Rehabilitative Management of the Chronic Pain Patient: **Goals, Strategies, and Expectations**

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Disclosures

☐ None
Persistent pain is not necessarily related only to injury, but also due to activation of the matrix.

<table>
<thead>
<tr>
<th>Afferent Pathways</th>
<th>Motivational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>Emotional</td>
</tr>
<tr>
<td>Affective</td>
<td>Context Factors</td>
</tr>
</tbody>
</table>
Management Benchmarks

- Information for mind and body
- Desensitization
- General activation
- Turn the corner on disability
“subchronic low back pain can be managed successfully … and long term disability may be reduced … with information for patients about the nature of the problem, provided in a manner designed to reduce fear and give them reason to resume light activity.”

Neuromatrix Approach

Information for the Mind

Therapeutic focus:

- Reduce the threats by improving understanding
- Key components
  - Education
  - Systematic approach to identification and progression of motoric and functional baselines

Neuromatrix Approach
Information for the Mind

Social Support

Help establish:
- Family Support - Help with duties
- Sleeping
- Exercise
- Nutrition
- Smoking

Willingness to socialize:
- Are they isolating themselves?
- Possibly not moving much
- Encourage walking with family members
- Social activities
Communication

- Self Consciousness:
  - Ensure early success in treatment (some form)
  - Do not pick on them
Motor control is affected by:

- Fear of pain
- Anticipation of pain
- Catastrophizing
- Past history
- Thoughts and emotions

Neuromatrix Approach
Information for the Body

Locomotor Consequences:

- **Muscles**
  - Global
  - Local
  - Pelvic floor

- **Changes due to pain**
  - Histological
  - Strength
  - Motor recruitment (magnitude and timing)
# Neuromatrix Approach

## Information for the **Body**

<table>
<thead>
<tr>
<th>Exercise Group Number</th>
<th>Recumbent</th>
<th>Locomotor Component</th>
<th>Exercise Group Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Complex Combinations</strong></td>
<td>1 + 7</td>
<td>Transverse Abdominus</td>
<td>1. ADIM in Supine</td>
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<tr>
<td></td>
<td>2 + 7</td>
<td>Internal Obliques</td>
<td>2. ADIM in Prone</td>
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<tr>
<td></td>
<td>3 + 7</td>
<td>Abdominal Co-Contraction</td>
<td>1. Bridging</td>
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<tr>
<td></td>
<td></td>
<td>Multifidus</td>
<td>2. Side Bridging (SB)</td>
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<td></td>
<td></td>
<td>Gluteus Maximus</td>
<td>3. Abdominal Crunch</td>
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<tr>
<td></td>
<td></td>
<td>Latissimus Dorsi</td>
<td>A-B in Supine</td>
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<tr>
<td></td>
<td></td>
<td>Pelvic Floor</td>
<td>A-B in Prone</td>
</tr>
<tr>
<td><strong>Higher Order</strong></td>
<td>4 + 1, 4 + 3, 5 + 1, 5 + 3, 4 + 1 + 7, 4 + 3 + 7, 5 + 1 + 7, 5 + 3 + 7</td>
<td>SenMoCOR™</td>
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<tr>
<td><strong>Standing</strong></td>
<td>6 + 1, 6 + 3, 6 + 1 + 7, 6 + 3 + 7</td>
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<tr>
<td></td>
<td>ADIM in standing</td>
<td>1. Latissimus Pull-Downs</td>
<td></td>
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<td></td>
<td>Diagonal Pull-Downs</td>
<td>2. Low-Rows</td>
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<tr>
<td></td>
<td>A-B in Standing</td>
<td>PFA in standing</td>
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<tr>
<td><strong>1/2 Kneeling</strong></td>
<td>1. Reciprocal Reach</td>
<td>1. Unilateral Pull-Downs</td>
<td></td>
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<tr>
<td></td>
<td>ADIM in 1/2 kneeling</td>
<td>2. Unilateral Low-Rows</td>
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<tr>
<td></td>
<td>Diagonal Pull-Downs</td>
<td>PFA in 1/2 kneeling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A-B in 1/2 Kneeling</td>
<td></td>
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<tr>
<td><strong>Sitting</strong></td>
<td>Reciprocal Shoulder Elevation</td>
<td>1. Latissimus Pull-Downs</td>
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<td></td>
<td>ADIM in Sitting on SwissBall</td>
<td>2. Low-Rows</td>
<td></td>
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<tr>
<td></td>
<td>1. X-Leg resisted diag's</td>
<td>PFA in Sitting on Swiss Ball</td>
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<td></td>
<td>2. X-Leg Diag Pull-Downs</td>
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<td></td>
<td>A-B in Sitting</td>
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<tr>
<td><strong>All-4’s</strong></td>
<td>Tipped Rise from SwissBall</td>
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<td></td>
<td>ADIM in All-4’s</td>
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<td></td>
<td>Reciprocal Drawing-in</td>
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<td></td>
<td>A-B In All-4’s</td>
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<tr>
<td></td>
<td>Hip Ext-Hold</td>
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<tr>
<td></td>
<td>Knee Ext --&gt; Hip Ext + LEER</td>
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<td></td>
<td>Resisted Sh. Extension</td>
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<td></td>
<td>PFA in All-4’s</td>
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</tbody>
</table>

*See other exercise group combinations*
Functional Sensory Consequences:

- Reflex responses
- Proprioception
- Static and dynamic balance
- Postural control
Neuromatrix Approach
Information for the Body: Testing

- Single-leg balance
  - Hard vs foam surface

- Y-Balance Test

Neuromatrix Approach
Information for the Body: Training
Neuromatrix Approach
Desensitize

Neuromatrix Approach
Desensitize

Use Visualization

- Imagine using the arm/leg how it used to be
- See yourself in the future with normal function: imagine those activities
Neuromatrix Approach

Desensitize

Focus on Function Rather Than Pain

- De-emphasize VAS
- Emphasize functional scores
General Activation

Neuromatrix Approach

Improving Fitness and Function

- Activity-oriented exercise > strengthening and stretching exercises
  - Allows the patient to link the exercise to their day-to-day activities

- Understand that the exercise is not about a cure, but about how to be more active despite the pain. Any change to the pain, is a bonus!
Neuromatrix Approach
General Activation

- Introduce exercise *slowly*, and start with the least feared movements.

- “*What would you do if your pain was gone?*”

- Break the goal down into small parts.

- Make a plan – write it down.

- Activity log.
Neuromatrix Approach
General Activation

- Start with low baselines. Build up tolerance gradually and systematically.
  - Easily manageable (time or repetitions)
  - Done comfortably
  - Does not cause flare-up (can have up to 2 hours of increased pain after)

- Take regular rests between activities.

- Do small amounts often rather than doing everything at once.
Do not rush to increase activity/exercise levels. Just maintaining the program can be beneficial.

Don’t overdo it on good days (pacing).

“every day you do more than you did yesterday, but not much more”
Neuromatrix Approach
Turning the Corner on Disability
Neuromatrix Approach

Turning the Corner on Disability

Additional Treatment Domains

- Anxiety and Depression
- Emotional Issues
- Socioeconomic Issues
- Fear Avoidance
- Social Support
- Occupational Barriers
Neuromatrix Approach
Turning the Corner on Disability

- Increased pain thresholds during physical tasks (Moseley, 2004; Van Oosterwick et al, 2011)

- Reduced unhelpful pain-related beliefs and attitudes, improved exercise outcomes (Moseley, 2004; Nijs et al, 2011; Meeus 2010)

- Decreased perceived disability (Moseley, 2002; Van Oosterwick et al, 2011; Pires et al, 2015)
Reduced healthcare visits: 3.6 vs. 13.5 in control group at 1 year (Moseley, 2002)

Significantly reduced sick-leave days and care-seeking (Vibe Fersum et al., 2013)

Reduced healthcare costs when implemented pre-operatively: 45% less than control group at 1 year (Louw et al., 2014)