

PCPs are front line defense in diagnosing serious illness in patients with acute lower back pain

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A study by researchers at The George Institute for International Health in Australia found that it is rare for patients presenting to PCPs with acute lower back pain to have previously undiagnosed serious diseases. The most common serious disease cause documented was vertebral fracture, with half of the cases identified at the time of initial consultation. Full findings appear in the October issue of *Arthritis & Rheumatism*, a journal published by Wiley-Blackwell on behalf of the American College of Rheumatology.

The World Health Organization (WHO) estimates that global prevalence of lower back pain could be as high as 42%. Pain occurring in the lower back interrupts daily routines such as work, school, or activities and is a chief cause of visits to primary care physicians (PCPs). According to The National Institute of Neurological Disorders and Stroke (NINDS), a part of the National Institutes of Health (NIH), back pain is the second most common neurological ailment in the U.S. NINDS estimates Americans spend at least \$50 billion each year due to low back pain, a leading contributor to missed work and job-related disability.

In this study a total of 170 general medical practitioners (Australian equivalent to PCP), physiotherapists, and chiropractors in the Sydney area were recruited. Between 2003 and 2005, the clinicians screened 3,184 patients with 1,172 presenting with acute low back pain. These patients were assessed for the presence of red flags for serious disease.

The term "red flag" means danger and is used as a warning signal. In healthcare settings "red flag" clinical features, e.g. unexplained weight loss, are used by PCPs to screen for low back pain patients who are more likely to have a serious disease and so require more extensive diagnostic work-up.

Patients 14 years and older, presenting for the first consultation of the current episode of acute low back pain were included in this study. Researchers monitored patients for 12 months after initial consultation to determine if fracture, infection, [arthritis](#), or cancer was the cause of their lower back pain. The results showed that PCPs identified 5 of the 11 cases of previously undiagnosed serious illnesses during the initial consultation.

Researchers, led by Christopher Maher, Ph.D., noted 8 cases of vertebral fracture, the most common serious disease identified and the only disease for which researchers were able to create a diagnostic rule. The rule contained 4 variables: female sex, age > 70 years, significant trauma (major in young patients, minor in elderly patients), and prolonged use of corticosteroids. When at least 1 of the "red flag" questions was positive, the likelihood ratio (for fracture) was 1.8; with at least 2 positive features, the ratio increased to 15.5 and with 3 positive features it increased to 218.3. "Our rule suggests that when any 3 of the 4 "red flags" are positive, the probability of vertebral fracture greatly increases (e.g., from 0.5% to 52%), said Professor Maher.

The study also uncovered there to be high false-positive rates with some red flag questions. An approach where any positive red flag is acted upon would result in unnecessary referrals to specialists and needless investigation of patients. The authors propose, "A better approach would be to evaluate a combination of red flag questions that identify serious disease while reducing the number of false-positive results." The primary care setting plays a vital role in early detection of serious disease

and the authors recommend further research into the diagnostic accuracy of red flags in [lower back pain](#) is needed.

More information: "Prevalence of and Screening for Serious Spinal Pathology in Patients Presenting to Primary Care Settings With Acute Low Back Pain" Nicholas Henschke, Christopher G. Maher, Kathryn M. Refshauge, Robert D. Herbert, Robert G. Cumming, Jane Bleasel, John York, Anurina Das, and James H. McAuley. *Arthritis & Rheumatism*; Published Online: September 29, 2009 ([DOI 10.1002/art.24853](https://doi.org/10.1002/art.24853)); Print Issue Date: October 2009.

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