Long & Gentle Meets Fast & Furious

A new study is looking at whether an aggressive exercise program can help patients recovering from total knee replacement surgeries get their legs back under them.

The five-year, $2.5 million National Institutes of Health-funded study is recruiting patients from three Colorado sites, including University of Colorado Hospital, said principal investigator Jennifer Stevens-Lapsley, PT, PhD, director of the Muscle Performance Laboratory at the CU School of Medicine’s Department of Physical Therapy.

The study is the only one in the country seeking to establish definitively the effectiveness of the two recovery paths, she added.

“If you go into the community you’ll find therapists practicing both approaches, and surgeons and therapists advocating for one or the other,” she said.

To ensure patient safety, therapists will closely monitor each group for swelling and for injuries, including muscle strains, tendinitis, and poor incision healing, Stevens-Lapsley added.

**Speeding recovery, improving health.** The study could produce significant payoffs for the half-million patients who undergo total knee replacement each year. The procedure aims to reduce pain and improve function. But on the whole, patients have 20 to 50 percent deficits in walking and stair-climbing speed compared to healthy individuals of comparable ages, Stevens-Lapsley said.

Three-quarters of patients report some limitations going up and down stairs long after their surgeries, she added.

“They start at a lower level of function before surgery and never quite get back to the levels when they were healthy,” she noted. “Our goal is to restore functional performance capabilities to the levels of healthy individuals.”

Stevens-Lapsley, who just completed an NIH-funded study using electrical stimulation to improve quadriceps strength following total knee replacement (Insider, Feb. 3, 2009), believes muscle strength is a big player in a patient’s recovery. But rising copay costs for therapy sessions may deter patients from sticking to their recovery regimens. That means less therapy and in many cases diminishing physical strength. That, in turn, increases the risk of hospital readmissions and the need for subsequent procedures to correct orthopaedic problems.

Patients enrolled in the study will get a three-month, 26-visit intervention – at least twice the amount normally offered – and
will pay nothing out of pocket, Stevens-Lapsley said. Researchers will test them before surgery and then follow them for one year.

The study is about one-quarter of the way to its recruitment goal of 160, Stevens-Lapsley reported. Physicians at UCH will recruit patients out of the Orthopaedics Clinic. Donald Eckhoff, MD, is a co-investigator for the study. Associate professor of Orthopaedics Michael Dayton, MD, and assistant professor of Orthopaedics Craig Hogan, MD, are also collaborating, along with surgeons from the Colorado Joint Replacement Center at Porter Adventist Hospital.

Study Details

There are three rehabilitation sites for the study: the Anschutz Medical Campus, Active Motion Physical Therapy in south-central Denver, and Ascent Physical Therapy in Littleton.

To be included in the study, patients must be undergoing a single total knee replacement and have no other unstable orthopedic conditions that substantially limit mobility. They must also:

» Be 50 years or older
» Have a body mass index (BMI) less than 35
» Have no neurological or vascular conditions that limit function
» Be non-smokers

For more on the study, visit the Muscle Performance Lab Web page or contact Jennifer Stevens-Lapsley, PT, PhD, at Jennifer.Stevens-Lapsley@UCDenver.edu