What problems did the researchers set out to study, and why?

Subacromial impingement syndrome (SAIS) is a common and painful condition of the shoulder. No studies have specifically compared ultrasound therapy (US) to high-intensity laser therapy (HILT) for treating SAIS. The goal of the researchers was to compare the effectiveness of these 2 forms of treatment for SAIS.

Who participated in this study?

70 participants with confirmed grade I or II SAIS were included in the study. Patients were excluded from the study if they had anesthetic or corticosteroid injections in the 4 weeks preceding the study, surgery or previous fracture of the humeral head, impaired rotation of the glenohumeral joint as measured by goniometry, a history of acute arthritis, known osteoarthritis in the shoulder, or known ruptures of the rotator cuff. Patients also were excluded if they had one of several systemic conditions such as systemic lupus erythematosus, diabetes, thyroid dysfunction, and anxiety-depression syndromes.

What new information does this study offer for patients?

The use of high-intensity laser therapy may offer greater improvements in pain, motion, and strength when compared with ultrasound therapy for patients with subacromial impingement syndrome.

How did the researchers go about this study?

Subjects were randomly assigned into a HILT group or a US group. The HILT and US were administered a total of 10 times during 2 weeks. The HILT treatment was administered by a physiatrist and the US was administered by a physical therapist. No other treatment was delivered during the course of the study. The researchers collected data on pain, muscle strength, functional movement, and information from 2 outcome measures: the Constant-Murley Scale and the Simple Shoulder Test. Outcomes were assessed after 2 weeks.

How might the results be applied to physical therapist practice?

Physical therapists deciding between US and HILT as part of a comprehensive program for SAIS might use the results of this trial to choose in favor of HILT.

What are the limitations of the study, and what further research is needed?

This study was limited by a small sample size, lack of placebo or control groups, and a limited follow-up period. The fact that the trial was conducted without the addition of other commonly administered treatments for SAIS, and the fact that 10 treatments were delivered over only 2 weeks, may limit the clinical applicability of this information.

Eric K. Robertson
E.K. Robertson, PT, DPT, OCS, is Assistant Professor, Department of Physical Therapy, Medical College of Georgia.