

DBC Spine Research



Publications in international peer-reviewed journals

1. Epidemiology and risk factors

Peltonen JE, Taimela S, Erkintalo M, Salminen JJ, Oksanen A, Kujala UM. **Back Extensor and Psoas Muscle Cross-Sectional area, Prior Physical Training and Trunk Muscle Strength - a Longitudinal Study in Adolescent Girls.** Eur J Appl Physiol 1998; 77:66-71.

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Kujala UM, Taimela S, Videman T, Battie MC, Viljanen T. **Physical Loading and Performance as Predictors of Back Pain in Healthy Adults. A 5-Year Prospective Study.** Eur. J. Appl. Physiol. 1996;73:452-458.

2. Etiology, Evaluations and Diagnostics

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Luoto S, Aalto H, Taimela S, Hurri H, Pyykko I, Alaranta H. **One-Footed and Externally Disturbed Two-Footed Postural Control in Patients with Chronic Low Back Pain and Healthy Control Subjects. A Controlled Study with Follow-Up.** Spine 1998;23(19):2081-9; discussion 2089-90.

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3. Treatment

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4. Abstracts

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