

Calculation of necessary strength to execute movements at inclined plane

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Abstract

The purpose of this study is to contribute to the improvement of the training process by objectivizing the development of muscular strength. One of the apparatuses used to develop strength in artistic gymnastics is the inclined plane. Using formulas from mathematics and physics, the values of muscular strength necessary in executing the movements on this apparatus can be obtained.

Starting from the value of the subjects' body weight and from the load with which we wish to increase the effort, we can calculate the value of the inclination angle compared to the horizontal and the height where the high end of the inclined plane must be fixed. By doing this, the objective muscular strength values, related to the individual possibilities and on the intensity of the used biological stimulant, can be obtained. These values contribute to the optimization of muscular strength development with the help of the inclined plane in artistic gymnastics.

Key words: muscular strength, muscular contraction, inclined plane, strength in speed regime, elastic strength, strength calculus, artistic gymnastics.