

## Abstract

**Title:** The influence of flossing band on range of motion of hip joint in grappling athletes

**Objectives:** The objective of this thesis is to determine the effectiveness of the therapeutic method "tissue flossing" in increasing the range of motion of hip rotations among recreational level grappling athletes, and whether this effect persists after a 60-minute grappling training session or during daily activities.

**Methods:** The experimental research involved 20 healthy participants engaged in recreational-level-grappling. All participants were men aged between 18-35 years. The research consisted of four sets of measurements conducted in two rounds, referred to as input and output measurements. In the first set, an input measurement was taken to establish the baseline range of motion for hip rotation in the right lower extremity, followed by an output measurement of the values for external and internal rotation in the hip joint after a 60-minute grappling session led by an expert coach. The second set included both input and output measurements taken before and after the 60-minute training session. However, specific exercises to enhance hip rotations were incorporated before the second input measurement. The third measurement followed the same procedure as the second set, with the addition of treating the hip joint area using the "tissue flossing" method prior to the input measurement. The same set of exercises as in the second measurement set was performed. The fourth measurement was conducted after the application of the flossing bands to the hip joint area. It was followed by the initial measurement and then 60 minutes of daily activities by the participants, with a subsequent re-measurement of the range of motion. Plastic manual two-arm goniometry, according to Janda and Pavlů (1993), was used to evaluate the range of motion. The results were recorded in an Excel spreadsheet and rounded to the nearest 5°. The obtained data were processed using the statistical program R Studio. Data analysis included descriptive statistics, and t-tests and Wilcoxon tests were used to determine statistical significance. The critical level of significance was set at 0.05.

**Results:** Research has found that following application of the flossing band, there is an immediate increase in the range of motion in the hip joint into external and internal rotation. Both results were evaluated as statistically significant ( $p < 0.05$ ). It was shown that treatment with the "tissue flossing" method leads to a significant ( $p < 0.05$ ) and more significant increase in range of motion, compared to only performing range of motion exercises without the applied band. It was further confirmed that this effect persisted after 60 min of grappling

training. Again, this was a statistically significant result ( $p < 0.05$ ). When evaluating the results, it became apparent that we could observe increased range of motion in the hip joint into rotations 60 minutes after application of the flossing band even if no sports activity occurred in the 60-minute time window, only daily activities. The result was again assessed as statistically significant ( $p < 0.05$ ).

**Key words:** tissue flossing, range of motion, hip joint, compression, grappling