Although the authors of a recent systematic review have determined that physical therapist-supervised exercise programs tailored to the impairments of each individual are effective for adults with chronic low back pain, debate remains regarding which form of exercise is most beneficial for these patients. Lumbar stabilization training is one approach that addresses specific muscle functional impairments, and it has been shown to be beneficial for those with lumbar spondylolisthesis, unilateral low back pain, chronic low back pain, posterior pelvic pain associated with pregnancy, and a subgroup of patients who fit a clinical prediction rule. However, other researchers have shown similar improvements when intensive strength and conditioning programs addressing more global strength and endurance impairments were utilized.

Some researchers have attempted to determine which of these exercise approaches (specific versus global exercises) was more beneficial. One limitation of these studies is that the inclusion criteria were broad, thus unlikely to exclusively capture the subgroup of patients most likely to benefit from either approach, re-iterating the notion that no “magic bullet” approach exists for all individuals with low back pain. Another limitation is that researchers assessing lumbar stabilization training have typically designed programs that address the underlying motor control deficits and have often failed to address the broader range of impairments related to range of motion, strength, endurance, or proprioception deficits. Similarly, researchers assessing general strength and endurance deficits have also failed to address impairments of range of motion, flexibility, motor control, and proprioception as patients progressed back to full function. Furthermore, in 1 comparative study, the exercises utilized were similar across the treatment groups as time progressed. Some researchers have also incorporated overly conservative initial rehabilitation phases that permitted only low-level muscle contractions with minimal lumbar motion. This raises the question whether such approaches may actually exacerbate psychosocial issues, such as fear-avoidance beliefs, because of the overly cautious manner in which the exercise program is prescribed.

In a recent randomized control trial, Ferreira et al demonstrated short-term benefits of motor control training or manipulation compared to general-strengthening exercises. However, there was no difference between the 3 groups at the long-term follow-up. The lack of long-term differences between an exercise approach that focused on motor control training versus one that focused on general trunk strengthening was also found by Koumantakis et al. The lack of differences between treatment approaches in these studies and the small treatment effects leads us to ask if we, as researchers, are asking the right question. Is there a “magic bullet” exercise for low back pain? Do some individuals require more specific visual feedback of muscle function? There is no doubt that rehabilitative ultrasound imaging (RUSI) can provide a visual representation of muscle function. What remains to be ad-
dressed is how and when this should be implemented into physical therapy clinical practice. It is our opinion that there exists a subgroup of patients with acute and chronic low back pain that can be helped with appropriate use of this tool. It is up to us as physical therapists to continue evaluating the role of RUSI in clinical practice. We must be careful not to fall prey to the allure of “the image” that befell the use of magnetic resonance imaging for patients with low back pain and which frequently created more harm than good by leading to increased disability and reliance on surgical options for those with chronic recurrent low back pain. Rather, we may be better served at this point in time if we accept the current state of RUSI knowledge and commit to using this technology in a way that best informs our decision-making process when treating patients.

In this issue of the journal, we explore RUSI’s potential as a tool that physical therapists use in examining low back muscle function. As an assessment tool, RUSI can assist practitioners in recognizing impairments such as a decreased ability to increase muscle thickness (eg, transversus abdominis or multifidus) during specific physical tasks, excessive use of more global muscles (eg, rectus abdominis or erector spinae muscles) during low-level activities, and muscular atrophy. Identifying these impairments can help practitioners formulate a specific exercise program matched to the patient’s underlying impairments during early stages of rehabilitation. From a treatment perspective, RUSI can provide feedback to both the physical therapist and patient that may help determine which verbal or tactile cues are most effective to facilitate proper performance of therapeutic exercises during the early phase of rehabilitation. Additionally, it may assist physical therapists in their decision-making process related to exercise prescription and progression. Finally, RUSI may help determine when specific impairments have been sufficiently addressed to permit the exercise progression necessary to achieve maximal pain-free function.

**REFERENCES**