

Degenerative Changes – Are they work-related?

Your patient has persistent pain months from a minor injury. You order X-rays or imaging and the report comes back noting degenerative changes. Is this the cause of your patient's persistent pain?

If occupational factors are important causal factors ... greater exposure to suspected occupational factors should lead to greater ... degeneration (Videman and Battie 1999 p. 1165). Patients with

- (1) pain disability from a minor injury,
- (2) little objective clinical evidence of impairment
- and (3) sedentary to moderate job demands

are likely to have degenerative changes on X-rays and imaging that are consistent with age and gender. In assessing work-relatedness, we need to consider if sufficient time has elapsed between the injury and now for degenerative changes to have developed; if the mechanism of injury would be expected to lead to increased risk of developing degenerative changes; if pain disability is due predominantly to physical or predominantly to psychosocial factors.

Back pain and degenerative changes

Disc degeneration seems to be a normal finding on X-rays, CT scan and MRIs beyond age 20 and unrelated to symptoms and impairment (Videman and Battie 1999; Videman, Battie et al. 2003). 35% of asymptomatic 20 year-old males have degenerative spinal changes on MRI (Paajanen, Erkintalo et al. 1989). 33% of asymptomatic women have significant degenerative spinal changes on MRI by age 40 (Powell, Wilson et al. 1986). 64% of asymptomatic middle-age persons have lumbar disc protrusions and bulges on MRI (Jensen, Brant-Zawadzki et al. 1994).

There is a lack of correlation between MRI findings and LBP (Savage, Whitehouse et al. 1997; Videman, Battie et al. 2003). Twin studies have shown that back problems are unrelated to the degree of wear and tear changes on x-rays and imaging studies (Battie, Videman et al. 2002). Other studies show a lack of correlation between back pain disability and physical impairment (Waddell, Somerville et al. 1992; Sullivan, Shoaf et al. 2000; Parks, Crichton et al. 2003; Denis, Shannon et al. 2007).

Shoulder pain and degenerative changes

Studies find no correlation between findings on imaging and extent of rotator cuff tear (RTC) on arthroscopy, clinical findings or disability (Mohtadi, Vellet et al. 2004; Jost, Zumstein et al. 2005; Krief and Huguet 2006). The prevalence of partial RTCs as a normal finding on imaging increases with age (Sher, Uribe et al. 1995; Tempelhof, Rupp et al. 1999). The majority of occupational throwing persons (overhead workers) have asymptomatic partial RCTs (Miniaci, Mascia et al. 2002; Reilly 2006). The presence of a partial RCT on imaging may not account for symptoms. In the general population, the prevalence of tears was 39% in asymptomatic shoulders using ultrasound and 26% using MRI. Ultrasound appears to overestimate the prevalence of tears compared with MRI (Reilly 2006). Connor *et al* found that degenerative changes can be asymmetrical in asymptomatic throwing shoulders – limited to the dominant side. 5 years after this incident finding, persons with degenerative changes in the dominant shoulder remained asymptomatic (Connor, Banks et al. 2003). Unilateral findings are not indicative that the degenerative changes are the cause of the patient's pain.

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Degenerative Changes as a Secondary Claim

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