Do Relaxation Exercises Decrease Postoperative Pain after Rotator Cuff Repair? A Randomized Controlled Trial

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Disclosure Information

Consultant:
• Mitek
• Mitek – DePuy
• Vericel

Stocks:
• Johnson & Johnson
• Franklin/Keystone Biosciences
• Trice Medical
Introduction

While effective, opioid medications are associated with significant adverse effects.\(^1\)

Other analgesic modalities are often expensive or associated with equally adverse effects.\(^2\)

Cognitive-based relaxation therapy is safe, inexpensive, and easily accessible.

Prior Research indicates that relaxation exercises can decrease pain following:

- General Surgery\(^3,4\)
- Total Joint arthroplasty\(^5,6\)
- Spinal Arthrodesis\(^7,8\)
Purpose

Primary Aim:
• To determine the effect of relaxation exercises on post-op pain and opioid consumption after arthroscopic rotator cuff repair.

Secondary Aim:
• To determine the effect of relaxation exercises on post-op shoulder function after arthroscopic rotator cuff repair.
Methods: Study Design

Prospective Randomized Controlled Trial

Control Group:
Standard Post-op Protocol
• Oxycodone /acetaminophen 10/325 mg tablets
• Cryotherapy cuffs (optional)
• Oral NSAIDs (optional)

Standard Post-op Rehabilitation protocol

Relaxation Group:
Standard Post-op Pain and Rehabilitation Protocol

Relaxation Educational Material
• 5 minute instructional video
• Brief Instructional Pamphlet
## Study Design: Outcome Measures

### Prospective Randomized Controlled Trial

<table>
<thead>
<tr>
<th><strong>Primary Objectives</strong></th>
<th><strong>Secondary Objectives</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>5-day Post-op Journal:</strong></td>
<td><strong>Pre-op and Post-op Shoulder Function:</strong></td>
</tr>
<tr>
<td>• VAS Pain Score</td>
<td>• American Shoulder and Elbow Surgeons Shoulder Assessment (ASES)</td>
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<td></td>
<td>• Single Assessment Numeric Evaluation (SANE)</td>
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<td><strong>2-week Follow-up Survey:</strong></td>
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<td></td>
<td>• Subjective Effectiveness</td>
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</tbody>
</table>
## Results: Demographics

<table>
<thead>
<tr>
<th>Sample size</th>
<th>Total Cohort</th>
<th>Relaxation Group</th>
<th>Control Group</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>151</td>
<td>75</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>59.5 ± 9.7</td>
<td>59.2 ± 9.3</td>
<td>59.8 ± 10.1</td>
<td>0.70</td>
</tr>
<tr>
<td>BMI</td>
<td>29.0 ± 4.9</td>
<td>29.0 ± 5.0</td>
<td>29.0 ± 4.9</td>
<td>0.94</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>56.3% (85)</td>
<td>43.7% (66)</td>
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<tr>
<td></td>
<td>60% (45)</td>
<td>40% (30)</td>
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</tr>
<tr>
<td></td>
<td>52.6 (40)</td>
<td>47.4% (36)</td>
<td></td>
<td>0.36</td>
</tr>
</tbody>
</table>
Results: Post-op VAS Pain

No significant difference in pain scores between the relaxation and control group (p = 0.32)
The relaxation group consumed less opioid medication.
• 15.0 vs. 25.0 tablets (p < 0.01)

63% of patients reported relaxation exercises decreased their pain levels.

52% of patients reported still performing the exercises at two weeks post-op.
No significant difference in shoulder function between the relaxation and control group (p = 0.31)
Results: SANE Score

No significant difference in shoulder function between the relaxation and control group (p = 0.36)
Conclusions

Relaxation exercises are inexpensive and easily accessible to the majority of patients.

Relaxation exercises can decrease post-operative opioid use, without increasing (or decreasing) reported post-operative pain.

The use of relaxation exercises has no effect on post-operative shoulder function.

Relaxation exercises and their potential benefits should be discussed with patients during the peri-operative period.


THANK YOU.