Exercise and the Prevention of Low Back Pain
Ready for Implementation

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Acute low back pain (LBP) is common, with more than 80% of us experiencing at least one episode in our lives. It is painful, a common cause of time off work, and interferes with our ability to perform daily activities. Fortunately, most episodes of acute LBP are self-limited and improve with time and conservative treatments. However, recurrence is common, with estimates ranging from 24% to 80% in the first year.1

After recovery, patients often query their health care professional on how to avoid future episodes of LBP. The well-conducted systematic review by Steffens and colleagues2 provides us with concrete evidence on the value of exercise. They summarize several low- to moderate-quality trials that examine the benefits of exercise and education on primary and secondary prevention of LBP and sick leave due to LBP. The benefits were fairly consistent across studies, and the effect size was large enough to have clinical and policy importance. Exercise alone or in combination with education is effective for preventing LBP. The authors also assessed other interventions, including education without specific exercise instruction, orthotic insoles, and back belts. These other interventions demonstrated minimal, if any, evidence of benefit. The types of exercise instruction across these studies were variable, encompassing core exercises emphasizing the strengthening of back and abdominal muscles, stretching and spine range-of-motion exercises, and more general instruction in aerobic conditioning. Almost all of the education and exercise regimens assessed were substantial regarding the frequency and duration of the sessions. The effect size of the risk for subsequent LBP was impressive (approximately 25%-40%), with some evidence of reduced use of sick leave. Long-term benefits were less certain, with several studies showing no effect after 1 year. This diminished benefit may be the result of reduced adherence to continued exercise beyond the intervention period.

If a medication or injection were available that reduced LBP recurrence by such an amount, we would be reading the marketing materials in our journals and viewing them on television. However, formal exercise instruction after an episode of LBP is uncommonly prescribed by physicians. This pattern is, unfortunately, similar to other musculoskeletal problems in which effective but lower-technology and often lower-Reimbursed activities are underused. In one study,3 fewer than half of the patients with chronic LBP or neck pain who were surveyed received exercise instruction despite a good evidence base for its effectiveness. Passive treatments (eg, physical modalities) with limited evidence of effectiveness were relatively commonly used.4 How might we address barriers to the use of exercise instruction after LBP?

Develop Standard Exercise Treatment Protocols
Although the protective effect of the various interventions was similar, the types of exercise prescribed were different. Experts in physical medicine, physical therapy, and other fields must come to consensus regarding standard, efficient, and acceptable bundled interventions for LBP prevention. It might be unrealistic to come up with a “one-size-fits-all” intervention; however, determining the categories of exercise (eg, strengthening, stretching, and aerobic) and the appropriate frequency, dose, and intensity for each category would be a positive start.

Identify Key Components of Educational Programs
Although the differences were modest, Steffens et al2 found a long-term protective effect of exercise in combination with education vs exercise alone and a slightly larger short-term effect for exercise and education vs exercise alone. As with exercise, identification of and consensus on key points for education on LBP are needed.

Address Patient Motivation
When patients have recovered from an episode of acute LBP, how do we motivate them to engage in exercise? Our colleagues in health behavior and the payer community can assist in development of very low-cost and acceptable interventions. Employers can also help by offering incentives that promote exercise (eg, reduced fitness club membership fees and payment-based health promotion programs).5

Identify Efficient Delivery Models
Payers will need to be convinced regarding the cost-effectiveness of preventive interventions for recovered patients before they support such interventions. We will need information regarding the costs of different bundles and different providers as well as an understanding of the feasibility and effectiveness of group classes vs individual classes.

Improve Payment Policy
To attract patients, out-of-pocket expenses should be minimal. As medical professionals become more responsible for overall health care costs through capitation in entities similar to accountable care organizations, providing these services will become more attractive. In the interim, payers should support exercise programs by covering a sufficient number of visits for instruction and keeping co-pays to a minimum.

Instill Clinician Confidence to Prescribe
Although exercise appears to be effective in reducing the risk of future LBP episodes, it will not eliminate one’s risk of recurrence.6 Health care professionals must be able to de-
scribe, with confidence, the benefits of easily accessible exercise programs to diverse patient populations.

Conclusions
To address these barriers, payers, professional societies, consumers, and members of health care delivery systems will need to work together. Consensus-development conferences and cross-specialty guidelines can be highly effective in disseminating common policies. The discipline of implementation science can provide us with guidance on the readiness of the health care system for such programs. Health care professionals will need simple referral pathways for their patients to receive individual instruction or group classes that are financially attractive to both the health care system and patients. The potential benefits to the health system, patients, and employers are substantial.

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