

## Editorial Commentary: Postoperative Anterior Cruciate Ligament Reconstruction Protocols Are Like Snowflakes; No 2 Are Alike



**Abstract:** Postoperative rehabilitation after arthroscopic and related surgery should follow guidelines that emphasize time (tissue healing) and performance (motion and strength) milestones. These guidelines are often missing in traditional protocols, which assume that all patients arrive in the same condition at the same point in time. The real challenge for the allied health professional will be demonstrating that milestone-based protocols that use the best available evidence are effective, and as a start, we need to eliminate treatments proven ineffective.

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The systematic review by Makhni et al.<sup>1</sup> is a glimpse of what lies ahead for the allied health professional in the value-based era of health care. “Value” in health care is defined as the outcome achieved relative to the cost incurred in the provision of that care.<sup>2</sup> Now more than ever, the type and timing of treatment provided by physical therapists as well as the number of units or clinic visits required to provide these treatments need to be well justified.<sup>3</sup> In this systematic review, the authors report on postoperative anterior cruciate ligament (ACL) reconstruction rehabilitation protocols. Despite restricting the search to academic institutions and excluding protocols that incorporated concomitant procedures, the authors found substantial variability in the composition and timing of the postoperative protocols as well as the use of treatment modalities that have been shown to be ineffective. Consequently, it is difficult to imagine that these protocols are outlining care that maximizes value.

The variability in protocols is somewhat expected. Historically, these protocols introduce exercises on a visit or weekly basis, for example, *do this exercise 10 times at visit 6 or add this exercise at week 4*. Over time, new approaches to exercise and manual techniques emerge and are added to the protocol. As practices grow, more tweaking of the protocol is needed to reflect the preferences and experiences of individual surgeons and physical therapists. The end result is an itemized set of instructions that reads more like a recipe than a plan of care.

Ideally, postoperative rehabilitation should follow guidelines that emphasize time (tissue healing) and performance (motion and strength) milestones. These guidelines are often missing in traditional protocols, which assume that all patients arrive in the same condition at the same point in time. This is noted by the authors who found that many protocols lacked criteria or instructions for determining when it is appropriate to progress to the next level. Developing ACL protocols that are goal oriented and centered on the biological principles guiding rehabilitation that provide criteria for the progression of activities and discourage the use of treatments that have not been shown to be efficacious will eliminate some of the variability in the current protocols. The real challenge for the physical therapist will be demonstrating that milestone-based protocols that utilize the best available evidence are effective.

Several factors, including donor site morbidity,<sup>4</sup> timing of surgery,<sup>5</sup> preoperative motion,<sup>6</sup> and associated injury,<sup>7</sup> may influence progress postoperatively. If a patient is initially slow to progress due to increased morbidity, a goal-oriented, milestone protocol allows the physical therapist to utilize the best available evidence to accelerate the patient. This may mean providing intervention, be it evidence-supported exercises or increased clinic visits, which are not needed for patients with less morbidity. However, to satisfy the outcome portion of the value equation, protocols will need to be designed with enough structure that it can be compared to determine which is optimal. This can be difficult in a milestone approach, where rehabilitation can be individualized to a certain extent to meet the needs of the patient.

Although challenging, this is an opportunity for the physical therapist to collaborate across disciplines to

maximize value for these patients. In value-based health care, ACL reconstruction is not a singular event but rather a process involving clinicians from various disciplines providing care in the pre-, intra-, and postoperative period.<sup>3</sup> With an increased emphasis on empowering the patient to perform rehabilitation at home and the advent of bundle payments, it is essential that physical therapists work in a collaborative fashion to develop and update evidence-based guidelines that reflect our contribution to the patient through the entire cycle of care and maximize value.

Mark P. Cote, P.T., D.P.T., M.S.C.T.R.  
*Associate Editor*

### References

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