



NONPHARMACOLOGICAL MANAGEMENT OF PAIN IN CHILDREN

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Principles

Pain is a subjective sensation, and it is important to believe the child's experience of pain.

Developmentally appropriate measures should be used to assess pain and the child's response to treatment.

Try to avoid the dichotomy between organic and nonorganic pain by assuming that both factors may be relevant

Nonpharmacological interventions can be helpful even with pain for which emotional factors make little contribution to the pain experience

Treatment should be multimodal and multidisciplinary in nature and incorporate both pharmacological and nonpharmacological approaches

Education

Parents require education about treatment approaches for chronic pain.

help the family to differentiate the appropriate response of sympathy and attention from responses that reinforce chronic pain behaviours

Parents may mistakenly believe that the child should be allowed to rest during pain episodes

Excessive attention to the child's pain may encourage the child to scan his or her body for somatic cues and reinforce somatic vigilance

Parents need to learn how to acknowledge their child's pain but at the same time encourage the use of distraction and other active coping strategies

Parents require education about the appropriate use of analgesia and possible misconceptions about addiction. Education about the secondary effects of inactivity and muscle tension may be helpful

Other common misconceptions include the belief in a single, as yet undiagnosed, cause of pain as well as an inaccurate understanding of the interplay with stress or other psychological factors

Physical Therapy

- Physical therapy is used to **increase flexibility and mobility** as well as endurance and stamina. **Stretching and massage may reduce muscle tension**, which is often a secondary cause of pain in patients with chronic pain. Physical therapy introduced in association with changes to the medication regimen, or following a nerve block, **may allow the resumption of physical activities** that have not been possible for many months, with the hope that these activities will be sustained after the block is discontinued.



Biofeedback

- Biofeedback refers to the procedure in which **physical parameters such as muscle tension or temperature** are continuously monitored and fed back to the patient, who then attempts to alter the parameter. Although the measurement and control of physiological responses are usually not thought to be under voluntary control, biofeedback is based on the principle that it is possible to amplify and transform the response in such a way that it can be monitored and understood by the patient.
- Muscle tension and finger temperature are the most common physical functions measured in the treatment of pain. Biofeedback uses electrical equipment that allows the use of auditory and visual feedback from a physiological function (e.g., muscle contraction or relaxation).

- The patient's increased ability to monitor and control the muscle tension is then applied to controlling or altering the physiological process thought to cause the pain sensations. Biofeedback results in an **increased sense of mastery and control for patients** (ages 6 years and older), who are generally enthusiastic and receptive to this intervention

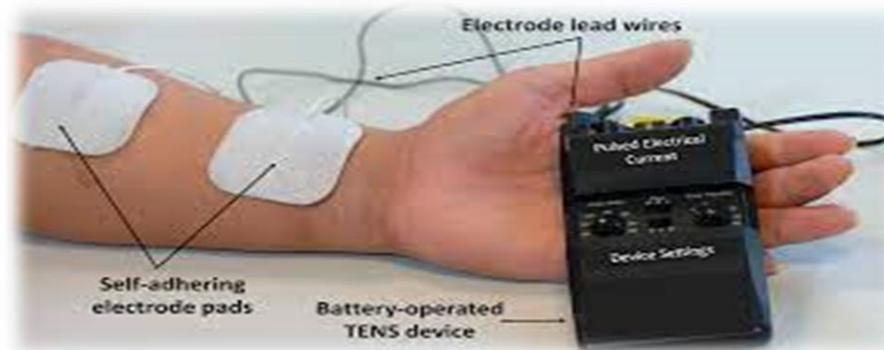


Transcutaneous Electrical Nerve Stimulation

- Transcutaneous electrical nerve stimulation (TENS) units are used for **localized pain**, **complex regional pain syndromes**, and **postoperative pain**. Electrodes are placed around the painful region, along peripheral nerve routes, or at spinal segments. Electrical stimulation of large afferent A nerve fibers by the TENS unit is believed to inhibit pain transmission to the spinal cord that ordinarily occurs via the smaller-diameter nerve fibers, with the result that the child feels tingling and vibrating sensations rather than aching pain.



- It is also believed that TENS units may **activate the release of endogenous opioids**. Patients are trained on the use of TENS units during physical therapy sessions and then wear the unit at home and during normal activities, including school.



Cognitive-Behavioural Therapy

Relaxation

- Several methods of progressive muscle relaxation are used to distract patients from their pain and to reduce subjective pain intensity.
- In the tension relaxation method, the child is taught to constrict the muscles for 5–10 seconds and then relax specific muscle groups. This technique can be combined with suggestions of relaxation, heaviness, and warmth and images of relaxing situations.



- In the **suggestion method**, the child is given repeated suggestions of calmness, relaxation, heaviness, and warmth combined with pleasant imagery but **without instructions to tense the muscles**.
- With **differential relaxation**, the child learns to relax one part of the body while maintaining tension in other parts. For example, in the treatment of a migraine, the child learns to relax the jaw and shoulders but keeps tension in arms and trunks in order to be able to continue school activities



Guided Imagery and Hypnosis

- “Preparation for Procedures,” are commonly used as part of a pain management intervention. The successful use of hypnosis for pain management has been reported in children receiving bone marrow aspiration and lumbar punctures as well as for postoperative pain and anxiety and chronic headache .



Behavior Modification

- Behavior modification interventions are introduced when the target is not specifically the pain complaints but rather the associated pain behaviors, including the functional disability associated with the pain.
- Programs include incentives for **improvements in functional ability** and **decreased attention to complaints of pain**.



Psychotherapy

- Individual psychotherapy can play an important role in helping **change a child's erroneous cognitions about his or her ability to resume functioning.**
- **Encouragement of more adaptive coping strategies** can become a focus of the therapy.
- It is helpful to **explore potential sources of stress and gain understanding of the emotional factors that may perpetuate pain behaviors.**



Family intervention

- Family interventions are designed to help the **family support healthy, functional behaviors** and **reduce support for pain behaviors**.
- Evidence supports the use of family-based cognitive behavior therapy for patients with chronic pain. Treatment should also address **family conflicts that may be causing stress for the child or interfering with efforts to cope with pain**.
- Children with chronic pain may **unconsciously use their symptoms to avoid stressful school or social situations or as a response to competitive athletic pressures**.
- **Parents** similarly may receive **secondary gain** from their child's pain behavior—for example, by avoiding work or gaining increased closeness with their child.

- Illness behaviour in general tends to promote or maintain maladaptive patterns of family interaction that need to be explored in family therapy.
- In addition, family members may experience feelings of frustration related to the disruption to family life caused by their child's pain.
- Families may harbor pessimistic feelings that no treatment will help with the pain, or they may fear the possibility of increased pain and disability.
- There may be strong feelings of anger directed toward the pediatric team.
- Therapy should be directed toward reducing feelings of anxiety and hopelessness and toward promoting active coping.

Mindfulness-Based Interventions

- Mindfulness-based interventions are based on the premise that teaching patients to increase their awareness of and **focus on the present in a nonjudgmental manner with acceptance of the situation** can result in improved physical and emotional functioning .
- Patients with chronic pain are **taught to approach rather than avoid painful sensations** and to incorporate strategies such as **thought diffusion** and **present-moment awareness**.
- The expectation is that patients learn that although **pain may be unavoidable, suffering and distress are optional**. Although data on the use of mindfulness-based interventions in pediatric chronic pain are limited, increased pain acceptance was demonstrated in a sample of adolescents with chronic pain using mindfulness strategies .

- Mindfulness-based interventions have also resulted in **improvements in quality of life, physical functioning, depression**, and pain acceptance in adolescents with recurrent headaches .
- Acceptance and commitment therapy (ACT) incorporates similar mindfulness strategies with the goal of acceptance rather than control of physical discomfort.

