

Standing Tutorial Meetings in Higher Education

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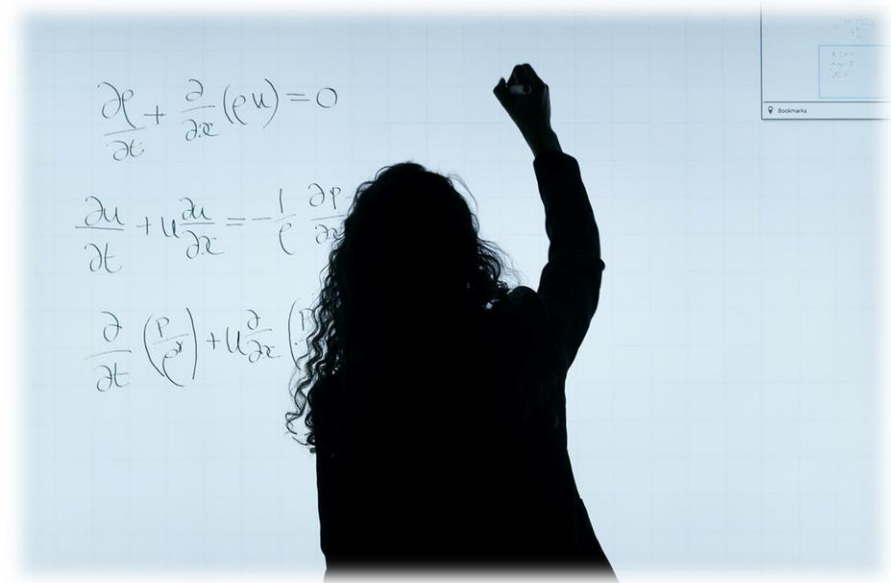
Why encourage sedentary behavior?



Overall research question:

What are the effects of sitting vs. standing tutorial group meetings in higher education?

- Physical activity behavior
- Learning



Tutorial group meetings



9 weeks, 13 tutorial meetings, 2-hour each



Physical activity behavior



Physical activity behavior

	SB	MVPA
Tutorial days		
Sit group	08:12 (00:17)	00:29 (00:03)
Stand group	07:17 (00:15)	00:39 (00:04)
Non-tutorial days		
Sit group	08:04 (00:15)	00:24 (00:03)
Stand group	07:22 (00:13)	00:33 (00:03)

LPA	Sit group	Stand group
Tutorial days	04:51 (00:14)	06:20 (00:15)



Physical activity behavior

↓ Sedentary behavior

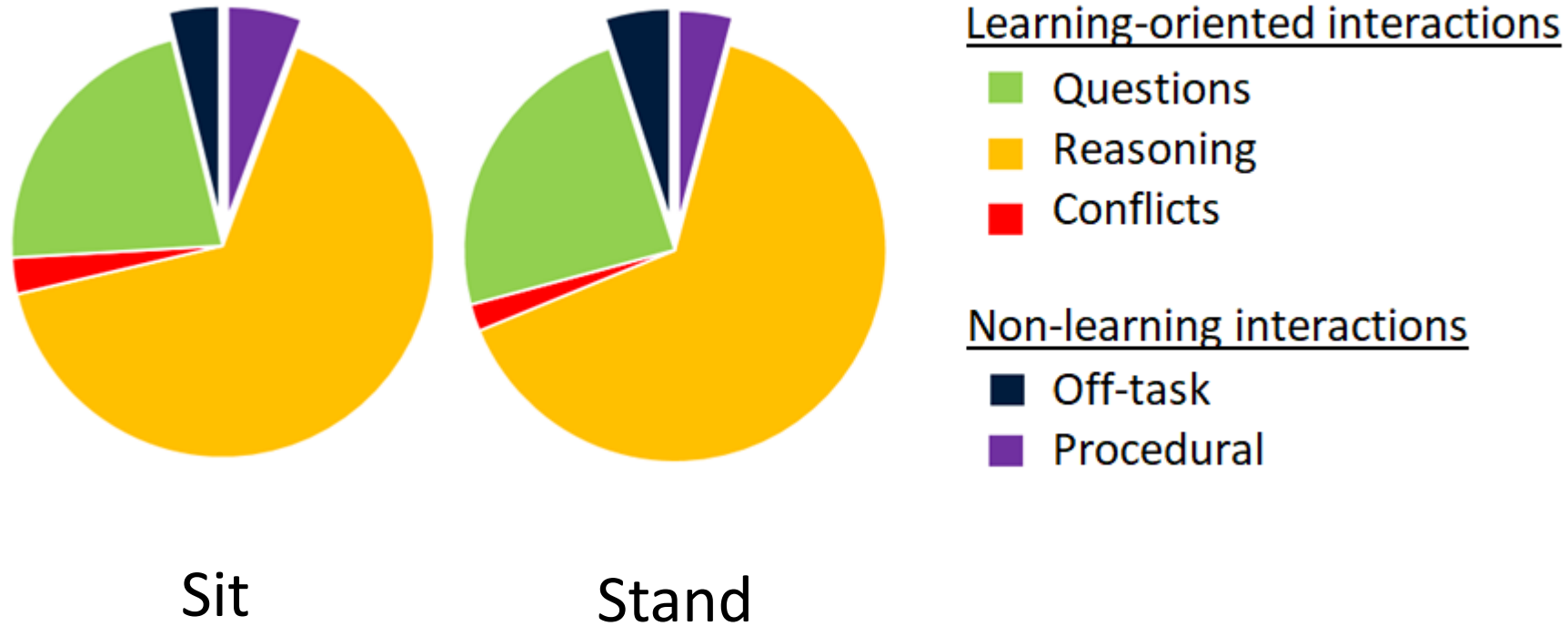
↑ Physical activity



Learning

- Tutorial group interactions
- Concept map
- Exam grades

Tutorial group interactions

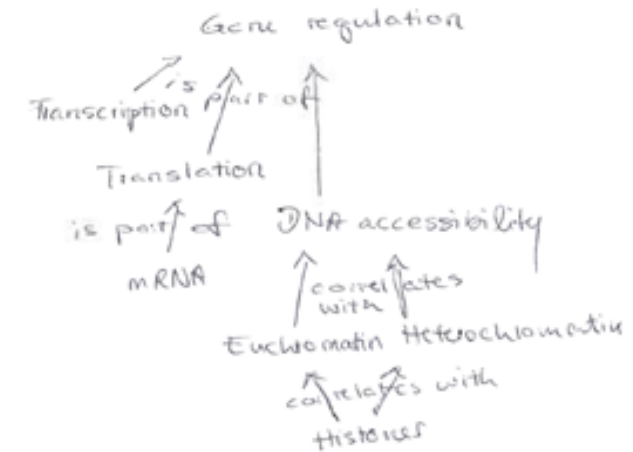


Concept map

List all the keywords that are related to “early embryonic development until blastocyst, and gene regulation”.

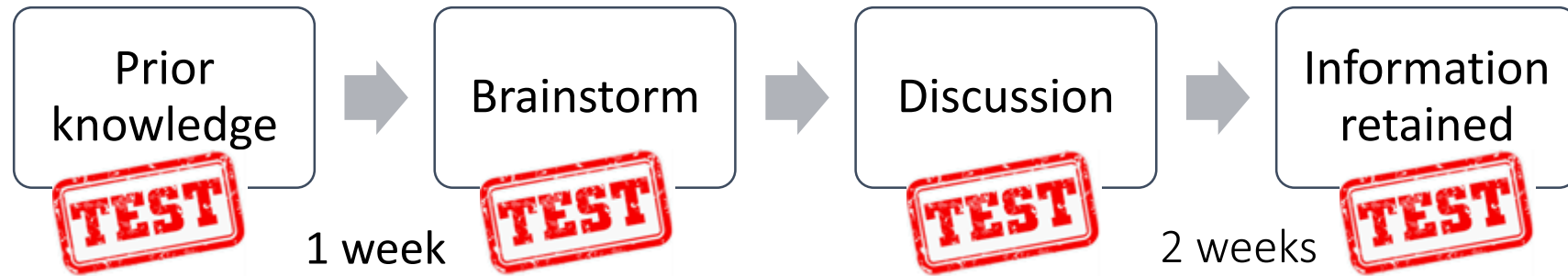
1. Early embryonic development
2. Blastocyst
3. Gene regulation
4. Zygote
5. Oocyte
6. Spermatozoa
7. Transcription
8. Translation
9. Fertilization
10. Cleavage
11. Morula
12. DNA accessibility
13. Gametogenesis
14. Ovulation
15. mRNA
16. Euchromatin
17. Heterochromatin
18. Histones

Please draw your Concept Map here:



- ✓ Keyword scores
- ✓ Number of correct relationships

Concept map

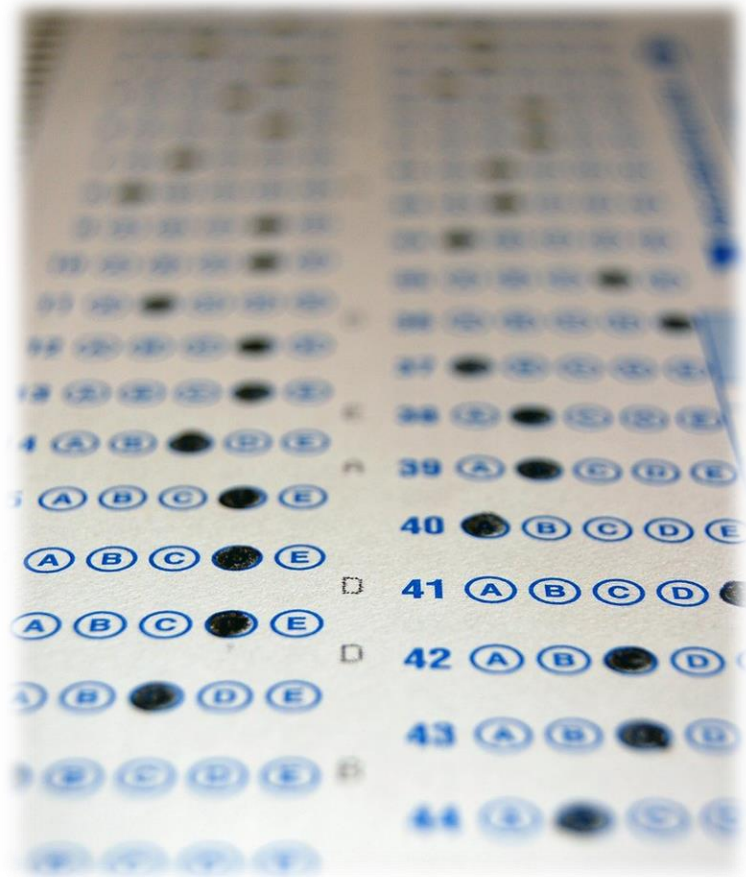


Concept map

Sit vs. Stand: No group differences



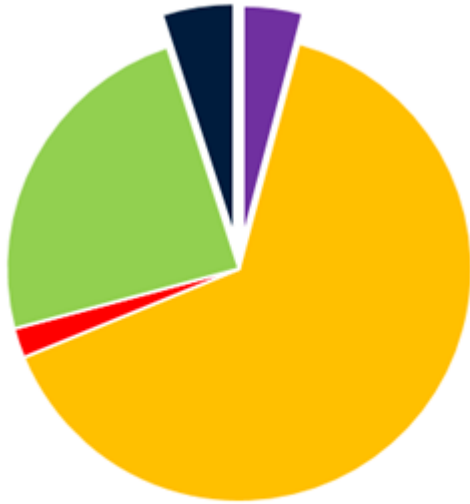
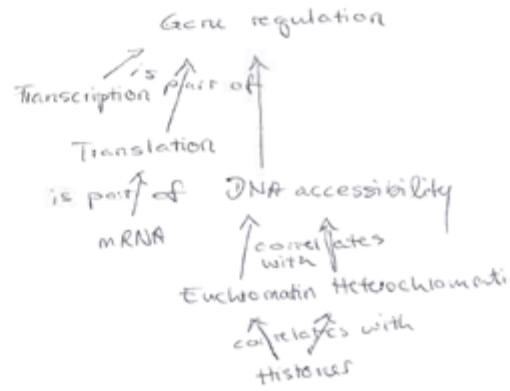
Exam grades



Average exam grades

Sit	5.8/10
1-	A B C D
2-	A B C D
3-	A B C D
4-	A B C D
5-	A B C D
6-	A B C D

Stand	6.5/10
1-	A B C D
2-	A B C D
3-	A B C D
4-	A B C D
5-	A B C D
6-	A B C D



Stand 6.5/10

1- A B C D

2- A B C D

3- A B C D

4- A B C D

5- A B C D

6- A B C D



Overall findings

Standing tutorial group meetings

- Less sedentary behavior, more physical activity
- Learning is not affected



Take home messages

Stand for the students' right to an active lifestyle

Students should be given the option to stand in educational (tutorial group) meetings at universities



Thank you

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Relevant articles:

- Chim, H. Q., Van Gerven, P. W., de Groot, R. H., Oude Egbrink, M. G., Erkens, R. H., & Savelberg, H. H. (2021). The effects of standing tutorial meetings on physical activity behavior in undergraduates: A randomized controlled trial. *Physiology & Behavior*, 230, 113294.
- Chim, H. Q., Van Gerven, P. W., de Groot, R. H., oude Egbrink, M. G., Erkens, R. H., & Savelberg, H. H. (2019). The effects of standing tutorials on learning in undergraduate students: Study protocol. *International Journal of Educational Research*, 98, 123-133.
- Chim, H. Q., de Groot, R. H. M., Van Gerven, P. W. M., oude Egbrink, M. G. A., Erkens, R. H. J., von Rango, U., Broers, J. L. V., & Savelberg, H. H. C. M. (2020). The effects of standing in tutorial group meetings on learning: A randomized controlled trial. *Manuscript submitted for publication*.

