Physical Therapy Treatment for Chronic Pain

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Faculty/Presenter Disclosure

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• Relationships with commercial interests:
  • None

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Question for you...

Currently in your practice, do you recommend physical strategies directly to your patients as a way of coping with pain? (i.e. relaxation, walking, heat)

a) Never or infrequently (0-25%)
b) Sometimes (25-50%)
c) Often (50-75%)
d) Always or frequently (75-100%)
Learning Objectives

1. Explain the theory of using physical strategies in the management of chronic pain

2. Identify and list options for physical strategies in the management of paediatric chronic pain

3. Generate a practical toolkit of strategies that is suitable for the child’s or youth’s pain presentation
Highlighting Evidence

- Gold standard for chronic pain management is the '3-P' approach involving pharmacology, psychology, and physiotherapy
- Evidence is lacking for many of the interventions, particularly level 1 and 2 evidence
- No standardized treatment protocol for children and youth with chronic pain

Caes et al. 2018; Fisher et al. 2022
The 'Tool kit'

- Wide variety of interventions provided by a wide array of practitioners
- Physical strategies should assist with pain management to promote calming of pain pathways and restoration of normal physical functioning
The 'Tool kit'

- Graded exercise
- Muscle relaxation
- Graded motor imagery
- Desensitization
- Activity pacing & Daily routines
- Return to school
- Modalities – Ice, heat, TENS
- Pain Education

Chronic Pain Management Toolkit
Pain Education: Question #1

All pain is real.

a) True
b) False
Question #2

Pain can be protective or helpful.

a) True  
b) False
Question #3

Chronic pain is pain that is "all in your head".

a) True
b) False
The only way to treat chronic pain is through medication.

a) True
b) False
Pain Education – Foundation / Tool-box

- Explain Pain Neurophysiology
- Hurt ≠ Harm
- "Buy In"
- Use of Metaphors
- Move towards functional goals
- Active strategies

Moseley et al. 2004
Pain Education Videos

Video references for pain education which explain pain in a biopsychosocial framework

About Kids Health – What is Chronic Pain?
• https://www.youtube.com/watch?v=EL1E54nH_7c

TedEd - The Mysterious Science of Pain - Joshua W. Pate
• https://www.youtube.com/watch?v=eakyDiXX6Uc

AboutKidsHealth - The Impact of Chronic Pain – Focus: Physical Activity
• https://www.youtube.com/watch?v=7MAoMvCmX1k&list=PLjTtOP3StIuUKKc7L8lcRlmFQ8RV9QPLf&index=2
Passive Strategies

• Ice
• Heat
• Massage
• Manual therapy
• TENS

• Can facilitate a functional goal:
  • use a hot-pack over muscles while taking a break during gym class
  • keep ice pack at school to use during breaks in quiet place
  • use TENS machine on back while sitting at desk studying
4 P's

- Pacing
- Prioritizing
- Planning
- Positioning
Activity Pacing and Daily Routines

- Pacing means that you slowly increase your levels of activity in a planned way, under your control
- Pacing helps you keep a regular amount of activity each day
- Daily routines starting from wake-up time to bedtime helps with normalization of day-time activities
Graded Exercise & Activity

↑ Muscle tension/spasms
↓ Movement
↓ Function
Weakness

↓ PAIN
Improved function

↑ Strength, endurance, ROM
↑ Graded movement/participation
Downtraining the nervous system techniques

↓ PAIN
Graded Exercise & Activity

• SMART goals
• Types of exercise/activities that are meaningful to the child or teen:
  - Simple activities that are accessible
  - Start low and increase slowly to minimize pain activation
  - Increase by 10-20% every 4-5 days of activity completion
  - Do the activity/exercise according to a plan, not according to how you feel

Caes et al. 2018; Kempert 2021
Example of a graded activity plan:

**My Progressive Plan**

<table>
<thead>
<tr>
<th>Date</th>
<th>Plan</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/21</td>
<td>Walking 3000 steps daily for 4-5 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walking 3300 steps daily for 4-5 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walking 3630 steps daily for 4-5 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walking 3993 steps daily for 4-5 days</td>
<td>✓</td>
</tr>
</tbody>
</table>
Desensitization

- **What is it?**
  - Rubbing a variety of textures on an area of skin that is sensitive to touch
  - Massage
- **Goals:**
  - Normalize sensory input
  - Reduce fear of touch through graded exposure

- **Indications:**
  - Allodynia or hyperalgesia
  - Commonly used for neuropathic pain and CRPS

- **How to prescribe:**
  - 15-30 minutes per day

- **Evidence -> Limited**
  - Many different styles/ways of prescribing
Graded Motor Imagery

Left/right discrimination

Explicit motor imagery

Mirror therapy

Moseley et al. 2006
Muscle Relaxation

- Modulating state of the autonomic nervous system
- Reduce muscle tension
- Prepare for activity or post-activity

Rest and recovery  Belly breathing  Heat  Gentle movement
Return to School

- Point person who the student can go to when support is needed, regular check-ins
- Ability to rest in a quiet place and use pain management strategies in their "tool-kit"
- Ability to stand-up, reposition, take a walking break
- Ability to take breaks during gym class and continue to participate
Learning Objectives

1. Explain the theory of using physical strategies in the management of chronic pain

2. Identify and list options for physical strategies in the management of paediatric chronic pain

   - Graded exercise
   - Activity pacing
   - Daily routines
   - Return to school
   - And more...

3. Generate a practical toolkit of strategies that is suitable for the child’s or youth’s pain presentation

   Chronic Pain Management Toolkit

Pain Education
Reflection

How confident are you to explain, identify, and guide your patients with physical strategies to manage pain?

a) Not at all
b) Somewhat
b) Confident
d) Very confident


Meeus et al. 2016. Pain Clinic Updates. IASP March;24 (1)


Steiger et al. (2012). Is a positive clinical outcome after exercise therapy for chronic non-specific low back pain contingent upon a corresponding improvement in the targeted aspect(s) of performance? A systematic review. *Eur J Spine. 21*:575 –598


Graded motor imagery: https://www.noigroup.com/graded-motor-imagery/