

Background. The reported life-time occurrence of low back pain (LBP) in children and adolescents varies from 7% to 72% reaching adult levels by the end of puberty. Signs of disc degeneration (DD) on magnetic resonance imaging (MRI) increase after the pubertal growth spurt and have been shown in up to 44% of adolescents with LBP. DD developing in early adulthood seems to predispose the individual for a more rapid progression of DD. However, the value of MRI findings in predicting future LBP has proven low. **Purpose.** In the present study, our objective was 1) to describe the natural history of lumbar intervertebral discs from childhood to adulthood, and 2) to investigate whether findings of DD are associated with LBP. **Materials and Methods.** In 1994, we recruited 94 healthy 8-year-old school children for a semi-structured interview, a clinical examination, and a lumbar spine MRI with follow-ups at the ages of 11 (n=81) and 18 (n=71). In January 2021, at the age of 34, they were invited for a long-term follow-up (n=48). We assessed the signal intensity of the lumbar discs visually using the Pfirrmann classification and calculated the Pfirrmann Summary Score (PSS) for the whole lumbar spine (range 5-25). Further, we analyzed the association of PSS with self-reported LBP. **Results.** At the age of 8, 11 and 18, disc changes on MRI occurred in 18, 10, and 38% of the participants, respectively. At the age of 18 the occurrence of self-reported LBP was 50% reaching 73% by the age of 34. The mean PSS significantly increased from the age of 18 to the age of 34 from 10.4 (SD 1.6) to 11.6 (SD 1.7) with a mean change of 1.2 (95% CI 0.7 to 1.7). No significant difference in PSS was noticed at the ages of 18 or 34 between participants with or without LBP. The OR (95% CI) of PSS at the age of 18 with reference to LBP at the age of 18 was 1.32 (0.91 to 1.92), and to LBP at the age of 34 1.49 (0.93 to 2.38). **Conclusion.** More widespread lumbar DD at the age of 18 marginally predicted LBP in adulthood with every 1-point increment in PSS increasing the risk of LBP 1.5-fold. Thus, accelerated disc degeneration after the pubertal growth spurt may predispose the individual for LBP in adulthood.