

REFERENCE OF DISSERTATION THESIS OPPONENT

Study program: KINANTROPOLOGY

Opponent's name:

PhDr. Jitka Malá, Ph.D.

Author's name:

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Supervisor's name:

doc. PhDr. Petr Šťastný, Ph.D.

The title of the diploma thesis:

The effect of different kinds of instant fascial release techniques for improvement of range of motion and muscle stiffness.

The aim of the diploma thesis:

The aim is to critically evaluate the effectiveness of immediate fascial release techniques such as tissue flossing and foam rolling, on range of motion, viscoelastic properties of the muscle, dynamic stabilization and jump performance among athletes and fitness enthusiasts.

1. Scope:

number of pages of the thesis / text	101/83		
number of used sources	180		
others	tables	fig./photos/graphs	supplements
	12	35	7

2. Formal and language level of the thesis:

	excellent	very good	good	unsatisfactory
choice and definition of the topic, originality		X		
degree of fulfillment of the goal of the thesis	X			
logical structure of the thesis	X			
work with literature, use of citation standard		X		
work editing (text, graphs, pictures, tables)	X			
stylistic level of the text	X			

3. Evaluating criteria of the theoretical part of the thesis:

	excellent	very good	good	unsatisfactory
analysis and interpretation of literary review	X			
application of bibliography results for connection to the experimental part		X		

4. Evaluating criteria of the special part of the thesis:

	degree of evaluation			
	excellent	very good	good	unsatisfactory
hypotheses - relevance and quality of their definition		X		
<i>Hypotheses are written so that multiple research objectives are solved within a single hypothesis. This makes the hypotheses less clear.</i>				
research set - adequacy of selection	X	X		
<i>According to my opinion, within each group, a relatively small number of probands are processed. The conclusions are then influenced by the relatively small research sample.</i>				
methodology - used evaluation methods and their quality	X	X		
<i>A relatively large number of methodological, statistical processing steps were used. On the other hand, it is evident from the graphs that the input parametric data were not completely identical for the observed groups, e.g. the control group achieved different ranges of motion of the knee joint compared to the experimental groups.</i>				
results - presentation and interpretation	X	X		
<i>As part of the results, it would be nice to discuss the clinical significance of the parameters found.</i>				
statistical processing and data analysis	X			
discussion - interpretation of results in relation to current knowledge	X			
conclusion - self-evaluation level of the thesis		X		
<i>I lack a more extensive final evaluation and a link to possible follow-up work in the future.</i>				

4. Usefulness of the results of the thesis in practice:

above average average below average

5. Additional commentary and evaluation, questions for the defense:

The student presented a paper in which she discusses the effect of techniques acting on fascial tissue to determine the change in viscoelastic properties of the muscular system in the lower limb. The aim was to investigate the change in viscoelastic properties of muscles, range of motion at the knee joint and dynamic stabilization during jumping in athletes and fitness enthusiasts. All of these were compared within three groups, namely the group treated with tissue flossing, the group treated with foam rolling, and the control group. She used the active knee extension test and Y balance test and qualitative assessment of the jump. Statistical evaluation was performed using two-way ANOVA. The results showed an improvement in the range of motion of the experimental group relative to the control group.

In terms of topic selection, I see this issue as beneficial to the present study, however, I believe it would be interesting to evaluate the relationship between changes in thixotropic properties of fascia and soft tissue at locations farther away from the site of application and not just in the area of one joint where the intervention was applied. I would also have appreciated a more detailed and in-depth discussion of the link between fascial influence on tensile force transmission and thixotropy.

In some of the essays, I miss the ideal citation of sources, e.g. chapters 2.4.1, 2.4.2, 2.5.

The citation of sources is in the most general form, e.g. page 11, 13, 24, 26, 30 (Harvard style), while other pages show Vancouver numerical style.

Questions:

Can you describe in your own words the importance of TITIN on muscle contraction?

In ch. 2.3 you talk about fascia. You write about dehydration of the fascia and that dehydration of the fascia reduces its elasticity. Can you describe the mechanism of change in fascial elasticity due to dehydration?

On page no. 10, you write that there are several potential mechanisms that may be beneficial for fascia therapy. These are thixotropy, piezoelectricity, fascial adhesion, cellular responses, fluid flow, fascia inflammation and myofascial trigger points. Can you please explain how these processes can be beneficial to therapy?

Chapter 5 provides a description of the data collection, please specify exactly how the data was collated, this is not included in the text.

In the methodology you write that a mechanical stress of 0.4 N was applied for 15 milliseconds. Practically, it is not clear to me how both the magnitude of the force and the time were monitored.

How do you explain the significant differences in the outcome of viscoelastic properties e.g. in vastus lateralis on the left lower limb when comparing foam roll application and flossing?

6. Statement of the opponent:

I declare that all referenced sources are properly cited or paraphrased in the thesis.

7. Recommendation for defense:

yes	yes with reservations	no
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8. Proposed classification level:

according defense

In Prague:

opponent's signature