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## Age-related differences in youth male soccer players during maximal and sub-maximal jumps

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The aim of the study was to assess possible age-related differences during maximal and sub-maximal jumps. 38 boys from two age groups (U13 and U15) completed testing based on contact and flight times, measures of reactive strength index (RSI = jump height/contact time) and leg stiffness (LS = peak ground reaction force/peak displacement of centre of mass) were collected during the jumping trials. Parametr RSI was measured by using FITRO Jumper (Fitronic, Slovakia) from the test of 5 maximal jumps. Relative LS was measured on force platform PS-2142 (Pasco, Roseville, USA). Mann-Whitney U test ( $p < 0,05$ ) was used to quantify differences between age groups. Statistically significant differences were found during maximal hopping when 15-year olds produced significantly greater reactive strength index ( $p < 0,000006$ ) than 13-year olds. During sub-maximal hopping, 15-year olds produced significantly greater relative leg stiffness than 13-year olds ( $p < 0,000027$ ). This results support Lloyd, Oliver, Hughes and Williams (2012) in their study where the average RSI of 12 and 15-year olds were significantly greater ( $p < 0,02$ ) then in a group of 9-year olds. Lloyd, Oliver, Hughes and Williams (2011) found out arising trend in LS and RSI related to age in 7-17-year olds. Results suggest that as children mature, they become more reliant on supraspinal feed forward input and short latency stretch reflexes to regulate greater levels of leg stiffness and RSI when hopping which are leading to greater LS and RSI (Lloyd et al., 2011; Lloyd et al., 2012; Oliver & Smith, 2010).

### Biography

Tereza Krakovská has completed her master degree in physiotherapy from Palacký University last year. Then started her PhD at the same University in Kinantropology. She is working as physiotherapist at private ambulance FyzioArt in Brno.

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