

Evaluating the measures of the legs muscles work according to the data from frontal stabilograms

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The article suggests a strategy for computing the measures of the legs muscles mechanical work according to the data from stabilometrics in the form of integral of the muscles strength modulus. The application of this approach for evaluating the movement in the coronal plane is discussed. When simulating the movement we use a simplified three-link model with two parallel links, which lean upon the platform and simulate straight legs. The third link — the body with the head and arms — is simulated as a single solid-state body. We use this model to assess the sum moment in the hip joints and the legs rate of angular rotation. In the initial representation we calculate the measures of the legs muscles work with the aid of the standard stabilometrical analyses: Romberg Test and Target Test. The suggested measure of the legs muscles work in the coronal plane demonstrates the increase of the frontal fluctuations more distinctly than, for instance, the traditional “span”.

Keywords: stabilometrics, posturology, mechanical work, frontal movements

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