

MARIA PAOLA BRUGNOLI  
ANGELICO BRUGNOLI  
ALESSANDRO NORSA

**NONPHARMACOLOGICAL AND  
NONINVASIVE  
MANAGEMENT IN PAIN:  
  
PHYSICAL AND  
PSYCHOLOGICAL MODALITIES**

AIST

ITALIAN ASSOCIATION FOR THE STUDY  
OF PAIN THERAPY  
AND CLINICAL HYPNOSIS  
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***“ And all work is empty save when there is love;  
It is to weave the cloth with threads drawn from your heart,  
even as if your beloved were to wear the cloth.  
It is to build a house with affection,  
even as if your beloved were to dwell in that house.  
It is to sow seeds with tenderness and reap the harvest with joy,  
even as if your beloved were to eat the fruit.  
It is to charge all things you fashion with a breath of your own spirit.  
Work is love made visible”.***

***(Kahlil Gibran)***

***“ I am forever walking upon these shores,  
betwixt the sand and the foam.  
The high tide will erase my foot-prints,  
And the wind will blow away the foam.  
But the sea and the shore will remain  
For ever”.***

***(Kahlil Gibran)***

***“The small yard has the sound of wind and rain,  
shadows thrown by the sun and the moon,  
when I am relaxing or feeling low.  
Contemplating this picturesque surroundings,  
It is no difficult for me to condense everything  
And hide it away in some secret place,  
Or to expand it to fill the whole world.”***

***(Zheng Xie, Poetry and Prose of the Ming and Qing)***

# PREFACE

## About AIST

The **ITALIAN ASSOCIATION FOR THE STUDY OF PAIN THERAPY AND CLINICAL HYPNOSIS** is an association for the study of palliative medicine in therapy of pain.

*Palliative Medicine* is an international interdisciplinary science, dedicated to improving knowledge and clinical practice in the palliative care of patients with far advanced or chronic disease. It reflects the multidisciplinary approach that is the hallmark of effective palliative care.

The purpose of the AIST is to promote the professionalism of Pain Therapist, Hypnotherapists and the practice of hypnotherapy in pain therapy.

AIST was formed in Verona, Italy, in 2005 by a group of licensed therapists.

Their aim was to provide a multidisciplinary forum for the ethical use of hypnosis hypnotherapy, and palliative care in pain therapy.

## Staff Directory

ITALIAN ASSOCIATION FOR THE STUDY OF PAIN THERAPY AND CLINICAL HYPNOSIS (AIST)  
Via Della Contea N°18, 37020 PEDEMONTE, VERONA, ITALY

### PRESIDENT

#### Prof. Angelico Brugnoli, MD

Via 24 Maggio 20, 37126 – Verona, Italy

e-mail: [angelico.brugnoli@alice.it](mailto:angelico.brugnoli@alice.it)     [anbru@easyasp.it](mailto:anbru@easyasp.it)

-Postgraduate Specialization in Medical Hydroclimatology

- Hypnotherapist; Board of Directors, Promoting Partner and Teacher from 1966 of Italian Institute of Clinical Hypnosis and Psychotherapy, “H. Bernheim”, in Verona, Italy, now Postgraduate School of Specialization In Psychotherapy and Clinical Hypnosis (recognized by Italian Government Department of University and Scientific Search)
- Member and Teacher from 1966 till now of Clinical Hypnosis and Pain Therapy at Istituto Italiano Studi Ipnosi Clinica e Psicoterapia “H. Bernheim”, (Italian Institute of Clinical Hypnosis and Psychotherapy “H. Bernheim”) Verona, Italy – Postgraduate School of Specialization In Psychotherapy (recognized by Italian Government Department of University and Scientific Search )

- collaborator of ***BIOMETEOLAB*** Centre of Researches in Medical Bioclimatology, Biotechnologies and Natural Medicine (Director: Professor Umberto Solimene) CENTRE FOR RESEARCH IN MEDICAL BIOCLIMATOLOGY, BIOTECNOLOGIES, AND NATURAL MEDICINE OF MILAN UNIVERSITY, Italy;

[www.naturmed.unimi.it/meteolab.html](http://www.naturmed.unimi.it/meteolab.html)     [www.naturmed.unimi.it](http://www.naturmed.unimi.it)     [www.talasso.unimi.it](http://www.talasso.unimi.it)

- Collaborator I.P.C.C. - Intergovernmental Panel on Climate Change (IPCC)  
E.N.E.A.- C.N.R. e W.H.O.

## **VICE- PRESIDENT**

### **Dott. Alessandro Norsa, Psychologist**

-Psychotherapist

- Hypnotherapist;
- Member and Teacher from 1996 to 2005 of Clinical Hypnosis at Istituto Italiano Studi Ipnosi Clinica e Psicoterapia “H. Bernheim”, (Italian Institute of Clinical Hypnosis and Psychotherapy “H. Bernheim”) Verona, Italy – Postgraduate School of Specialization In Psychotherapy (recognized by Italian Government Department of University and Scientific Search )
- From 2005 till now Teacher of Clinical Hypnosis, Psychotherapy, Psychosomatic and Mental Training in Sport and Rehabilitation, at AIST Italian Association for the Study of Pain Therapy and clinical Hypnosis, Verona, Italy

-Postgraduate specialization in Psychodrama

-Postgraduate Specialization in Psychosomatic

Verona, Italy

e-mail:[norsaalessandro@yahoo.it](mailto:norsaalessandro@yahoo.it)

## **SCIENTIFIC DIRECTOR**

### **Dr. Maria Paola Brugnoli, MD**

- Postgraduate Specialization in Anaesthesia and Intensive Care, at University of Verona, Italy, years 1987- 1990.
- Master in Paediatric Anaesthesia and Intensive Care, at University of Padova, Italy, year 1996-1997.
- Training of two years in Clinical Hypnosis at Istituto Italiano Studi di Ipnosi Clinica e Psicoterapia “H.Bernheim” (Italian Institute of Clinical Hypnosis and Psychotherapy “H. Bernheim”) Verona, Italy : years 1985-86 and 1986-87
- Member and Teacher from 1985 of Clinical Hypnosis and Pain Therapy at Istituto Italiano Studi Ipnosi Clinica e Psicoterapia “H. Bernheim”, (Italian Institute of Clinical Hypnosis and Psychotherapy “H. Bernheim”) Verona, Italy – Postgraduate School of Specialization In Psychotherapy (recognized by Italian Government Department of University and Scientific Search )

- Course of 1 year at University of Milan (2001-2002), Italy :” Biomedical technology and Traditional Medicine”
- 3 Masters in Acupuncture at University of Milan, Italy, years 2000, 2002 and 2006
- 2008 Master in Pain therapy and palliative Care at Padova University
  - From 2005 till now Teacher of Clinical Hypnosis, Pain Therapy and Mental Training in Rehabilitation, at AIST Italian Association for the Study of Pain Therapy and clinical Hypnosis, Verona, Italy
  - Member of ASCH, American Society of Clinical Hypnosis registration N° 21369

Tel. +39 045 6800991  
+39 348 7403705

e-mail: [paola.brugnoli@libero.it](mailto:paola.brugnoli@libero.it) Verona, Italy

# INTRODUCTION

## AIST and Clinical Programs in Pain therapy

(Maria Paola Brugnoli, Angelico Brugnoli)

Cancer pain and chronic non malignant pain, can have devastating effects on patients' quality of life. The speciality of pain management has developed in medicine and other disciplines to address the need for comfort, functional restoration and treatment of associated problems.

AIST offers specialized multidisciplinary treatment approaches for a wide variety of chronic pain problems.

The multidisciplinary teams that staff these programs include anesthesiologists, surgical physicians, psychologists, acupuncturists and hypnotherapists.

Based on a careful assessment, the team offers a treatment approach tailored to the patient's diagnosis and targeted to the patient's specific physical and psychosocial condition. The goals are to reduce pain, improve functioning, enhance the quality of life, and reduce dependence on the health care system.

### **Treatment approaches in pain therapy include:**

- Expertise in drug therapy for pain;
- Psychological interventions, including cognitive approaches such as biofeedback and hypnosis, mental training, and formal psychotherapy.
- Access to rehabilitative therapies including treatment with analgesic modalities such as transcutaneous electrical nerve stimulation (TENS), acupuncture and electro acupuncture .
- Interventional pain relieving treatments, including anesthesiological injections and nerve blocks.
- Biomedical researches in Medical Bioclimatology; these allow to check the close relations between the meteorological changes and the different human pathologies. Furthermore we refer to those fields like neuropsychoneuroimmunology, the arthrorheumatic diseases and respiratory diseases. A lack in the capacity of fitting by the organism, due to different external causes coming from the surrounding, can bring to real meteoropathological syndromes, also in chronic pain syndromes

### **Clinical Programs in the Palliative Care**

Palliative care is a treatment model focused on the care of patients with all types of progressive incurable diseases, including cancer; advanced diseases of the heart, lungs, kidney and liver; and neurodegenerative diseases. Palliative care includes a broad range of interventions that together help the patient and family maintain a good quality of life while living with the disease, and allow the patient with advanced illness to face the end of life with comfort ensured, values and decisions respected, and the family supported.

Our mission is furthered by the efforts of researchers and educators in the AIST .

These efforts are focused on education of professionals, patients and families, and the community at large, and on research into diverse clinical issues related to pain or palliative care.

AIST members provide competent, professional and caring treatment and referrals for treatment, to the clients and patients. It also provides a professional network for licensed professionals to draw on each other's knowledge from different theoretical perspectives and training.

### **Our studies are about:**

1. The Palliative Medicine Approach to End of Life Care
2. Alleviating Psychological and Spiritual Pain in the Terminally ill
3. Assessment and Treatment of Pain in the Terminally ill
4. Management of Selected Non-pain Symptoms in the Terminally ill
5. Caring for the Terminally ill - Communication and the Physician's Role on the Interdisciplinary Team
6. Ethical Decision Making When Caring for the Terminally ill
7. The Palliative Medicine Approach to Caring for Patients with chronic diseases
8. The Palliative Medicine Approach to Caring for Paediatric Patients
9. Hypnosis in pain therapy
10. Psychotherapy in chronic pain
11. Acupuncture in pain therapy
12. TENS in pain therapy
13. Mental training in sport, in pain therapy and in rehabilitation
14. Music Therapy
15. Biomedical researches in Medical Bioclimathology in chronic pain syndromes

## **AIST and palliative medicine/care**

Palliative care concentrates on improving your quality of life and that of your family. It focuses on controlling pain and other symptoms, and meeting a person's social, emotional and spiritual needs.

It is acknowledged that Spirituality includes whatever gives a person meaning, value and worth in their life.

The aim of palliative care is to relieve suffering and improve the quality of living and dying for people whose disease cannot be cured. Palliative care supports the principle that it is important for people to be given the opportunity to live out their days with meaning and as little distress as possible. It may complement and enhance disease modifying therapy or it may become the total focus of care.

### **Palliative Care:**

- Embraces life and regards death as a normal process
- Neither speeds up death nor delays it
- Provides relief from pain and other distressing symptoms
- Integrates the psychological and spiritual aspects of care
- Offers a support system to help patients live as well as possible until death
- Offers a support system to help families cope with their loved one's death and to help them cope afterward with their own bereavement

### **AIST program on supportive and palliative care:**

Our program on supportive and palliative care advises those who develop and deliver cancer services for patients with cancer about what is needed to make sure that patients, and their families and carers, are well informed, cared for and supported.

Our strategy is:

- To promote improvement in the quality and availability of palliative care to patients with cancer and chronic pain
- To promote the extension of palliative care to patients with other life threatening conditions

### **W.H.O. DEFINITION OF PALLIATIVE CARE:**

Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.

Palliative care:

- provides relief from pain and other distressing symptoms;
- affirms life and regards dying as a normal process;
- intends neither to hasten or postpone death;
- integrates the psychological and spiritual aspects of patient care;
- offers a support system to help patients live as actively as possible until death;
- offers a support system to help the family cope during the patients illness and in their own bereavement;
- uses a team approach to address the needs of patients and their families, including bereavement counselling, if indicated;
- will enhance quality of life, and may also positively influence the course of illness;
- is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy, and includes those investigations needed to better understand and manage distressing clinical complications.

### **W.H.O. Definition of Palliative Care for Children:**

Palliative care for children represents a special, albeit closely related field to adult palliative care. W.H.O.'s definition of palliative care appropriate for children and their families is as follows; the principles apply to other paediatric chronic disorders (W.H.O.; 1998a):

- Palliative care for children is the active total care of the child's body, mind and spirit, and also involves giving support to the family.
- It begins when illness is diagnosed, and continues regardless of whether or not a child receives treatment directed at the disease.
- Health providers must evaluate and alleviate a child's physical, psychological, and social distress.
- Effective palliative care requires a broad multidisciplinary approach that includes the family and makes use of available community resources; it can be successfully implemented even if resources are limited.
- It can be provided in tertiary care facilities, in community health centres and even in children's homes.

# **CHAPTER 1**

## **The management of chronic pain**

(Maria Paola Brugnoli)

The Agency for Health Care Policy and Research (AHCPR) was established in December 1989 under Public Law 101-239 (Omnibus Budget Reconciliation Act of 1989) to enhance the quality, appropriateness, and effectiveness of health care services and access to these services. AHCPR carries out its mission by conducting and supporting general health services research, including medical effectiveness research, facilitating development of clinical practice guidelines, and disseminating research findings and guidelines to health care providers, policymakers, and the public.

### **A) Procedure-Related Pain in Adults and Children (The Agency for Health Care Policy and Research -AHCPR)**

1. For patients of all ages, interventions for managing procedure-related pain and distress should take into account the type of procedure, the anticipated level of pain, and such individual factors as age and emotional and physical condition.
2. Sedation should be considered for painless procedures that require patient cooperation in remaining still, particularly for children under 6 years of age and for cognitively impaired patients.
3. Conscious sedation for procedural pain should be done in a manner that emphasizes safety and monitoring.
4. Patients with cancer undergo painful procedures for diagnosis, therapy, and supportive care, including lumbar puncture, bone marrow aspiration, and biopsy. Although venipunctures, insertion of intravenous catheters, and intramuscular injections are less invasive, less painful procedures, their frequency and repetition become a major source of distress and apprehension. For aggressive treatment protocols, multiple invasive procedures may be performed weekly or daily.
5. Children with cancer consider painful procedures to be the most difficult part of having cancer, and frequent repetition of procedures does not desensitize them to the distress (Fowler-Kerry, 1988; Weekes and Savedra, 1988). No published studies have focused on the reactions of adults to frequent and cumulative procedures, but some adults may be able to cope because of their greater cognitive ability and life experience in dealing with adversity and stress. Nevertheless, what is painful for a child or adolescent is also likely to be painful for an adult, especially when already stressed by the diagnosis of a potentially fatal illness. For all cancer patients, then, intervention for suffering should include concern for and management of the pain and distress associated with procedures.

**Plans for managing pain associated with painful procedures should address several questions:**

- \* Why is the procedure being performed?
- \* What is the expected intensity of pain?
- \* What is the expected duration of pain?
- \* What is the expected intensity of anxiety?
- \* What is the expected duration of anxiety?
- \* How often will the procedure be repeated?
- \* How do parents think their child will react? What reaction do adults predict for themselves?
- \* What is the meaning of the procedure for the patient and the family?

## **B) Pain in Neonates, Children, and Adolescents (The Agency for Health Care Policy and Research -AHCPR)**

Most children with cancer experience pain ( McGrath, 1990b), which, as does the progression of cancer in children, differs from that of adults.

After diagnosis, the common childhood malignancies generally respond rapidly to treatment, and disease-related pain often remits. If the tumor recurs and is resistant to treatment, the disease progresses rapidly, resulting in early death (Miser, 1993).

Pain in children with cancer arises more often from the treatment than from the disease (Miser, Dothage, Wesley, et al., 1987). Aggressive multimodal treatment protocols for children have increased survival rates markedly for most types of cancer, but they often involve treatment toxicity that results in painful conditions, e. g., mucositis, peripheral neuropathy, and infection.

Children with cancer undergo procedures ranging from venipunctures to bone marrow aspirations and biopsies. Children with aggressive treatment protocols may have one or more venipunctures daily, lumbar punctures weekly, and bone marrow aspirations monthly. Unlike adults, infants and children do not provide consent for these procedures and often do not understand the reasons for them or realize their short duration.

Although appropriate preparation and adequate analgesia are crucial for children undergoing procedures, often neither occurs or they occur in a haphazard fashion (Schechter, 1989).

The optimal treatment of a child's cancer-related pain requires an awareness of the many factors that shape that pain. Among these are the child's developmental level, emotional and cognitive state, personality traits, physical condition, and past experiences; the meaning of the pain for the child; the stage of the disease; the child's fears and concerns about illness and death; issues, attitudes, and reactions of the family; cultural background; and the environment ( Hester, Foster, and Beyer, 1992). Clinicians should be aware that children with cancer experience many distressing symptoms such as pain, depression, anxiety, panic, pruritus, fatigue, nausea, constipation, insomnia, dyspnea, and the fear of abandonment and death.

Getting to know the child and having knowledge of developmental norms and behavioral competencies are important in the assessment and management of pain. Clinicians should tailor assessment and management strategies to the child's developmental level, personality style, and emotional and physical resources and to the context; tailoring is particularly necessary for children with developmental delays, learning disabilities, emotional disturbances, and language barriers.

Assessment is not only diagnostic but also therapeutic. Assessing the meaning of the pain to the child and the family, the effect of the pain on the activities of daily living and on mood, and the concurrent concerns and symptoms helps clinicians understand pain from the perspective of the child and the family. Asking about pain underscores the clinician's desire to ease pain and suffering and builds a therapeutic alliance with the child and family.

It is easier for clinicians to understand inherently subjective experiences, such as pain, anxiety, and despair, when the child can verbalize, but for some children, verbal communication is difficult or impossible. Therefore, the clinician should recognize the potential for pain and discomfort or suspect that the child is in pain even if the signs are not immediately apparent.

**Assessment of children's pain** involves one or more of the following approaches: self-reports, proxy reports, observations, and physiologic measures. "Because physiologic indicators such as heart rate, respiratory rate, blood pressure, and diaphoresis alter with a variety of stress-arousal events, they should not be used as measures of pain in the absence of other pain assessment methods or clinical indicators" (McGrath, de Veber, and Hearn, 1985). A variety of assessment methods are available, but no one approach provides a complete picture of the pain experience. At least one method that is reliable, valid, and developmentally appropriate to the child should be used regularly for assessing pain. Because children with cancer may need assessment in settings other than hospitals (e.g., their homes), the methods should be affordable and easy for parents or other caregivers to use.

**Self-Report.** Self-report methods provide the most reliable and valid estimates of pain intensity and location. These methods are appropriate for children over the age of 4 who can verbalize (McGrath, 1990b).

Rarely will children with cancer fabricate pain (Ross and Ross, 1988), but they may deny or underreport pain if they (1) fear that admission of pain will mean further painful procedures or treatments such as "a shot for pain"; (2) lack awareness that pain can be treated; (3) wish to protect parents from the reality of progressive disease; or (4) desire to please and placate others.

Self-report methods should be easy to administer with simple instructions for children. They should allow both verbal and nonverbal (e.g., pointing) responses. Often, children will not respond to questions verbally, especially if they are anxious or depressed or are experiencing severe pain.

Several self-report methods for pain intensity are available for use with children (see Attachment B). Although the psychometric adequacy of these methods for children with cancer has yet to be determined, reliability and validity estimates are available for other pain syndromes such as postoperative pain, procedural pain, and juvenile rheumatoid arthritis. Methods appropriate for children over the age of 4 years include the Oucher (Beyer, Villarruel, and Denyes, 1993) and the Poker Chip Tool (Hester, Foster, and Kristensen, et al., 1989). Some investigators have used cartoon faces as scales of measurement for young children with cancer who are undergoing procedures, but the construct being measured was not necessarily pain. One scale measures pain affect (McGrath, de Veber, and Hearn, 1985), whereas others measure intensity of pain, anxiety, or distress (Adams, 1990; LeBaron and Zeltzer, 1984).

Children over the age of 7 years who understand the concepts of order and number may prefer a numerical rating scale (NRS) (McGrath and Unruh, 1987), a horizontal word graphic rating scale (Savedra, Tesler, Holzemer, et al., 1989 [updated 1992]), or a VAS (McGrath, 1990b). A large study that included children and adolescents reported that the VAS was the least preferred of five horizontal pain scales (Tesler, Savedra, Holzemer, et al., 1991).

To determine the location of pain, children can be asked either to point to their body or use a body map (i.e., an outline). Children over the age of 4 can use crayons or colored markers to locate pain on a body map (Eland, 1989; Savedra, Tesler, Holzemer, et al., 1989). The precision of the location will increase with the child's age. Children who are suffering may regress; similarly, children who are developmentally delayed or learning disabled may need assessment tools developed for younger children. If a child is unable or unwilling to provide pain ratings, parents or health care professionals can provide proxy reports. Proxy ratings, however, are inexact.

**Behavioral Observation.** Behavioral observation is the primary assessment approach for preverbal and nonverbal children and is an adjunct to assessment for verbal children.

Observations focus on vocalizations

(e.g., crying, whining, or groaning), verbalizations, facial expressions, muscle tension and rigidity, ability to be consoled, guarding of body parts, temperament, activity, and general appearance.

Adequate reliability and validity documentation is lacking for behavioral observations; consequently, most such observations offer only a second-best approximation of the child's experience, even though clinicians often attribute greater importance to nonverbal expression than to self-report (Craig, 1992). Changes in how a child looks and acts may indicate the onset of pain or its increase (Hester and Foster, 1990) and warrant further investigation and documentation. Observations are problematic in that the stimulus for behaviors or changes is not always clear. For example, children cry in response to pain, as well as fear, loneliness, and overstimulation. Clinicians may misinterpret behaviors such as sleeping, watching television, and using humor as the absence of pain when, in fact, the child is attempting to control pain. Moreover, behavioral responses may be absent or attenuated when vocalizations or movements cause or increase pain. Infants may become apathetic after only a few days of continuing severe pain, and suffering experienced by older children and adolescents with cancer may blunt behaviors and affect. Other factors that inhibit behavioural responses include intubation, use of paralyzing agents or sedatives, extreme illness, weakness, or depression. Therefore, the use of behavioral observation to guide analgesia requires close attention to the context. If caretakers are not sure whether a behavior indicates pain and if there is reason to suspect the presence of pain, a trial of analgesics can be diagnostic as well as therapeutic.

Most of the scales developed for measuring behaviors address postoperative pain or pain associated with invasive procedures (e.g., LeBaron and Zeltzer, 1984). Given the nature of cancer-related pain, behavioral scales for the assessment of acute pain problems are unlikely to be sensitive in assessing the child with cancer pain. The Gustave- Roussy Child Pain Scale (Gauvain-Piquard, Rodary, Rezvani, et al., 1987) is the only observation tool developed for children with cancer pain.

**Pain Management.** Pain is managed within a therapeutic alliance among the child, his or her parent(s), nurses, physicians, and other health care professionals. The beliefs and preferences of the child and family should be elicited, respected, and carefully considered. At the same time, the primary obligation of the health care professional is to ensure safe and competent care. The presence of divergent beliefs and goals among members of the team can interfere with effective pain and symptom management, but these can often be resolved through discussion and negotiation.

**Medical Interventions.** Medical interventions include analgesics, adjuvant agents (e.g., corticosteroids, tricyclic antidepressants, stimulants), palliative chemotherapy, radiation therapy, regional analgesia, and neurosurgical approaches. In most cases, analgesics either alone or supplemented with chemotherapeutic agents, radiation therapy, and adjuvants provide adequate pain relief. Regional analgesia is occasionally helpful.

In children, nonpharmacologic methods with demonstrated efficacy for lumbar punctures and bone marrow aspirations and biopsies include hypnosis (Zeltzer and LeBaron, 1982); thought stopping (Ross, 1984); and a multidimensional psychological intervention that includes a breathing exercise, reinforcement, imagery, behavioral rehearsal, and filmed

modeling (Jay, Elliott, Ozolins, et al., 1985).

## C) Examination of pain

Recommendations (The Agency for Health Care Policy and Research -AHCPR)

1. Health professionals should ask about pain, and the patient's self-report should be the primary source of assessment.
2. Clinicians should assess pain with easily administered rating scales and should document the efficacy of pain relief at regular intervals after starting or changing treatment. Documentation forms should be readily accessible to all clinicians involved in the patient's care. (Panel Consensus)
3. Clinicians should teach patients and their families to use assessment tools in their homes in order to promote continuity of effective pain management across all settings. (Panel Consensus)
4. The initial evaluation of pain should include:
  - \* A detailed history, including an assessment of pain intensity and characteristics.
  - \* A physical examination.
  - \* A psychosocial assessment.
  - \* A diagnostic evaluation of signs and symptoms associated with the common cancer pain syndromes. (Panel Consensus)
5. Clinicians should be aware of common pain syndromes:  
this prompt recognition may hasten therapy and minimize the morbidity of unrelieved pain.
6. Changes in pain patterns or the development of new pain should trigger a diagnostic evaluation and modification of the treatment plan. (Panel Consensus)

Health professionals should ask about pain, and the patient's self-report should be the primary source of assessment. The self-report should include a description of the pain; its location, intensity/severity, and aggravating and relieving factors; and the patient's cognitive response to pain. Neither behavior nor vital signs should be used in lieu of a self-report (Beyer, McGrath, and Berde, 1990). It is best to use brief, easy-to-use assessment tools that reliably document pain intensity and pain relief and to relate these to other dimensions of pain such as mood. One routine clinical approach to pain assessment and management is summarized by the mnemonic "ABCDE":

- A. Ask about pain regularly. Assess pain systematically.
- B. Believe the patient and family in their reports of pain and what relieves it.
- C. Choose pain control options appropriate for the patient, family, and setting.
- D. Deliver interventions in a timely, logical, and coordinated fashion.
- E. Empower patients and their families.

Three commonly used self-report assessment tools are:

- Simple Descriptive Pain Intensity Scale.

- 0-10 Numeric Pain Intensity Scale.
- Visual Analog Scale (VAS).

If the patient understands the scale and is capable of answering and if end points and adjective descriptors are carefully selected, each of these instruments can be valid and reliable (Gracely and Wolskee, 1983; Houde, 1982; Sriwatanakul, Kelvie, and Lasagna, 1982).

Knowing factors that aggravate or relieve pain helps clinicians to design a pain treatment plan. The initial pain assessment should elicit information about changes in activities of daily living, including work and recreational activities, sleep patterns, mobility, appetite, sexual functioning, and mood.

A psychosocial assessment should emphasize the effect of pain on patients and their families, as well as patients' preferences among pain management methods. Patients who are able to answer should be asked about the effectiveness of past and present pain treatments, such as antineoplastic therapy or specific pharmacologic and nonpharmacologic therapies.

The clinician should perform a physical and neurologic examination related to the pain report. The painful area should be carefully examined to determine if palpation or manipulation of the site exacerbates the pain. Common sites of pain referral should be evaluated (e.g., shoulder pain may emanate from subdiaphragmatic abdominal sources; knee and hip pain may be referred from lumbar spine lesions). In addition, the patient should be observed for cues that indicate pain, e.g., distorted posture, impaired mobility, guarding the painful area, restricted movement of a limb, anxiety, attention seeking, or depression. However, absence of these behaviors should not be interpreted to mean that the patient has no pain.

Neurologic examination should be focused. For example, pain in the head and neck region requires careful cranial nerve examination to exclude intracranial pathology and lesions at the base of the skull, that may require definition by specialized magnetic resonance imaging (MRI) or computed tomography (CT). Neck or back pain require careful motor, sensory, and reflex examination of the arms and legs, as well as evaluation of rectal and urinary sphincter function to exclude plexopathy and spinal cord lesions.

Appropriate diagnostic tests should be performed to determine the cause of the pain and the extent of disease, and patients should be offered analgesia to facilitate these evaluations (e.g., to allow the patient to lie flat for CT or MRI scans). It is important to correlate the results of these studies with physical and neurologic findings to assure that appropriate areas of the body have been imaged and that identified abnormalities do in fact explain the patient's pain. Pain may be the first sign of tumor recurrence or progression and may appear or increase before changes are evident in imaging studies; therefore, imaging studies may have to be repeated.

Pain should be assessed and documented:

- At regular intervals after starting the treatment plan.
- With each new report of pain.
- At a suitable interval after each pharmacologic or nonpharmacologic intervention, such as 15 to 30 minutes after parenteral drug therapy and 1 hour after oral administration.

## **D) Management of pain:**

The guidelines of The Agency for Health Care Policy and Research (AHCPR) assists practitioners in the prevention, diagnosis, treatment, and management of clinical conditions.

The recommendations about the assessment and management of pain (AHCPR) include the use of:

- analgesics and adjuvant drugs;
- psychological and cognitive/behavior strategies;
- physical modalities;
- palliative radiation and antineoplastic therapies;
- nerve blocks;
- palliative and ablative surgery
- non conventional remedies and herbal

### **1) Pharmacologic Management:**

(The Agency for Health Care Policy and Research -AHCPR)

1. An essential principle in using medications to manage cancer pain is to individualize the regimen to the patient.
2. The simplest dosage schedules and least invasive pain management modalities should be used first. (Panel Consensus)

Three major classes of drugs are used alone or, more commonly, in combination to manage pain in the cancer patient:

- \* NSAIDs Nonsteroidal Anti-Inflammatory Drugs and acetaminophen (APAP).
- \* Opioid analgesics.
- \* Adjuvant analgesics.

### **The WHO Ladder:**

A simple, well-validated, and effective method for assuring the rational titration of therapy for cancer pain has been devised by WHO (World Health Organization, 1990). It has been shown to be effective in relieving pain for approximately 90 percent of patients with cancer (Ventafridda, Caraceni, and Gamba, 1990) and over 75 percent of cancer patients who are terminally ill (Grond, Zech, Schug, et al., 1991).

This approach is based on the concept of an analgesic ladder.

The five essential concepts in the WHO approach to drug therapy of cancer pain are:

- By the mouth.
- By the clock.
- By the ladder.

- For the individual.
- With attention to detail.

## **2) non conventional remedies and herbal:**

### **Homeopathy**

Homeopathy is based on the principle that substances that are poisonous in large doses can be very beneficial in small doses. Homeopathy is a form of medicine that treats the body as a whole and helps it to heal itself. It can be used for the short term (acute) illnesses and long term (chronic) illnesses. The objective is to prevent the patient from getting the illnesses again (prevention). The name homeopathy comes from the Greek word "homios" which means "like" and the word "pathos" meaning "suffering". Thus homeopathy simply means treating like with like.

In the fourth century B.C., Hippocrates, the father of modern medicine, observed that large amount of certain natural substances can produce symptoms in healthy people resembling those caused by the disease, while smaller doses of these same substances can relieve those symptoms. In 1790's Samuel Hahnemann, a German doctor, amplified this concept and proposed the practice called homeopathy. He proposed that "Let like be cured by like". Homeopathy uses animal, vegetable and mineral preparations to cure a person's illness. Millions of people in Britain, Europe and America uses Homeopathy.

Homeopathy looks at each patient and develops a remedy or treatment plan strictly for him or her. It invokes the powers of healing inherent in individuals (our immune system) to develop a successful therapy. The more one knows about the patient, the symptoms, likes and dislikes, what makes them better or worse, it helps in developing a "symptom picture" of the patient that can lead to a successful treatment.

If we think about the principle of homeopathy, it has a lot in common with our present understanding of immunizations. To prevent us from catching small pox, a vaccine is prepared which is a mild form of the virus that causes the disease. The principle is that introduction of this small amount of the virus in our body system will set out our body's defenses so that when the actual virus shows up, our body will have enough barriers or fighting power to prevent the virus from entering our body. Homeopathy practitioners believe that when we introduce a very very small amount of the deadly material into the body, our body will unleash enough defenses to prevent the disease from recurring again. However, there are significant differences between the concepts used in Western medicine and those of homeopathy. Vaccines are not rendered more potent when they are diluted like homeopathic preparations. In conventional treatment, there is a minimum dosage that need to be given before the medication becomes effective in treating the underlying problem. For example, when taking antibiotics, we have to take the whole course at regular intervals to maintain a potency level in the bloodstream to kill the bacteria.

Homeopathic remedies, which are made from naturally occurring plant, animal, or mineral substances, are recognized and regulated by the Food and Drug Administration (FDA) and are manufactured by established pharmaceutical companies under strict guidelines. There are over 2000 homeopathic remedies that are usually referred to by their abbreviated name. (For example Arg nit. stands for Argentum nitricum). These are derived from such exotic sources as bee stings, snake venoms, arsenic, gold and silica, and even compounds from diseases tissue. Homeopaths also prescribes tissue salts. Tissue salts

are prepared from mineral sources. Homeopathic remedies are diluted to such an extent that there can be no possible side effects from even the most toxic substances. The dilution process is known as 'potentiation'. Taken in this ultra diluted form, Homeopathic remedies have no side effects and are perfectly safe, non-toxic and non-addictive. Most of the major homeopathic remedies are useful to treat arthritis. Homeopathic remedies to relieve immediate pain and joint stiffness may include Rhus toxicodendron or Bryonia. What remedy is selected depends on the symptoms.

## **Herbal medicine**

Herbal Medicine, sometimes referred to as Herbalism or Botanical Medicine, is the use of herbs for their therapeutic or medicinal value. An herb is a plant or plant part valued for its medicinal, aromatic or savory qualities. Herb plants produce and contain a variety of chemical substances that act upon the body.

Herbal medicine is the oldest form of healthcare known to mankind. Herbs had been used by all cultures throughout history. It was an integral part of the development of modern civilization. Primitive man observed and appreciated the great diversity of plants available to him. The plants provided food, clothing, shelter, and medicine. Much of the medicinal use of plants seems to have been developed through observations of wild animals, and by trial and error. As time went on, each tribe added the medicinal power of herbs in their area to its knowledgebase. They methodically collected information on herbs and developed well-defined herbal pharmacopoeias. Indeed, well into the 20th century much of the pharmacopoeia of scientific medicine was derived from the herbal lore of native peoples. Many drugs commonly used today are of herbal origin. Indeed, about 25 percent of the prescription drugs dispensed in the United States contain at least one active ingredient derived from plant material. Some are made from plant extracts; others are synthesized to mimic a natural plant compound.

The World Health Organization (WHO) estimates that 4 billion people, 80 percent of the world population, presently use herbal medicine for some aspect of primary health care. Herbal medicine is a major component in all indigenous peoples' traditional medicine and a common element in Ayurvedic, homeopathic, naturopathic, traditional oriental, and Native American Indian medicine. WHO notes that of 119 plant-derived pharmaceutical medicines, about 74 percent are used in modern medicine in ways that correlated directly with their traditional uses as plant medicines by native cultures. Major pharmaceutical companies are currently conducting extensive research on plant materials gathered from the rain forests and other places for their potential medicinal value.

Substances derived from the plants remain the basis for a large proportion of the commercial medications used today for the treatment of heart disease, high blood pressure, pain, asthma, and other problems. For example, ephedra is a herb used in Traditional Chinese Medicine for more than two thousand years to treat asthma and other respiratory problems. Ephedrine, the active ingredient in ephedra, is used in the commercial pharmaceutical preparations for the relief of asthma symptoms and other respiratory problems. It helps the patient to breathe more easily.

Another example of the use of a herbal preparation in modern medicine is the foxglove plant. This herb had been in use since 1775. At present, the powdered leaf of this plant is known as the cardiac stimulant digitalis to the millions of heart patients it keeps alive worldwide.

Herbal Medicine can be broadly classified into various basic systems: Traditional Chinese Herbalism, which is part of Traditional Oriental Medicine, Ayurvedic Herbalism, which is derived from Ayurveda, and Western Herbalism, which originally came from Greece and Rome to Europe and then spread to North and South America.

Chinese and Ayurvedic Herbalism have developed into highly sophisticated systems of diagnosis and treatment over the centuries. Western Herbalism is today primarily a system of folk medicine.

Interest in the United States had been growing in the recent years from the reported success stories from the use of herbs. For example, St. John's Wort is widely used in the treatment of mild depression without the need for Prozac. St. John's Wort does not have the side effects such as that of Prozac. There are some Ayurvedic herbs that are very useful for reducing cholesterol, diabetes etc. Similarly the popularity of Ginseng and Ginkgo biloba (ginkgo) is rising due to its beneficial effects.

There are some herbs that are very useful for reducing pain as "Belladonna" tincture madre.

### **Tips on evaluating non conventional remedies and herbal:**

Adapted from: "Tips on evaluating herbal remedies" quoted from the University of Toronto. Faculty of Medicine Health News 1995;13(5) October:

- For unconventional therapies that are taken by mouth or put into the body: Do not take any of these during chemotherapy, hormonal therapy or immunotherapy. Do not take any them in conjunction with any other medications without checking with your doctor about possible drug interactions.
- Always tell your cancer doctor about any alternative therapies being used.
- Use herbal products only for short periods, in moderation.
- Do not use alternative therapies to replace prescribed treatment.
- Purchase from established and reputable suppliers. Ask about what you are buying: Are the Latin names of herbs, the quantities and uses listed?
- Do not give children under age two herbal teas.

### **3) Nonpharmacologic Interventions: Invasive Therapies**

(The Agency for Health Care Policy and Research -AHCPR)

1. With rare exception, noninvasive treatments should precede invasive palliative approaches. (Panel Consensus)
2. Indications for palliative radiation therapy include treatment of symptomatic metastases in sites where tumor infiltration has caused pain, obstruction, bleeding, or compression.
3. Radiopharmaceuticals emitting a b-particle should be used for the pain of bone metastases only when bone scintigraphy shows a lesion.
4. Radiation tolerance of adjacent normal tissues should be considered in the design of treatment portals and the prescription of teletherapy or radiopharmaceutical dose.
5. The desired dosage of radiation should be administered in the fewest fractions possible to promote patient comfort during and after treatment. (Panel Consensus)
6. Neurolytic blockade of peripheral nerves should be reserved with rare exception for instances in which other therapies (palliative radiation, TENS, pharmacotherapy) are ineffective, poorly tolerated, or clinically inappropriate. (Panel Consensus)
7. Clinicians should:
  - \* Assess thoroughly each patient's pain mechanism in order to apply the most appropriate nerve block.
  - \* Screen patients for coexistent medical conditions, ability to understand risks of the proposed procedure, and ability to cooperate during the procedure.
  - \* Consider a block only if the person planning to do it is experienced and skillful, is prepared to deal with its immediate effects and side effects, and is able to provide follow-up assessment and treatment.
  - \* Use radiographic control for blocks when ease and safety depend on precise anatomic guidance. (Panel Consensus)
8. When a patient is painfree after neurolysis, opioids should not be stopped abruptly, lest a withdrawal syndrome be provoked.
9. The oncologic surgeon should be familiar with the interactions of chemotherapy, radiation therapy, and surgical interventions so that iatrogenic complications may be avoided or anticipated. (Panel Consensus)
10. The surgeon should recognize and treat characteristic pain syndromes that follow specific surgical procedures. (Panel Consensus)

#### **- Radiation Therapy**

Radiation therapy can relieve metastatic pain as well as symptoms from local extension of primary disease (Greenwald, Bonica, and Bergner, 1987). Over one-third of the practice of radiation therapy is palliative (Arcangeli, Micheli, Arcangeli, et al., 1989). The intent of any palliative treatment is to relieve pain quickly and maintain symptom control for the duration of the patient's life. Treatment is therefore tailored to the patient's clinical condition and overall prognosis (Lawton and Maher, 1991; Maher, Coia, Duncan, et al., 1992). Radiation therapy is complementary to analgesic drug therapies and may enhance their effectiveness because it directly targets the cause of pain.

In general, the larger the daily dose of radiation, the lower the total dose that can be administered because of limits to normal tissue tolerance. Proportionately more tumor cells are killed when the daily radiation dose is larger. A balance is required between the killing

of tumor cells and the adverse radiation effects on normal tissues, which are largely a function of the daily dose. A number of different schedules have been developed that take into account specific tumor characteristics and the tolerance of normal tissues.

## - **Surgical Management of Pain**

Operations for the curative excision or palliative debulking of a tumor have the potential to reduce pain, improve prognosis, and even to achieve long-term, symptom-free survival. On the other hand, a tumor may be recognized to be unresectable at the time of operation. These perioperative dilemmas provoke anxiety in patients and their families, who worry not only about mortality but also about possible survival at the expense of function or loss of body parts. This anxiety may worsen pain.

The surgeon's response to these issues can help to create a sense of personal comfort, to reduce the feelings of loss of control in patients confronted with a loss of autonomy, if not life itself, and to foster a clear understanding of the pain- and tumor-control goals of the surgical procedure and of how the procedure relates to other aspects of treatment.

Postoperatively, the patient is often left with major changes in anatomy and physiology (e.g., laryngectomy, colostomy) that require further rehabilitation and continued attention to pain control. The surgeon should convey the nature and implications of the surgical intervention to the other members of the patient's management team and should continue in an advocacy role throughout the patient's course of care (Dunphy, 1976).

## - **Anesthetic Techniques :**

### **Nerve Blocks**

The possibility of controlling otherwise intractable pain by the relatively brief application of a local anesthetic or neurolytic agent makes neural blockade an attractive approach in selected patients.

Published estimates of the percentage of all patients with cancer pain for whom nerve block procedures may appropriately be considered vary greatly. Variability in this estimate reflects evolution of the effectiveness of noninvasive therapies, interinstitutional differences in availability of clinicians with the necessary expertise, and access to alternative options such as spinal opioid therapy or neurosurgery (Bonica, Buckley, Moricca, et al., 1990).

Allowing for vagueness in methods of arriving at published estimates, lack of uniformity in clinical conditions treated by neural blockade, and in reported clinical outcomes, it still appears that some 50 to 80 percent of patients who receive nerve blocks for cancer pain may benefit (Cousins and Bridenbaugh, 1987; Patt, 1993; Raj, 1992) (Table 19).

Local anesthetic such as lidocaine or bupivacaine is typically applied at an anatomically defined site to provide diagnostic information (e.g., whether the pain is somatic or visceral; whether it has a sympathetic mechanism). Prognostic injection assesses side effects such as hypotension and subjective sensations, including pain relief or unpleasant numbness, likely to result from a planned neurodestructive procedure. Although the lack of a desirable result from local anesthetic injection after proper needle placement generally predicts the failure of a neurolytic block, a promising result after local anesthetic injection does not guarantee the success of subsequent chemical destruction.

The simpler technique of subcutaneous infiltration with local anesthetic and corticoid has also been reported to provide symptomatic relief for herpes zoster. When single sympathetic blocks produce only transient benefit, the placement of a catheter at the sympathetic ganglion (or the corresponding intraspinal segments or interpleural space) to

enable continuous sympathetic blockade for days to weeks may produce sustained benefit.

Cranial neurectomies have selected indications in neuralgias resulting from cancer. The trigeminal and glossopharyngeal nerves can be ablated by radiofrequency lesions created by electrodes placed in either the foramen ovale (gasserian ganglion) or the jugular foramen or by chemical neurolysis at the gasserian ganglion (Ischia, Luzzani, Brugnoli, 1988; Sweet, 1976).

Neurolytic sympathetic blockade is useful to relieve pain in the arm, head and neck (stellate ganglion), or leg (lumbar sympathetic block), as well as to interrupt the visceral afferent pain pathways mediating pain in the pancreas and other upper abdominal organs (celiac block) or in the pelvis (hypogastric block). Side effects of celiac block include transient hypotension and diarrhea; complications (less likely with radiologic guidance) include paraplegia or less severe radicular weakness or numbness, intrarenal injection and damage, retroperitoneal hematoma, and failure of ejaculation (Ischia, Luzzani, Brugnoli et al. 1988; van Dongen and Crul, 1991). Four-fifths or more of patients with pancreatic or other abdominal cancers derive pain relief from celiac block, usually lasting until death (Brown, Bulley, and Quiel, 1987; Eisenberg, Carr, and Chalmers, unpublished manuscript; Mercadante, 1993). Even when relief is incomplete, patients may appreciate the ability to lower their opioid dosage and by doing so reduce drowsiness and constipation. It thus appears reasonable to consider early celiac neurolytic block for patients with a short life expectancy and pain from pancreatic cancer (Mercadante, 1993). Anterolateral cordotomy is an ablative procedure aimed at the pain-conducting tracts in the anterolateral quadrant of the spinal cord. Cordotomy provides selective loss of pain and temperature perception several segments below and contralateral to the segment at which the lesion is placed. Anterolateral cordotomy is effective for unilateral, mainly somatic pain below the midcervical dermatomes (Ischia, Luzzani, Brugnoli et al., 1988; Lahuerta, Lipton, and Wells, 1985). For visceral pain or bilateral pain, bilateral cordotomies may be required (Amano, Kawamura, Tanikawa, et al., 1991). Most cordotomies are currently done with the patient under local anesthesia by the percutaneous route under fluoroscopic guidance, and the lesion is created by radiofrequency. The percutaneous approach avoids risks of open operation and anesthesia in patients in poor medical condition.

Complications associated with local anesthetic nerve blocks, catheter implants, neurostimulator implants, thermal ablations, and neurolytic injection have been reported (Cousins and Bridenbaugh, 1987; Melzack and Wall, 1990; Raj, 1992). Serious side effects including hemorrhage, infection, unexpected nerve damage, pneumothorax, and cardiorespiratory arrest are rare but nonetheless mandate resuscitative skills and close short-term followup (The Agency for Health Care Policy and Research -AHCPR).

Because of the appeal of nerve blocks for use in intractable pain and their potential for harm as well as benefit, clinicians should: (The Agency for Health Care Policy and Research -AHCPR)

- \* Assess thoroughly each patient's pain mechanism, in order to apply the most appropriate block.

- \* Screen patients according to coexistent medical conditions (e.g., coagulopathy); ability to understand risks of the proposed procedure (e.g., paresis or incontinence); and ability to cooperate during the procedure (e.g., not move).

- \* Consider a block only if the person planning to do it is experienced and skillful; prepared to deal with its immediate effects and side effects (e.g., hypotension, respiratory depression, or paralysis); and able to provide followup assessment and treatment.

- \* Use radiographic control for blocks when ease and safety depend on the precise identification of landmarks.

## **Spinal or epidural catheter**

Temporary spinal or epidural catheter placement is normally undertaken by specialists trained to recognize possible complications (e.g., opioid-induced respiratory depression or hypotension or sensorimotor blockade due to local anesthetic) and able to deal with these promptly and effectively. The need for dosage titration and coordination of spinal with systemic medications and nonmedical therapies requires that the catheter be placed within the framework of multidisciplinary continuing care. Because identical materials and methods are often used for percutaneous epidural catheter placement for cancer pain and for acute postoperative pain control, anesthesiologists typically perform these techniques and their specific followup. The placement of catheters other than spinal ones, such as for drug infusion into interpleural or paravertebral areas, is uncommon, and few data other than case reports are available. Percutaneous electrical stimulation for the relief of otherwise refractory cancer pain has likewise not yet been evaluated in controlled trials. Case reports -- limited essentially to the percutaneous insertion of spinal cord electrodes for dorsal column stimulation --tend to focus on details of the method, to use nonuniform patient selection criteria, and to use heterogeneous pain assessment methods and followup duration. Not all experience is favorable ( Meglio, Cioni, and Rossi, 1989). Hence, as Miles and colleagues wrote nearly 20 years ago, "At this stage it seems sensible to concentrate effort on evaluating the method rather than on encouraging widespread and possibly indiscriminate use of what is an expensive use and relatively unproven technique"(Miles, Lipton, Hayward, et al., 1974), (The Agency for Health Care Policy and Research -AHCPR).

In properly selected patients, intraspinal or intraventricular infusions of opioids have the advantage of producing profound analgesia without motor, sensory, or sympathetic blockade ( Behar, Magora, Olshwang, et al., 1979; Bullingham, McQuay, and Moore, 1982). See Chapter 3 and also the section on catheter placement in this chapter for a discussion of intraspinal and intraventricular routes of administration.

#### **4) Nonpharmacological and noninvasive Management in pain:**

##### **A) Physical and**

##### **B) Psychological Modalities**

We are convinced that noninvasive management in pain and psychological approaches in pain therapy are sleeping giants.

This book is one of the welcome signs that the long sleep is over.

For well over 2000 years noninvasive therapy in pain was practised in every culture as a folk tradition. It was all there: heat, cold, massage, manipulation, acupuncture, reflexology, meditation, etc.

The last change comes from the new techniques of brain imaging, where we must know question the traditional separation of sensory and motor mechanisms. It becomes reasonable to propose that sensory events are analysed in terms of what might to be the appropriate action. If this turns out to be reasonable, then therapies directed at physiotherapy or psychology in daily life may well influence perceived sensation.

The chapter headings of this book show how the authors has expanded to incorporate this fundamentally new thinking about the origins of pain and the direction of new therapies.

This book describes in particular noninvasive and nonpharmacological strategies in pain therapy;

We recommend that cancer and chronically pain be treated aggressively by pharmacologic and nonpharmacologic approaches.

However in most instances, pain can be treated effectively also with non-invasive and nonpharmacologic therapies.

Cutaneous stimulation techniques, including applications of superficial heat and cold, massage, pressure or vibration, should be offered to alleviate pain associated with muscle tension or muscle spasm.

Patients should be encouraged to remain active and to participate in self-care when possible.

Clinicians should reposition patients on a scheduled basis during long-term bedrest and provide active and passive range-of-motion exercises.

For a patient in acute pain, exercise should be limited to self-administered range of motion. Prolonged immobilization should be avoided whenever possible to prevent joint contracture, muscle atrophy, cardiovascular deconditioning, and other untoward effects.

Patients who choose to have acupuncture for pain management should be encouraged to report new pain problems to their health care team before seeking palliation through acupuncture.

Psychosocial interventions should be introduced early in the course of illness as part of a multimodal approach to pain management.

Because of the many misconceptions regarding pain and its treatment, education about the ability to control pain effectively and correction of myths about the use of opioids should be included as part of the treatment plan for all patients.

Clinicians should offer patients and families means to contact peer support groups.

Pastoral care members should participate in health care team meetings that discuss the needs and treatment of patients. They should develop information about community resources that provide the spiritual care and support of patients and their families. Physical and psychosocial therapies can be used concurrently with drugs and other modalities to manage pain. These interventions can be carried out by professional staff and often by the patient or family members.

**The key recommendations are:**

- People affected by cancer should be involved in developing cancer services
- There should be good communication, and people affected by cancer should be involved in decision making
- Information should be available free of charge
- People affected by cancer should be offered a range of physical, emotional, spiritual and psychotherapeutic support (also with clinical hypnosis)
- There should be services to help people living with the after-effects of cancer manage these for themselves
- People with advanced cancer should have access to a range of services to improve their quality of life
- There should be support for people dying from cancer

## Nonpharmacological and noninvasive Management in pain:

### **A) Physical modalities in pain treatment:**

#### 1. Cutaneous Stimulation

- Superficial heat (thermotherapy)
- Cold (cryotherapy)
- Massage
- Mobilization and manipulation

#### 2. Exercise and physiotherapy

#### 3. Counterstimulation

a) TENS therapy

b) Acupuncture

### **B) Psychological Modalities in pain treatment**

#### 1. Psychosocial Interventions

#### 2. Relaxation and Imagery

#### 3. Music therapy as a medical discipline

#### 4. Patient Education

#### 5. Psychotherapy and Structured Support

#### 6. Mental training and chronic pain in sport and rehabilitation

#### 7. Hypnosis

#### 8. Biometeorology and pain

#### 9. Peer Support Groups

#### 10. Pastoral and Spiritual Counseling:

##### a. Spiritual approach in many religions:

- THE PAIN AND THE DEATH: THE ANTHROPOLOGICAL AND RELIGIOUS POINT OF VIEW
- FUNDAMENTALS OF TIBETAN MEDICINE ACCORDING TO THE RGYUD-BZHI
- CHRISTIAN MEDITATION

##### b. Meditation and Meditative States

- Concentrative Meditation

## CHAPTER 2

### Nonpharmacological and noninvasive Management in pain:

#### Physical Modalities

(Maria Paola Brugnoli)

Physical modalities include cutaneous stimulation, exercise, immobilization, transcutaneous electrical nerve stimulation (TENS), and acupuncture (Lee, Itoh, Yang, et al., 1990). Their use may decrease the need for pain-reducing drugs. These modalities should be introduced early to treat generalized weakness and deconditioning as well as aches and pains associated with periods of inactivity and immobility related to cancer diagnosis and therapy.

#### Learning objectives

At the end of this chapter the reader will have understanding of:

1. The extent and quality of the evidence-base supporting the clinical efficacy of manual physical therapy.
2. The issues that need to be considered when judging the level of research-based evidence of manual physical therapy.
3. The pain relieving effects of manual physical therapy.
4. The effects of manual physical therapy beyond those of pure pain control but complementary to the clinical role of this treatment approach.
5. The proposed mechanism(s) by which manual physical therapy exerts its clinically beneficial effects.

# 1. Cutaneous Stimulation

Cutaneous stimulation includes the application of:

- **Superficial heat (thermotherapy)**
- **Cold (cryotherapy)** (Mayer, 1985)
- **Massage**
- **Mobilization and manipulation**

Other methods, such as massage, pressure, and vibration, may help patients to relax or distract them from their pain.

Cutaneous stimulation sometimes increases pain briefly before pain relief occurs (McCaffery and Beebe, 1989).

These methods are noninvasive and usually can be easily taught to the patient or family caregiver.

- **Superficial applications of heat** act through conduction or convection to increase the blood flow to the skin and superficial organs and to decrease the blood flow to inactive tissues such as the underlying musculature (Lehmann and de Lateur, 1990). Heat induces vasodilation, which increases oxygen and nutrient delivery to damaged tissues

(Whitney, 1989). Heat also decreases joint stiffness by increasing the elastic properties of muscles (Vasudevan, Hegmann, Moore, et al., 1992).

Superficial heat can be applied by hot packs, hot water bottles, hot and moist compresses, electric heating pads (dry or moist), commercially available chemical and gel packs, and immersion in water (tub, basin, or whirlpool) (McCaffery and Wolff, 1992). For all types of hot packs, care should be taken to wrap them well to prevent burns and to discourage patients from lying directly on them. In most cases, the protection of one towel between the skin and the heating device is sufficient. If the patient has decreased skin sensation, is using an electrical heating device, or tends to lie on top of a hot pack, more layers of cloth are needed for skin protection and close monitoring of the skin condition is required. Heat should not be applied to tissue that has been exposed to radiation therapy.

The literature is divided on the use of heat in patients with cancer.

Superficial heat is commonly used by patients to reduce pain (Barbour, McGuire, and Kirchhoff, 1986; Davis, Cortex, and Rubin, 1990; Donovan and Dillon, 1987; Rhiner, Ferrell, Ferrell, et al., 1993; Wilkie, Lovejoy, Dodd, et al., 1988), and some texts recommend heat to reduce pain and discomfort (Ferrell, Rhiner, and Ferrell, 1993; McCaffery and Wolff, 1992; Vasudevan, Hegmann, Moore, et al., 1992). Other texts, however, caution against the use of heat because of concern that the use of heat over tumor sites will increase tumor growth and the metastatic spread of the disease (Lee, Itoh, Yang, et al., 1990; Lehmann and de Lateur, 1990; Pfalzer, 1992). Research evidence cited in support of this cautionary statement is from a 1940 study of rats (Hayashi, 1940), as well as several studies of fetal tissue cells exposed to high degrees of temperature (Lehmann and de Lateur, 1990).

In view of the lack of research findings that clearly contraindicate this use of superficial heat, the panel recommends that it be used as a method of pain control in patients with cancer.

Modalities to deliver deep heat—such as short wave diathermy, microwave diathermy, and ultrasound—should be used with caution in patients with active cancer; they should not be applied directly over a cancer site (Lehmann and de Lateur, 1990).

- **Cold therapy**, which causes vasoconstriction and local hyperesthesia, is effective in reducing inflammation, edema soon after an injury, burning perineal pain (Evans, Lloyd, and Jack, 1981), and muscle spasm (Vasudevan, Hegmann, Moore, et al., 1992), and is recommended when superficial heat is ineffective in reducing spasm.

In acute pain (of tendons and muscles) the immediate treatment of any soft tissue injury is important. Proper care and treatment now will go a long way towards a full recovery later. Without a doubt, the most effective, initial treatment for acute pain is the R.I.C.E.R. regime. This involves the application of (R) rest, (I) ice, (C) compression, (E) elevation and obtaining a (R) referral for appropriate medical treatment.

Where the R.I.C.E.R. regime has been used immediately after the occurrence of an injury, it has been shown to significantly reduce recovery time. R.I.C.E.R. forms the first, and perhaps most important stage of injury rehabilitation, providing the early base for the complete recovery of injury.

Ice packs, towels soaked in ice water, or commercially prepared chemical gel packs can be used. Cold packs should be sealed to prevent dripping, they should be flexible to conform to body contours, they should be applied so as to produce a comfortable and safe intensity of cold, and they should be adequately wrapped (e.g., in one layer of towel or pillowcase) to prevent skin irritation. The duration of ice application is shorter than that of heat, usually lasting less than 15 minutes; however, it produces a longer acting effect, provided that the muscle is actually cooled (Lehmann and de Lateur, 1990; Michlovitz, 1990).

Cold should not be applied to tissue that has been damaged by radiation therapy and is contraindicated for any condition in which vasoconstriction increases symptoms, such as in peripheral vascular disease, Raynaud's syndrome, or other vascular or connective tissue diseases (Lehmann and de Lateur, 1990; Whitney, 1989). In some patients, cooling painful joints will increase range of motion, but in others, this may increase joint stiffness and should therefore be avoided.

- **Massage** is a comfort measure used to aid relaxation and ease general aches and pains, particularly those associated with periods of treatment related immobility. Massage may also decrease pain in a specific area by increasing superficial circulation (Fairchild, Salerno, Wedding, et al., 1986; McCaffery and Wolff, 1992). Common techniques of massage are stroking, kneading, and rubbing with rhythmic, circular, distal-to-proximal motions (Lee, Itoh, Yang, et al., 1990). An alcohol-free lotion can be used to reduce friction. The patient should be encouraged to choose movements that provide the greatest comfort.

Massage cannot strengthen debilitated muscles, and it should not be used in place of exercise and activity for patients who are able to walk. Manual or mechanical vibration can also be used to increase superficial circulation. Specific instructions for the use of a variety of cutaneous stimulation methods for pain relief are available elsewhere (McCaffery and Beebe, 1989).

Massage - Massage has been said to come from the word 'mass' which is to touch in Arabic, from 'masein' which is to knead in Greek or from 'manus' which means hand in Latin. Massage is the mechanical manipulation of body tissues, usually the soft tissues (i.e. muscle and connective tissue). It can be self-administered or administered by a therapist and is most usually applied via the hand, but may also be applied by use of the foot, elbow, forearm or a variety of mechanical/electromechanical devices. Much

has been written about the history of massage; its origins date back to recordings of massage as early as 8000 BC. A testament to its perceived value to society is that, despite a lack of scientific evidence to substantiate its effects and efficacy, it has endured and is popular today.

from these two sources the practitioner is then left with a number of presumably less satisfactory strategies. One is to look for evidence of sound scientific studies of the treatment approach (e.g. placebo-controlled, blinding of investigator and subjects). If this is lacking then single case studies, case series and clinical notes may provide some direction for the clinician, on which to base a therapeutic approach.

Should this evidence-based literature approach prove fruitless the practitioner is left to using his/her clinical reasoning skills to structure the treatment program. In this instance the practitioner will base decisions on the findings of the clinical examination and any related information from the scientific literature (e.g. anatomical, biomechanical, physiological and pathological). In terms of evidence-based practice this is deemed to be the least satisfactory situation, however while most treatments await further investigation it remains the basis of clinical practice in the management of musculoskeletal pain. It must be noted that the clinical reasoning-based approach to treatment selection is not only employed when there are none of the higher levels of evidence available. Rather it is necessary in all situations where a manual physical therapy treatment is being administered in the clinical setting.

The scope and nature of this chapter does not allow for a treatise of the clinical reasoning skills and the broad range of practical clinical skills, most of which require high levels of manual dexterity and skill, required by clinicians to adequately manage musculoskeletal pain. There are several authoritative texts and programs from which the reader can obtain more detailed insight into the clinical reasoning process in physical therapy.

- **Mobilization and manipulation**

Mobilization and manipulation are two terms that are used to differentiate two classes of manual physical therapy techniques applied to the joints of the body. Some of the differentiating features are that mobilizations are delivered in an oscillatory and repetitive fashion, whereas manipulations are often single thrusts of high velocity and low amplitude. Mobilization techniques may also involve sustained positions to compress or stretch intra-articular or peri-articular structures. The high-velocity manipulations are often associated with a joint noise (i.e. click, pop or crack) and are done at such speed that the client cannot control the technique. Mobilizations do not normally produce a joint noise and allow the client the ability to exert some control over the technique should it be required.

## **2.Exercise and physiotherapy**

Exercise is important for the treatment of subacute and chronic pain because it strengthens weak muscles, mobilizes stiff joints, helps restore coordination and balance, enhances patient comfort, and provides cardiovascular conditioning (Vasudevan, Hegmann, Moore, et al., 1992).

Barbour, McGuire, and Kirchhoff (1986) found that some patients use position change or exercise as a self-initiated strategy for pain relief; of those who used these strategies, 86 percent reported pain relief with change of position and 25 percent reported pain relief after exercise. Patients should be encouraged to remain active and participate in self-care when possible (Kohl, LaPorte and Blair, 1988; Kovar, Allegrante, MacKenzie, et al., 1992; Powell, Thompson, Caspersen, et al., 1987; Siscovick, LaPorte, and Newman, 1985). When patients are unable to maintain function, families should be taught a simple routine of range-of-motion exercises and massage to minimize discomfort and preserve muscle length and joint function during periods of decreased function and immobility (Kisner and Colby, 1985).

Passive exercises should not be carried out if they increase pain.

During acute pain, exercise should be limited to self-administered range of motion (Lee, Itoh, Yang, et al., 1990). All forms of exercise that involve weight bearing should be avoided when pathologic fracture is likely because of tumor invasion.

Positioning is another simple method to promote comfort and to prevent or relieve pain. Clinicians should ensure that patients who are bedridden are positioned in correct body alignment, that patients are repositioned frequently, that skin condition is monitored, and that range-of-motion exercises are provided.

Clinicians should educate ancillary personnel and family caregivers so that they are able to perform range of motion exercises correctly and safely position patients.

Immobilization or restriction of movement is often used to manage episodes of acute pain and to stabilize fractures or otherwise compromised limbs, joints, or both. When immobility is desired, supportive devices such as adjustable elastic or thermoplastic braces can be used to maintain optimal body alignment.

Joints should not be maintained at their maximal range but in their position of optimal function (i.e., wrist at 30° of dorsiflexion with thumb opposed to fingers, ankle at 90° flexion with 5° to 10° flexion of the knee, etc.) to allow for maximal function after an immobilization period (Lee, Itoh, Yang, et al., 1990).

In patients with bone metastasis, immobilization may be necessary to prevent fractures. These patients and their families should be taught how to apply orthotic devices properly and how to prevent torsion during positioning and turning. Prolonged immobilization should be avoided whenever possible to prevent joint contracture, muscle atrophy, cardiovascular deconditioning, and other untoward effects.

### **3.Counterstimulation**

(M.P. Brugnoli)

Counterstimulation denotes techniques, such as:

#### **c) TENS therapy**

#### **d) Acupuncture**

that are believed to activate endogenous pain-modulating pathways by direct stimulation of peripheral nerves ( Sjolund and Eriksson, 1979).

Many patients report that they obtain relief from their use (Avellanosa and West, 1982; Bauer, 1983).

#### **a. Transcutaneous Electrical Nerve Stimulation (TENS)**

-TENS is a non-invasive method of pain control.

-TENS is a method of applying controlled, low-voltage electrical stimulation to large, myelinated peripheral nerve fibers via cutaneous electrodes for the purpose of modulating stimulus transmission and relieving pain (Avellanosa and West, 1982; Bauer, 1983).

-TENS is the result of years of research and development in finding a method of 'switching on' the production of the body's own endorphin supply - the body's own pain relief system.

-TENS has been used for more than 20 years in the management of chronic and acute pain.

It is used everyday in hospitals, in pain clinics and treatment centres nationwide.

Many people purchase their own TENS stimulator and use it at home and at work as their personal pain management - without the use of analgesics.

-TENS can help to reduce or eliminate a dependency on pain-killers.

-TENS has many applications.

Its use was limited to pain clinics that utilised its capabilities after trying all other conventional medication and physical therapies.

-TENS has now been shown to have its place in pain management and has given the user the ability to participate in his or her own treatment.

-The TENS stimulators are now used with the knowledge that the effectiveness is greatly enhanced through research by eminent physicians in the field of pain management and through the use of the latest integrated micro-electronics.

Physicians and clinicians are increasingly concerned about managing their patients who are in pain. They are now able to offer this non-narcotic, non-addictive alternative to conventional drug therapy.

Patients with mild pain may benefit from a trial of TENS.

TENS can be defined as the application of low-frequency, pulsed biphasic electrical currents, over the painful site or the course of peripheral nerves, for the relief of pain (Walsh 1997), using small battery-powered portable stimulators.

While typically provided to patients for home-use after initial assessment by a therapist or physician, in some countries TENS units are also now available from other sources, including pharmacists or via mail order outlets.

TENS treatment is widely regarded by clinicians as (solely) a treatment for chronic pain, and is rarely considered for the management of acute pain, even though other forms of electrical stimulation are routinely applied. However, it is important to stress that the modality can be used effectively in most types of pain, regardless of whether the pain to be treated is acute or chronic in nature, although chronicity may be an important factor in selection of stimulation parameters.

### **Principles of application of TENS (Patrick D. Wall):**

TENS may be applied by a therapist as a part of routine management, as for other electrophysical agents, but is more typically given to the patient for self-application according to standardized instructions, after a detailed briefing and assessment of suitability. Most contemporary machines are battery-powered portable units which allow the therapist to set (essentially 'prescribe') the stimulation parameters on the TENS machine prior to patient issue. TENS units may be single or double channelled, with each channel comprising a pair of anode and cathode electrodes (typically made of carbon rubber or disposable gel-based material).

TENS stimulation may be effectively applied to a N-°variety of sites: the area of pain, over relevant nerve trunks or nerve roots, or, where indicated, to appropriate trigger or acupuncture points. The availability of dual channel units allows the simultaneous stimulation of two painful areas (e.g. bilateral arthralgia in rheumatoid arthritis), the treatment of larger areas of pain (e.g. low back pain), or for the simultaneous treatment of acupuncture points and painful area, or nerve root and nerve trunk, etc.

### **The electrostimulation parameters to be determined in prescribing TENS treatment are as follows (Patrick D. Wall):**

**1. Pulse frequency** - this is the number of pulses delivered by the machine per second and is specified in Hertz. Typical ranges are from 2-250 Hz, with lower frequencies of < 10 Hz typically used (with higher intensities) for treatment of more chronic pain, and higher frequencies of around 100 Hz for treatment of subacute pain. The mechanisms underlying the action of different ranges of frequencies (and combinations of parameters) are liable to be different.

**2. Pulse duration** - the duration of each pulse of electrical stimulation is measured in microseconds. Typical values for this parameter range from 50-1000 microseconds. Shorter pulse durations are generally considered more comfortable by patients (as these pulses don't evoke muscle contractions), although longer pulse durations are considered useful in delivering more aggressive stimulation.

**3. Stimulation intensity** - intensity is usually controlled via a slider or wheel control and is (rarely) measured as electrical current in mA. Usually, devices have a scale of arbitrary units (e.g. 0-10) to facilitate some standardization of stimulation from one treatment to the next. This notwithstanding, it is important to stress that TENS stimulation intensity is assessed in terms of the patient's reported sensation. For so-called 'conventional TENS' treatment intensity should be increased until the patient first reports a tingling sensation, and then until this sensation is reported as 'strong but comfortable'. The patient's sensation should then be reassessed at regular intervals (2-3 minutes) and

stimulation intensity increased as necessary to counter any adaptation (i.e. when the patient reports sensation as fading).

**4. Stimulation mode** - Walsh (1997) has described four basic modes of TENS stimulation that are essentially particular combinations of stimulation parameters (i.e. pulse duration, pulse frequency and intensity). Conventional TENS is the most commonly employed mode of stimulation and combines high-frequency (> 100 Hz) stimulation with relatively short pulse durations (50-100 ms) to produce a rapid-onset localized analgesia. Based upon the use of relatively low stimulation intensities, it is regarded as the most comfortable mode of TENS stimulation. 'Acupuncture-like TENS', in contrast, relies on application of high-intensity electrical stimulation (sufficient to effect muscle contractions) using a combination of low pulsing frequency (< 4 Hz) and longer duration pulses (> 200 ms). Such stimulation produces a longer lasting analgesia (but with a relatively longer latency to onset), than conventional TENS, however, due to the muscle contractions, some patients do not easily tolerate this form of stimulation. 'Brief/intense TENS' combines a high pulsing frequency (> 100 Hz) with long pulse duration (> 150 Hz), applied at the highest intensity that the patient can tolerate. This mode of TENS (as its names suggests) can only be applied for relatively short periods of time (10-15 minutes maximum), but can operate as an effective counterirritant.

Finally, so-called 'burst train TENS' is essentially a combination of conventional and acupuncture-like modes, with bursts of high-frequency stimulation (c. 100 Hz) delivered at a much lower frequency (< 4 Hz). This mode of stimulation, which was originally developed by Eriksson and Sjolund (1976), based upon observations with chronic pain patients using (needle) electroacupuncture, is more easily tolerated by patients than acupuncture-like TENS as described above.

**5. Site of treatment** - TENS may be applied directly to the painful area, or over the course of relevant nerve trunks or nerve roots supplying the painful area. Electrodes may also be applied over acupuncture or trigger points, depending upon the circumstances and the training of the therapist.

**6. Treatment regime** - TENS may be applied for extended periods of time, but stimulation periods (at a single site) are generally kept under 1 hour to limit skin irritation, and for convenience. Where home or patient use is prescribed, treatment can be applied 2-3 times a day if necessary, provided this regime is acceptable to the patient. Alternatively some have recommended extensive periods of stimulation (8-10 hours) to achieve best effects (Walsh 1997). Clinic use will of necessity be limited to days (and periods) of attendance.

### **Safety considerations of TENS**

While TENS is considered a relatively safe modality, the following should be regarded as contraindications:

1. Treatment over the pregnant uterus. Although a contraindication for most electrophysical agents, it is important to stress that this does not preclude the use of TENS for the treatment of pregnant women at other anatomical sites.
2. Treatment of areas with abnormal or absent sensation. In such cases, the risk of skin irritation or (chemical) burns precludes TENS treatment. However, stimulation may be applied to proximate areas of intact sensation.
3. Application over the carotid sinus (anterior aspect of the neck).
4. Treatment of patients with cardiac pacemakers. While some have challenged the exclusion of these patients (Rasmussen et al 1988), it remains prudent to regard such patients as contraindicated.

5. Treatment of unreliable or incompetent patients (particularly where home use is being considered).
6. Direct treatment over the eyes or gonads.
7. Treatment of undiagnosed pain.

Beyond these situations, the therapist should also care-fully assess skin reaction to treatment, as in a minority of cases, severe skin reactions may occur.

### **Mechanisms of action**

The neurophysiological mechanisms underlying the pain relief achieved with the main modes of TENS stimulation are considered to be different (Low & Reed 2000, Bowsher 1988). In particular, manipulation of combinations of stimulation parameters is critical to the physiological effects of electrical stimulation (Johnson et al 1992, Kishioka et al 1994, Walsh 1997).

Conventional TENS, which is used to produce a rapid-onset localized analgesia, works mainly through segmental inhibition (or gating mechanisms), via direct stimulation of low-threshold, myelinated AB mechanoreceptive afferents, and the release in the central nervous system of opiates such as dynorphin (Han & Wang 1992).

In contrast, acupuncture-like TENS and burst train TENS are thought to effect pain relief through stimulation of the descending pain suppression systems (Chen & Han 1992). These opiate-mediated systems at spinal and supraspinal levels are initiated by selective stimulation of high-threshold thinly myelinated A-delta afferents. In addition, where TENS stimulation is applied over the course of a peripheral nerve at relatively higher frequencies (> 50 Hz), stimulation may also induce a localized block of conduction, specifically in nociceptive afferents. These afferents are more likely to fatigue in response to repeated stimuli.

Finally, and although poorly studied to date, TENS will also have a direct effect upon the autonomic nervous system (Han & Wang 1992, Uvnas-Moberg et al 1993), which may be of particular relevance in the treatment of so called 'sympathetically-maintained' pains, such as reflex sympathetic dystrophy (complex regional pain syndrome). This direct effect may offer some explanation for the beneficial effects of such stimulation on sleep patterns and blood pressure. Apart from such direct neurophysiological effects, TENS stimulation may also affect bloodflow, typically producing a localized vasodilation, which can be useful in the treatment of some types of (chronic) musculoskeletal or ischaemic pains (Lundeberg 1993).

TENS may be recommended for the nonpharmacological management of virtually any type of pain.

There are many controlled studies of its use (Brugnoli, 1988).

- **Transcutaneous electrical nerve stimulation (TENS) reduces chronic hyperalgesia induced by muscle inflammation.**

Pain. 2006 Jan; 120(1-2):182-7. Epub 2005 Dec 19

Ainsworth L, Budelier K, Clinesmith M, Fiedler A, Landstrom R, Leeper BJ, Moeller L, Mutch S, O'Dell K, Ross J, Radhakrishnan R, Sluka KA.

Graduate Program of Physical Therapy and Rehabilitation Science, University of Iowa, IA 52242, USA.

Transcutaneous electrical nerve stimulation (TENS) reduces pain through central mechanisms involving spinal cord and brainstem sites. Since TENS acts through central mechanisms, we hypothesized that TENS will reduce chronic bilateral hyperalgesia

produced by unilateral inflammation when applied either ipsilateral or contralateral to the site of muscle inflammation. Sprague-Dawley rats were injected with carrageenan in the left gastrocnemius muscle belly. Mechanical withdrawal threshold was tested bilaterally before and 2 weeks after carrageenan injection. After testing withdrawal thresholds at 2 weeks, rats received TENS treatment either ipsilateral or contralateral to the site of inflammation. In each of these groups, rats were randomized to control (no TENS), low frequency (4 Hz), or high frequency (100 Hz) TENS treatment. TENS was applied for 20 min at sensory intensity under light halothane anesthesia. Mechanical withdrawal thresholds were re-assessed after TENS or 'no TENS' treatment. Unilateral injection of carrageenan to the gastrocnemius muscle significantly reduced the mechanical withdrawal threshold (mechanical hyperalgesia) bilaterally 2 weeks later. Either low or high frequency TENS applied to the gastrocnemius muscle ipsilateral to the site of inflammation significantly reversed mechanical hyperalgesia, both ipsilateral and contralateral to the site of inflammation. Low or high frequency TENS applied to the gastrocnemius muscle contralateral to the site of inflammation also significantly reduced mechanical hyperalgesia, both ipsilateral and contralateral to the site of inflammation. Since ipsilateral or contralateral TENS treatments were effective in reducing chronic bilateral hyperalgesia in this animal model, we suggest that TENS act through modulating descending influences from supraspinal sites such as rostral ventromedial medulla (RVM).

- **A randomized clinical trial of TENS and exercise for patients with chronic neck pain.**

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Chiu TT, Hui-Chan CW, Chein G.

Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hung Hom, Hong Kong. rstchiu@polyu.edu.hk

**OBJECTIVE:** To investigate the effect of transcutaneous electrical nerve stimulation (TENS) on acupuncture points and neck exercise in chronic neck pain patients. **DESIGN:** A randomized clinical trial. **SETTING:** Hospital-based practice. **SUBJECTS:** Two hundred and eighteen patients with chronic neck pain. **INTERVENTIONS:** Subjects were randomized into three groups, receiving either (1) TENS over the acupuncture points plus infrared irradiation (TENS group); (2) exercise training plus infrared irradiation (exercise group); or (3) infrared irradiation alone (control); twice a week for six weeks. **OUTCOME MEASURES:** The values of verbal numeric pain scale, Northwick Park Neck Pain Questionnaire, and isometric neck muscle strength were assessed before, at the end of the six-week treatment, and at the six-month follow-up. **RESULTS:** Results demonstrated that after the six-week treatment, significant improvement in the verbal numerical pain scale was found only in the TENS group ( $0.60 \pm 2.54$ ,  $p = 0.027$ ) and the exercise group ( $1.57 \pm 2.67$ ,  $p < 0.001$ ). Though significant reduction in Northwick Park Neck Pain Questionnaire score was found in all three groups, post-hoc tests showed that both the TENS and the exercise group produced better improvement ( $0.38 \pm 0.60\%$  and  $0.39 \pm 0.62\%$  respectively) than the control group ( $0.23 \pm 0.63\%$ ). Significant improvement ( $p = < 0.001$  to  $0.03$ ) in neck muscle strength was observed in all three groups, however, the improvement in the control group was not clinically significant and it could not be maintained at the six-month follow-up. **CONCLUSIONS:** After the six-week treatment, patients in the TENS and exercise group had a better and clinically relevant improvement in disability, isometric neck muscle strength, and pain. All the improvements in the intervention groups were maintained at the six-month follow-up.

## **b. Acupuncture in pain therapy**

Acupuncture is a neurostimulatory technique that treats pain by the insertion of small, solid needles into the skin at varying depths, typically penetrating the underlying musculature.

### **Acupuncture Pain Relief and Pain Management**

The origin of acupuncture can be traced back over 3500 years to China.

For more than 2,500 years, acupuncture has been one of the world's most popular forms of health care. Only in the latter part of this century has the practice of acupuncture gained acceptance in North America, but the profession appears to have earned much respect in that short time. A 1998 study published in the *Archives of Internal Medicine*, for example, showed that medical doctors refer their patients to acupuncturists more than any other "alternative" care provider; the same study also revealed that 51% of medical doctors believe acupuncture to be efficacious and of value.

The studies show objective evidence that acupuncture works as a form of pain relief and that certain types of acupuncture work better than others.

Acupuncture is without question one of the most powerful pain-altering modalities in the world. Its reputation for pain relief is known and respected internationally. It may be practiced successfully with a variety of procedures other than needles, including lasers, electronic and noninvasive stimulation devices for those who are needle-phobic and would not consider acupuncture otherwise.

There are a variety of techniques, procedures, acupoints and philosophies surrounding acupuncture and pain relief worldwide.

Acupuncture is a component of traditional Chinese medicine which is based on the theory that two opposing forces, yin and yang, must be balanced in order to keep an optimal flow of energy to maintain a healthy mind and body. Traditional Chinese medicine uses a complex assessment including many systems (hearing, skin, pulse, the external ear and the tongue) to diagnose where there is an imbalance. Treatment involves acupuncture and herbal remedies with the objective of establishing homeostasis, improving the immune response and often calming or sedating the person.

Although traditional Chinese medicine requires extensive training and a completely different interpretation of how the human body functions, the treatment modality, acupuncture, can be selectively and successfully learned and incorporated into Western health practice without the necessary shift to occidental belief systems.

The majority of Westerners who use acupuncture for pain treatment use the musculoskeletal approach, stimulating acupuncture points which are tender (ah-shi points), and are highly correlated with myofascial trigger points (Chaitow 2000, Melzack et al 1977). Acupuncture points can be located by skin-conductance devices, because they are associated with superficial nerve endings, musculotendinous junctions, intramuscular and visceral nerve endings, where there is increased sweating and vasomotor activity (Gunn et al 1976, Liu et al 1975, Wu 1988).

Dryneedling of trigger points has become widely used by acupuncturists and others (mostly physicians and dentists). Trigger points are identified by symptom patterns and palpation, not through traditional Chinese diagnostic practice, and are therefore straightforward for a conventional health-care professional to learn. Needles are widely available and weekend courses will instruct practitioners in how to insert

them. Acupuncture points can also be stimulated using non-invasive techniques such as massage (shiatsu massage), TENS, laser and ultrasound.

A consensus panel of the National Institutes of Health in the US concluded that there was strong evidence to support the use of acupuncture by itself or in combination with conventional medicine for postoperative dental pain and several other problems unrelated to pain (Wilentz 1998). The panel also concluded that acupuncture may be effective for headache, menstrual cramps, fibromyalgia, tennis elbow, carpal tunnel syndrome and low back pain.

However, for these types of pain the data was less convincing. Acupuncture provides relief from acute and chronic pain.

Back pain is one of the most common reasons people see a health care provider. It has been estimated that up to 80% of the world's population will suffer from back pain at some point in their lives, with the lower back as the most common location of pain. Although most episodes of low back pain last less than two weeks, research has shown that recurrence rates for low back pain can reach as high as 50% in the first few months following an initial episode.

While there is no definitive way to resolve lower back pain, the use of acupuncture to treat this condition has increased dramatically in the past few decades, based in a large extent to placebo-controlled studies that have validated it as a reliable method of pain relief. The results of a recent study published in the *Clinical Journal of Pain* provide further proof that acupuncture is a safe and effective procedure for low-back pain, and that it can maintain positive outcomes for periods of six months or longer without producing the negative side-effects that often accompany more traditional pain pharmacological remedies.

This method of treatment is based on the belief of traditional Chinese medicine that the body's balance of health is regulated by a constantly changing flow of energy call qi (pronounced "che").

Qi travels through the body by way of 20 primary meridians (or channels). Acupuncture strengthens the flow of qi by inserting tiny flexible needles just under the skin at specific points along the meridians which are linked to particular internal organs.

The stimulation of the needles on the skin's surface conducts energy which can remove disease causing blockages deep within the body. Often electricity is applied to enhance the needles' effect.

Acupuncture is used to relieve chronic pain caused by arthritis, headaches, back pain, fibromyalgia, carpal tunnel syndrome, neuritis and some cancer pain .

Acupuncture treatments begin with a thorough medical history and some unique techniques such as palpitation of certain body parts, examining the tongue and pulse. Based on this information, a diagnosis will be made followed by a treatment designed for the condition. Several subsequent visits may be required before relief or a cure is experienced.

In the U.S., acupuncture is best known for its effects in reducing pain and is fast becoming the treatment of choice. Because of this, a need arose to integrate acupuncture and TCM techniques with Western medical procedures. Acupuncture works because of its interaction with the afferent nociceptive (pain) and proprioceptive (muscle length and position) sensory and other nerves of the body that provoke local, spinal and centrally mediated control.

Acupuncture does not seem to be a suitable treatment modality for neuropathic pain. However, the clinical use of acupuncture is sometimes indicated for the treatment of chronic nociceptive pain. The study is the first to show that acupuncture may have a long-term effect on chronic low back pain superior to that of placebo. Therefore, it is vital that before acupuncture is applied, a thorough analysis of the pain condition is performed to preclude the indiscriminate, unnecessary, and costly use of this treatment technique.

Acupuncture is without question one of the most powerful pain-altering modalities in the world. Its reputation for pain relief is known and respected internationally. It may be practiced successfully with a variety of procedures other than needles, including lasers, electronic and noninvasive stimulation devices for those who are needle-phobic and would not consider acupuncture otherwise.

There are many controlled studies of its use.

- **Electroacupuncture direct to spinal nerves as an alternative to selective spinal nerve block in patients with radicular sciatica--a cohort study.**

Acupunct Med.2005 Mar;23(1):27-30

Inoue M, Hojo T, Yano T, Katsumi Y.

Meiji University of Oriental Medicine. mo\_inoue@muom.meiji-u.ac.jp

We applied electroacupuncture to the spinal nerve root by inserting needles under x ray imaging in three cases with radicular sciatica, as a non-pharmacological substitute for lumbar spinal nerve block. In all three cases, symptoms were markedly reduced immediately after electroacupuncture to the spinal nerve root. The sustained effect was noticeably longer than that of spinal nerve blocks previously performed, in two out of the three cases. We suggest that descending inhibitory control, inhibitory control at the spinal level, inhibition of potential activity by hyperpolarisation of nerve endings, or changes in nerve blood flow may be involved in the mechanism of the effect of electroacupuncture to the spinal nerve root. These results suggest that electroacupuncture to the spinal nerve root may be superior to lumbar spinal nerve block when it is applied appropriately in certain cases of radicular sciatica, taking into consideration patient age, severity of symptoms and duration of the disorder.

- **Effectiveness of acupuncture in the treatment of fibromyalgia.**

Singh BB, Wu WS, Hwang SH, Khorsan R, Der-Martirosian C, Vinjamury SP, Wang CN, Lin SY.

Altern Ther Health Med. 2006 Mar-Apr;12(2):34-41.

Southern California University of Health Sciences, Whittier, USA.

CONTEXT: Fibromyalgia syndrome (FMS) is a prevalent musculoskeletal disorder associated with pain, mood state alteration, and disability. A structured and effective treatment plan for palliative care has not been established. The genesis of FMS is not clear. FMS occurs primarily in adult women. DESIGN: Using a quasi-experimental clinical design and following the criteria of the American College of Rheumatology (ACR), for FMS, 21 participants completed the study. The mean age was 53.6 years. The data were collected at baseline and at 1 and 2 months. Acupuncture treatments included 17 points for FMS symptoms, and 8 outcome measures were collected. RESULTS: The Fibromyalgia Impact Questionnaire (FIQ) showed significant differences at 1 and 2 months. For the SF-12, 3 subscales showed significant differences between baseline and 2 months. Four of 6 items were significantly changed. The mean number of general health symptoms was significantly decreased by 2 months. For the Catastrophe Index, significant differences were found for baseline vs 2 months. Pain threshold scores were significantly different at end of treatment for 5 bilateral tender points. There was significant improvement in Beck Depression items for both 1- and 2-month periods. In a multivariate regression model, 5 covariates were included--age, number of weeks in treatment, number of doctors treating, number of general symptoms, and baseline FIQ score. The results indicated significant age effect. This analysis

showed that the higher the FIQ score, the more positive the change experienced by study participants. Number of weeks in treatment, number of doctors who treated, and total number of general health symptoms did not have a significant effect on outcomes. CONCLUSIONS: Significant improvement was experienced by participants at 8 weeks of treatment. Acupuncture treatment as delivered was effective at reducing FMS symptoms in this outcome study.

- **Suppression of pain by exposure of acupuncture points to polarized light.**

Limansky YP, Tamarova ZA, Gulyar SA.

Pain Res Manag. 2006 Spring;11(1):49-57.

Bogomoletz Institute of Physiology, National Academy of Sciences, Kiev, Ukraine.

liman@biph@kiev.ua

BACKGROUND: According to clinical studies, the stimulation of acupuncture points (APs) by a variety of methods (eg, needles, pressure, etc) is an effective method for the treatment of many pain syndromes. However, no experimental proof exists showing that the exposure of APs to low-intensity incoherent polarized (P) light evokes an analgesic affect. OBJECTIVES: The authors' previous work, using mice, shows that the exposure of APs to low-intensity microwaves effectively decreases pain. The purpose of the present study was to determine whether exposure of APs to low-intensity incoherent P light evokes a statistically significant reduction in pain. METHODS: The effects of P light on behavioural responses to acute and tonic pain were tested in mice. The threshold of vocalization during electrical stimulation of the foot (acute pain) was measured before and after exposure of AP E-36 to P light. The duration of licking the formalin-injected foot (tonic pain) was investigated in control mice and mice exposed to P light on APs E-36, V-56 and V-60 or on skin that did not contain analgesic APs. RESULTS: Exposure of APs to P light evoked a statistically significant increase in pain threshold by 34.2% to 59.1%, and shortened the licking time by 32.3% to 50% in mice. The most effective AP was E-36 in both the painful foot and the normal foot. After 2 min, 6 min and 10 min of P light exposure, analgesia was 7.6%, 30.9% and 50%, respectively. The exposure to P light on skin that did not contain analgesic APs did not evoke significant effect. CONCLUSIONS: The results show the efficacy of pain suppression by exposure of antinociceptive APs to P light.

- **[Acupuncture for chronic pain patients Treatment outcomes - the role of the acupuncturist.]** [Article in German]

Weidenhammer W, Menz G, Streng A, Linde K, Melchart D.

Schmerz. 2006 Feb 16; [Epub ahead of print]

Zentrum für naturheilkundliche Forschung, II. Medizinische Klinik und Poliklinik, TU München, .

CONCLUSION: These results are relevant to the choice of appropriate criteria for quality assessment of acupuncture and emphasize the role of patient satisfaction within quality assurance. Pre- and post-treatment differences in a set of pain related measurements were determined using a combination of data from an observational study and a survey of physicians. The following features of the physicians' study were investigated: specialisation, qualification in acupuncture, rate at which patients received acupuncture, use of further, complementary methods in the practice. The results were statistically adjusted according to different basic conditions (case-mix). A total of 4,084 patients with chronic headache, lower back pain or arthritic pain were treated by 1,838 acupuncturists. There were no differences in success for

patients treated by physicians passing through shorter (A diploma) or longer (B diploma) training courses in acupuncture. Patients treated by orthopedists showed less improvement than those treated by physicians with other specialisations. However, these differences had disappeared 6 months after the onset of acupuncture. These longer term effects were more pronounced for physicians offering additional complementary methods in their practice. Improvement after acupuncture and patient satisfaction were positively correlated.

- **Conducting and reporting case series and audits--author guidelines for acupuncture in medicine.**

White A.

Acupunct Med. 2005 Dec;23(4):181-7.

Acupuncture in Medicine, Peninsula Medical School, Plymouth, UK.

Editor@medical-acupuncture.org.uk

This article aims to give guidance on the conduct and reporting of case series and audits of acupuncture, based on common problems that have arisen in the past. This type of project, and particularly the prospective case series or pre- post-intervention study, may give valuable evidence of the overall effectiveness of acupuncture--for example in different situations and in different conditions-- and provides one step in the research pathway before generating an hypothesis. The project should be designed with the aim of reducing bias as much as possible. Careful and detailed planning is essential for the project to produce worthwhile results that readers can evaluate and replicate. Ethical issues should be considered and formal approval may be necessary. The patient group should be recruited systematically and baseline data obtained. The treatment given should be systematic and decisions to change or end treatment made explicit. The outcome should be measured in ways that are known to be reliable and valid.

Musculoskeletal problems can be evaluated with scales for pain and confirmed by measuring one other symptom such as stiffness or one other aspect such as bothersomeness. Global change scores also provide supporting information, and the MYMOP (Measure Yourself Medical Outcome Profile) measure is popular when patients with different conditions are included. The design of questionnaires for beliefs and attitudes is a specialised area that should not be attempted without expert help. Adverse events should also be recorded. Analysis of the data and the best way of summarising and presenting the results are also discussed.

- **Acupuncture and self acupuncture for long-term treatment of vasomotor symptoms in cancer patients--audit and treatment algorithm.**

Filshie J, Bolton T, Browne D, Ashley S.

Acupunct Med. 2005 Dec;23(4):171-80.

Royal Marsden Hospital, London and Surrey, UK. jacqueline.filshie@btinternet.com

INTRODUCTION: Since hormone replacement therapy given for long periods is now recognised to produce serious side effects, patients with troublesome vasomotor symptoms are increasingly using non-hormonal treatment including acupuncture. Several randomised controlled trials have shown that acupuncture reduces menopausal symptoms in patients experiencing the normal climacteric. It may have this effect by raising serotonin levels which alter the temperature set point in the hypothalamus. Vasomotor symptoms can be extreme in breast cancer patients and patients with prostate cancer who are undergoing anticancer therapy. The safety of some herbal medicines and phytoestrogens has been questioned, as

they could potentially interfere adversely with the bioavailability of tumouricidal drugs. A previous study reports short term benefit from acupuncture, and the aim of this report is to describe our approach to long term treatment. **ACUPUNCTURE APPROACH:** After piloting several approaches, six weekly treatments were given initially at LI4, TE5, LR3 and SP6 and two upper sternal points, but avoiding any limb with existing lymphoedema or prone to developing it. If there were no contraindications, patients were given clear instructions on how to perform self acupuncture using either semi-permanent needles or conventional needling at SP6, weekly for up to six years, for long term maintenance. **AUDIT METHODS AND RESULTS:** A retrospective audit of electronic records was carried out by a doctor not involved in treatment. A total of 194 patients were treated, predominantly with breast and prostate cancer. One hundred and eighty two patients were female. The number of pre-treatment hot flushes per day was estimated by the patient: in the 159 cases providing adequate records, the mean was 16 flushes per day. Following treatment, 114 (79%) gained a 50% or greater reduction in hot flushes and 30 (21%) a less than 50% reduction. Treatment was abandoned in those who responded poorly or not at all. The duration of treatment varied from one month to over six years with a mean duration of nine months. Seventeen patients (9%) experienced minor side effects over the six year period, mostly minor rashes; one patient described leg swelling but this was likely to be due to a concurrent fracture. **CONCLUSION:** Acupuncture including self acupuncture is associated with long-term relief of vasomotor symptoms in cancer patients. Treatment is safe and costs appear to be low. An algorithm is presented to guide clinical use. We recommend the use of self acupuncture with needles at SP6 in preference to semi-permanent needles in the first instance, but poor responders use indwelling studs if they fail to respond adequately to self acupuncture with regular needles. Point location may be of less importance than the overall 'dose', and an appropriate minimum dose may be required to initiate the effect.

- **[Acupuncture and moxibustion for treatment of pain in Austria]**

[Article in Chinese] Sheen HQ.

Zhongguo Zhen Jiu. 2005 Dec;25(12):870-2.

Wangjing Hospital, China Academy of TCM, Beijing 100102, China.

shq931@163.net

The author treated 1252 Europeans with various kinds of pain, including 7 kinds of pain such as lumbocrural pain, headache, pain in neck and nape and others, in Klagenfurt Hospital of Austria with acupuncture using uniform reinforcing-reducing manipulation, and with a fixed prescription, twice each week, 10 sessions constituting one course. The pain indexes before and after treatment were evaluated by local medical experts. It was indicated that the pain index was decreased by 70.08%.

Pain can signal disease progression, the emergence of adventitious infection, or some significant complication of treatment. Therefore, patients who choose to have acupuncture for pain management should be encouraged to report new pain problems to their health care team before seeking palliation through acupuncture.

Maintaining an open and accepting relationship will make it easier for the patient and the practitioner to discuss negative as well as positive experiences and situations where acupuncture might be contraindicated.

When a patient seeks TENS therapy or acupuncture, clinicians should listen for clues that would indicate that the pain is uncontrolled. If the patient is seeking these modalities because of poorly managed pain, the clinician, in cooperation with the patient, should revise the pain management plan by:

- Correcting misconceptions the patient might have concerning the use of analgesic drugs, especially the phenomena of addiction and tolerance with opioids.
- Increasing an analgesic dosage.
- Adding an adjuvant drug to manage a specific pain complaint or to counteract a side effect.
- Prescribing a psychotropic drug to manage coexisting anxiety or depression.
- Providing training in the use of cognitive-behavioral strategies.

## CHAPTER 3

### Nonpharmacological and noninvasive Management in pain:

#### Psychological Modalities in pain treatment

(A. Brugnoli, M.P. Brugnoli, A. Norsa)

#### 1. Psychosocial Interventions

Psychosocial interventions are an important part of a multimodal approach to pain management. Such interventions do not replace, but rather, are used in conjunction with appropriate analgesics for the management of pain.

One goal is to help the patient gain a sense of control over the pain. A simple rationale underlies such intervention: How people think affects how they feel, and changing how they think about pain can change their sensitivity to it and their feelings and reactions toward it (McGrath, 1990b).

Psychosocial intervention may use cognitive or behavioral techniques or both. Focusing on perception and thought, cognitive techniques are designed to influence how one interprets events and bodily sensations. Giving patients information about pain and its management and helping patients to think differently about their pain are both cognitive techniques. Behavioral techniques, by contrast, are directed at helping patients develop skills to cope with pain and helping them modify their reactions to pain.

Many patients with cancer are highly motivated to use cognitive-behavioral methods, which are often effective not only in controlling symptoms, but also in restoring the patient's sense of self-control, personal efficacy, and active participation in his/her own care.

In recommending psychosocial interventions, the clinician should consider:

- Intensity of pain.
- Expected duration of pain.
- Patient's mental clarity.
- Patient's past experience with the technique.
- Patient's physical ability.
- Patient's desire to employ active or passive techniques.

Psychosocial interventions should be introduced early in the course of illness so that patients can learn and practice these strategies while they have sufficient strength and

energy. When introduced early, they are more likely to succeed, which fosters the patient's motivation to continue using them. Patients and their families should be given information that describes strategies commonly used to manage pain and anxiety and encouraged to try several strategies, then select one or more to use regularly when they experience pain.

As with other modalities, psychosocial interventions can require different levels of training and expertise on the part of clinicians. The interventions discussed here, however, can be performed by most clinicians. In addition to these interventions, some patients will benefit from short-term psychotherapy.

AIST studies how psychosocial intervention would be a privileged field for an holistic vision of medicine and psychology and how it is suitable in the psychosomatic approach.

## **2. Relaxation and Imagery**

Relaxation techniques and imagery are used to achieve a state of mental and physical relaxation. Mental relaxation means alleviation of anxiety; physical relaxation means reduction in skeletal muscle tension.

Relaxation techniques include simple focused-breathing exercises, progressive muscle relaxation, meditation, and music-assisted relaxation (McCaffery and Beebe, 1989).

Simple relaxation techniques should be used for episodes of brief pain, or in chronically pain, during procedures, as well as when the patient's ability to concentrate is compromised by severe pain, a high level of anxiety, or fatigue.

Pleasant mental images can be used to aid relaxation. For example, patients might be encouraged to visualize a peaceful scene, such as waves softly hitting the beach, or to take slow, deep breaths as they visualize pain leaving the body. Both pleasant imagery and progressive muscle relaxation have been shown to decrease self-reported pain intensity and pain distress (Graffam and Johnson, 1987).

Relaxation techniques are most helpful when combined with imagery, especially when the image is individualized to the patient's needs or preferences. The advantages include:

- They are easy to learn.
- No special equipment is required.
- Staff do not require extensive training.
- They are often readily accepted by patients (Hendler and Redd, 1986; Syrjala, 1990).

### **Pain Management Techniques of relaxation: (A. Brugnoli, M.P. Brugnoli)**

#### **a. Distraction and Reframing**

Try focusing on something besides your pain, such as a good book, listening to music, or taking a warm bath. Ignoring pain like this is called "distraction" and can help make you feel better.

Distraction is the strategy of focusing one's attention on stimuli other than pain or the accompanying negative emotions (McCaffery and Beebe, 1989; McCaul and Malott, 1984). Distractions may be internal, for example, counting, singing mentally to one's self, praying, or making self-statements such as "I can cope," or external, for example, listening to music as an aid to relaxation (Beck, 1991; Munro and Mount, 1978), watching television, talking to family and friends, or listening to someone read.

Distraction exercises often include repetitive actions or cognitive activity, such as rhythmic massage or the use of a visual focal point.

Distraction may be used alone to manage mild pain or as an adjunct to analgesic drugs to manage brief episodes of severe pain, such as procedure-related pain.

A related technique, reframing or cognitive reappraisal, teaches patients to monitor and evaluate negative thoughts and images and replace them with more positive ones. For example, patients who are preoccupied with a fear of pain can be encouraged to use positive self-statements to facilitate coping ( "I've had similar pain and it's gotten better"). Reframing can add to patients' feelings of control over their situations.

## **b. Imagery**

Some people find that imagery is a good way to control their pain. Imagery is creating pictures with your imagination. Try closing your eyes and thinking of yourself in a place that you love, such as the beach or your own backyard. Think about all of the sounds and smells of your special place, and come back to this place as often as you need comfort. Other things you can do to help your pain include:

- Resting
- Using dim lighting
- Getting a massage
- Applying a cold or warm pack
- Wearing comfortable clothes
- Putting a damp washcloth on your forehead
- Breathing deeply

You may experience increased pain following your injury. Headaches are common. Other pain problems, including neck and shoulder pain and other aches and pains, may also occur.

Pain can interfere with your sleep and make you very tired. You may find you are less patient and more irritable when you are in pain or tired. Even little stressors, hassles you can usually handle, can be very hard to deal with when you are in pain. This can cause problems with your family and friends and with those at work. You may be afraid of the pain and worried that it means something is seriously wrong. The pain may interfere with the things you want and need to do. You may do less and less because you are hurting, tired and cranky. This inactivity can have serious consequences. It can lead to other physical problems and emotional problems, including depression.

Surprisingly, people with mild brain injuries often have more problems with pain, especially headaches, than people with severe brain injuries.

Pain can and should be treated, not ignored. The medical team can help. They can prescribe medication and teach you pain management techniques that have worked for other people experiencing pain. A combination of medication, preventive techniques and pain management techniques is best for managing pain. No one pill or technique works as well as a combination.

## **c. Techniques of Relaxation**

Relaxation is a state of physical and emotional calmness, the opposite of the stress or "fight or flight" response. When you are relaxed, your muscles are free of tension and you feel little or no anxiety or irritability. The muscles of the forehead, jaw, neck and shoulders are often very tense during headaches and other pain episodes. This tension makes the headache pain worse. Relaxing the muscles is a way to break this cycle and thus reduce the pain or at least make it easier to manage.

Relaxation may help you to spot undue levels of tension:

- tense muscles
- heart racing or pounding
- hyperventilating; feeling light-headed or faint persistent tiredness or exhaustion
- aches and pains
- difficulty with sleeping or gritting your teeth at night
- waking up tired
- loss of appetite or not eating well, perhaps with our stomach "in knots"
- developing minor ailments such as headaches, migraines or stomach upsets
- mind in a whirl; can't think straight, concentrate or work effectively sense of rush and pressure, lack of time.

Of all relaxation techniques and methods, hypnosis or guided imagery can teach you how to use your mind to achieve deep relaxation quickly and easily. Stress management at work, progressive muscle relaxation to fall asleep quickly or at-home relaxation therapy to boost your energy, motivation and concentration.

Numerous studies have shown that using relaxation techniques regularly can:

- Decrease the likelihood of heart attack and stroke, and can significantly reduce the incidence of a 2nd heart attack
- Decrease chronic pain
- Protects you from mental health problems
- Improves your immune system function
- Aids memory and learning
- Improves your coping skills and makes you feel better!

If there's one truth about the way we live today, it's that our stress levels are higher than they were a century ago. A lot higher.

### **Techniques of relaxation:**

One of the most simple and easily learned techniques for relaxation is Progressive Muscle Relaxation (PMR), a widely-used procedure today that was originally developed by Jacobson in 1939.

The PMR procedure teaches you to relax your muscles through a two-step process. First you deliberately apply a sweet tension to certain muscle groups, and then you stop the tension and turn your attention to noticing how the muscles relax as the tension flows away.

Through repetitive practice you quickly learn to recognize—and distinguish—the associated feelings of a tensed muscle and a completely relaxed muscle. With this simple knowledge, you can then induce physical muscular relaxation at the first signs of the tension that accompanies anxiety. And with physical relaxation comes mental calmness—in any situation.

It is recommended that you practice full PMR twice a day for about a week before moving on to the shortened form (below). Of course, the time needed to master the full PMR procedure varies from person to person.

Once you have learned PMR and are familiar with the feeling of muscle relaxation, you can then induce relaxation without even bothering with the tension-relaxation process. All you need to do is use your imagination to think of and then relax the various muscle

groups using your cue word(s). Usually this is done by starting at the top of your head and then working down through your body, as if relaxation were being poured over your head and flowing down over all of your body.

When the body and the mind are constantly overworked, their natural efficiency to perform work diminishes. Modern social life, food, work and even the so-called entertainment, such as disco dancing, make it difficult for modern people to relax. Many have even forgotten that rest and relaxation are nature's way of recharging. Even while trying to rest, the average person expends a lot of physical and mental energy through tension. Much of the body's energy is wasted uselessly.

More of our energy is spent in keeping the muscles in continual readiness for work than in the actual useful work done. In order to regulate and balance the work of the body and mind, it is best to learn to economize the energy produced by our body.

This may be done by learning to relax.

“...You can start by getting yourself into a comfortable position in a space where you will not be unnecessarily disturbed, for some minutes. ..

...check to see if your arms and legs are in a relaxed uncrossed position...

Let your shoulders release tension ...and let your neck begin to relax ...

Check the muscles of your head and face...

and the muscles around your mouth...

taking one deep slow breaths...

... and then exhaling fully and completely...

...as you exhale you can begin to release thoughts and tensions...

...you can imagine yourself as if you were on a warm and pleasant day, in a wonderful place... with a blue sky ...

you can feel the warmth of the sunlight or of the warm breezes...

and you are calm and relaxed...

...feel calm ...

...And the effects of the calmness and comfort will last longer, carrying over throughout your day.”

(Dr. Paola Brugnoli)

### **3. Music therapy as a medical discipline**

Within the last decade music therapists have developed their work with people who have life-threatening illnesses and with those who are dying. This book presents some of that work from music therapists working in different approaches, in different countries, showing how valuable the inclusion of music therapy in palliative care has already proved to be.

It is important for the dying, or those with terminal illness, that approaches are used which integrate the physical, psychological, social and spiritual dimensions of their being.

AIST emphasizes the importance of working not only with the patient but with the ward situation, friends and family members. By offering patients the chance to be creative they become something other than patients - they become expressive beings, and there is an intimacy in music therapy that is important for those who are suffering. Our work is with both children and adults living with cancer and other chronic degenerative diseases.

#### **Music Therapy**

The use of music as a therapeutic tool falls into the realm of behavioral and psychological support services. With persons who are not actively dying, music can be used to stimulate interaction, memory, and affective response. It encourages interaction between listeners and between listeners and the performer. This active stimulation presumes that the clients are awake and capable of response. It can be used to stimulate energy if the patient is lethargic, or to calm the patient if there is too much energy. Music therapy presumes that a positive change in mood or behavior can be brought about in the listener.

#### **Use of Music in care for chronic pain and for the dying**

Integrating music with supportive care of the dying is becoming more common in hospice and palliative care programs. The conscious use of music as an adjunct support service is good example of how the multidisciplinary approach to hospice care seeks to address the total person and their family. There are several ways that music can be of help. This overview will cover the most common uses of music at different stages of the support continuum, ranging from stress relief for the relatively healthy, to bedside support for the acutely dying, the use of music in funerals and memorial services, and as part of supportive care for grief recovery.

Because music reaches a deep, non-rational part of the human spirit, it is ideally suited as an adjunct service that can affect feelings such as grief, fear, anxiety, sadness, and anger that stand in the way of a clear passage. Music can release blocked or painful feelings and can stimulate positive ones such as hope, love, and gratitude. Sharing music together can lead to sharing of the emotions that the music brings up. Acknowledging these emotions together can help bring closure to old issues and enable reflection. People have used music and song to comfort one another since time immemorial. Who has not been touched by hearing a lullaby? Aristotle and Plato wrote about their beliefs in the healing power of music. During medieval times, a tradition of monastic chant for the sick developed. The Benedictine Order, which embraced communal living, supported their sick or dying community members through formal musical rituals.

Hospitals as we know them are a relatively recent development in health care. After the two World Wars, volunteers at Veterans hospitals began to play music and sing for patients. Positive responses to this musical support led hospitals to hire musicians directly,

and formal music training programs for health care applications began to appear. In 1944, Michigan State University offered the first college degree in music therapy.

In 1950 the National Association for Music Therapy was founded, followed in 1971 by the American Association for Music Therapy. Those two organizations merged in 1998 to create the American Music Therapy Association (AMTA), the largest professional association representing over 5,000 members.

The Canadian Association for Music Therapy was formed in 1974. The organization furthers the practice of music therapy in clinical, educational, and community settings throughout Canada.

Therese Schroeder-Sheker developed a field specifically called "music thanatology" through The Chalice of Repose Project. The term "thanatology" is derived from "thanatos," the Greek term for death. The term "music thanatology" sometimes is used in a strict sense to refer to a specific way of using live harp music at the bedside of acutely dying patients. Music thanatologists view their work as a compassionate, spiritual, and contemplative practice.

Music thanatology does not presume that the listener has a reserve of energy that can respond actively to the music. A person who is actively dying may be very weak, with limited communication capacity. In some cases the person may be comatose or in a state of altered consciousness on the threshold of death.

In some hospices and hospital facilities that provide musical support, a family can arrange for a bedside visit by one or two specially-trained musicians to sing or play live music for someone who is dying. The purpose of such a music vigil is to provide comfort and support both to the person who is dying and to loved ones. A music vigil can be scheduled by speaking with the hospice staff, palliative care staff, chaplain, or other support staff depending on the facility. Music vigils may take place at any time during hospice care, but they can be of particular benefit during critical times such as the days immediately prior to death, during times when hard decisions must be made, or when artificial life-support equipment is being removed. Typically a vigil will last from thirty minutes to an hour. During a music vigil the musicians will try to respond to the situation in the room by playing music that is responsive to the particular needs of the patient.

The goal is to support the patient and family, not to seek applause. Some musicians avoid using words like "perform" or "performance" to describe what they do, because these words may put focus on the person creating the music rather than on the patient for whom the music is being played.

Musicians differ in the details of how they prefer to conduct a music vigil. Some prefer that those in the room remain silent, while others encourage participants to talk quietly with one another and to the dying person as the music plays in a supportive manner in the room, honoring and reinforcing the importance of the family gathering. Some musicians allow families to make a recording of the music vigil as a remembrance of this special time together.

The term "prescriptive music" refers to the way in which musicians observe body processes and mental states, and then adjust their playing in ways that are appropriate to what the patient is feeling at the time. Prescriptive music is improvised or modified at the moment it is created to adjust to the immediate needs of the patient. For this reason, recorded music is not used in a formal music vigil. The music is offered uniquely for the needs of that patient. If family or friends are present in the room, naturally they will also react to the music. The entire group present may be affected, but the process of creating the music is primarily guided by the state of the dying patient.

People who use music in health care are convinced that music can have somatic benefits when used as one component of holistic multidisciplinary palliative care for dying patients. Music thanatologists are formally trained to adjust their harp music to respond to specific

organic changes taking place in their listeners, such as changes in breathing rates or circulation. The goal is to support the patient in their own process by offering harp music in a prescriptive manner to create a field that can allow the patient to experience what they need to experience in the most supportive way. Prescriptive music is not specifically outcome-based. That is, the music thanatologist does not try to control what the patient is experiencing, but rather to support the patient in whatever they are experiencing.

Creating a supportive musical field may be helpful to a patient who is anxious by making it easier for them to calm down or become more at peace.

In some hospice care and in many nursing homes, the process of thinking back on one's life and communicating about one's life to another person is called life review. Life review is an important part of bringing one's life to a close. As life ends, we want to know that we have truly been seen by someone in this world, and that our life has had value and meaning. Musical memories, and the use of music to stimulate recall, can be an enjoyable and emotionally-engaging part of life review. Hearing specific music can help people remember meaningful times from the past. Sharing music with others and talking about "old times" with a supportive listener can reduce feelings of isolation. Family members and other loved ones may find it hard to express their feelings, fears, and final wishes when death is imminent. Music can help the social interaction both by offering opportunities for conversation, and by providing a comforting background when words just aren't needed.

The use of music in care giving and support has many applications beyond the bedside of the acutely dying.

Music can be helpful to people who are in grief. Music has been shown to be of benefit in nursing homes to stimulate alertness and social functioning of elderly persons. Some studies have shown that elderly patients in nursing homes have better appetite and improved mood when music is played during meal times. Even completely non-responsive dementia patients have been known to react in striking ways to music, including singing lyrics in response to old favorites. Music may be a useful adjunct in cases of emotional distress, grief, restlessness, agitation, and insomnia. Music can be used to calm agitated patients and to induce sleep. Music has been used for years by dentists as a way to distract the mind and reduce perceived pain.

The type of music used for these purposes will vary depending on cultural and faith preferences, the stage of illness, the immediate comfort needs of the patient and family, and available musical resources. In almost all cases the music is of a soothing, relaxing, or uplifting nature. The music may be drawn from existing songs, hymns, or lullabies, or it may be composed spontaneously to respond to the organic processes taking place. The most important thing is that it be supportive to the persons receiving it.

If existing music is used, the arrangement may be adjusted to make it more effective with seriously ill persons. Common changes in arrangement include softening volume, reducing percussion, slowing down the tempo, and reducing tonal range. Harp, recorder, and guitar are the most common instruments. Purely vocal music may be sung or chanted without accompanying instruments. Recorded music can include natural sounds such as chimes, bells, bird songs, wind, or rain. Music drawn from a specific religious tradition, such as hymns or praise, can backfire unless it is known for certain that the person who is dying loved that type of music. This is not a time to force religion on someone who cannot object. When using any type of recorded music in hospice settings, consider using headphones to limit "sonic spillover" from the room.

Music to lift the spirits is often played at a moderately fast tempo with frequent use of rhythm changes and percussion. These features make the music unsuitable for use with people who are very close to death. When death is very near, slow (largo) music with a constant tempo, or softly arhythmical tonal background sounds are most appropriate. Upbeat music is included at funerals more often than you might think. Playing a favorite

song can recall a time when life was good and it all seemed like it would go on forever. Remember, funerals are for the living. If you have the responsibility of planning a funeral, don't be afraid to include any music that has special meaning for you or your loved one. Ever see one of those great New Orleans jazz funerals? What a way to go!

The literature of music therapy has numerous reports to study the role of music in the therapy of pain in palliative care.

### **Music Therapy in Hospice and Palliative Care: a Review of the Empirical Data**

Russell E. Hilliard

Music Department, State University of New York at New Paltz New Paltz, NY, USA

Although music therapy is an established allied health profession and is used with increasing frequency in the treatment of those with a terminal illness, there is a real dearth of empirical research literature supporting the use of music therapy in end-of-life care. This article reviews the empirical studies found in the literature and documents the emergence of an evidenced-based approach to the use of music therapy in hospice and palliative care. A total of 11 studies are reviewed; of these, six show significant differences supporting the use of music therapy in this area. Dependent variables positively affected by music therapy include pain, physical comfort, fatigue and energy, anxiety and relaxation, time and duration of treatment, mood, spirituality and quality of life. Guidelines for future research are considered, and variables that need to be controlled are presented. The need to create an evidence-based approach to hospice and palliative care music therapy is articulated, and future researchers are empowered to continue to conduct investigations among this population.

### **Music therapy in palliative care** (S. Munro and B. Mount)

Initial observations regarding the use of music therapy at one hospital in the palliative care of patients with advanced malignant disease are presented. In the hands of a trained music therapist, music has proven to be a potent tool for improving the quality of life. The diversity of its potential is particularly suited to the diversity of the challenges - physical, psychosocial and spiritual - that these patients present.

### **Pain, music creativity and music therapy in palliative care.**

Am J Hosp Palliat Care. 1996 Mar-Apr;13(2):43-9.

O'Callaghan CC

An analysis of the music therapy literature yields numerous reports to support the role of music in the alleviation of pain in palliative care. Four theoretical perspectives that support why many patients report reduced pain sensation after music therapy include: the psychological relationship between music and pain; the psychophysiological theory; spinal mechanisms involved in pain modulation; and the role of endorphins. Considerations significant to the use of music in pain relief include how music, used inappropriately, can aggravate pain sensation. Case studies, which include the use of creative music therapy techniques, point to the efficacy of music therapy in alleviating the pain experiences of both palliative care patients and their significant others.

## **4. Patient Education**

Patient education entails giving patients and families accurate and understandable information about pain, pain assessment, and the use of drugs and other methods of pain relief, emphasizing that almost all pain can be effectively managed. It should also address major barriers to effective pain management, namely, patients' reluctance to talk about their pain with their care providers, their unfounded fears about becoming addicted to opioids, and their fears that the pain cannot be effectively controlled without unacceptable consequences.

Patient education should address other misconceptions, such as the thought that pain medication should be saved for when pain is severe, or else it might not be effective (Ward, Goldberg, Miller-McCauley, et al., 1993).

Some believe that analgesics might produce unacceptable side effects or that choices might have to be made between treating the disease or treating the pain.

A goal of patient education is to involve patients in their pain management: one of the most important steps toward improved control of cancer pain is better understanding by patients of the nature of the pain, its treatment, and the role that they need to play in pain control. Patients should be encouraged to report pain as active participants in their own care. To improve their understanding of drug therapy and its effects, patients should be told that: The use of opioid analgesics will not lead to addiction.

Tolerance to opioid analgesics can be dealt with by upward dosage adjustments.

Many patients worry that, if they complain of pain, their health care providers might not think of them as "good" patients (Ward, Goldberg, Miller-McCauley, et al., 1993).

Because of these concerns, some patients who are taking opioids and have been told to take them regularly may take them only when their pain is severe.

Patients should be taught that the prevention of pain by the use of regularly scheduled analgesics is desirable. Because of the many misconceptions regarding pain and its treatment, education about the ability to control pain effectively and correction of myths about the use of opioids should be included as part of the treatment plan.

Because uncertainty increases distress and threatens the perception of ability to cope, informing patients about what is going to happen to them can help them think about a situation differently and feel less helpless (Mishel, 1984).

Research has shown that patients who receive medication-related education have a higher rate of compliance with analgesic prescriptions, fewer concerns about taking opioid analgesics, and lower pain levels than do patients not given such information (Rimer, Levy, Keintz, et al., 1987).

Other research has demonstrated that informing patients about possible side effects of therapy will not increase the occurrence of side effects or have other adverse effects (Howland, Baker, and Poe, 1990; Wilson, 1981).

After the clinician has told patients that they are expected to take an active role in their pain management and has reassured them that pain relief is an important goal, then patients should be able to use clinicians as sources of information and reassurance about pain control.

Information presented orally to patients should be supplemented with written material.

## **5. Psychotherapy and Structured Support**

(Alessandro Norsa)

Should the anxiety symptoms associated with the stress in chronic pain require treatment with the anxiolytic drug? Billion of tranquillizer pills are prescribed annually in the world. This inevitably must result in a massive increase in the psychological and physical dependency on this type of preparation.

Therapists need to consider when they should incorporate different psychological approaches in their management of people with pain.

Many patients with chronic pain, benefit from short-term psychotherapy or more complex cognitive-behavioral interventions provided by a psychiatrist, clinical psychologist, psychiatric nurse, or psychiatric social worker.

Short-term supportive psychotherapy based on a crisis intervention model can provide emotional support, continuity, and information while helping the patient adapt to the crisis. The therapist emphasizes the patient's past strengths, supports the patient's use of previously successful coping strategies, and teaches new coping skills.

Studies have shown that patients with cancer who receive active, structured psychological support report less pain and live longer (Fawzy, Cousins, Fawzy, et al., 1990; Spiegel and Bloom, 1983; Spiegel, Bloom, Kraemer, et al., 1989).

Psychotherapy should be offered to patients whose pain is particularly difficult to manage (e.g., substance abusers), those who develop symptoms of clinical depression or another adjustment disorder, and those with a history of psychiatric illness.

Psychotherapy is usually integrated with the use of other cognitive-behavioural, medical and pharmacological strategies.

In therapy, clients can be helped to regain self-esteem. Therapists can work with clients to identify their current strengths, and to acknowledge these strengths. Therapy plans can then be developed which look at realistic ways to accomplish other valued goals (refer back to the goal setting and self-efficacy sections). Successful accomplishment of tasks and activities is a powerful booster of self-esteem. This is why the engagement of the client in activities and exercises by the occupational therapist or physiotherapist is such a useful part of the rehabilitation process for clients with chronic pain.

It may also be important to help clients learn to use positive self-talk. For example, instead of a client saying, 'I am never going to be able to work as a plant operator again', encourage them to focus on the positives and say, 'I have some good knowledge about machines that I might be able to use as a technical college instructor'. The amount of assistance a client needs in this area needs to be determined by careful therapist assessment.

### **INCORPORATING PSYCHOLOGICALLY BASED PAIN MANAGEMENT INTO INTERDISCIPLINARY WORKING WITH PSYCHOTHERAPY**

The cognitive-behavioural approach is often used within a multidisciplinary or interdisciplinary perspective. Interdisciplinary pain management programs provide more benefits than management by one discipline or profession (Flor et al 1992).

**Goals of interdisciplinary programmers include:**

- Reduction of pain intensity
- Increased physical functioning
- Proper use of medication
- Improvement of sleep, mood, and interaction with others
- Return to work or to normal daily activities (Jamison 1996).
- Psychologically based strategies that are incorporated into an interdisciplinary programme may include all or some of the following:
- Education
- Relaxation training in Group therapy
- Family therapy
- Vocational counselling
- Cognitive-behavioural treatment
- Hypnosis

Psychotherapy is not used by physical therapists or occupational therapists unless they have acquired recognized postgraduate training. Psychotherapy may be helpful for clients who continue to suffer with chronic pain despite the use of other interventions.

#### PSYCHOTHERAPY AND HYPNOSIS

Typical aspects of clinical hypnosis and hypnotic states are present in every form of psychotherapy.

A hypnotic therapy can ground on the analysis of the symbolic meaning of the symptom and on the correlated conflictuality, or on the reinforcement of the ego.

Psychotherapy is founded on the representation of the reality, through a continuous interpretation of the individual's deep aspects. It is important the relationship with the physical, semantic and cultural experience of the patient.

**Norsa A. Conosciamoci meglio (The Better Knowledge). Editrice Millennium, Verona, 2004. Italian.**

Confirming that hypnotic relation is a possible instrument in a psychosomatic therapy, the Author suggests some practical opinions on the importance of reactive language of the body to various stimulus which are always performed, in every man.

## **6. mental training and chronic pain in sport and rehabilitation**

(M.P. Brugnoli)

### **The value of the mind in body healing**

Mental training can help accelerate the healing process in rehabilitation.

It is a fact of sports, competitive or not, that sportspeople get injured. Traditional medicine recommends rest and relaxation with gentle exercise during the recovery process, and this is sometimes a difficult regime to stick with (often there are disastrous consequences in not sticking to it). It is clearly important to speed the recovery process as much as possible, and the evidence drawn on above suggests that hypnosis may be utilised as part of treatment during a recovery period.

### **Underlying Psychological Causes**

Sports injuries are generally physical in nature; most do not have an underlying psychological cause. Hypnosis has been shown to be of value in the treatment of asthmatics (Liggett 2000) and is often employed in dealing with so-called psychosomatic illness. Physical symptoms of illness and injury sometimes have an underlying psychological cause. This underlying issue usually has a positive intention, known as secondary gain. This can be seen, for example, in cases in which pain recurs predictably before competition or in stressful situations. The mind has a way of protecting us from things that it thinks may not be beneficial, and often pain is a positive message of warning from our unconscious.

Liggett (2000) describes a case study of a football player who often has painful calf muscles during practice and in games. Physiologically the pain seemed to be caused when exercise caused the muscle to expand beyond the capacity of the muscle compartment. However the pain did not occur every time he exercised the leg, this pointed to an underlying psychological cause. Under hypnosis the athlete revealed that there was an event in their past (not being selected for a senior level college team) that seemed to seed times when there was an onset of the pain. Specifically the pain seemed to occur when he believed that someone was outperforming him. The secondary gain here is that the pain gives the athlete an excuse for not performing as well as his competitor.

There are a number of ways of resolving problems with secondary gain. It is essential first of all to recognise the intention as valuable and positive, and perhaps then to look for other ways of achieving the same result without the symptom of pain. Liggett (2000), in this case, installed a post hypnotic suggestion that the athlete would make comparisons with his own past performances, rather than with other peoples, in future. This reduced the psychological element of his pain, and although the physiological aspect was still present the intensity of the pain reduced to a level that no longer impeded his performance.

As well as addressing the psychological aspects of injury, the power of the mind can be brought in to play in the healing process itself. The body has a remarkable capacity to heal itself, as it demonstrates in the rapid healing of a deep cut, a broken bone or a torn ligament. The role of the mind in this process is still very much debated.

## **Mental Training includes:**

- **Imagery:** mental drills for physical people: how recreating all-sensory experience can profoundly affect your performance
- **Goal setting:** one step at a time – how to raise your game by setting smarter goals
- **Performance profiling:** a coaching tool for pinpointing strengths and weaknesses, designing training strategies and building better communication with athletes
- **Flow:** for peak experiences in sport, you need to go with the flow
- **Emotional control:** these pre-performance strategies will get a grip on your emotions before they get a grip on you
- **Pain control**
- **Thought control:** when it comes to doing your best, it's the thoughts that count
- **Injury:** how much do psychological factors contribute to the risk of injury in sport?

Recent research evidence suggests that to achieve maximum benefits athletes and coaches should select the content of their images very carefully.

You'll find that once learned, imagery can be applied in many different ways to aid sports performers, and is one of the most regularly used tools of the sport psychologist.

Scientific research strongly supports the use of imagery in sport as an adjunct to physical practice. However, sceptics who need convincing may wish to consider the following three pieces of evidence:

Elite athletes and coaches use imagery regularly.

Case studies of the use of imagery programs tailored to individual needs have demonstrated some dramatic performance improvements

Most importantly, a wealth of controlled scientific studies have shown that imagery can significantly benefit the learning and performance of a variety of sports skills

Given the strong evidence, scientists have now turned their attention to the question of how imagery works. On this issue opinion remains divided and a healthy debate continues.

Some experts believe that small neuromuscular 'firings' that have been demonstrated in some research studies provide sufficient feedback from imagined stimuli to allow for changes in performance.

Another line of evidence suggests that imagery may work more indirectly – facilitating changes in someone's psychological state by building confidence, promoting motivation and reducing performance anxiety.

## **Mental Training and Goal setting**

Anyone interested in athletics will be aware of the achievements of the US 200m and 400m sprinter, Michael Johnson. In the course of a spectacular career, Johnson rewrote the record books when he became the only man ever to win both 200m and 400m Olympic gold medals, at the 1996 Olympics. At times he was, quite literally, 'in a class of his own'.

However, according to the man himself, his achievements were based not purely on talent and hard physical conditioning, but on mental strength and a clear vision of where he wanted to go.

Michael Johnson developed a plan of how to get there and mobilised his extraordinary talent through effective goal setting.

## How goal-setting enhances performance

There are three types of goals:

- **Dream goals** are the ones that seem a long way off and difficult to achieve. In time terms, they may be anything from six months to several years away
- **Intermediate goals** are markers of where you want to be at a specific time.
- **Short-term or daily goals** are the most important because they provide a focus for our training in each and every session.

## Performance and process goals

Performance goals can be easily readjusted to provide meaningful and realistic targets. 'Process goals' are to do with the actions or techniques that are required to achieve success.

Coaches have a preference for performance and process goals, since these can be more easily and precisely adjusted than outcome goals, although all three types of goal should be used as appropriate to the athlete and situation.

One recent study found better results when using a combination of goal strategies (outcome, performance and process goals) than either one alone.

Here's the technique used to help remember the key principles of goal setting: think **SMARTER**.

That is, your goals should be:

**Specific** – Indicate precisely what is to be done. Avoid vague alternatives

**Measurable** – You should be able to quantify your goal

**Accepted** – Goals must be accepted as worthwhile, realistic and attainable

**Recorded** – Write your goals down. This is the basis of a contract with yourself

**Time-constrained** – Set specific time limits

**Evaluated** – Monitor your progress regularly

**Reversible** – In the event of injury, or failure to achieve over difficult goals

## AROUSAL AS A TRIDIMENSIONAL VARIABLE: AN EXPLORATORY STUDY OF BEHAVIOURAL CHANGES IN ROWERS FOLLOWING A MARATHON RACE.

Int. J. Sport Psychol., 20:31-41, 1989

FRANCOISE DOUCIIAMPS-RIBOUX, JEAN-KARL HEINZ, and JACQUES DOUCIIAMPS, *Belgium*.

Eleven highly fit rowers were tested in control conditions and within the first half hour following a marathon race in order to examine the incidence of sustained exercise on mood and motor, perceptual and cognitive functions.

Subjects reported fatigue but not exhaustion and physiological activation was evidenced by an important rise in heart rate. *Motor impulse became more efficient* but simple reaction time, critical flicker *threshold* and *hand-to-eye* coordination tests failed to reveal changes in performance. In the cognitive task, in which subjects had to memorize 4 and 12 items before performing a multiple-choice reaction time, performance deteriorated differently in response to the 4- and 12-item series of trials. Confronted with the low mental load, the strategy remained similar to that of the pre-race condition, whereas *with the high mental load*, subjects adopted a more stereotyped strategy, committing longer and more numerous errors than in control conditions.

A heuristic model of human performance which considers arousal as three-dimensional (energetically, emotional and computational) is tentatively advanced to suggest that,

during a post-marathon spill-over period, mental performance is predominantly influenced by the energetically pattern of arousal and that automatic processing is reinforced.

Practical facts

Changes in the central nervous system (CNS) after sustained physical exercise have been assessed by more or less complex behavioral tasks (for a comprehensive review, see Tomporowski & Ellis, 1986), and by various neurophysiological methods (Gliner et al., 1979; Sheich & Simon, 1970).

### **Pain and mental Training in sport and in rehabilitation**

An athlete spends most of his or her time training rather than competing. So a quicker way to train holds real value.

By combining

(1) Time-saving exercises, with

(2) Science-based techniques

you have the key to an exponential leap in speed, power and endurance.

This double-action approach is the foundation on which mental training in sport is built.

Exercise programmes are displayed in modular format so you can speedily utilise the relevant workout for your sport.

Modules are targeted at major areas of fitness:

1. Planning
2. Injury Prevention
3. Mobility
4. Endurance
5. Strength
6. Speed and Agility
7. Psychology
8. Pain therapy in sport
9. Rehabilitation in sport
10. Rehabilitation in disability

### **Mental Training: You have the key to an exponential leap in strength development**

Mental Training:

- Increased power output which increases speed of movement -- thereby heightened sport prowess; Increased power of your mind
- Reduced incidence of injury
- Enhanced psychological aura surrounding the more physical and powerfully prepared athlete
- Increased agility, balance and coordination with more power available to the athlete
- Increased energy: more endurance, power and strength which translate into more useable energy
- Improved intellectual capacity and productivity. Your brain needs a reprieve from thinking; physical exercise provides that respite from the constant intellectual thinking tasks of our modern life
- Better sleep: exercise enables a better sleep pattern to develop
- Control of stress and depression: you are active in a productive manner and the brain sends out endorphins signaling a happy pleasant state of mind during and after exercise
- Decreases stress: you are doing something for YOURSELF

- Decreases chronic pain
- Added protection from heart disease
- Increased endorphins (pain killers)
- Increased self-confidence, self image, self-perception and outward self-projection.

Psychological preparation is as crucial to success as training, recovery, kit, hydration and nutrition.

Mental training explains why top athletes and coaches believe there is more to peak performance than a well-honed body.

You'll experience such benefits that you won't look back.

Whatever your sport, you need to discover why top athletes and coaches consider psychological training so important. This is your chance to try out the mental training techniques that lift performances to extraordinary levels.

### **Mental training as pain therapy in sport and in rehabilitation**

This is especially important when you have spent time organising your goals and putting them into a plan of action. The last thing you want to do is have to take time off because of an injury. Even during your normal exercise routine there is always the possibility that small, minute injuries occurred during the session. It is these small, minute injuries which, if left unattended, can build up over time and lead to major, debilitating injuries which can cost you weeks, if not months, in recovery time. This is where mental training can assist by helping recovery without any loss to your training schedule.

The physical objective is the fitness/strength/speed requirement and this usually determines the structure and content of the mental training. The learning objective is a skill or psychological factor you want learnt or practised. Defining both the learning and the physical objectives when planning the mental training, helps achieve a balance and progression in training.

### **Disability and chronic pain**

The oldest and persistent questions of humanity are: Why suffering? What is the meaning of pain, sickness, and death? Why is the world full of troubles, violence, and terror? How can individuals triumph over adversities? What can be done to transform fear to courage; doubt to faith, despair to hope, hate to forgiveness, and sorrow to joy? What are the roles of religion, science and medicine?

Perhaps one of the hardest things in life is coping with illness and pain. In some ways, it can be even harder when we are having to look after a loved one who is ill, than with our own illness.

### **Brugnoli Maria Paola. Mental training nello sport (Mental Training in Sport). RED Edizioni, Milano, 2005, Italian.**

The Author describes the importance of mental training in sport activity, not only for athletes, but also as an opportunity of recreation and rehabilitation for "all the abilities". She follows especially the Milton Erickson thought with psychotherapeutic and hypnotic practice: he disabled obtained exceptional results in widening of mental and physical possibilities.

The Author explains many applications of mental training and hypnosis in rehabilitation of sport activity.

### **AIST supports patients with chronic pain and disabilities with mental training**

## 7. Hypnosis

(A.Brugnoli, M.P. Brugnoli)

**The hypnotic trance is a state of heightened awareness and focused concentration that can be used to manipulate the perception of pain and has been effective in the treatment of cancer-related pain** (Reeves, Redd, Storm, et al., 1983; Spiegel and Bloom, 1983; Syrjala, Cummings, and Donaldson, 1992).

Hypnosis is a condition of altered attention in an individual, achieved by an induction process (Elton et al 1983). Hypnosis may help by altering the pain sensations, by directing the person's attention away from the pain, or by suggesting pain relief (Elton et al 1983). Specialized training in hypnosis is needed, it is not a technique used by physical therapists and occupational therapists.

Our ordinary state of consciousness is not something natural or given, but a highly complex construction, a specialized tool for coping with our environment and the people in it, a tool that is useful for doing some things but not very useful, and even dangerous, for doing other things (Charles T. Tart).

As we look at consciousness closely, we see that it can be analyzed into many parts. Yet these parts function together in a pattern: they form a system. While the components of consciousness can be studied in isolation, they exist as parts of a complex system, consciousness, and can be fully understood only when we see this function in the overall system. Similarly, understanding the complexity of consciousness requires seeing it as a system and understanding the parts. For this reason, I refer to my approach to states of consciousness as a system approach.

To understand the constructed system we call a state of consciousness, we begin with some theoretical postulates based on human experience. The first postulate is the existence of a basic awareness. Because some volitional control of the focus of awareness is possible, we generally refer to it as *attention/awareness*. We must also recognize the existence of *self-awareness*, the awareness of being aware.

Further basic postulates deal with *structures*, those relatively permanent structures/functions/subsystems of the mind/brain that act on information to transform it in various ways. Arithmetical skills, for example, constitute a (set of related) structure(s). The structures of particular interest to us are those that require some amount of attention/awareness to activate them. Attention/awareness acts as *psychological energy* in this sense. Most techniques for controlling the mind are ways of deploying attention/awareness energy and other kinds of energies so as to activate desired structures (traits, skills, attitudes) and deactivate undesired structures.

Psychological structures have individual characteristics that limit and shape the ways in which they can interact with one another. Thus the possibilities of any system built of psychological structures are shaped and limited both by the deployment of attention/awareness and other energies and by the characteristics of the structures comprising the system. The human biocomputer, in other words, has a large but limited number of possible modes of functioning.

Because we are creatures with a certain kind of body and nervous system, a large number of human potentials are in principle available to use. but each of us is born into a particular

culture that selects and develops a small number of these potentials, rejects others, and is ignorant of many. The small number of experiential potentials selected by our culture, plus some random factors, constitute the structural elements from which our ordinary state of consciousness is constructed. We are at once the beneficiaries and the victims of our culture's particular selection. The possibility of tapping and developing latent potentials, which lie outside the cultural norm, by entering an altered state of consciousness, by temporarily *restructuring* consciousness, is the basis of the great interest in such states (Charles T. Tart).

### **Hypnosis is a different state of consciousness (Charles T. Tart).**

As an adjunct to psychotherapy, hypnosis can help clients enter a relaxed, comfortable, trance state for obtaining specific therapeutic outcomes. With clinical hypnosis, the therapist can make suggestions designed to help the client formulate specific internal processes (feelings, memories, images and internal self-talk) that will lead to mutually-agreed-upon outcomes.

Hypnotic suggestions can influence behavior when the listener is:

- (a) relaxed, receptive and open to the suggestions
- (b) experiences visual, auditory, and/or kinesthetic representations of the suggestions
- (c) anticipates and envisions that these suggestions will result in future outcomes.

These three criteria are facilitated through the use of "hypnotic language patterns."

Hypnotic language patterns include: guided visualization, stories, guided memories, analogies, ambiguous words or phrases, repetition, and statements about association, meaning, and cause-effect.

### **Myths and Misconceptions about Hypnosis**

Hypnosis is not mind control or brainwashing. People change their minds and actions throughout their lives. When such changes occur as a result of exposure to specific information, it is because this information has been presented through persuasion and influence. A hypnotherapist uses communicative methods of persuasion and influence; so do people who advertise and market goods and services; so do teachers, politicians, lawyers, entertainers, parents, and ministers.

Perhaps you've heard of hypnosis being used for a number of problems such as pain management (also in oncologic patients), smoking cessation, rehabilitation, and mental training in sport. Maybe you have thought of trying hypnosis but were afraid you might lose your will or be controlled by the hypnotist like you've seen in stage hypnosis. Although while in the hypnotic state you tend to be much more responsive to suggestion, you are not without will or under anyone else's control during that time.

### **Applied medical hypnosis in the treatment of pain**

All symptoms have one unique biologic feature, from remission, health and life to relapse pain, suffering and death.

Biologic function is never static and can be controlled to some degree by the patient through Applied Medical Hypnosis. The first step of treatment intervention is to determine how much symptom management is possible by the patient.

The patient's self esteem, conviction toward health, treatment, and faith weigh heavily in a realistic approach to recovery. It is necessary to learn what patient myths may be dignifying disease. The first step is to decondition the victims' attitude by facilitating Clinical Hypnosis, then teaching assertiveness for improved life coping skills. In this procedure iatrogenic complications are expected. These controlled relapses are signs

that the patient is capable of remission and may be discovering some specific hidden self-destructive tendencies.

The primary thrust of this treatment is psychophysiological self management. Physiological Self Regulation (PSR) training may involve combinations of pathological abreactions and relief before retraining of learned limitations is integrated. This step is called depotentiating the symptom syndrome.

Exploration of secondary gains from symptoms is essential to depotentiate relapse and encourage patients to participate in a daily health regime. It is incumbent on the patient to work with the treatment team to learn to be responsible enough to establish and maintain wellness. This holistic concept relies on a contract with the patient and staff to agree to do everything possible to assist each other to facilitate and integrate health.

Modern medical hypnosis today facilitates healing and cures through suggestion, imagination, imagery, expectancy and motivation of the patient.

With hypnosis most symptoms may be reduced significantly.

Pain is a necessary physical sensation to warn the person of damage. Research indicates that after the organism notes the disease or injury site, pain interferes with healing, and retards the eventual course leading to vitality. Reduction of pain and suffering is one of the primary targets of all treatment because reduction of pain is the beginning of rapid recovery.

This issue of pain is debated throughout varieties of healing professionals. There is no absolute answer, and yet hypnosis is able to help most easily those who need help most. Many researchers and clinicians have demonstrated that management of pain is a natural capacity housed in each person. Yet pain is a deeply subjective experience. Research literature shows pain reduction through hypnosis does not eliminate the pain, rather the internal experience of the sensations are altered.

Merging behavioral medicine with medical hypnosis has advantages because Western Civilization has its own brand of cultural inhibitors which contribute to any disease, injury or accident. The idea in treatment is to determine the degree of symptom management potential each patient possess. A problem facing the professional is how to determine the degree of unconscious aspects of symptoms so the patient can be helped to reconcile living problems and to be free to cope without natural cultural psychophysical reactions.

Successful treatment utilizes hypnotic trance to help patients relearn sub-cortical activity in the brain and then to alter (self talk). Symptoms are defined as preverbal, conditioned reflexes which at some sensate level make sense to patients; and are subconsciously designed, then used to prevent awareness of experienced or subconscious distress. The patient's symptomatic dilemma is how an original life survival defense reaction, subconsciously designed to relieve stress, may later produce a health problem: an ulcer can be a message of not being able to stomach something; ulcerative colitis as a need to get rid of something.

The preceding treatment method itself has elements of danger because this approach relies on directness and moves quickly to the symptom source. It may contribute to a clinical, iatrogenic energy - commonly referred to as resistance; acting out, abreaction and possibly worsened symptoms. The primary problem of treatment is how to manage this human energy in a controlled manner to make healing surprisingly easy and natural.

The previous cortically encoded neurotransmitters produce psychoneuromuscular activity, which researchers say develops into the symptom for proper differential diagnosis.

The value of hypnotic training through refractation (a profound hypnotic state), is to help patients learn some physical functions, even though complex and complicated; even subconscious psychophysical reactions are within their control.

Hypnotic trance attempts to accelerate a patient's ability to reorganize thinking, to have a unique experience and simultaneously to learn the responsibility of personal health through self-involvement.

Clinically produced trance is an altered state of consciousness to help patients change rigid, imprisoning molds another may have cast, and to free them from this symptomatic, learned bondage. Theoretically, symptom-bound energy provokes and distorts intrapsychic perceptions and sensations into severely disturbed biochemical mutation. Clinical visual imagery by the patient helps to return physiology to a natural state. Trance is more direct and useful simply because it is regarded as a natural human capacity.

Erickson and Kroger cite hypnosis as direct because a person in trance (an altered state of consciousness), is more easily approached and influenced to accept a healthier viewpoint rather than their symptom or complaint as a solution.

Research suggests symptoms are rooted in natural, critical life events, resulting in subconscious phenomena.

### **Ericksonian Hypnosis:**

The kind of hypnotherapy most frequently practiced in psychotherapy today is "Ericksonian Hypnosis," named after the late Milton H. Erickson, M.D. From the 1930's to the 1980's Dr. Erickson was very influential in bringing the use of clinical hypnosis into the fields of medicine and psychotherapy. He taught and practiced a kind of hypnosis that was gentle, permissive, and respectful of the client. He established the National Association for Clinical Hypnosis and published the first professional journals and monographs on the therapeutic uses of hypnosis. Hundreds of books and articles have been written about Dr. Erickson and his methods. Dr. Erickson has been regarded as the leading hypnotherapist in the world.

### **The use of metaphor in indirect hypnotherapy**

When the main road is blocked, as Milton Erickson often said, then we must find other roads, perhaps more winding, but, which will ultimately take us to our destination.

This metaphor will be the winding road that we will follow to present the use of metaphor in indirect hypnotic therapy. In many cases, for example in the treatment of chronic pain, hypnotic therapy faces obstacles which seem practically insurmountable. When traditional methods fail however, indirect techniques are often the only possible alternative.

Indirect hypnotherapy is the therapeutic use of hypnosis without the formal induction of trance and without explicit directives. The subject receives an indirect suggestion and therefore has a greater possibility of personalizing it and of adapting it to his own needs, developing the type of trance most appropriate to the context and to his personal situation.

More than any other person, Milton Erickson has highlighted the importance of:

1. the indirect approach and has also described numerous indirect communicative modes which can be used in hypnotherapy such as
2. dissemination
3. pantomime

4. confusion techniques
5. anecdotes and
6. metaphors.

The metaphor is a rhetorical figure of speech and as such acquires a particular suggestive value in common language. Probably for this reason, metaphors have always been an essential part of classic hypnotic procedures, especially in the induction and deepening of trance states. The fact that the metaphor by definition always carries indirect meanings makes it an ideal instrument not only in the trance state but also in the entire course of the indirect therapeutic process.

With the aim of most closely matching each single metaphor to each subject and each situation, AIST would like to propose some general criteria for the construction of the therapeutic metaphor to be used in indirect hypnotherapy.

Based on the Ericksonian metaphor of the blocked road, to reach our destination it will be necessary to trace an alternative route on the map, but to select, a new itinerary we need some well-defined points of reference.

### **Applications of Hypnotherapy**

Hypnosis has many applications in therapeutic settings. Among them are:

- Analgesia in chronic pain and pain Management
- Relaxation During Childbirth
- Treating Fears and Anxiety
- Sleep Disorders and Disturbances
- Interpersonal Problems
- Depression
- Psychosomatic Complaints
- Post Trauma Relief
- Stress Management
- Academic Performance
- Athletic Performance
- Help with Life Transitions
- Preparation for Medical/Dental Procedures
- Blocks to Motivation and Creativity

### **Inducing Hypnosis**

The procedures for inducing hypnosis are many and varied but certain steps are common to most of these procedures. The first such step usually involves having you sit or lie comfortably, so you do not have to exert any effort to maintain your bodily position, and telling you not to move and to relax your body as much as possible. This step has a variety of effects. For one thing, if you are somewhat anxious about what is going to happen, your anxiety which intimately related to bodily tension, is at least partially relieved if you relax. You limit your ability to feel anxiety. This makes it easier for you to alter your state of consciousness. Also, when your body is in a relaxed position and lying still, many of the kinesthetic receptors adapt out, as in going to sleep. Thus the body as a whole begins to fade out as a conscious experience.

Second, the hypnotist commonly tells you to listen only to his voice and ignore other thoughts or sensations that come into your mind. Ordinarily you constantly scan the environment to see if important stimuli are present. This constant scanning keeps up a continuous, varied pattern of information and energy exchanges among subsystems, which tends to keep subsystems active in the waking state pattern: as varied perceptions

come in, you must decide whether they are important, you must draw on memories from the past in making these decisions, etc. By withdrawing attention/awareness energy from this scanning of the environment, you withdraw a good deal of psychological energy and activity from a number of subsystems: a major loading and patterning process is attenuated.

The hypnotist commonly suggests to you that you are feeling sleepy or drowsy. This elicits a variety of memory associations that help the induction process.

Since going to sleep is a passive activity, the suggestion encourages a sense of passivity on your part and so reinforces the earlier instructions not to think *about* what the hypnotist is saying but simply to accept it. The references to sleep also draw up memories and expectations of your identity fading, so energy is not required to keep evaluating the situation in terms of your personal values.

As well as suggesting sleep, the hypnotist often further indicates that this sleep is not quite the same as real sleep because you will still hear him. The hypnotist may not need to suggest this overtly: everyone in our culture knows enough about hypnosis to realize that the subject can still hear the hypnotist.

Once you appear passive and relaxed, most hypnotic procedures go on to simple motor suggestions, such as having you hold an arm horizontally out in front of you and telling you it is getting heavy. Motor suggestions like this are relatively easy most people to experience, and as you begin to respond to these suggestions.

The Hypnotic State

If the induction is successful and the neutral hypnotic state is developed, the result is a state of quiet mind; most of the structures are inactive, many of the psychological subsystems are not actively functioning (Charles T. Tart).

Typically, if a deeply hypnotized subject is asked what he is thinking about or experiencing, the answer is "Nothing." However, this state is also characterized by greatly enhanced suggestibility, a greater mobility of attention/awareness energy, so when a particular experience is suggested to the subject he usually experiences it far vividly. Thus the hypnotic state shows a high flexibility of functioning, even though it is relatively quiet between particular functionings. The state is also characterized by a quality called *rapport*, a functioning of the Sense of Identity subsystem to include the hypnotist as part of the subject's own ego (Charles T. Tart).

It is easy to see how the various techniques mentioned above destabilize the ordinary pattern and operate on various psychological subsystems to push them toward extreme values of functioning.

There are many controlled studies of its use in the therapy of pain:

- **Clinical Hypnosis May Benefit Pediatric Oncology Patients Undergoing Lumbar Punctures**

According to an article recently published in *The International Journal of Clinical and Experimental Hypnosis*, hypnosis appears effective in reducing pain and anxiety in children undergoing lumbar punctures, especially if a therapist is present.

Lumbar puncture, also known as spinal tap, involves the removal of cerebral spinal fluid from the spinal canal. This fluid contains glucose, proteins, white blood cells, and many other substances that are also found in blood. Doctors use lumbar punctures to diagnose and monitor many different diseases, including cancers of the spinal cord and brain.

As defined by the American Cancer Society, hypnosis "is a state of restful alertness during which a person can be relatively unaware of, but not completely blind to, their surroundings". Hypnosis has been approved by an independent panel from the National Institutes of Health (NIH) for chronic pain. Several studies have suggested that hypnosis

may alleviate stress, anxiety, and pain, although scientists do not understand exactly how hypnosis works.

A team of researchers in the psychology department at the University of Wales conducted a controlled clinical trial of 80 pediatric cancer patients between the ages of 6 and 16. Each child received one of four different types of treatment: 1) direct hypnosis with standard medical treatment, 2) indirect hypnosis with standard medical treatment, 3) attention control with standard medical treatment, or 4) standard medical treatment alone. Standard medical treatment for all patients consisted of lumbar puncture.

Patients who underwent hypnosis, direct or indirect, reported less anxiety and pain than their un hypnotized counterparts. In addition, both forms of hypnosis appeared equally effective. Hypnotized patients were also rated by the investigators as demonstrating less behavioral distress than the control groups. An important factor associated with the efficacy of hypnosis was the ease with which a patient could become hypnotized. Unfortunately, self-hypnosis failed to achieve high therapeutic benefit.

These British researchers concluded that hypnosis appears effective in preparing children with cancer for lumbar puncture. However, the presence of a therapist appears crucial. Pediatric oncology patients and/or their families may wish to speak with their physician about the risks and benefits of CAM or about participation in a clinical trial further evaluating CAM therapies. Three sources of information regarding ongoing clinical trials include the National Cancer Institute's Office of Cancer Complementary and Alternative Medicine at <http://www3.cancer.gov/occam/trials.html>, the National Center for Complementary and Alternative Medicine at <http://nccam.nih.gov/clinicaltrials/>, and [eCancerTrials.com](http://eCancerTrials.com). Personalized clinical trial searches on behalf of patients are also provided at [eCancerTrials.com](http://eCancerTrials.com).

Reference: Lioffi C, Hatira P. Clinical hypnosis in the alleviation of procedure-related pain in pediatric oncology patients. *The International Journal of Clinical and Experimental Hypnosis*. 2003;51:4-28.

- **Hypnosis for pain management.**

Valente SM.

J Psychosoc Nurs Ment Health Serv. 2006 Feb;44(2):22-30.

Research and Education, Department of Veteran Affairs, Los Angeles, California, USA.

Nurses are in a key position to learn and use hypnosis with patients to reduce pain and enhance self-esteem. However, most nurses lack knowledge about the clinical effectiveness of hypnosis and may seek continuing education to become skilled in its use. Painful procedures, treatments, or diseases remain a major nursing challenge, and nurses need complementary ways to relieve pain from surgery, tumors, injuries, and chemotherapy. This article examines the evidence base related to hypnosis for pain management, as well as how to assess and educate patients about hypnosis.

- **Hypnosis for procedure-related pain and distress in pediatric cancer patients: a systematic review of effectiveness and methodology related to hypnosis interventions.**

Richardson J, Smith JE, McCall G, Pilkington K.

J Pain Symptom Manage. 2006 Jan;31(1):70-84.

Faculty of Health and Social Work, Portland Square, University of Plymouth, Drake Circus, Plymouth, Devon PL4 8AA, United Kingdom.

The aim of this study was to systematically review and critically appraise the evidence on the effectiveness of hypnosis for procedure-related pain and distress in pediatric cancer patients. A comprehensive search of major biomedical and specialist complementary and alternative medicine databases was conducted. Citations were included from the databases' inception to March 2005. Efforts were made to identify unpublished and ongoing research. Controlled trials were appraised using predefined criteria. Clinical commentaries were obtained for each study. Seven randomized controlled clinical trials and one controlled clinical trial were found. Studies report positive results, including statistically significant reductions in pain and anxiety/distress, but a number of methodological limitations were identified. Systematic searching and appraisal has demonstrated that hypnosis has potential as a clinically valuable intervention for procedure-related pain and distress in pediatric cancer patients. Further research into the effectiveness and acceptability of hypnosis for pediatric cancer patients is recommended.

- **Hypnotic treatment of chronic pain.**

J Behav Med. 2006 Feb;29(1):95-124. Epub 2006 Jan 11.

Jensen M, Patterson DR.

Department of Rehabilitation Medicine, University of Washington School of Medicine, Seattle, Washington, USA.

This article reviews controlled trials of hypnotic treatment for chronic pain in terms of: (1) analyses comparing the effects of hypnotic treatment to six types of control conditions; (2) component analyses; and (3) predictor analyses. The findings indicate that hypnotic analgesia produces significantly greater decreases in pain relative to no-treatment and to some non-hypnotic interventions such as medication management, physical therapy, and education/advice. However, the effects of self-hypnosis training on chronic pain tend to be similar, on average, to progressive muscle relaxation and autogenic training, both of which often include hypnotic-like suggestions. None of the published studies have compared hypnosis to an equally credible placebo or minimally effective pain treatment, therefore conclusions cannot yet be made about whether hypnotic analgesia treatment is specifically effective over and above its effects on patient expectancy. Component analyses indicate that labeling versus not labeling hypnosis treatment as hypnosis, or including versus not including hand-warming suggestions, have relatively little short-term impact on outcome, although the hypnosis label may have a long-term benefit. Predictor analyses suggest that global hypnotic responsivity and ability to experience vivid images are associated with treatment outcome in hypnosis, progressive relaxation, and autogenic training treatments. The paper concludes with a discussion of the implications of the findings for future hypnosis research and for the clinical applications of hypnotic analgesia.

- **Pain-related emotions modulate experimental pain perception and autonomic responses.**

Rainville P, Bao QV, Chretien P.

Pain. 2005 Dec 5;118(3):306-18. Epub 2005 Nov 14.

Departement de Stomatologie, Faculte de medecine dentaire, Universite de Montreal, CP. 6128, Succ. Centre-ville, Montreal, Que., Canada H3C 1J7.

The effect of emotions on pain perception is generally recognized but the underlying mechanisms remain unclear. Here, emotions related to pain were induced in healthy volunteers using hypnosis, during 1-min immersions of the hand in painfully hot water. In Experiment 1, hypnotic suggestions were designed to induce various positive or negative emotions. Compared to a control condition with hypnotic-relaxation, negative emotions produced robust increases in pain. In Experiment 2, induction of pain-related anger and sadness were found to increase pain. Pain increases were associated with increases in self-rated desire for relief and decreases in expectation of relief, and with increases in arousal, negative affective valence and decreases in perceived control. In Experiment 3, hypnotic suggestions specifically designed to increase and decrease the desire for relief produced increases and decreases in pain, respectively. In all three experiments, emotion-induced changes in pain were most consistently found on ratings of pain unpleasantness compared to pain intensity. Changes in pain-evoked cardiac responses (R-R interval decrease), measured in experiments 2 and 3, were consistent with changes in pain unpleasantness. Correlation and multiple regression analyses suggest that negative emotions and desire for relief influence primarily pain affect and that pain-evoked autonomic responses are strongly associated with pain affect. These results confirm the hypothesized influence of the desire for relief on pain perception, and particularly on pain affect, and support the functional relation between pain affect and autonomic nociceptive responses. This study provides further experimental confirmation that pain-related emotions influence pain perception and pain-related physiological responses.

- **Control conditions in hypnotic-analgesia clinical trials: challenges and recommendations.**

Jensen MP, Patterson DR.

Int J Clin Exp Hypn. 2005 Apr;53(2):170-97.

Department of Rehabilitation Medicine, Box 356490, University of Washington, Seattle, WA 98195-6490, USA.

Case studies and controlled clinical trials indicate that hypnotic analgesia can effectively reduce pain in patients with a number of different chronic pain conditions. However, because none of the studies published to date have included a credible control condition that adequately controls for expectancy effects, at this point we cannot conclude that hypnotic-analgesia treatment has a specific effect on chronic pain beyond that that might be produced by a credible placebo intervention. This paper (a) describes the types of control conditions that have been, or might be, used in clinical trials of hypnotic analgesia for chronic pain; (b) reviews their strengths and weaknesses; and (c) concludes with specific recommendations that investigators should consider when designing clinical trials of hypnotic analgesia.

- **The effects of hypnotic and nonhypnotic imaginative suggestion on pain.**  
Milling LS, Kirsch I, Allen GJ, Reutenauer EL.  
Ann Behav Med. 2005 Apr;29(2):116-27

University of Hartford, Department of Psychology, West Hartford, CT 06117, USA.

**BACKGROUND:** Few studies have compared placebo and suggested pain reduction. **PURPOSE:** Hypnotic and nonhypnotic imaginative analgesia suggestions were compared against a placebo in reducing experimental pain. The mediator role of response expectancies and the moderator role of hypnotic and nonhypnotic imaginative suggestibility were evaluated. **METHODS:** Sixty participants previously assessed for hypnotic and nonhypnotic imaginative suggestibility were assigned to one of two experimental conditions or a no-treatment control condition. In the "placebo first" condition, participants received placebo, followed by imaginative and then hypnotic analgesia suggestions. In the "placebo last" condition, participants received imaginative and then hypnotic suggestions, followed by placebo. **RESULTS:** Imaginative and hypnotic suggestions did not differ significantly and were more effective than no treatment in reducing pain. The placebo was no different from the analgesia suggestions and was more effective than no treatment, but only when administered after the suggestions. Pain reduction was mediated by expectancy but was not significantly related to suggestibility or hypnotizability, the latter operationalized as hypnotic suggestibility with imaginative suggestibility statistically controlled. **CONCLUSIONS:** In the general population, nonhypnotic imaginative suggestions may be as effective as hypnotic suggestions in reducing pain. Response expectancies would seem to be an important mechanism of placebo and suggested pain reduction.

- **Pain management in children: developmental considerations and mind-body therapies.**  
Gerik SM.  
South Med J. 2005 Mar;98(3):295-302

Pediatrics and Family Medicine, University of Texas Medical Branch, Galveston, TX 77555-0340, USA.

One of the most challenging roles of medical providers serving children is to appropriately assess and treat their pain. Pain is one of the most misunderstood, underdiagnosed, and undertreated/ untreated medical problems, particularly in children. New JCAHO regulations regard pain as "the fifth vital sign" and require caregivers to regularly assess and address pain. This review focuses on the clinical assessment of pain, based on a developmental model and addresses common beliefs and myths that affect the management of pain in children. We provide a review of the pain literature that focuses on the integration of mind-body therapies into the management of procedure-related pain, headache, and recurrent abdominal pain in children.

- **Salient findings: A potentially groundbreaking study on the neuroscience of hypnotizability, a critical review of hypnosis' efficacy, and the neurophysiology of conversion disorder.**

**Nash MR.**

Int J Clin Exp Hypn. 2005 Jan;53(1):87-93.

University of Tennessee, Knoxville, Tennessee 37996-0900, USA. mnash@utk.edu

Three papers of special interest to researchers and clinicians alike have recently appeared in the general scientific and medical literatures. Two of these papers are original research studies that employ brain-imaging technologies, one using Magnetic Resonance Imaging (MRI), the other positron emission tomography (PET). A third paper is a comprehensive review of the empirical findings on the clinical use of hypnosis in pediatric oncology. The research study using MRI technology is extraordinary, because it is the first to document differences in brain morphology between high hypnotizable and low hypnotizable individuals. Arguably, if its findings replicate, the study could be one of the most important developments in scientific hypnosis since the genesis of the Stanford scales 45 years ago. The PET study notes differences in brain activation during intentionally simulated and hypnotically experienced paralysis. The review article examines empirical work addressing the efficacy of hypnosis for procedural pain in pediatric oncology.

- **Integrative oncology: complementary therapies for pain, anxiety, and mood disturbance.**

**Deng G, Cassileth BR.**

CA Cancer J Clin. 2005 Mar-Apr;55(2):109-16.

Assistant Member, Integrative Medicine Service, Memorial Sloan-Kettering Cancer Center, New York, NY, USA.

Many people with cancer experience pain, anxiety, and mood disturbance. Conventional treatments do not always satisfactorily relieve these symptoms, and some patients may not be able to tolerate their side effects. Complementary therapies such as acupuncture, mind-body techniques, massage, and other methods can help relieve symptoms and improve physical and mental well-being. Self-hypnosis and relaxation techniques help reduce procedural pain. Acupuncture is well documented to relieve chronic cancer pain. Massage and meditation improve anxiety and other symptoms of distress. Many dietary supplements contain biologically active constituents with effects on mood. However, not all complementary therapies are appropriate or useful, and even helpful complementary modalities may not be optimal under some circumstances. Situations when precaution is indicated include acute onset of symptoms and severe symptoms, which require immediate mainstream intervention. Dietary supplements are associated with serious negative consequences under some circumstances. The authors summarize the research on these modalities and discuss the rationale, expectation, and necessary precautions involved with combining complementary therapies and mainstream care. Practical clinical issues are addressed.

**- Can words hurt? Patient-provider interactions during invasive procedures.  
Lang EV, Hasiopoulou O, Koch T, Berbaum K, Lutgendorf S, Kettenmann E, Logan H, Kaptchuk TJ.**

Pain. 2005 Mar;114(1-2):303-9. Epub 2005 Jan 26.

Department of Radiology, Beth Israel Deaconess Medical Center, 02215 Boston, MA, USA.

Patients are often prepared for procedural discomforts with descriptions of pain or undesirable experiences. This practice is thought to be compassionate and helpful, but there is little data on the effect of such communicative behavior. This study assesses how such descriptions affect patients' pain and anxiety during medical procedures. The interactions of patients with their healthcare providers during interventional radiological procedures were videotaped during a previously reported 3-arm prospective randomized trial assessing the efficacy of self-hypnotic relaxation. One hundred and fifty-nine videos of the standard care and attention control arms were reviewed. All statements that described painful or undesirable experiences as warning before potentially noxious stimuli or as expression of sympathy afterwards were recorded. Patients' ratings of pain and anxiety on 0-10 numerical scales (0=No Pain, No Anxiety at All and 10=Worst Pain Possible, Terrified) after the painful event and/or sympathizing statement were the basis for this study. Warning the patient in terms of pain or undesirable experiences resulted in greater pain ( $P<0.05$ ) and greater anxiety ( $P<0.001$ ) than not doing so. Sympathizing with the patient in such terms after a painful event did not increase reported pain, but resulted in greater anxiety ( $P<0.05$ ). Contrary to common belief, warning or sympathizing using language that refers to negative experiences may not make patients feel better. This conclusion has implications for the training in medical communication skills and suggests the need for randomized trials testing different patient-practitioner interactions.

**- Suggestion, hypnosis and hypnotherapy: a survey of use, knowledge and attitudes of anaesthetists.**

**Coldrey JC, Cyna AM.**

Anaesth Intensive Care. 2004 Oct;32(5):676-80.

Department of Anaesthesia, Women's and Children's Hospital, Adelaide, South Australia.

Clinical hypnosis is a skill of using words and gestures (frequently called suggestions) in particular ways to achieve specific outcomes. It is being increasingly recognised as a useful intervention for managing a range of symptoms, especially pain and anxiety. We surveyed all 317 South Australian Fellows and trainees registered with ANZCA to determine their use, knowledge of, and attitudes towards positive suggestion, hypnosis and hypnotherapy in their anaesthesia practice. The response rate was 218 anaesthetists (69%). The majority of respondents (63%) rated their level of knowledge on this topic as below average. Forty-eight per cent of respondents indicated that there was a role for hypnotherapy in clinical anaesthesia, particularly in areas seen as traditional targets for the modality, i.e. pain and anxiety states. Nearly half of the anaesthetists supported the use of hypnotherapy and positive suggestions within clinical anaesthesia. Those respondents who had experience of clinical hypnotherapy were more likely to support hypnosis teaching at undergraduate or postgraduate level when compared with those with no experience.

## **- Mind-body therapies for the management of pain.**

**Astin JA.**

Clin J Pain. 2004 Jan-Feb;20(1):27-32.

California Pacific Medical Center Research Institute, San Francisco, CA, USA.

This paper reviews the evidence for mind-body therapies (eg, relaxation, meditation, imagery, cognitive-behavioral therapy) in the treatment of pain-related medical conditions and suggests directions for future research in these areas. Based on evidence from randomized controlled trials and in many cases, systematic reviews of the literature, the following recommendations can be made: 1) multi-component mind-body approaches that include some combination of stress management, coping skills training, cognitive restructuring and relaxation therapy may be an appropriate adjunctive treatment for chronic low back pain; 2) multimodal mind-body approaches such as cognitive-behavioral therapy, particularly when combined with an educational/informational component, can be an effective adjunct in the management of rheumatoid and osteoarthritis; 3) relaxation and thermal biofeedback may be considered as a treatment for recurrent migraine while relaxation and muscle biofeedback can be an effective adjunct or stand alone therapy for recurrent tension headache; 4) an array of mind-body therapies (eg, imagery, hypnosis, relaxation) when employed pre-surgically, can improve recovery time and reduce pain following surgical procedures; 5) mind-body approaches may be considered as adjunctive therapies to help ameliorate pain during invasive medical procedures.

## **- Haiku: Language, Communication, and Hypnosis**

Thomas B. Roberts Onalaska, WI

American Journal of Clinical Hypnosis. 47:3. January, 2005

This article will illustrate how effective hypnotic communication closely resembles the Haiku form. Working with the Haiku form is an effective and dynamic approach that encourages the therapists to keep their awareness sharpened and observation astute. Haiku is not just a type of poetry; it is a way of looking at the world with a heightened level of attentiveness. Crafting effective and evocative hypnotic suggestions requires that the therapist become immersed in the world of passion, images, sounds, sights, opposites, humor, creativity, and perceptive consciousness. Enhancing our skills of observation is an important aspect of the *continuing* experience of the hypnotherapist. The Haiku method can help us enhance our observation and utilize what we observe in developing evocative hypnotic suggestions that help the client access their internal representational systems to stimulate their healing response. A systematized method for learning to write Haiku is presented.

Hypnosis relies on both the power of observation and the effective use of words to evoke healing responses. Often, when approaching the learning of hypnosis, people feel intimidated by the complexity and sophistication involved. In order to establish a foundation of skill and confidence, therapists needs to first come to trust their own observation skills and their intuition regarding their response to what they observe in the therapeutic process. When examining what means can be used as a model and a discipline to help sharpen skills of observation, develop and deepen intuition, and hone skillful word usage, I choose to use the Haiku form.

This article will illustrate how effective hypnotic language closely resembles the Haiku form, and by learning to utilize this form, hypnotherapists will sharpen their skills of observation and the use of image-evoking words to express that observation.

**-Brugnoli Angelico. Ipnosi e dolore. ( Hypnosis and Pain) Acta Hypnologica, anno 6 N°2-3, mag-sett, 2002, Italian.**

The Author explains the various possibility applications of hypnosis in chronic pain, underlining how psychological and relational components are prevalent in it and proposing like “new way” the thecnique of progressive diminution of the cerebral map reading.

**- Brugnoli Angelico. Stati di Coscienza Modificati Neurofisiologici. (States of consciousness neurophysiological and modified). La Grafica Editrice, 2005, Italian.**

The Author presents a survey of the greatest discoveries of neurosciences: DNA, brain plasticity and the importance of human relationship.

He gives a definition of “coscience” from the point of view of neurosciences.

Then he passes to hypnosis, which he considers a state of conscience employed as a medium in the therapeutic relationship.

The Author explains and make a classification of many states of consciousness neurophysiological and modified: from simply relaxment to the illuminated state of consciousness through a way philosophical, psychological and neuroscientific.

**- Brugnoli Maria Paola. Tecniche di rilassamento e ipnosi nel controllo della sofferenza del paziente terminale. (Techniques of relaxment and hypnosys in the dying patient). Acta Hypnologica, anno VIII, N°1-2,p.3-14, 2004. Italian.**

In the treatment of the dying patient the physicianis asked not only for experience, skill and wisdom, but for a remarkable amount of humanity as well.

He has to carry out every therapeutic measure, pharmacological and not, in order to limit the patient's physical and psychological pain in a short time and, by means of an interpersonal relationship, based on humility and empathy, to reassure him.

Then the therapeutic outcome won't bring but well-being, serenity and peace of mind to both of them.

**- Brugnoli Maria Paola. Rilassamento ed Ipnosi in età evolutiva. (Relaxation Techniques and Hypnosis in evolutive age). Acta Hypnologica, anno VI, N°1, p. 8-14, 2003.**

The Author, through the study of psychomotor neurophysiology in evolutive age and relations between perception, emotion and mind, explains the characteristics which make peculiar relaxation and and hypnotic thecnics in interpersonal relation, referring symbolic experiences of M. Erickson and W. ferlioli, and underlining the good action on child, as psychomotor game, or neuromuscular relaxation or guide and reassurance therapy or behaviour pathologies modifications.

**- Alessandro Norsa, F. Bilone, C.A. Robotti. Ipnosi e cancro: una ricerca condotta presso l'Ospedale Civile Maggiore di Verona. (Hypnosis and cancer: a study executed at Hospital C.M. of Verona). Acta Hypnologica, anno V, N°3, p.2-8, 2001.**

For this research 21 patient had been valued and attented by psychological sittings.

The goal was to test the anxiety and depression index in patients affected by neoplasia.

For the clinical evaluation had been utilized tests to get informations about medical and psychological conditions. About the psychological caring had been utilized hypnotic techniques to bear anxiety, depression and pain.

## TEACHING HYPNOSIS

The Association organizes seminars for palliative medicine.

AIST has given particular attention to the teaching of hypnosis. The problem here was not merely one of how to organize the teaching from a technical point of view, but of how to bring it into line with the AIST's particular principles and the concept of hypnosis it was in the process of developing. A vision that presented hypnosis not simply as a «state», but also as a relationship between hypnotist and subject, could not simply offer a collection of techniques to be mechanically learnt and applied. Instead AIST aimed to teach a constant dialectic between techniques on the one hand and the complexity of the interpersonal relationship on the other, the philosophy being that the efficient and correct application of hypnosis depends precisely on the hypnotist's comprehension and control of this second aspect. Teaching could not, that is, avoid focusing on aspects and characteristics of the hypnotic relationship, a relationship which is strictly related to the pre and post hypnotic relationship and which can only be brought out and consolidated through a training process which concentrates on the individual and relational dynamics of the trainees. Only through building up and elaborating one's own experience both as hypnotist and subject in sessions where the induction is of such a kind as to keep constantly to the fore the need for real formative growth, can one develop the perception and comprehension necessary for the correct therapeutic use of hypnosis.

## **8. Biometeorology, Hydrothermal therapy and pain**

(Angelico Brugnoli)

### **Hydrothermal therapy**

Hydrotherapy is the use of water in the treatment of disease. Hydrothermal therapy additionally uses its temperature effects, as in hot baths, saunas, wraps, etc.

#### **Historical Perspective**

Hydro- and hydrothermal therapy are traditional methods of treatment that have been used for the treatment of disease and injury by many cultures, including those of ancient Rome, China, and Japan. Water therapy has been around for centuries. The ancient Greeks took therapeutic baths. Water is an important ingredient in the traditional Chinese and Native American healing systems.

A Bavarian monk, Father Sebastian Kneipp helped re-popularize the therapeutic use of water in the 19th century. There are now many dozens of methods of applying hydrotherapy, including baths, saunas, douches, wraps, and packs.

#### **How it works**

The recuperative and healing properties of hydrotherapy are based on its mechanical and/or thermal effects. It exploits the body's reaction to hot and cold stimuli, to the protracted application of heat, to pressure exerted by the water and to the sensation it gives. The nerves carry impulses felt at the skin deeper into the body, where they are instrumental in stimulating the immune system, influencing the production of stress hormones, invigorating the circulation and digestion, encouraging blood flow, and lessening pain sensitivity.

Generally, heat quiets and soothes the body, slowing down the activity of internal organs. Cold, in contrast, stimulates and invigorates, increasing internal activity. If you are experiencing tense muscles and anxiety from your stress, a hot shower or bath is in order. If you are feeling tired and stressed out, you might want to try taking a warm shower or bath followed by a short, invigorating cold shower to help stimulate your body and mind. When you submerge yourself in a bath, a pool, or a whirlpool, you experience a kind of weightlessness. Your body is relieved from the constant pull of gravity. Water also has a hydrostatic effect. It has a massage-like feeling as the water gently kneads your body. Water, in motion, stimulates touch receptors on the skin, boosting blood circulation and releasing tight muscles.

#### **Indications**

Hydrotherapy and hydrothermal therapy are chiefly used to tone up the body, to stimulate digestion, the circulation, and the immune system, and to bring relief from pain.

Description of indications are given under individual method used.

Water seems to have special powers in getting rid of stress and rejuvenating our body. It affects the skin and muscles. It calms the lungs, heart, stomach, and endocrine system by stimulating nerve reflexes on the spinal cord.

### **Proof it works**

Various case reports, observational studies, and a number of controlled studies provide some evidence of success in the use of hydrotherapy.

In a study of 40 persons at University of Minnesota, 85% of the participants preferred a whirlpool bath to a still bath. Only whirlpool was effective in reducing the participants' reactivity to stress although both still and whirlpool baths were effective in reducing anxiety.

### **Risks, Cautions, and Contraindications**

Please see under individual techniques for warnings and caution for the use and follow them.

Persons with impaired temperature sensation run the risk of scalding or frostbite at temperature extremes.

When a condition is recurrent or persistent, please consult your physician to determine whether a physical therapy of this type is suitable in your case.

- If you have diabetes, avoid hot application to the feet or legs. Also avoid full body heating treatments, such as body wraps.
- Avoid cold application if you are diagnosed with Raynaud's disease.
- Hot immersion baths and long, hot saunas are not recommended for those with diabetes or multiple sclerosis, women who are pregnant or anyone with abnormally high or low blood pressure.
- Don't take cold foot baths if you are prone to bladder or rectal irritation. People suffering from sciatica, pelvic inflammation or rheumatism in the toes or ankles should avoid cold foot baths.
- Elderly people and young children may be exhausted by too much heat and should avoid long full-body hot treatments such as immersion baths and saunas.
- If you are pregnant or have heart disease, consult a doctor before taking a sauna.

### **Common techniques**

A number of techniques are available under the general heading of hydrotherapy. These include: baths and showers, neutral baths, foot baths, cold mitten friction rub, steam inhalation, hot compresses, cold compresses, alternating hot and cold compresses, heating compresses, body wrap, wet sheet pack, and salt glow.

### **Cold rubbings**

Soak a linen cloth in cold water, wring out and briskly rub the upper and lower trunk, or the entire body. Go to bed until warm and dry. *Indications:* For invigoration, to tone up the body, to promote blood flow, for use in problems of circulation, or infections of the respiratory system.

### **Douches**

Gentle douches can be carried out with a watering can or hose. The water should not splash, but gently envelop the skin. The water stream should always be directed from the periphery toward the heart. After douching, stroke off excess water, dress, and exercise. There are various types of douche:

- **Knee douche.** The water stream is directed from the right small toe, along the outside of the lower leg to the hollow of the knee, then back along the inside and over the sole of the foot. The process is then repeated for the left leg. Useful for headaches and migraines, low blood pressure, sleeplessness, contusions, and varicose veins. This treatment influences the digestive and reproductive organs and can help ward off vascular damage. Do not use for urinary tract infections, irritable bladder, sciatica, or during menstruation.
- **Thigh douche.** The procedure is as for a knee douche, but includes the upper thigh. It can stimulate blood flow and help improve poor circulation. Useful for the

treatment of varicose veins, muscular rheumatism, crural paralysis, coxarthrosis. Do not use for urinary tract infection, irritable bladder, sciatica, or during menstruation.

- **Lower trunk douche.** The procedure is as for the thigh douche, but including the lower trunk. Useful for diabetes mellitus, meteorism, enlargement of the liver, enlargement of the gallbladder, stone formation. Do not use for urinary tract infections, irritable bladder, sciatica, or during menstruation.
- **Arm douche.** Direct the water stream from the outside of the right hand to the shoulder, then back on the inside of the arm. Repeat the process for the left arm. Useful for cold hands, nervous disorders, neuralgia and paralysis, rheumatism of the arms, heart problems, vertigo, headaches, catarrh in the nose and throat.
- **Chest douche.** Douche the arms first. Useful for chronic bronchitis and bronchial asthma, angina pectoris. Caution: Moderate the temperature if there is risk of angiospasm.
- **Upper trunk douche.** This involves the upper torso and arms. It can be used to improve blood flow to the lungs, heart, and pleura. Useful for the treatment of bronchitis, bronchial asthma, disease of the larynx and vocal cords, headaches, nervous excitability, varicose veins of the legs, for toning-up, and for stimulating cardiac and respiratory activity. *Caution:* Do not use if there is blood stasis in the pulmonary circulation.
- **Back douche.** Useful for the treatment of weakened back muscles, back pain, spinal disease, multiple sclerosis, bronchial asthma, nearly all diseases of the lung. *Warning:* Do not use in debilitated patients or those with neurasthenia.
- **Neck douche.** Useful for headaches, migraines, tenseness in the shoulder and neck, hypersensitivity to changes in the weather, mild depression, tinnitus, vertigo, arthrosis of the hand and finger joints. *Warning:* Not to be used in persons with high blood pressure, enlargement of the thyroid, or raised intraocular pressure.
- **Face douche.** Proceed from the right temple downward to the chin, upward to the left temple, from right to left over the forehead, and repeatedly from the forehead to the chin, then in circles over the face. This is useful for relieving headaches and migraines, trigeminal neuralgia, toothaches, for relaxing tired eyes. *Caution:* Keep the eyes closed.

### Sauna and Steam Baths

Saunas and steam baths are similar in effect; the decision to take one rather than the other will be guided by personal preference. In a sauna the heat acts more quickly to eliminate toxins through the skin, though some consider the moist air of a steam bath to have a more satisfying effect on the respiratory system. Saunas are deeply relaxing and are a great way to melt away stress.

A sauna is an eliminative procedure; it stimulates blood flow, increases the heart rate, has an immune-modulating effect, promotes hormone production, encourages mucosal secretions in the respiratory system, opens the airways, reduces resistance to respiration, regulates the vegetative system, relaxes, and can improve mental outlook. Children can start to take saunas at two or three years of age.

*Indications:* For "toning-up," for health promotion, as a way of treating pain caused by pulled back muscles, chronic rheumatoid arthritis, bronchial asthma, unstable hypertension (stages I and II), severely disturbed peripheral blood circulation.

*Warnings:* Saunas should not be taken by persons with acute rheumatoid arthritis, acute infection, active tuberculosis, sexually transmitted diseases, acute mental disorder, inflammation of an inner organ or blood vessels, significant vascular changes in the brain or heart, circulatory problems or acute cancer.

Do not spend more than 15 to 20 minutes at a time in a sauna. Wipe your face frequently with a cold cloth to avoid overheating.

### **Full and partial immersion baths**

Various substances can be added to warm and rising temperature baths. See herbal baths below. The following are the different kinds of bath used:

**Rising temperature hip bath.** This is taken in a tub filled with a hand's breadth of tepid water. Hot water is then gradually added until the level reaches the navel. The final temperature should be 103-104°F. Following this procedure, the patient is wrapped warm and proceeds to bed. It should last 15-30 minutes, not more than three times per week.

*Indications:* incipient and abating common colds, back pain (sciatica).

*Warning:* to be used with caution by persons with heart or circulation problems, hemorrhoids, or varicose veins.

**Cold foot bath.** The feet are placed into a foot bath filled to calf depth with cold water. Stop when a cold stimulus is felt or when the water is no longer perceived as being particularly cold. Stroke off excess water, dress, and walk or run until dry. A special form of this treatment is "walking in water," which involves walking stork-like on a non-slip mat placed under the water.

*Indications:* Varicose veins, susceptibility to edemas, headaches, low blood pressure, circulatory problems, sleeplessness, proneness to the common cold, sweaty feet, or a contused ankle.

*Warning:* This type of treatment is best avoided by people who suffer from cold feet, very high blood pressure, an irritable bladder, urinary tract infection, diabetes, or vascular occlusion.

**Rising temperature foot bath, warm foot bath.** The feet are immersed in a foot bath filled with water at body temperature. Hot water is gradually added to give a final temperature of 103-104°F. In warm foot baths water of this temperature is added straight away. Keep warm afterwards. The procedure should last 10-15 minutes and can be done daily.

*Indications:* Cold feet, start of a common cold, for relaxation.

*Warning:* Best avoided by people with varicose veins, lymphostasis, or edema.

**Cold arm bath.** A basin is filled with cold water until it reaches a depth several inches above the immersed elbow. If the treatment becomes intolerable, stop and repeat as desired.

*Indications:* Headaches, sleeplessness.

*Warning:* Best avoided by people with heart or circulatory problems.

**Rising temperature arm bath.** In principle, this is the same as the rising temperature foot bath. It should be followed by a cold arm douche, then by half an hour's rest.

*Indications:* Bronchitis, asthma, incipient respiratory infection, circulatory problems, angina pectoris.

**Sitz bath.** This is generally taken in a hip bath as a cold, rising temperature, or warm sitz bath. Prior to a sitz bath, warm the feet, e.g. through a warm foot bath. Parts of the body not immersed in water should be covered.

*Indications:* Cold sitz bath for hemorrhoids or inflammation of the anus; warm or rising temperature sitz bath for difficulty in voiding the bladder, an irritable bladder, inflammation or infection of the prostate, preparation for pregnancy.

*Warning:* Do not use warm or rising temperature sitz baths for hemorrhoids.

### **Wraps**

A wrap is primarily used as a supportive measure for treating fever and local inflammation. The person receiving treatment should first adopt a relaxed position. Then a linen cloth is moistened with cold water (warm water for respiratory diseases), well wrung out, and then wrapped tightly around the appropriate part of the body, but not so tightly as to cause

constriction. The moist linen cloth is in turn wrapped with a dry cotton or linen cloth. The patient is then usually wrapped in a blanket or another cloth, and should rest for 45-60 minutes or, if the intention is to induce sweating, for up to three hours.

If the wrap is not felt to be warm after a quarter of an hour, heat should be applied in the form of a hot water bottle or by giving warm tea. The wrap should be removed immediately if the person complains of feeling unwell.

Indications:

- Neck wrap: sore throat
- Chest wrap: bronchitis, lung disease, neuralgia
- Body wrap (between costal arch and pubic bone): inflammatory disease of the upper abdomen, gastric and duodenal ulcers, cramps, sleeplessness, fever
- Trunk wrap (between pubic bone and armpits): high fever
- Hip wrap (with gap between the legs): prostatitis, vaginitis, hemorrhoids, anal eczema, inflammation in the pelvic cavity
- Calf wrap (between foot and knee): lymphostasis, edema, for withdrawing heat in fever and phlebitis; in varicose veins the effect can sometimes be amplified through the use of healing earth or loam poultices
- Joint wraps: rheumatoid arthritis, arthrosis

Packs

**Warm packs.** A wrapping cloth is soaked in a hot infusion or decoction of herbs, then wrung out and applied to the patient's body. Alternatively, the wrap may receive a coating of hot mud mustard flour, or fango. As a further alternative, hayseed may be placed in a sack and steamed.

*Indications:* Painful chronic diseases such as arthrosis, renal disease, or cystitis, and for stimulating blood flow.

*Warning:* Always check that the temperature is tolerable before applying a wrap.

**Cold packs.** Cooled cataplasm is spread onto the wrapping cloth and placed on the part of the body. Crushed ice in a plastic bag may also be repeatedly applied for one minute, then removed for four.

*Indications:* Various inflammatory arthropathies, sprains and strains, pleurisy. Ice packs can also be used for headaches.

*Warning:* When using ice packs, place a thin cloth between the pack and the skin to prevent frostbite.

**Herbal baths** can be particularly soothing when you are experiencing a period of stress. There are several ways to prepare an herbal bath:

1. Simmer 1/2 cup of herbs in 1 quart of water in a covered pot for fifteen minutes. While the herbs are simmering, take a short shower to cleanse your body, then fill the tub with hot or warm water. Strain the liquid from the decoction into the bath water, and wrap the herbs in a washcloth. Soak in the tub for at least twenty minutes, using the "herbal washcloth" to rub over your body. -
2. Add 1/2 cup of herbs to running bath water, preferably hot. You might want to cover the drain with a thin mesh screen to prevent the herbs from clogging the pipes. Soak in the tub for twenty to thirty minutes.
3. Fill a thin cloth bag with 1/2 cup of herbs, either placing it in the bath water or tying it to the spigot so that the hot water runs through it as it fills the tub. Again, soak for twenty to thirty minutes.

Certain herbs are quite effective for creating soothing baths. Combine a handful each of valerian, lavender, linden, chamomile, hops, and burdock root, and add it to your bath according to one of the preceding methods. Soak for thirty minutes in the tub. Another soothing herbal bath calls for a handful each of hops, linden, valerian, chamomile, yarrow,

and passionflower. Prepare this bath according to one of the preceding methods, or simmer the herbs in a quart of water, then drink 1/2cup of the liquid (with lemon and honey added, if you wish) and pour the rest in the tub. While soaking in an herbal bath, you can read, meditate, listen to peaceful music, or just sit quietly, concentrating on relaxing yourself.

### **Importance of Drinking Sufficient Water**

It is very important that we drink sufficient amount of water in a day to make up for the water lost. The benefits of drinking water is widely recognized. Drinking pure, fresh water is essential to our health and well-being.

Our need for water increases as we grow older. As we age, our skin and mucus membranes become thinner and lose more water, and our kidneys function less efficiently. So our need for water increases. You may not feel thirsty. But you should get into the habit of drinking water, nevertheless.

### **Follow these steps for an Effective Hydrotherapy:**

- For overall tension reduction, use a neutral bath (temperature between 92 to 94 degree F) that is close to the skin temperature.
- Use water temperature between 102 to 106 degree F for loosening tight, tense muscles and reducing the pain of stress-related conditions such as backache. (Using temperatures higher than 106 degrees is not recommended as it can raise your body temperature very fast, inducing an artificial fever.)
- Take a cold shower after you step out of the bath. This brings and immediate rush of blood through your system, as well as a rush of energy. (Try alternating cold and hot shower to get a similar effect. 3 minutes of hot water followed by 30 seconds of cold water and the 3 minutes of hot water, etc.)
- Stay in the bath no more than 15 to 20 minutes. If you have high blood pressure or cardiovascular problems, don't stay long enough to raise your body temperature.
- Evening is the best time to soak in water. A study conducted in England found that people who took a soaking bath before going to bed slept more readily and deeply

## **Biometeoclimatology**

**Biometeoclimatology** is the branch of meteoclimatology that deals with the relations between weather, climate and life, especially the effects of climate changes and extreme events on the health and activity of human beings (human biometeoclimatology) and on animals and plants.

Medical meteoclimatology studies the meteorological mediators responsible for clinical events, such as the appearance of primary and secondary meteor pathologies and the effects of climatotherapy.

AIST studies primary and secondary meteor pathologies and the effects of climatotherapy in the different human pathologies and in pain therapy.

The biomedical researches in Medical Bioclimathology allow to check the close relations between the meteorological changes and the different human pathologies. Furthermore we refer to those fields like neuropsychosimmunoendocrinology, the arthrorheumatic diseases, cardiovascular and respiratory diseases. A lack in the capacity of fitting by the organism, due to different external causes coming from the surrounding, can bring to real meteopathological syndromes, and in chronic pain syndromes.

Climate change is the biggest challenge that we face in the world today. Extreme weather events are becoming more and more common. Glaciers are melting. Sea ice and snow cover are declining. Animals and plants are responding to an earlier spring.

Regional observation report an increase in magnitude and frequency of extreme events. Extremes will be more frequent and more severe in all over the world, especially in tropical and subtropical climate.

In biometeoclimatology it is very important to study:

- Projects
- Case
- Tools
- Thematic Papers

Communication & Information Packages with several types of dialogues:

national dialogues

basin dialogues

regional dialogues

From Report IPCC, 2001. “**Climate change & water resources**”.

Climate change :

1) intensification of the global hydrological cycle

2) major impacts on regional water resources

3) Effects: Changes in the total amount, frequency and intensity of precipitation directly affect the magnitude and timing of runoff and the intensity of floods and droughts; however, at present, specific regional effects are uncertain...

Water resources.

“The impacts of climate change depend on the baseline condition of the water supply system and the ability of water resource managers to respond not only to climate change but also to population growth and changes in demands, technology, and economic, social and legislative conditions. In wealthier countries improved water management may protect water users from climate change at minimal cost; in many countries, however, there could be substantial economic, social and environmental costs....

...most of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations.”

The potential health effects of climate change are serious and demand more attention, because Increased levels of heat, extreme weather events, vector-borne and water-borne diseases, air pollution, and compromised water supplies affect all peoples of the World.

In particular the poor, elderly, young, and anyone whose immune system doesn't work well will be the hardest hit.

Also the people affected by chronic pain will increase, especially the ones living in subtropical and tropical climate.

Many of the effects of climate change will be compounded by other environmental stresses such as pollution, increasing population, overharvesting of natural resources, and habitat loss. Thus, improving environmental practices such as decreasing discharges of pollutants into the soil, air, and water may help lessen the harmful effects of climate change on fragile ecosystems.

Continued research is needed to better understand the relationships among climate change, the health of ecosystems, and the health of the people.

**AIST in particular studies the relationship between biomedical biometeoclimatology and chronic pain in man.**

**Links:**

**BIOMETEOLAB**

**Intergovernmental Panel on Climate Change (IPCC)**

**[www.naturmed.unimi.it/meteolab.html](http://www.naturmed.unimi.it/meteolab.html)**

**[www.naturmed.unimi.it](http://www.naturmed.unimi.it)**

**[www.talasso.unimi.it](http://www.talasso.unimi.it)**

## **9. Peer Support Groups**

Programs of self-help and mutual support of patients with cancer have been available since the 1940s, when the American Cancer Society (ACS) established visitor programs to offer practical help for patients at home (Mastrovito, Moynihan, and Parsonnet, 1989). Some, such as the National Coalition for Cancer Survivorship and many of their local chapters, enroll survivors of any type of cancer and their relatives.

Others target specific cancers; these include the International Association of Laryngectomees, the United Ostomy Association, and the ACS's Reach to Recovery program for breast surgery patients. Many of the peer support groups work closely with health care teams who refer patients to them.

The experience and empathy of people who have experienced a disease can provide credible support to others with the same disease or problem and can help new patients learn to cope more effectively (Mantell, Alexander, and Kleiman, 1976). Support networks can also help patients to maintain social identity and provide emotional support, material aid, and access to information ( Walker, MacBride, and Vachon, 1977). Because of the benefits provided by these groups, clinicians should know which are active in their area and provide this information to patients who wish to join them.

## **10. Pastoral and Spiritual Counseling**

Having cancer and chronic pain frequently raises issues of spirituality for patients and their families, both of whom may be helped by pastoral counseling. The experience of pain can often lead patients to fear abandonment and to question meaning and the possibility of hope. Many religions address these concerns and offer an important dimension in a multidisciplinary approach to pain management. Thus:

### **a. Spiritual approach in many religions**

### **b. Meditation and Meditative States**

In pastoral and Spiritual Counseling:

- Ecumenical pastoral care should be made available.
- Pastoral care members should participate in health care team meetings that discuss the needs and treatment of patients.
- Pastoral care members should develop information about community
- Resources that provide spiritual care and support

## **a. Spiritual approach in many religions:**

### **THE PAIN AND THE DEATH: THE ANTROPOLOGICAL AND RELIGIOUSE POINT OF VIEW**

(Alessandro Norsa)

In this article we propose various ways of readings the theme of the death and of the pain. The culture of the western society in whom we are inserted hard makes the problems of pain and of death intelligible. The progress is glad of a ascend such on the humanity to attribute the fantastic possibility of the omnipotence. The achieved results are baffling, as much than one is not surprised any more than what which one is skilled, if ever one is astonished of what one is not yet able. The incapacity to bear the pain and the death is connected with the difficulty to gather the sense. However the possibility of recovering the meaning is offered to us by a side from the religion, from the other from psychology, then by the faith or by the comprehension. To this purpose, we will afterwards face the pain and death vision in the perspective of some of the religions and cultures more well-known and at last, according to one of the possible psychological explanations.

THE PAIN AND THE CATHOLIC CHRISTIAN PERSPECTIVE: pain is essential to the nature of the man and the transcendent is a supplementing part of his. Through it the man comes "destined" to exceed him itself and that is called in a mysterious way. To understand the "reason because" of the pain to modify is necessary the glance to the revelation of the divine love what finds his demonstration in the Jesus Christ cross. The victory on the sin and the death, taken back by Christ with his cross and resurrection, it does not abolish the time pains of the human life, nor it frees the whole historical dimension of the existence from the pain, however on all this dimension and on every pain it throws a new light, which is the light of the salvation.

THE HEBREW PERSPECTIVE: the pain and the evil have the purpose to give the man the sense of its limitations. The Hebrew, in front of the evil, recognizes the god power and accepts him; in him also the dread to be put in front of this test and not be able to exceed it coexists; in this conception the prayer is a tool to invoke god and be able to free him from the pain. He will be able to a full solution to reach through three passages: the conscience exam, to recognize its faults and try a reapproach in the relationship with god. Take consciousness of its limits and be subjected to the god will, keeping on of believing, pray and thank for the tests to which he submits him.

THE MUSLIM PERSPECTIVE: Muslim believes that all that that succeeds to him, is in the health condition that of disease, makes part of the destiny, than, in the Islam, is the essential pillar of the faith. The Muslim is always happy of all that that happens and not protest against it, aware that only God grants the health and thinks that is the man who provokes the disease. This can happen in three ways: not curing just the body; diminishing the faith and, therefore, undergoing themselves to the risk of a psychosomatic lack of balance, that it renders more vulnerable body to the diseases; creating an unequilibrium harmful to the health.

BUDDHIST PERSPECTIVE: For the buddhism, there is not dichotomy between body and mind; they always come considered like one you inseparable. Therefore, also in the disease, the aspects more merely physicists have a psychical implication. The two levels are interlaced, conditioning themselves. The search of the happiness and the elimination of

the suffering are the scope of the man. The suffering and the disease must be accepted for what they are, that is an aspect just of the human existence, from which cannot be escaped.

### **THE DEATH AND THE PRACTICAL RITUALS POST- MORTEM:**

THE CATHOLIC CHRISTIAN PERSPECTIVE: in this optical, the death of the man is physical and represent the possibility to operate in "its time", "its salvation". In the Bible she is written that the spirit through the dead returns to God (Qo 12, 7) and the body to the earth.

THE JEWISH PERSPECTIVE: the topic of the death is faced from the jewish from two angles-shot. From a part one acknowledges that the death are the natural conclusion of every vital process; from the other there is who supports that the dead women are one risen of consequent punishment to one guilt. The rituals of the interment have an anthropological and normative value.

THE MUSLIM PERSPECTIVE: the attitude in which the religious one it places of forehead the death is rational: "We are of God and to Him we will return". It's the conclusion of the earthly life, the Muslim knows that he begins the true life, for which has prepared itself observing the principles of its religion.

THE HINDUIST PERSPECTIVE: the death is tightened relation with the doctrine of the reincarnation. The conclusion of the vital activities represents the death of the body, the abandonment of the empty one, that is of a container of organs very far away from the perfection. The Hinduism thinks that the experience of the death is in truth a passage to an other shape of existence. The person is thought immortal, since every died she prepares for the income in an other shape of life, not always with human appearance, but with appearances that can also be mineral, vegetables or animals.

THE BUDDHIST PERSPECTIVE: Dying, the man, aware of the immortality of the Karma (the complex of the actions completed in the screw previous) comes invited to prepare itself for the death in order to favour a good rebirth and to allow who will follow of being able to rebirth in good conditions.

ANIMIST PERSPECTIVE OF THE AFRICAN ETHNIA ASHANTI: for the ashanti the death is the logical consequence of the existence; the spirit after to have left the body of the defunct one it enters to make part of the way of the ancestors, a world lacking in suffering and hunger, that they are living terrain conditions. This can happen if the life has been lead in worthy way, otherwise the spirit is not admitted and is forced to be reincarnated in order to lead one honoured life.

THE PSYCHOLOGICAL DIMENSION THE SUFFERING: one of the possible means that can assume the suffering can be offered from the psychosomatic perspective, that considers it like a symptom, marks it like an alarm of something in the existence of the individual that is not covering the corrected way. it's task for the person to listen to it, to interpret it and to make about it a resource and a possibility for being able to re-enter in the correct trajectory.

THE DEATH: can be read like a synonym of a process of growth that coincides with the destiny, from which one does not attend more than how much it is possible in a precariousness time.

## **FUNDAMENTALS OF TIBETAN MEDICINE** **ACCORDING TO THE RGYUD-BZHI**

*Translator & Editor* T.J. Tsarong *Associate Editors* J. G. Drakton L. Chomphel (1982)  
**TIBETAN MEDICAL CENTRE DHARAMSALA, LADAKH, TIBET**

(Maria Paola Brugnoli)

From time immemorial, disease has always been part and parcel of life and men have devised not only theories to explain its etiology, but have also developed various techniques in order to bring about its prevention, alleviation, and cure. Each society, in accordance with its particular cultural milieu, devised specific interpretations of disease and health. The primitive man ascribed disease to the evil influences of malignant souls (ghosts, devils etc.), magic, and incantations. The ancient Jews regarded disease as an expression of the wrath of God.

The Chinese considered that disease was caused by the improper balance between two opposing forces of *Yin* and *Yang* and the Five Elements.

The Indian Ayurvedists viewed disease as a result of improper proportion of the *Tridoshas* of Vayu, Pitta, and Kapha.

### **Tibetan medicine**

From about 1960, the international community has become increasingly aware of the rich cultural heritage of Tibet.

One integral part of Tibetan culture is its traditional system of medicine which still enjoys an unbroken continuity for over 2,500 years. Based on the holistic or integrated Buddhist concept of mind-body, Tibetan medicine is a system of psycho-cosmo-physical healing whose philosophy and healing techniques have much to offer towards the world-wide campaign against disease.

Unfortunately, due to various socio-economic and political factors, this unique medical tradition suffers from much neglect, prejudice, and indifference.

In Tibetan society, the interpretations of disease and its treatment have found expression in a system of medicine known as *gSo-wa Rig-pa* or "the knowledge of healing." The original teachings are generally attributed to the Buddha who is said to have taught the roots of this tradition in a manifestation of the Medicinal Buddha (Skt : *Bhaishajya Guru*; Tib : Sangs-rgyas sllfan-bla)-the teachings are still preserved in the *rGyud-bzhi* or the *Four Tantras*.

### **THE RGYUD-BZHI**

The Sanskrit title of this work is "Amrta Astanga *Guhyopadesa* Tantra", while the Tibetan title is: "*bDud-rtzi sNying po Yan-lag brGyad pa gSang-ba Man-ngag gi rGyud-bzhi*" or "*The Four Secret Oral Tantras on the Eight Branches of the Essence of Nectar*".

The original Sanskrit work was probably written during the fourth century AD. It was translated into Tibetan by Vairichanain 755-797 A.D.

## FUNDAMENTALS OF TIBETAN MEDICINE: AETIOLOGY OF AFFLICTIONS AT THE PRIMORDIAL LEVEL

### The Dug-gsum Theory

Buddhism starts with the premise that everything within the universe is in a constant state of flux: that all phenomena are characterized by impermanence and that the only permanent feature is its impermanence. "No matter whether perfect beings arise or not," the Buddha said, "it remains a fact and hard necessity of existence that all creation is transitory."

It is this very impermanence of creation that causes each and every being, at one stage or another, to suffer.

Suffering is not accidental but springs from a specific cause.

The extinction of suffering means the liberation from the vicious cycle of existence and this, is accomplished through the proper knowledge and genuine practice of the Dharma.

The Buddha traced the specific cause of all suffering to the concept of *bDag-'zin* or Ego which is manifested in the form of *gTi-mug* (delusion, ignorance, confusion).

This, in turn, gives rise to '*Dod-chags* (attachment, greed, desire) and *The-sdang* (hatred, aversion, aggression). In comparing these "three poisons" with a fire which permanently consumes man, the Buddha said: "It burns through the fire of delusion, through the fire of attachment, through the fire of hatred; it burns through birth, old age, and death; through grief, lamentation, pain, sorrow, and despair."

The "three poisons" of '*Dod-chugs*, *Zhe-sdang*, and *gTi-mug*, respectively, give rise to the three afflictions of *rLung*, *mKhris pa*, and *Bad-kan*.

An in-depth study of the "three poisons" is found in Buddhist philosophy and psychology, and for our purpose, it is important to note the close interrelationship between a mental and a physical disorder.

### The 'Byung-ba INga Theory

This theory states that all physical phenomena, whether in the macrocosmic or the microcosmic world, are formed by the five cosmo-physical energies of:

- (1) *Sa* (Earth);
- (2) *Chu* (Water);
- (3) *Me* (Fire);
- (4) *rLung* (Air);
- (5) *Nam-mkha* (Space).

The body, be-ing partly physical, is also composed of these five basic cosmo-physical energies.

The five cosmo-physical energies are not the static physico-chemical elements, but dynamic forces which deal more with their inherent energetical function rather than their actual state.

Hence, a disorder also involves a disequilibria of these energies and their relationship is as follows:

### RELATIONSHIP BETWEEN THE AFFLICTIONS AND THE FIVE COSMO-PHYSICAL ENERGIES

#### Cosmo-Physical Energies:

- Earth & Water
- Fire
- Air

#### Affliction:

- *Bad-kan*
- *mKhris- pa*
- *rLung*

(Spatial energy is all pervasive)

### BEHAVIOURAL (MENTAL, EMOTIONAL, AND PHYSICAL)REGIMENS

The *rGyud-bzhi* classifies the behavioral regimens into regular, seasonal, and immediate. The regular behavior generally deals with the proper use of one's body, speech, and mind. Occupations which are emotionally disturbing or hazardous are strongly discouraged. One must assume the regular behavior not just for the benefit of this life but also for the life to come.

With respect to the seasonal behavior, an individual must be aware of the energetically changes within the environment and must try to harmonize his behavior with these changes.

For instance, during the Upper Winter season, the cold blocks all the pores of the body and this subsequently, increases the Fire energy. Air further increases this heat and consequently, one must consume more food having sweet, sour, and salty tastes or else the bodily constituents will weaken. Upper Winter is also a period when the nights are longer and one is always hungry. This, further weakens the seven *Lus-zungs*.

To counteract this imbalance, one must massage one's body with sesame oil, eat more greasy food and drink more meat soup. Similar are the behavioral regimens for the remaining five seasons.

The immediate behavioral regimens deal with satiating one's hunger and thirst and the natural urges of yawning, sneezing, urination, defecation, expelling of phlegm etc. All these urges must not be suppressed but let nature take its course.

The fundamental tenets of the *gSo-ba Rig pa* art of pharmacology intrinsically revolve around the theory of *'Byung-ba INga*. As mentioned earlier, these energies are not the physical-chemical elements, but subtle concepts dealing more with their inherent energetically function rather than their actual state

## **The Tibetan Book of Living and Dying**

(Sogyal Rinpoche)

The Bardo Thodol also spelled Bardo Thotrol, translated as The Tibetan Book of the Dead, for centuries it was passed down orally. This ancient text was first put into written form by the legendary Padma Sambhava in the 8th century A.D. Translated, Bardo Thodol means "liberation by hearing on the after death plane". The book acts as a guide for the dead during the state that intervenes death and the next rebirth..

The Tibetan Book of Living and Dying, published in 1992, is widely regarded as one of the most complete and authoritative presentations of the Tibetan Buddhist teachings ever written. It has demonstrated how these teachings can be at one and the same time accessible to everyone, and yet totally authentic and faithful to the tradition.

Acclaimed by people of all ages and backgrounds, as well as by Buddhist practitioners, Rinpoche's book has been adopted for use in courses, workshops, and retreats by a variety of groups and disciplines, therapeutic and spiritual. Many readers have remarked on how it carries all the immediacy and force of an oral teaching, and how, with repeated study and reflection, deeper meanings are continually revealed.

### **Showing unconditional love**

(Sogyal Rinpoche)

From The Tibetan Book of Living and Dying

Often we forget that the dying are losing their whole world: their house, their job, their relationships, their body, and their mind--they're losing everything. All the losses we could possibly experience in life are joined together in one overwhelming loss when we die, so how could anyone dying not be sometimes sad, sometimes panicked, sometimes angry? Elisabeth Kübler-Ross suggests five stages in the process of coming to terms with dying: denial, anger, bargaining, depression, and acceptance. Of course not everyone will go through all these stages, or necessarily in this order; and for some people the road to acceptance may be an extremely long and thorny one; others may not reach acceptance at all.

Ours is a culture that does not give people very much true perspective on their thoughts, emotions, and experiences, and many people facing death and its final challenge find themselves feeling cheated by their own ignorance, and terribly frustrated and angry, especially since no one seems to want to comprehend them and their most heartfelt needs.

As Cicely Saunders, the great pioneer of the hospice movement in Britain, writes: "I once asked a man who knew he was dying what he needed above all in those who were caring for him. He said, 'For someone to look as if they are trying to understand me.' Indeed, it is impossible to understand fully another person, but I never forgot that he did not ask for success but only that someone should care enough to try."

It is essential that we care enough to try, and that we reassure that person that whatever he or she may be feeling, whatever his or her frustration and anger, it is normal. Dying will bring out many repressed emotions: sadness or numbness or guilt, or even jealousy of those who are still well. Help the person not to repress these emotions when they rise. Be with the person as the waves of pain and grief break; with acceptance, time, and patient understanding, the emotions slowly subside and return the dying person to that ground of serenity, calm, and sanity that is most deeply and truly theirs.

Don't try to be too wise; don't always try to search for something profound to say. You don't have to do or say anything to make things better. Just be there as fully as you can. And if you are feeling a lot of anxiety and fear, and don't know what to do, admit that openly to the dying person and ask his or her help. This honesty will bring you and the dying person closer together, and help in opening up a freer communication. Sometimes

the dying know far better than we how they can be helped, and we need to know how to draw on their wisdom and let them give to us what they know.

Cicely Saunders has asked us to remind ourselves that, in being with the dying, we are not the only givers. "Sooner or later all who work with dying people know they are receiving more than they are giving as they meet endurance, courage and often humor. We need to say so..." Acknowledging our recognition of their courage can often inspire the dying person.

I find too that I have been helped by remembering one thing: that the person in front of me dying is always, somewhere, inherently good. Whatever rage or emotion arises, however momentarily shocking or horrifying these may be, focusing on that inner goodness will give you the control and perspective you need to be as helpful as possible. Just as when you quarrel with a good friend, you do not forget the best parts of that person, do the same with the dying person: Don't judge them by whatever emotions arise. This acceptance of yours will release the dying person to be as uninhibited as he or she needs to be. Treat the dying as if they were what they are sometimes capable of being: open, loving, and generous.

On a deeper, spiritual level, I find it extremely helpful always to remember the dying person has the true buddha nature, whether he or she realizes it or not, and the potential for complete enlightenment. As the dying come closer to death, this possibility is in many ways even greater. So they deserve even more care and respect.

### **HEART ADVICE ON HELPING THE DYING (Sogyal Rinpoche)**

The most essential thing in life is to establish an unafraid, heartfelt communication with others, and it is never more important than with a dying person...

Often the dying person feels reserved and insecure, and is not sure of your intentions when you first visit. So don't feel anything extraordinary is supposed to happen, just be natural and relaxed, be yourself. Often dying people do not say what they want or mean, and the people close to them do not know what to say or do. It's hard to find out what they might be trying to say, or even what they might be hiding. Sometimes not even they know. So the first essential thing is to relax any tension in the atmosphere in whatever way comes most easily and naturally.

Once trust and confidence have been established, the atmosphere becomes relaxed and this will allow the dying person to bring up the things he or she really wants to talk about. Encourage the person warmly to feel as free as possible to express thoughts, fears, and emotions about dying and death. This honest and unshrinking baring of emotion is central to any possible transformation - of coming to terms with life or dying a good death - and you must allow the person complete freedom, and give your full permission to say whatever he or she wants.

When the dying person is finally communicating his or her most private feelings, do not interrupt, deny, or diminish what the person is saying. The terminally ill or dying are in the most vulnerable situation of their lives, and you will need all your skill and resources of sensitivity, and warmth, and loving compassion to enable them to reveal themselves. Learn to listen, and learn to receive in silence: an open, calm silence that makes the other person feel accepted. Be as relaxed as you can, be at ease; sit there with your dying friend or relative as if you had nothing more important or enjoyable to do.

A dying person most needs to be shown as unconditional a love as possible, released from all expectations. Don't think you have to be an expert in any way. Be natural, be yourself, be a true friend, and the dying person will be reassured that you are really with them, communicating with them simply and as an equal, as one human being to another. It is essential that we care enough to try, and that we reassure that person that whatever he or she may be feeling, whatever his or her frustration and anger, it is normal. Dying will

bring out many repressed emotions: sadness or numbness or guilt, or even jealousy of those who are still well. Help the person not to repress these emotions when they rise. Be with the person as the waves of pain and grief break; with acceptance, time, and patient understanding, the emotions slowly subside and return the dying person to that ground of serenity, calm, and sanity that is most deeply and truly theirs.

Don't try to be too wise; don't always try to search for something profound to say. You don't have to do or say anything to make things better. Just be there as fully as you can. And if you are feeling a lot of anxiety and fear, and don't know what to do, admit that openly to the dying person and ask his or her help. This honesty will bring you and the dying person closer together, and help in opening up a freer communication. Sometimes the dying know far better than we how they can be helped, and we need to know how to draw on their wisdom and let them give to us what they know.

### **BRINGING THE MIND HOME** (Sogyal Rinpoche)

The purpose of meditation is to awaken in us the sky-like nature of mind, and to introduce us to that which we really are, our unchanging pure awareness, which underlies the whole of life and death.

The stillness and silence of meditation, we glimpse and return to that deep inner nature that we have so long ago lost sight of amid the busyness and distraction of our minds. Isn't it extraordinary that our minds cannot stay still for longer than a few moments without grasping after distraction; they are so restless and preoccupied that sometimes I think that living in a city in the modern world, we are already like the tormented beings in the intermediate state after death, where the consciousness is said to be agonizingly restless. According to some authorities, up to 13 percent of the people in the United States suffer from some kind of mental disorder. What does that say about the way that we live? We are fragmented into so many different aspects. We don't know who we really are, or what aspects of ourselves we should identify with or believe in. So many contradictory voices, dictates, and feelings fight for control over our inner lives that we find ourselves scattered everywhere, in all directions, leaving nobody at home.

**Meditation, then, is bringing the mind home.**

*"He is the Lord of Great Compassion! Then dissolve the Archetype from the edges and contemplate the void clear light transparency of ultimate nonperception. That is the profound key." (The Tibetan Book of Living and Dying)*

## BUDDHISM

H.Saddhatissa, in his presentation of Buddhism, outlines methods for the practice of meditation which parallel Eliade's description of Yoga techniques. The preliminary instructions that Saddhatissa presents for meditation include a quiet environment and a comfortable position. One should choose a suitable place, which will have few distractions and therefore help one concentrate. He suggests a sitting posture, not necessarily a lotus, cross-legged, position, but a position that one finds comfortable.

Saddhatissa proceeds from these preparations to categorize two types of Buddhist meditation-samatha, the development of calm and concentration, and *vispassana*, the development of insight. In *samatha* the meditator concentrates on a fixed object, either external or internal. *Anapanasati*, one of the foremost practices of *samatha*, was used by the Buddha on the night of his enlightenment. It is the practice of in-breathing and out-breathing. Focusing his attention at the tip of his nostrils, the meditator quietly "watches" the breath flowing in and out past the tip of the nostril. It is recommended that he count breaths, not going past ten, and repeating the count to aid his concentration.

Ashvagoshya, an eminent Buddhist of the first century A.D., formulated and expounded the teachings of the Mahayana school, a more elaborate and developed form of the original doctrines of Buddhism. Ashvagoshya's book '*The Awakening of Faith*' instructs the reader how to practice the Mahayana faith. The practice consists of five stages, the fifth being the "stage of preventing vain thoughts, and the practice of divine wisdom or judgments."

These two concepts are to be gradually activated at the same time. The practice of checking vain thoughts is accomplished through a quiet environment, a proper posture, and a passive attitude. According to him, "if the mind wanders far away, it must be brought back into its proper state. One should know that the proper state is that of the soul alone without anything outside of it." Eventually the practitioner will perfect this practice and the mind will be at rest, from which one will proceed to reach the "peace of the Eternal."

### **Meditation and Prayer**

People in the West are more familiar with prayer than meditation. Prayer is a general term and many types of it exist, but the term usually refers to an active form of meditation in which we project an intention—calling on God to help us or our loved ones in some way. Both ayurveda and yoga use prayer (*prarthana*) along with mantra and meditation.

Generally mantra is energized prayer, a prayer or yogic wish directed by special sound patterns or vibrations of the cosmic Word. Meditation is a silent or contemplative form of prayer in which there may not be any movement of thought or intention.

Devotional meditation is an intensely personal matter and is usually conditioned by one's religious background. Other than worshipping personal gods and deities who appeal to a particular person's consciousness, another important form of devotional worship is-the worship of planetary deities and cosmic powers behind the forces of time and karma.

### Yoga

The different yoga schools simply adhere to different applications of inner discipline, all of which ultimately lead to the liberation of the soul and to a unique understanding of the Divine Unity.

The schools are merely named according to the yogi's objective of self-transformation and the instrument chosen for such anticipated change.

The yoga schools are:

## PURNA YOGA

and its different variations, for the most part, aim at the fullest development of any one human faculty—the mind, emotions, life-force or the physical body. Such partial perfection is then allowed to spill over to one's entire being.

But [Sri Aurobindo's Purna Yoga](#) or Integral Yoga focuses on the whole being in order to bring about total [transformation](#). The approach, objective and means of *Purna Yoga* are all integral in essence.

The main stages of *Purna Yoga* are:

- Aspiration for the Divine.
- Surrender of the individual soul to the Universal Soul.
- Rejection of all obstructions to the path of total transformation.

Realizing the Divine within oneself is the first step of Integral Yoga. The means of achieving this state of Divine awareness is through a regular practice of either concentration, [meditation](#) or prayer.

The next step involves the realization of the Divine in entities beyond the subjective self. A realization of all constituent consciousnesses of the universe—an acceptance of a common origin of all beings.

The third stage consists of a true identification with the "Transcendental Divine", which is neither limited within the being of a single individual nor within any other constituents of existence. According to Sri Aurobindo, unless this crucial Truth is realized, it is impossible for the *sadhak* or seeker to attain liberation.

In his philosophy, Rishi Aurobindo termed this rarefied region of higher consciousness as the "Supramental Consciousness", the attainment of which is necessary for the liberation of the soul. The Master believed this stage of spiritual awareness to be potentially the ultimate rung on the human evolutionary ladder.

And the realization of this "Supramental Consciousness" is the principal aspiration of Sri Aurobindo's *Purna Yoga* or Integral Yoga

## JNANA YOGA

*Jnana* refers to knowledge but the emphasis is not on acquiring information but on developing the analytical powers of the mind. The manner in which the power of analysis is applied depends on the metaphysical system within which it is practiced. In the *Samkhya* system of Indian philosophy, the focus is on understanding one's own inner self. In *Advaita Vedanta* [Vedanta](#) (non-dualist Vedanta philosophy), the idea is to understand the difference between reality and illusion

## BHAKTI YOGA

*Bhakti* Yoga is all about getting in touch with the Divine Being by following the outpourings of one's heart. The term '*bhakti*' can be roughly translated to mean 'devotion', and this emotion coupled with the Christian concept of faith leads to a state of mind which can be described as being immersed in *bhakti*. This strand of yoga principally advocates love and devotion as the path to *moksha* or liberation

## KARMA YOGA

Originally, it was believed that the practice of *Karma Yoga*, accompanied by the observance of certain rituals, would lead to liberation from the cycle of birth and death. In the [Bhagavad Gita](#), Lord Krishna further extended the semantics of the term *karma* to mean detached action, that is, subjugation of the individual will to Divine purpose. According to the *Bhagavad Gita*, these three different paths of yoga (*jnana*, *bhakti* and *karma*) help to define three different categories of men—reflective, emotional and active,

respectively—distinguished on account of the distribution of emphasis on the theoretical, emotional and practical aspects of human personalities

#### RAJA YOGA

*Raja Yoga* or [Ashtanga Yoga](#), which was formulated by Patanjali into a definite system from classical yoga, forms one of the *Shad-Darshanas* or classical systems of Indian philosophy. The school of *Raja Yoga* prescribes to a particular meditative system, which focuses on the analysis and control of the field of human consciousness. Often known as the 'royal road' or the 'royal path' ('*raja*' in Sanskrit denotes 'king' or 'royal'), it offers a comprehensive method for controlling waves of thought by channeling mental and physical energies into spiritual energy

#### HATHA YOGA

The school of *Hatha Yoga* attaches a lot of importance to the perfect physical form, believing it to be a way of attaining spiritual perfection. And to this end it takes the help of *pranayama* (breath-control exercises) and [mudras](#) (hand gestures) to attain self-realization.

Often seen as part of *Raja Yoga*, the origins of *Hatha Yoga* can be traced to Gorakhnath, the 12th-century founder of the *Kanphata Yogis*. The word '*hatha*' is derived from the two root terms, '*ha*' meaning 'the sun' and '*tha*' meaning 'the moon'. Taken together, the term stands for 'union of force'. Hence, central to *Hatha Yoga* disciplines is the harmonizing of its positive (sun) and negative (moon) currents.

#### KUNDALINI YOGA

is the potential form of *prana* or life force, lying dormant in our bodies. It is conceptualized as a coiled up serpent (literally, '*kundalini*' in Sanskrit is 'coiled up') lying at the base of our spine, which can spring awake when activated by spiritual disciplines. The practitioners of *Kundalini Yoga* concentrate on psychic centers or *chakras* in the body in order to generate a spiritual power, which is known as *kundalini* energy.

The practice comprises of awakening and then forcing this energy, flowing through *nadis* or channels, up the psychic channel of the *sushumna*, which runs from the base of the spine to the brain. The three main channels running alongside the spinal cord are *ida*, *pingala* and the *sushumna*. When this *kundalini* energy, pictured as the serpent residing in the first *chakra* at the root of the spine (*muladhar chakra*), is raised up through the rest of the *chakras* until it reaches the seventh and the highest *chakra* (*sahasrara*) located at the crown of the head—self-realization occurs. This induces the blissful state of *samadhi*. The school of [Sahaja Yoga](#) is very similar to the *Kundalini* school.

#### MANTRA YOGA

*Mantra Yoga* refers to the repetition of *mantras* (words or sounds) during various yoga meditation techniques. This ritualistic chanting helps bind the mind to a single thought until it attains the state of *samadhi*.

#### TANTRA YOGA

The roots of *Tantra Yoga* go back to ancient fertility cults of India. The history of this strain of yoga, like the *Kundalini* school, is linked with the worship of *Shakti*, the primordial female energy. The objective of *Tantra Yoga* is to merge with the Ultimate by the arousal and channeling of sexual energy.

The [Tantra](#) school equates spiritual awakening with the awakening and rising of the *kundalini* power. According to *Tantra*, the *kundalini* is present in everything, even in the

smallest of particles, in the form of cosmic energy. Only a fraction of it is operative, while an unmeasured residuum is left 'coiled up' and untapped at the 'base root'.

## **ISLAM PRAYER**

A religion that shuns the worship of God in any tangible form, Islam believes in a Supreme Being, the creator. The basic tenets of Islam revolve around obedience to the commandments of God as revealed in the Koran, which include struggle for justice, consideration for the rights of others and continuous self-betterment for the realization of the Ultimate.

The fundamental practice of Muslim faith can be summed up as the "Five Pillars' (al-Arkan).

1. Repetition of the creed (Shahada). La ilaha illa Allah- Muhammad rasul Allah: "There is no god but Allah, and Muhammad is the prophet of Allah."

This profession is whispered at birth, at death, during daily prayers, and at virtually all other events of significance in individual and community life. For a new convert to Islam, it represents the initial act of commitment that henceforth leads to an acceptance of all other aspects of Islam.

The first statement ("la ilaha ilia Allah") affirms acceptance of the absolute unity of God. The second statement ("wa Muhammad rasul Allah ") relates this unity to the medium through which the Absolute becomes manifested.

This manifestation makes it possible for human beings to respond to God in this world. The shahadah thus links God, the Prophet, and the believers.

## **HINDUISM**

Hinduism is one of the major religions of the world. There are nearly 800 million Hindus today. It is several thousand years old and holds the distinction of being the most ancient of the world's living religions.

The foundation of Hindu ethics is the Vedic teaching that God ([Brahman](#)) and the indwelling Self of man are one and the same. Behind the psychophysical man is the Self, which is divine. Ayam atma Brahma-"This Self is Brahman," is a fundamental teaching of the [Hindu scriptures](#).

The Self forms the very core of man's being. It is different from his physical body, vital energy, senses and mind. Man's ego is not this Self. The ego or I-ness is an idea only; it is purely mental. Being mental, it cannot be the Self. This Self of man is called Atman in Sanskrit.

If Brahman is compared to an infinite ocean, then Atman is a wave in it. The ocean is never different from its waves, and the waves are never different from the ocean. They are one and the same. Thus, Brahman and Atman are one and the same. It is Atman which has become the manifold universe. If I hurt anyone, I actually hurt myself. Therefore, I must not hurt anyone. This realization is the basis of Hindu ethics.

The Isha [Upanishad](#) says very beautifully, "He who sees all beings in the Self, and the Self in all beings, hates no one." It is possible for us to hate others only when that awareness of unity is not there. Our awareness of the presence of the Self in all makes everyone dear

to us. The spiritual goal of Hinduism is to experience this divine Self within and without. (Excerpted From: The Essentials of Hinduism by Swami Bhaskaranand).

The Upanishads (Vedanta)

The Upanishads were so called because they were taught to those who sat down beside their teachers. (upa=near, ni=down, shad=sit).

These texts developed from the Vedic tradition, but largely reshaped Hinduism by providing believers with philosophical knowledge.

The major Upanishads were largely composed between 800-200 BCE and are partly prose, partly verse.

Later Upanishads continued to be composed right down to the 16th century. Originally they were in oral form.

The early Upanishads are concerned with understanding the sacrificial rites.

One of the central beliefs of Hinduism is that there are many paths to seek the truth and God. They believe in the existence of [Brahman](#), one God, or a supreme universal spirit from which the manifestations of various deities developed including the trinity of [Brahma](#), [Vishnu](#) and [Shiva](#). Brahma represents the Hindu principle of origin or creation. Vishnu is the principle of preservation or nurturing and Shiva represents the principle of dissolution or destruction. Brahman is present in everything in this universe - people, animals, trees, plants, and even stones.

### **Inner Peace**

In this world we are constantly under physical and/or mental stress. The reason for this stress is that we become slaves of endless desires and uncontrolled emotions such as hatred, jealousy, anger etc. We feel powerless and limited in what we can do. At the same time we all have expectations. We expect certain things from others; others expect many things from us. Whenever these expectations are not fulfilled it causes frustration, depression and agony. It manifests as stress.

Many people take short refuge from stresses in this world by going for entertainment, watching TV, drinking, etc. These does not attack the root problem; the solutions are temporary. We need to develop something special that can save us from these stresses and give us not just a temporary relief but a permanent satisfaction and peace in the deepest of our soul which enable us to lead a blissful and tension free life. Hinduism has several suggestions on how to accomplish this. The answer is meditation.

*“When you abandon every desire that rises up within you, and when you become content with things as they are, then you experience inner peace.*

*When your mind is untroubled by misfortune, when you desire no pleasures, when your emotions are tranquil, and when you are free from fear and anger, then you experience inner calm.*

*When you are free from all attachments, when you are indifferent to success and failure, then you experience inner serenity.*

*When you can withdraw your senses from pleasures of the senses, just as a tortoise withdraws its limbs, then you experience inner wisdom.*

*When no pleasure and no desire can touch the soul, then you experience the highest state of consciousness.*

*Yet even those who are close to this state, can suddenly be carried away by a sudden surge of desire. Thus you must learn to meditate, controlling your senses, and focusing your- self entirely on me.” (Gita 2.55-61)*

*“Those who are focused on the objects of the senses, become attached to those objects. From attachment comes desire; and from desire comes anger; from anger comes*

*confusion of mind; from confusion of mind comes loss of memory; from loss of memory comes loss of intelligence; and from loss of intelligence comes destruction.*

*But those who can move in the world of the senses, and yet be free from both attachment and aversion, experience inner peace, in which there is no sorrow or sadness. This is wisdom, which arises from knowledge of the soul.*

*If your mind is distracted by the senses, how can you meditate? If you cannot meditate, how can you experience inner peace? And if you cannot experience inner peace, how can you know joy? When you let your mind follow the senses, they carry away all wisdom -just as storms carry a boat from its course on the sea.*

*Devote yourself to freeing the senses from attachment and aversion alike. In this way you will dispel the darkness of ignorance -which most people regard as day and awake to the light of truth.*

*Rivers flow into the sea, but cannot make the sea over flow. In the same way the streams of impressions from the world of senses will flow into your mind, but they will not make your passions overflow. On the contrary, you will remain calm and tranquil.” (Gita 2:62-70)*

Soul is infinite; it has no end although the body that contains the soul has its beginning and end. The soul is the energy. It causes all our thoughts and actions and everything else. But soul is untouched by good or evil, pleasure or pain, heat or cold although it lends its light to everything.

We should make every effort to get peace for ourselves and others. We need to do this while we are alive.

To attain peace many people undertake religious pilgrimages, read religious books, perform rituals, etc. These can bring peace if it is approached in a very pure manner (without any expectation) and with full faith.

Some people worship because they are afraid that something evil or bad could happen to them if they do not worship. They pray to God because they believe that if they do not do so bad things will happen to them. Or they will pray with high expectations that something good will come to them. They get very disappointed when their wishes are not met by God. To attain inner peace, we should love or pray to God unconditionally; like a honest lover who loves his/her beloved without any fear and expectation of reward

We are trying to improve and amend people and things around us but we are still not trying to throw away evil of negative thoughts which is deeply rooted inside us. If we throw away evil of our negative thoughts, things and people around us will automatically improve.

Everybody who is willing to get peace or like to attain perfection in materialistic world or having any type of physical or psychological problem can start meditation and he/she will feel himself or herself change in his or her life.

Meditation does not mean complete renunciation of our desires. It means that while enjoying this beautiful world, we must not become slave to our desires. We must avoid the two extremes-high luxuries and great simplicity. We should maintain a balance in our lives and enjoy a happy and a relaxed life. When a person can do this he will be happy in his life and will obtain inner peace.

In short, be what you are. Don't try to be what you are not. If you try to be what you are not you will never be successful. You will always feel incomplete and unfulfilled. If you simply try to be what you are under the proper guidance you will have an incredible reawakening experience, a mystical transformation of consciousness. You will attain true and lasting peace and happiness. You will become one of that small elite of persons in history who actually realized their full potential.

“yasya deve para bhaktir  
yatha deve tatha gurau

tasyaite kathita hy arthah  
prakasante mahatmanah”

"Only unto one who has unflinching devotion to the Lord and to the spiritual master does  
transcendental knowledge become automatically revealed."  
(Svetasvatara Upanisad 6.23)

### **The process of dying**

*“A heavily laden cart creaks as it moves along the road; in the same way the body groans under the burden of life as death approaches. When the body grows weak through old age or illness, the soul loosens itself from the body, as a mango or a fig loosens itself from its stalk; and thus it prepares to begin another life.*

*The soul gathers the powers of life to itself, and descends with them into the heart.*

*As life leaves the eye, and returns to its source within the soul, the eye no longer sees.*

*As life leaves the nose, and returns to its source within the soul, the nose no longer smells.*

*As life leaves the tongue, and returns to its source within the soul, the tongue no longer tastes.*

*As life leaves the mouth, and returns to its source within the soul, the mouth no longer speaks.*

*As life leaves the ear, and returns to its source within the soul, the ear no longer hears.*

*As life leaves the mind, and returns to its source within the soul, the mind no longer thinks.*

*As life leaves the skin, and returns to its source within the soul, the sense of touch is lost.*

*By the light of the heart the soul leaves the body; and as the soul leaves, the powers of life follow.*

*Since the soul is consciousness, the body loses consciousness as the soul departs; and the soul carries the spiritual effects of all that the person has done, experienced and known.” (Brihadaranyaka Upanishad 4;3.35-36; 4.1-2)*

## **TAOISM**

Taoism, one of the influential philosophical systems in the history and thought of China, dates back to the sixth century B.C., with the writing of Lao Tzzi, which embodies all of Taoist philosophy. Chuang Tzu, who lived two hundred years later, developed more clearly the concepts of Taoism and placed a stronger emphasis on the individual. To practice Taoism, according to Chuang Tzu, is:

"To regard the fundamental as the essence, to regard things as coarse, to regard accumulation as deficiency, and to dwell quietly alone with the spiritual and the intellect—herein lie the techniques of Tao of the ancients. . . . They built their doctrines on the principle of the eternal non-being, and held the idea of the Great One as fundamental."

Through tranquility of mind one achieves accord with nature and hence with Tao, the "One." Chuang Tzu says that dwelling quietly alone with the spirit and the intellect means "forgetting everything".

## CRISTIAN PRAYER AND MEDITATION

Christians have many forms of what is called prayer. First prayer is a personal action done by the individual believer calling out to God in praise, thanksgiving, sorrow for sins, or petition for human needs. Christians are known by a prayer given to them by the Lord Jesus, called the Lord's Prayer or Our Father. This simple prayer is universally used among Christians.

Prayers may be made from written texts or memorized verses as well as spontaneous invocations of God. Prayer can be done standing, sitting, kneeling, bowing, or prostrate on the ground. In public worship, the format varies among the various Christian churches, but all use some form of singing of hymns or the psalms from the bible, reading from the sacred books, preaching by a minister or priest, prayers for the public needs of the human and church community, and often including the celebration of the Lord's Supper (the Mass, the Divine Liturgy) by partaking of the blessed bread and wine to proclaim Jesus' death and yet living presence in the Christian community. This service can be very simple to the most elaborate of ceremonies using special vesture, candles, incense, and choreographed (choreographed) movements and processions.

One form of Christian meditation that has been used by believers since at least the fourth century AD is the *lectio divina*. It has been traditionally used in monastic religious orders and is enjoying a resurgence today. *Lectio divina* means "sacred reading" and has four stages: *lectio* (reading), *meditatio* (discursive meditation), *oratio* (affective prayer), and *contemplatio* (contemplation). In the *lectio* (reading) stage, one finds a passage and reads it deliberately. The next stage, *meditatio* (discursive meditation), is where one ponders the text. In the *oratio* (affective prayer) stage, one talks to God about the reading, asking Him to reveal the truth. In the final, *contemplatio* (contemplation) stage, one simply rests in the Lord's presence.

Introduction to meditation and personal, contemplative prayer through a study of its nature, necessity and method. Particular study is made of the method of St. Teresa of Avila.

### How to Meditate

Find a quiet place. Sit down with your back upright. Sit still.

Gently close your eyes and begin to recite your prayer-word, or mantra, silently, interiorly and lovingly throughout the time of your meditation: "Ma-ra-na-tha." Say it as four equally-stressed syllables.

It is an Aramaic word (which is the language that Jesus spoke) and it means "Come, Lord." It is found in the Scriptures and is one of the earliest prayers in the Christian tradition.

Do not think about the meaning of the word. Just give your attention to the sound of it throughout the time of your meditation, from the beginning to the end. Whenever distractions arise, simply return to your mantra. Meditate for 30 minutes each morning and each evening, every day of your life. Father John always said: "Just say your word." Meditation is a way of pure prayer marked by silence, stillness, and simplicity.

### **Prayers in time of suffering**

“Behold me, my beloved Jesus, weighed down under the burden of my trials and sufferings, I cast myself at Your feet, that You may renew my strength and my courage, while I rest here in Your Presence.

Permit me to lay down my cross in Your Sacred Heart, for only Your infinite goodness can sustain me; only Your love can help me bear my cross; only Your powerful hand can lighten its weight.

O Divine King, Jesus, whose heart is so compassionate to the afflicted, I wish to live in You; suffer and die in You. During my life be to me my model and my support; at the hour of my death, be my hope and my refuge. Amen.”

“Where there is charity and wisdom

Where there is charity and wisdom, there is neither fear nor ignorance.

Where there is patience and humility, there is neither anger nor vexation.

Where there is poverty and joy, there is neither greed nor avarice.

Where there is peace and meditation, there is neither anxiety nor doubt.”

(Saint Francis Of Assisi)

“Our Father.

Our Creator, Redeemer, Comforter and Saviour.

Who art in heaven.

You are with the angels and the saints, bathing them in your light that they may be enlightened by your love, and dwelling within them that they may be filled with your joy. You are the supreme good, the eternal good, from whom comes all goodness, and without whom there is no goodness.

Hallowed be your name.

May our knowledge of you become ever clearer, that we may know the breadth of your blessings, the length of your promises, the height of your majesty, and the depth of your judgements.

Your kingdom come.

Rule in our hearts with your grace, that we may become fit subjects for your kingdom. We desire nothing more than to dwell in your kingdom, where we can watch you on your throne, and enjoy your perfect love.

Your will be done, on earth as it is in heaven.

May we love you with our whole heart by always thinking of you, with our whole soul by always desiring you, with our whole mind by directing all our intentions to you, and with our whole strength by spending all our energies in your service. And may we love our neighbors as ourselves, drawing them to your love, rejoicing in their good fortunes, and caring for them in their misfortunes.

Give us this day our daily bread.

In memory and understanding and reverence of the love which our Lord Jesus Christ has for us, revealed by his sacrifice for us on the cross, we ask for the perfect bread of his body.

And forgive us our trespasses.

We know that you forgive us, through the suffering and death of your beloved Son.

As we forgive those who trespass against us.

Enable us to forgive perfectly and without reserve any wrong that has been committed against us. And strengthen our hearts truly to love our enemies, praying for them and striving to serve them.

And lead us not into temptation.

Save us not only from obvious and persistent temptations, but also those that are hidden or come suddenly when our guard is lowered.

But deliver us from evil.

Protect us from past evil, protect us against present evil, and free us from future evil.”

(Inspired By The Lord's Prayer St. Francis Of Assisi, 1182-1226)

## b. Meditation and Meditative States

- **Meditation**

Meditation refers to variety of *techniques*.

Meditation techniques are varied, but Naranjo and Ornstein have classified them into three basic types:

- a) **concentrative meditation,**
- b) **opening-up meditation,**
- c) **expressive meditation.**

Here we consider the first.

Most meditation techniques involve, as the initial step, sitting absolutely still in a posture that is not only comfortable, but that involves keeping the head, neck, and spine in a straight vertical line. A small but significant amount of muscular effort is needed to maintain this posture. Like the comfortable position assumed for inducing sleep or hypnosis, the comfortable posture in meditation allows various kinesthetic receptors to adapt out, so the body image generally fades. In contrast with going to sleep, the fact that a slight amount of muscular effort is needed to hold the body in this upright position prevents sleep from occurring for most people. Hypnotic induction procedures can allow the subject to slip in and out of actual sleep, but this is usually quite disruptive in meditative procedures, as the person begins to fall over.

Since much of a person's sense of identity comes from his body image, the fading of the body in a comfortable, steady posture also tends to reduce his sense of identity.

Sitting absolutely still, not acting, also frees energy that would otherwise be automatically absorbed in acting: meditation is a technically simplified situation in this way.

The vertical posture for head, neck, and spine is also of theoretical importance in meditation systems that believe that a latent human potentiality, the Kundalini force, is stored at the base of the spine and may flow upward, activating various other postulated latent potentials, the psychic energy centers or *chakras*, as it rises.

Since the meditator is sitting absolutely still, his muscular subsystem similarly has little to do beyond postural maintenance. This further reduces loading stabilization. Thus many sources of activity that maintain ordinary when the meditative posture is assumed.

### **Concentrative Meditation**

Concentrative meditation techniques basically instruct you to put all of your attention on some particular thing. This can be an external object that is looked at fixedly or some internal sensation such as the rise and fall of the belly in breathing. As in hypnotic induction, the meditator is told that if his mind wanders away from this focus he is to bring it back gently to this focus, and not allow it to be distracted.

This greatly restricts the variety of input to the system, inhibits thinking about various stimuli that come from scanning the environment, and in general takes attention/awareness energy away from and reduces the activity of the various subsystems of ordinary consciousness.

The meditator fixes his attention on *one* thing, usually an external or internal sensation.

This can produce unusually phenomena due to various kinds of receptor fatigue, as in the induction of hypnosis, but most meditation systems stress that these anomalous perceptual phenomena should not be taken as signs of success or be paid any special attention. In Zen Buddhism, for example, there is a teaching story of a student excitedly rushing to his roshi (master) to describe a vision of gods bowing down to him and feelings of ecstasy that occurred during his meditation. The roshi asks him if he remembered to keep his attention fixed on the rise and fall of his belly in breathing during the vision, as per the meditation instructions, and when the student says no (who would care about the rise and fall of your belly during such a vision?), the roshi reprimands the student for allowing himself to become distracted! Thus while anomalous perceptual phenomena may act as a disruptive forces for our ordinary state, they do not attract the same amount of attention in meditation as they do in hypnosis and so may have different effects.

As in any induction technique, the person preparing to meditate has explicit and implicit expectations of what will come about. His explicit expectations stem from his immediately conscious memories of what he knows about meditation and his goal in doing it. His implicit expectations range from the implicit but potentially conscious ones that come from other knowledge about meditation he *could* recall but is not recalling at the moment, to more implicit ones that he has absorbed over a longer time and of which he may not be consciously aware. The more implicit expectations may or may not accord with the teachings of the particular meditative system, for they may have come through personality-induced distortions of teaching situations in the past. The discussion of the construction of ordinary consciousness and how it affects our perception of the world is relevant here.

**Higher states of consciousness on the Buddhist Path of Insight**

<b>HIGH</b>	<b>NIRODH</b> Total cessation of consciousness.	
	<b>EFFORTLESS INSIGHT</b> Contemplation is quick, effortless, indefatigable. Instantaneous knowledge of Anatta, Anicca, Dukkha. Cessation of pain, pervasive equanimity	
	<b>REALIZATION</b> Realizations of the dreadful, unsatisfactory, and wearisome nature of physical and mental phenomena, physical pain, arising of desire to escape these phenomena. Perception of vanishing of mind and objects, perception fast and flawless, disappearance of lights, rapture, etc.	
<b>VALUE DIMENSION</b>	<b>PSEUDONIRVANA</b> Clear perception of the arising and passing of each successive mind moment, accompanied by various phenomena such as brilliant light, rapturous feelings, tranquility, devotion, energy, happiness, strong mindfulness, equanimity toward objects of contemplation. Quick and clear perception, and attachment to these newly arisen states.	
	<b>STAGE OF REFLECTIONS</b> These processes seen as neither pleasant nor reliable. Experience of Dukkha, unsatisfactoriness. These processes are seen to arise and pass away at every moment of contemplation. Experience of Anicca. Impermanence. These dual processes are seen as devoid of self. Experience of Anatta, not-self, as distinct and separate processes.	
<b>LOW</b>	<b>MINDFULNESS</b> Mindfulness of bodily function, physical sensations, mental states, or mind objects.	
	<b>ACCESS CONCENTRATION</b> Previous attainment of access. Concentration on path of concentration	<b>BARE INSIGHT</b> Achievement of ability to notice all phenomena of mind, to point where interfering thoughts do not seriously disturb practice.

**Meditation**

Meditation is an intensely personal and spiritual experience. The desired purpose of each meditation technique is to channel our awareness into a more positive direction by totally transforming one's state of mind. To meditate is to turn inwards, to concentrate on the inner self.

The entire process of meditation usually entails the three stages of concentration (*dharana*), meditation (*dhyana*) and enlightenment or absorption (*samadhi*). The individual

preparing to meditate usually starts off by harnessing his awareness, such as focussing his mind onto a certain object. Once attention gets engaged, concentration turns into meditation or *dhyana*. And through continuous meditation, the meditator merges with the object of concentration, which might either be the present moment or the Divine Entity. In some branches of Indian philosophy, direct perception from the inner self (*mana*) together with perception that is filtered through the five senses (*pancha indriya*) form a part of their valid epistemology (*pratyaksha jnana*). And this self-realization or self-awareness (as popularised by Paramahansa Yogananda), is nothing but the knowledge of the "pure being"—the Self.

Humanity is increasingly turning towards various meditative techniques in order to cope with the increasing stress of modern-day lifestyles. Unable to locate stability in the outside world, people have directed their gaze inwards in a bid to attain peace of mind. Modern psychotherapists have begun to discover various therapeutic benefits of meditation practices. The state of relaxation and the altered state of consciousness—both induced by meditation—are especially effective in psychotherapy.

But more than anything else, meditation is being used as a personal growth device these days—for inculcating a more positive attitude towards life at large.

Meditation is not necessarily a religious practice, but because of its spiritual element it forms an integral part of most religions. And even though the basic objective of most meditation styles remain the same and are performed in a state of inner and outer stillness, they all vary according to the specific religious framework within which they are placed. Preparation, posture, length of period of meditation, particular verbal or visual elements—all contribute to the various forms of meditation. Some of the more popular methods are, Transcendental Meditation, yoga nidra, vipassana and mindfulness meditation

### **Meditation as a Therapy**

Meditation has not only been used as an important therapy for psychological and nervous disorders, from simple insomnia to severe emotional disturbances, but lately physicians have also prescribed it for curing various physical ailments as well. It is useful in chronic and debilitating diseases like allergies or arthritis, in which stress or hypersensitivity of the nervous system are involved. Regular meditation practices have also been known to help in dealing with pain and a number of painful diseases, whether chronic or acute. The act of meditation comes in useful because it helps the mind to detach itself from all material and physical attachments—and that is the ultimate cure for all diseases or at least the way to transcend them when we cannot avoid them.

Research has found meditation, especially Transcendental Meditation, to be extremely successful in treating physiological problems. Research on Transcendental Meditation has been conducted at more than 200 universities, hospitals, and research institutions in 27 countries. As a result, more than 500 research and review papers have been written covering a wide variety of physiological, psychological, and sociological effects.

Transcendental Meditation allows mental activity to settle down in a natural way while alertness is maintained and enhanced. Following Transcendental Meditation, individuals have reported feeling refreshed physically as well as mentally. The mind has become calmer and more alert, thinking clearer, and energy levels have increased. Those with busy schedules have noted that Transcendental Meditation brings increased efficiency in activity; time is used more effectively. When mental and physical well being are enhanced, personal relationships also improve, a commonly reported and valued benefit of Transcendental Meditation.

Physiological research has shown that Transcendental Meditation gives rise to a state of deep rest characterized by marked reductions in metabolic activity, increased orderliness

and integration of brain functioning, increased cerebral blood flow and features directly opposite to the physiological and biochemical effects of stress. Taken together, these studies clearly distinguish the physiology of Transcendental Meditation from sleep or simple relaxation.

A review of research on behavioral therapy for hypertension concluded that Transcendental Meditation provides an optimal non-clinical treatment and preventive program for high blood pressure because the technique:

- produces rapid, clinically significant blood pressure reductions;
- is distinctly more effective than other meditation and relaxation procedures;
- is continued by a high proportion of subjects (in contrast to lower continuation rates for relaxation techniques and the frequent problem of poor compliance with anti-hypertensive drugs);
- has documented acceptability and effectiveness in a wide range of populations;
- is effective in reducing high blood pressure both when used as sole treatment and when used in concert with medication;
- reduces high blood pressure in 'real life' environments outside the clinic;
- is free from harmful side-effects or adverse reactions;
- reduces other cardiovascular risk factors and improves health in a general way.

However, all forms of meditation are not good for everyone, any more than all foods or herbs are. For this reason both yoga and ayurveda recommends a proper lifestyle and an integral approach to meditation that considers both our different faculties as well as our individual nature.

**Brugnoli Angelico. Stati di Coscienza Modificati Neurofisiologici. (States of consciousness neurophysiological and modified). La Grafica Editrice, 2005, Italian.**

The Author presents a survey of the greatest discoveries of neurosciences: DNA, brain plasticity and the importance of human relationship.

He gives a definition of "coscience" from the point of view of neurosciences.

Then he passes to hypnosis, which he considers a state of conscience employed as a medium in the therapeutic relationship.

The Author explains and make a classification of many states of consciousness neurophysiological and modified: from simply relaxment to the illuminated state of consciousness through a way philosophical, psychological and neuroscientific.

**AIST studies meditation and spiritual counseling in chronic pain.**

## CHAPTER 4

### Monitoring the Quality of Pain Management

To assure optimal pain management, formal means should be developed and used within each institution for evaluating pain management practices and for obtaining patient feedback to gauge the adequacy of its control.

The quality of pain management should be evaluated in all settings where patients with cancer receive care.

The quality of cancer pain management should be evaluated at points of transition in the provision of services (from the hospital to the home) to determine that optimal pain management is achieved and maintained.

For pain management to be effective, each practice setting should designate who will be responsible for pain management.

Policy and standard procedures, which define the acceptable level of patient monitoring and appropriate roles and limits of practice for health care providers, should govern the use of specialized analgesic technologies.

To ensure optimal pain management, formal means should be developed and used within each institution for evaluating cancer pain management practices (American Pain Society, Committee on Quality Assurance Standards, 1990; National Institutes of Health Consensus Development Conference, 1987) and should include feedback regarding the adequacy of pain relief.

Optimal pain management requires the interaction of all members of the health care team including the patient.

A formal process should be developed to evaluate the quality of pain management across all stages of the disease and across all practice settings.

Quality pain management begins with an affirmation by health care professionals that patients should have access to the best level of pain relief that can safely be provided.

In any setting, the quality of pain control is influenced by the training, expertise, and experience of clinicians. Practice settings vary considerably in size, complexity, resources, and patient populations. In addition, the goals of pain management may differ depending on the cause of the pain and the stage of the disease.

Different pain management programs are therefore suitable in different practice settings, but the responsibility for pain management should always be assigned to the clinicians most knowledgeable, experienced, interested, and available to respond to patients' needs quickly.

One aspect of pain management that should be considered when evaluating quality of care is the multiplicity of settings where cancer care is provided. Patients with cancer receive care in ambulatory care centers, clinicians' offices, hospitals, their own homes, nursing homes, and hospices. Pain management should be evaluated at points of transition in the provision of services to ensure that optimal pain management is achieved and maintained.

The key items to consider when developing a formal program to monitor the provision of pain relief are:

- \* Patients' satisfaction with pain management and its impact on their quality of life.
- \* Family satisfaction with pain management and its impact on their quality of life.
- \* The designation of who is responsible for pain management.
- \* The systematic assessment of cancer-related pain in all settings where patients receive care.
- \* The accuracy of diagnostic approaches for common cancer pain syndromes.
- \* The range and appropriateness of pain management options available within a particular practice setting.
- \* The effectiveness of pain management options utilized to prevent and treat pain.
- \* The prevalence and severity of side effects and complications associated with pain management.
- \* The quality of pain management across points of transition in the provision of services (American Pain Society, 1992; Miaskowski and Donovan, 1992; Miaskowski, Jacox, Hester, et al., 1992).

Three elements are essential for interdisciplinary collaboration in pain management:

- 1) A common purpose,
- 2) diverse professional skills and contributions,
- 3) effective communication and coordination of services (Spross, 1989).

The common purpose is the relief of the patient's pain. To meet this goal, the diverse and complementary skills and contributions of each health care professional should be recognized and used. At times, however, interpersonal issues of power, leadership, and conflict can hamper efforts to relieve pain.

Competent leadership and attention to conflict resolution are vital for building teams and keeping them focused on their shared purpose.

The following elements will help ensure effective communication and collaboration:

- \* Clarity among professionals about what they can and will contribute (who will coordinate pain management the primary nurse and attending physician or a specialized pain control team? Can consultants write prescriptions or orders?).
- \* Decision making that reflects the input and preferences of the patient and family, such as providing a number of pain control choices that include pharmacologic and nonpharmacologic options.
- \* Contingency planning, including orders to avert or treat possible

side effects; a range of analgesic doses to deal with varying pain intensity; ongoing followup of cancer-related pain problems; and clear directions about whom the patient or caregiver should notify if changes in the plan are required.

\* In institutional settings, regular interdisciplinary meetings of clinicians to maximize communication and information sharing and to ensure appropriate planning.

The following recommendations (adapted from American Pain Society, 1992) should be implemented in every practice setting where patients with cancer receive care:

1. Promise patients attentive care. Patients should be informed, orally and in writing, that effective pain management is an important part of their treatment, that talking about unrelieved pain is important, and that health care professionals will respond quickly to reports of pain.

It should be made clear to patients and families, however, that the total absence of any discomfort is not always an achievable goal.

2. Assign responsibility for pain management to clinicians most knowledgeable, experienced, interested, and able to respond to patients' needs in a timely fashion.

3. Document the assessment of pain and its relief. An assessment of pain intensity and pain relief should be recorded, regularly reviewed by members of the health care team, and incorporated into the patient's permanent record. The intensity of pain should be assessed and documented regularly (depending on the severity of pain) and with each new report of pain. The degree of pain relief should be determined after each intervention, once a sufficient time has elapsed for the treatment to reach peak effect. A simple, valid measure of intensity and relief should be selected, and the patient and family should be instructed in the use of the tool.

4. Define pain and relief levels to trigger a review. Each practice setting should identify values for rating pain intensity and pain relief that will elicit a review of the current pain therapy. The proposed modifications in treatment should be documented, and the effectiveness of the modified treatment should be reviewed subsequently. Cleeland, for example, has shown that when patients indicate a level of "5" or above on a scale from 0 to 10, the patient's ability to function is markedly affected (Cleeland, 1984).

5. Survey patient satisfaction. At regular intervals, as defined by the practice setting and the quality improvement committee (if available), each setting should assess a randomly selected sample of cancer patients who have pain. Patients should be asked to rate their current pain intensity, the worst pain intensity in the past 24 hours, the degree of relief obtained from interventions, side effects associated with pain management, satisfaction with relief, satisfaction with the responsiveness of clinicians, and the extent to which their preferences in pain management were taken into account.

6. Analgesic drug treatment should comply with two basic principles:

\* Oral analgesics and other noninvasive routes of administration are used whenever possible and administered in accordance with the principles expressed in the WHO analgesic ladder.

\* Analgesics are titrated to maximally effective doses or the appearance of dose-limiting side effects before specialized invasive analgesic approaches are used.

7. Monitor use of specialized analgesic technologies. The administration of intraspinal opioids, systemic or intraspinal PCA, continuous opioid infusion, local anesthetic infusion, and conscious or deep sedation should be governed by policy and standard procedures that define the acceptable level of patient monitoring and appropriate roles and limits of practice for all health care professionals involved. The policy should include definitions of physician and nurse accountability, physician and nurse responsibility to the patient, and the role of the pharmacist.

8. Offer nonpharmacologic interventions. Physical modalities and cognitive- and behavior-based interventions can provide substantial pain relief.

9. Monitor the efficacy of pain treatment. Periodically review pain treatment procedures using the practice setting's quality improvement mechanisms.

### **Looking for pain relief**

Pain can make you feel tired, crabby, and down. No one likes it, and having a hard time with pain does not make you weak. Pain can be a way for your body to let you know there is something wrong, that you need a different treatment, or even that you are getting better. No matter what kind of pain it is, you deserve to feel better.

Tell your doctor or nurse if you are in pain. Be sure to let them know:

- Where it hurts
- How strong the pain feels (try using a scale from one to ten to talk about your pain; use lower numbers for when it doesn't hurt as badly and higher numbers as the pain gets worse)
- What makes the pain worse
- What makes the pain better

Your doctor may give you medicine to help make the pain better. There are also other things you can do, in addition to taking medicine, to help make you feel better.

Tips for helping with your pain

Care given to improve the quality of life of patients who have a serious or life-threatening disease. The goal of palliative care is to prevent or treat as early as possible the symptoms of the disease, side effects caused by treatment of the disease, and psychological, social, and spiritual problems related to the disease or its treatment. Also called comfort care, supportive care, and symptom management.

Throughout your professional career you will care for the dying or incurable patient and the clinical skills needed here are highly specific and require effective application. Many of the skills employed by palliative care specialists are highly applicable to other specialties and an educational programme that gives you these skills will be equally valuable whether palliative care is a routine feature or just an occasional component of your role.

AIST studies best practice in pain management, symptom control, ethics, understanding and applying research evidence, effective communication skills, and inter-professional working. In addition to cancer-specific issues, it examines the psychological and social care aspects of patients with chronic disease with empathy.

## **Empathy in pain therapy**

The use of empathy and listening skills--empathic listening--sometimes leads to good relationships, emotional intimacy. Their use may also lead to a conversation partner feeling like she or he is receiving a hug--a "psychological hug."

Links:

[www.aist-pain.it](http://www.aist-pain.it)

[Cancer pain, palliative care and the World Health Organization: 2000-2002 priorities](#)

[New WHO guidelines for opioid availability](#)

[WHO Collaborative Center for Palliative Cancer Care](#)

[Tokuo Yoshida uses drug policy to improve access to essential pain medications](#)

[WHO Collaborating Center Policy and Communications](#)

[WHO Collaborating Center in Supportive Cancer Care](#)

[WHO Collaborating Center on Quality of Life](#)

[Pan American Health Organization calls for proposals to develop models for palliative care in Latin America and the Caribbean](#)

[World Health Organization Guidelines on cancer pain, opioid availability, symptom control and palliative care](#)