

## **Summary**

**Title:** Malfunctions of the Musculoskeletal System and Muscular Dysbalance in Female Volleyball Players Aged 15 to 19 Years

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**Objective:** To detect the most common malfunctions of the musculoskeletal system and to determine muscular dysbalance in female volleyball players aged 15 to 19 years.

**Methods:** Forty-two female volleyball players were examined. Subjects were surveyed in order to reveal any muscular dysbalance and/or any malfunctions of the musculoskeletal system by common means of examination used in physiotherapy. Subjects were all aged 15-19 years, active high-level-competition volleyball players. The subject group was made out of two teams of players, the results were summarised for both teams together.

**Results:** A high percentage of the subjects suffer from some kind of dysfunction of the musculoskeletal system, above all, muscular dysbalance and poor posture should be mentioned. 83% of the subjects show physiologically incorrect spine posture (round back, flat back), 74% of the subject group suffer from back pain: 48% report pain in lumbal segments and 26% suffer from pain in the thoracic segments. In 69% of the subjects there is a physiologically incorrect emphasized anteversion of the pelvis accompanied by an emphasised lumbal lordose.

A decreased range of motion of m. quadratus lumborum, m. erector spinae and m. iliopsoas, plus significant decrease of muscle strength mostly on mm. abdomini (lower part) and m. gluteus maximus has been found;

A decreased range of motion of m. trapezius and m. levator scapulae which emphasizes the cervical lordose. Highly increased tone mainly on m. trapezius was observed in 100% of all subjects.

45% suffer from chronic pain of the knee joint, major dysbalance of the muscles of the knee was found in 98% of the players.

**Conclusions:** The findings suggest that most of the examined players report significant problems with their musculoskeletal system. Compensative exercises should be provided.

**Keywords:** musculoskeletal system, muscular dysbalance, physical examination, sports, volleyball