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Conservative Treatment of Anterior Cruciate Ligament Deficiency

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Conservative Treatment of Anterior Cruciate Ligament Deficiency

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Introduction

One of the most common knee injuries is a tear or sprain to the anterior cruciate ligament. The ACL is responsible for preventing forward translation of the tibia on the femur. It is one of the four major stabilizing ligaments of the knee. The ACL can be injured in pivoting sports such as soccer, when the foot is planted and the knee twists, or in basketball, when landing awkwardly from a jump. Female athletes are three to nine times more likely to sustain an ACL injury compared to males. Regardless of age and activity level, the initial treatment after an ACL injury is rest, ice and usually crutches. Unlike the medial collateral ligament and posterior cruciate ligament, tears of the ACL frequently require surgical treatment. For individuals who choose not to have surgery, rehabilitation of the injured knee is frequently recommended to restore as much function as possible and help prevent instability. Rehabilitation focuses on strengthening the muscles around the knee in order to provide better support, control and stability. Some athletes may choose a non-surgical approach to finish a sports season and have reconstructive surgery at a later time. This is not recommended for most sports but can be successful in single plane sports that require minimal pivoting or side to side movements like sprinting athletes and designated hitters in baseball and softball.

Exercise Protocol

When working with patients always evaluate their full range of motion and note what ranges or activities that cause pain, so that provided exercises do not heighten pain levels. Below are examples of progressive exercises that are meant to help strengthen the musculature surrounding the knee meant to stabilize the knee during activity. If the exercise is causing the patient pain, then the exercise must be modified or not done again until the patient has no pain with performance of said exercise.

Stage of rehabilitation

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Exercises</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Injury – 2 weeks)</td>
<td>- Controlling edema/swelling and pain &lt;br&gt; - Quadriceps control with Russian electrotherapy with straight leg raises &lt;br&gt; - Active knee flexion &lt;br&gt; - Unloaded cycling for AROM &lt;br&gt; - Cryotherapy</td>
</tr>
<tr>
<td>2</td>
<td>(1 – 2 weeks)</td>
<td>- Controlling edema/swelling and pain &lt;br&gt; - Quadriceps control with Russian electrotherapy with straight leg raises &lt;br&gt; - Active knee flexion &lt;br&gt; - Unloaded cycling for AROM &lt;br&gt; - Cryotherapy</td>
</tr>
<tr>
<td>3</td>
<td>(3 weeks)</td>
<td>- Controlling edema/swelling and pain &lt;br&gt; - Quadriceps control with Russian electrotherapy with straight leg raises &lt;br&gt; - Active knee flexion &lt;br&gt; - Unloaded cycling for AROM &lt;br&gt; - Cryotherapy</td>
</tr>
<tr>
<td>4</td>
<td>(4 – 5 weeks)</td>
<td>- Controlling edema/swelling and pain &lt;br&gt; - Quadriceps control with Russian electrotherapy with straight leg raises &lt;br&gt; - Active knee flexion &lt;br&gt; - Unloaded cycling for AROM &lt;br&gt; - Cryotherapy</td>
</tr>
<tr>
<td>5</td>
<td>(Addition of brace)</td>
<td>- Controlling edema/swelling and pain &lt;br&gt; - Quadriceps control with Russian electrotherapy with straight leg raises &lt;br&gt; - Active knee flexion &lt;br&gt; - Unloaded cycling for AROM &lt;br&gt; - Cryotherapy</td>
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Purpose

The purpose of this literature review is to present a simple protocol for the treatment of Anterior Cruciate Ligament deficiency for one plane athletes like track athletes and baseball and softball designated players whom defer surgical intervention until after the season is completed.

References

- www.bodybuilding.com
- www.womenshealthmag.com