

# Knee Rehab May Avoid Cartilage Repair Surgery

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BRUSSELS – A carefully designed, 3-month program of rehabilitation exercise and education in patients with articular cartilage lesions who were scheduled for cartilage repair surgery led to significant improvements in knee function in a single-center study with 48 patients.

84% had a medial femoral-condyle lesion. Participants had had their symptoms for an average of 47 months prior to the study.

Analysis of training diaries and responses in biweekly questionnaires showed that 79% of participants adhered to their rehab regimens, and 88% had follow-up assessments an average of 104 days after they entered the study.

At follow-up, participants averaged a

30% improvement over baseline in both extension and flexion of their injured knee, Dr. Risberg reported at the meeting, sponsored by the Osteoarthritis Research Society International. They also averaged improvements of 21%, 31%, and 37% in the triple, crossover, and one-leg hop tests, respectively, compared with baseline, all statistically significant increases.

They also had significant improvements in measures of pain, activity, and

quality of life. Dr. Risberg cited the finding that nearly two-thirds of patients said they no longer needed immediate knee surgery as the best demonstration of their improvement.

She cautioned that despite completing the 3-month program, some patients had no significant response to their rehabilitation, and that additional studies should test the program in more patients with longer follow-up. ■

## VITALS

**Major Finding:** A 3-month program of intensive knee rehabilitation produced a significant, 30% improvement in knee extension and flexion in patients with articular cartilage lesions who were scheduled for repair surgery. After the program ended, 64% of participants said they no longer needed immediate surgery.

**Data Source:** Single-center study of 48 patients with articular cartilage lesions.

**Disclosures:** Dr. Risberg said she had no conflicts of interest.

Following the 3-month rehabilitation intervention, 64% of the patients said they no longer needed immediate surgery, said May Arna Risberg, Ph.D.

“I believe this [rehabilitation] program works for these patients. We will publish the program, and continue to use it ourselves, and we hope others will use it,” said Dr. Risberg, professor of sports medicine at the Norwegian School of Sport Sciences in Oslo. Gradually increasing knee loading using an individualized schedule may explain the rehab program’s success, she said.

“Patients with cartilage lesions are very different from osteoarthritis patients. You need to go much slower with progression of their knee loading. Rehab for cartilage needs to be slow and long,” she said in an interview.

All 48 patients in the study had undergone prior rehab sessions run by other clinicians, but aside from the focus on a gradual pace, an emphasis on using knee loading to guide the program’s intensity, and a strong education component, the rehab program tested by Dr. Risberg didn’t involve any novel approaches or exercise regimens.

Participating patients attended rehab sessions of the Oslo CARE (cartilage, active, rehab, and education) program an average of twice a week. Sessions included warm-up stretches, gait retraining, neuromuscular exercises, step-up and step-down exercises, and strength exercise for knee and hip muscles. Both the step and strength exercises featured gradually increasing loading over time. The program also included educational sessions and materials.

The study enrolled patients who had a focal femoral-condyle defect in the articular cartilage of one knee, diagnosed by arthroscopy, and who were scheduled for repair surgery. Their age averaged 34 years (range, 17-50); 70% were men, and

## IN TYPE 2 DIABETES MELLITUS THERE COULD BE DANGER BELOW



**Renal impairment is the leading microvascular complication associated with type 2 diabetes (over 40%), followed by retinopathy (28.5%) and neuropathy (19.4%) – it is important to recognize these complications as soon as possible<sup>1-4</sup>**

- ▶ According to the National Kidney Foundation, diabetes and renal impairment are considerably underdiagnosed, which may lead to disease progression because of missed opportunities to provide appropriate care for patients with these conditions<sup>5</sup>
- ▶ Microalbuminuria (albumin in the urine  $\geq 30$  mg/day or  $\geq 20$   $\mu$ g/min) is the earliest clinical evidence of renal disease<sup>6</sup>
- ▶ Patients with renal impairment may have poor glycemic control ( $A_{1c} \geq 7\%$ ), may have hypertension (BP  $\geq 130/80$  mm Hg), and may have dyslipidemia as well as other comorbidities<sup>5,7</sup>


**It's important to recognize microvascular complications in patients with type 2 diabetes as early as possible. Microalbuminuria is the earliest sign of renal disease, the leading microvascular complication, in type 2 diabetes.**

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