
Clinic

Application of Biomechanical Research in the Training of Gymnastics

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ABSTRACT

Purpose: The purpose of the clinic is to demonstrate the application of results of biomechanical research in the training process of advanced gymnasts. For this purpose some technique of floor exercises and vaults have been selected as examples. Quantitative biomechanical data of qualitatively judged skills and theoretical considerations are the basis for the identification of the major factors to be optimized during training. The aims for optimization are (1) the well-prepared and exact qualitative acoustic information from coach to athlete based on the coach's well-trained visual observation, (2) specially chosen methodological steps to pronounce some parameters, and (3) the use of a very simple feedback-system to inform coach and athlete immediately after each trial about selected time-parameters.

Procedure: The clinic will be composed of three events. All of them start with an introduction into the biomechanics of the special event. Then follows a demonstration of the optimization process based on the discussed biomechanical data or theoretical considerations. For this aim groups of 5-7 gymnasts of the upper middle level will work on the events. The biomechanically based training program will be supported by using a simple feedback-system measuring selected time parameters. The following three events are selected as examples:

Floor: **Roundoff - flic-flac** - backward somersault

Floor: Running handspring - handspring - hecht-handspring- forward somersault (part of the olympic compulsory exercises)

Vault: **Front handspring**