

IS KLORANE'S NEW SHAMPOO RELAXING? YES, AND IT IS SCIENTIFICALLY MEASURED

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AIM & INTRODUCTION

Aim

The aim of the present study was to prove our claim for a shampoo with relaxing effects, Peony.

Introduction

Both physiological and behavioral parameters were measured to assess whether our test shampoo had relaxing effects. People in a relaxed state typically show decreased electrodermal activity (EDA), heart rate and blood pressure and an increased inter-beat interval variation. Behaviorally, relaxation leads to decreased movement and a relaxed posture (legs flung out when sitting and less sitting upright) [1,2]. In a relaxed state the body does not need to be ready for action and can rest and digest.



METHODS

- Tests were carried out in a hotel room.
- 22 women (age range 18 – 62) were equipped with a wristband to measure electrodermal activity (EDA) and heart rate.
- The women washed their non-dominant arm, first with a scentless shampoo (NEU) and afterwards with our test shampoo (RELAX).
- After the washing session, the participants entered a smelling session in which they smelled the test shampoo in a bottle.
- Prior to and after applying the shampoo, participants sat in an easy chair where their overall behavior was filmed. The resulting videos were annotated using The Observer® XT.
- At four time points during the test the participants' blood pressure was measured: before applying the scentless shampoo, after applying it and before and after applying the test shampoo.

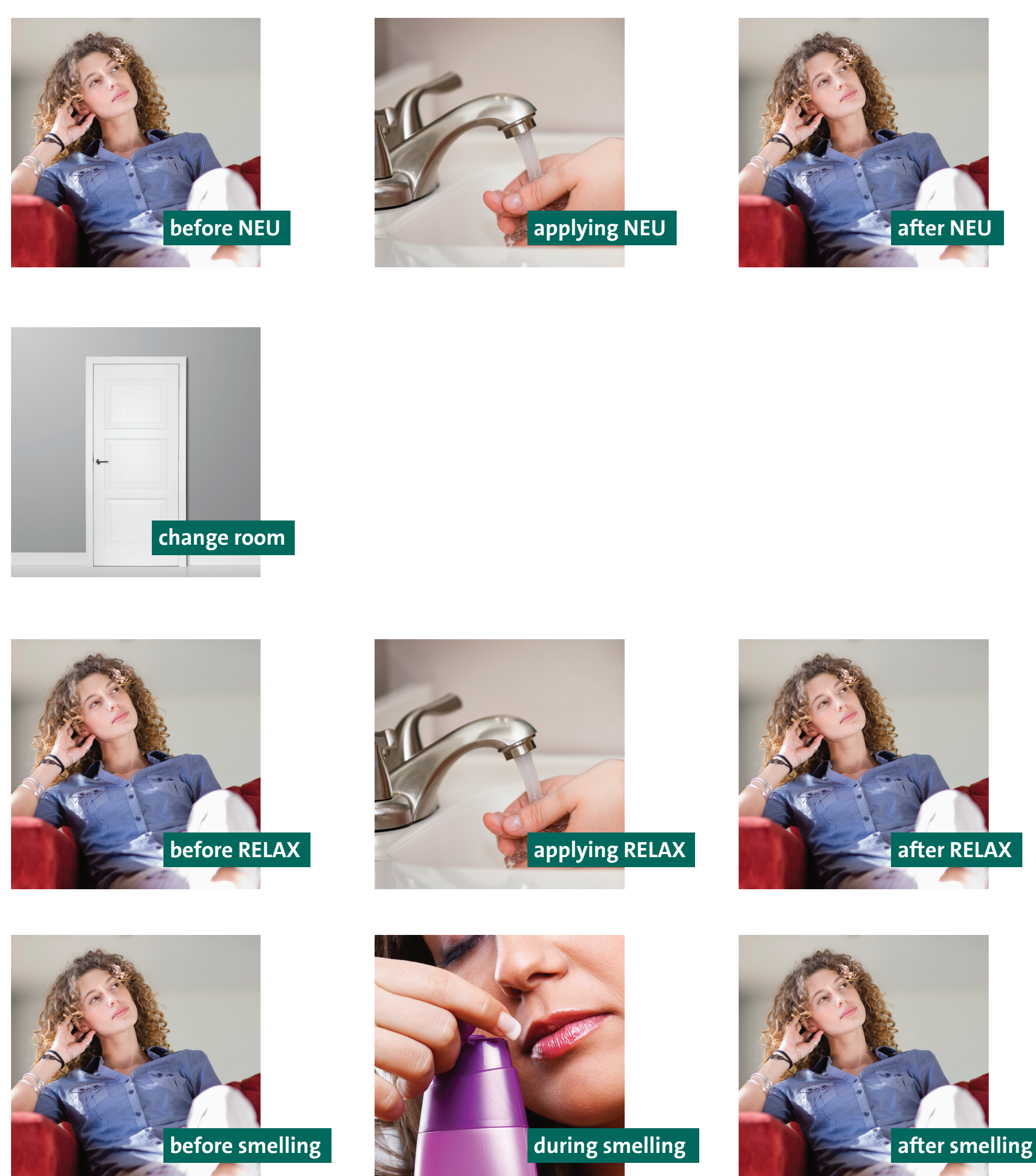


Figure 1. Overview of the test phases.

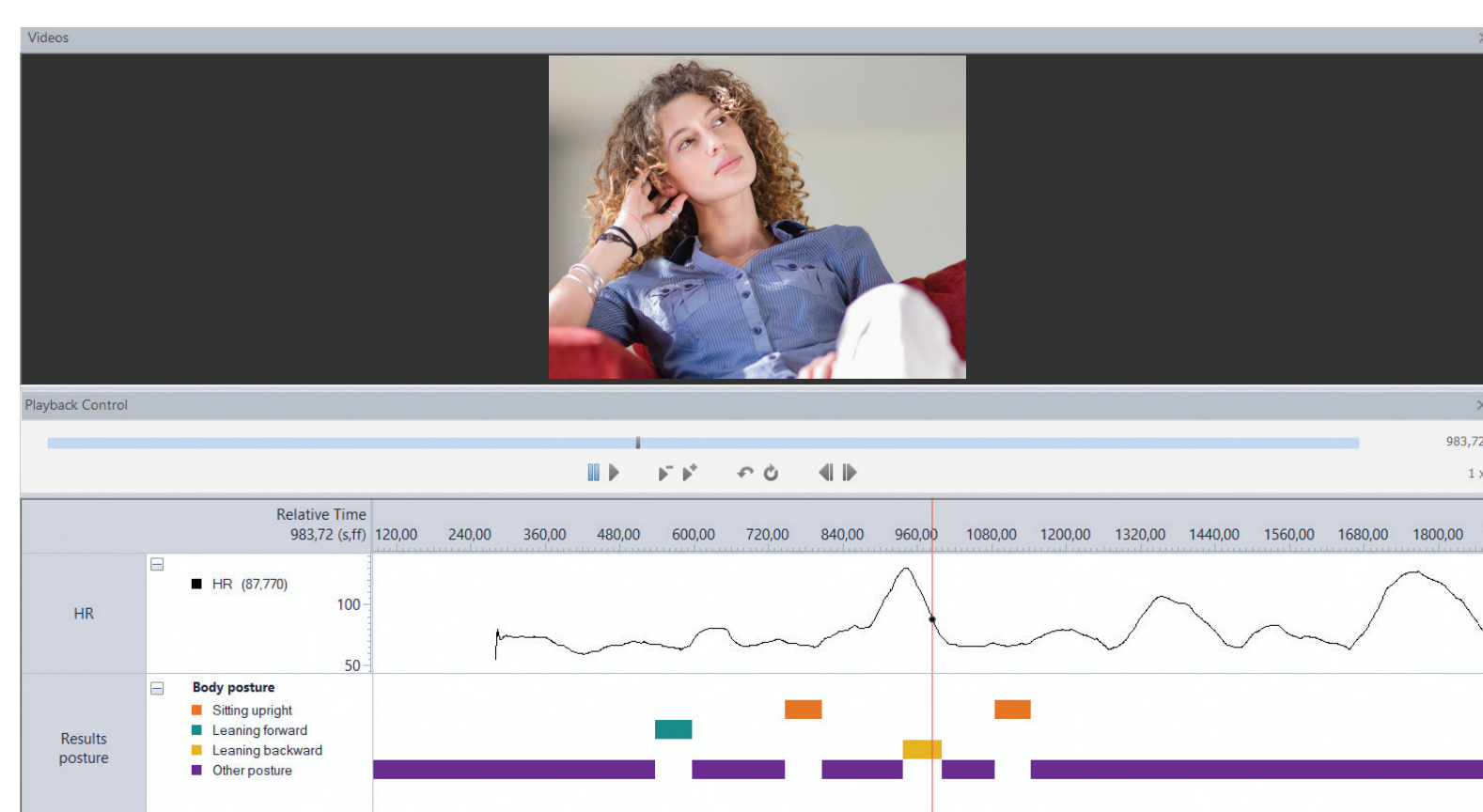


Figure 2. Screenshot of the video annotation software showing the annotated postures on the timeline (lower plot), the synchronized heart rate data (middle plot) and the synchronized video (upper plot).

RESULTS

The RELAX shampoo had both physiological and behavioral effects that pointed to relaxation:

- Smelling the RELAX shampoo from the bottle decreased participants' heart rate.
- Compared to the start of the test, the mean EDA significantly decreased during the application of the RELAX shampoo. The NEU shampoo did not have such an effect.

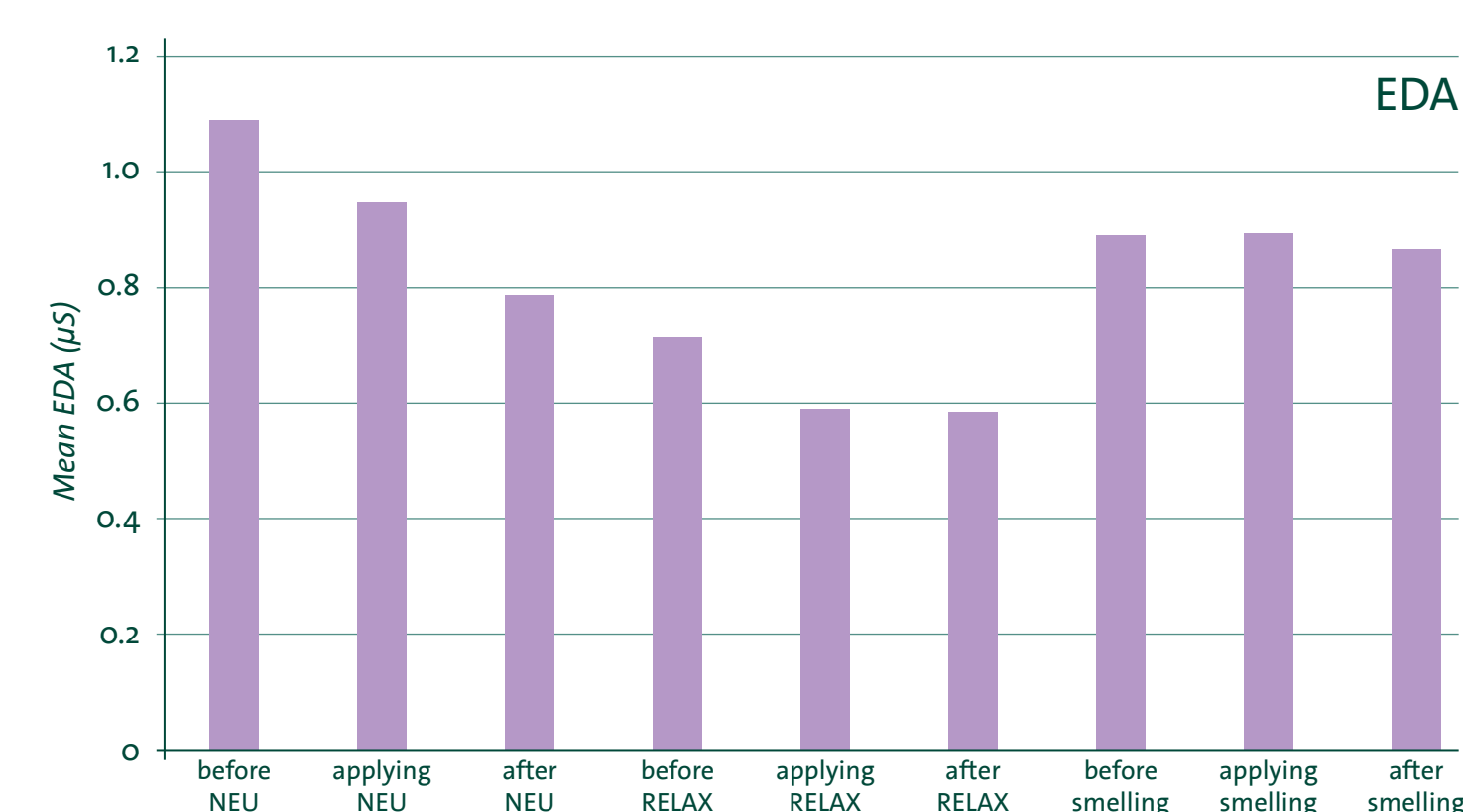


Figure 3. Mean EDA values during the nine test phases. Significant differences ($\alpha=5\%$):

- Applying RELAX < before NEU
- After RELAX < before NEU
- Applying RELAX < applying NEU
- After RELAX < applying NEU
- During smelling < before NEU
- After smelling < before NEU

- Both shampoos led to increased inter-beat interval variation, the effect was more pronounced for the RELAX shampoo.

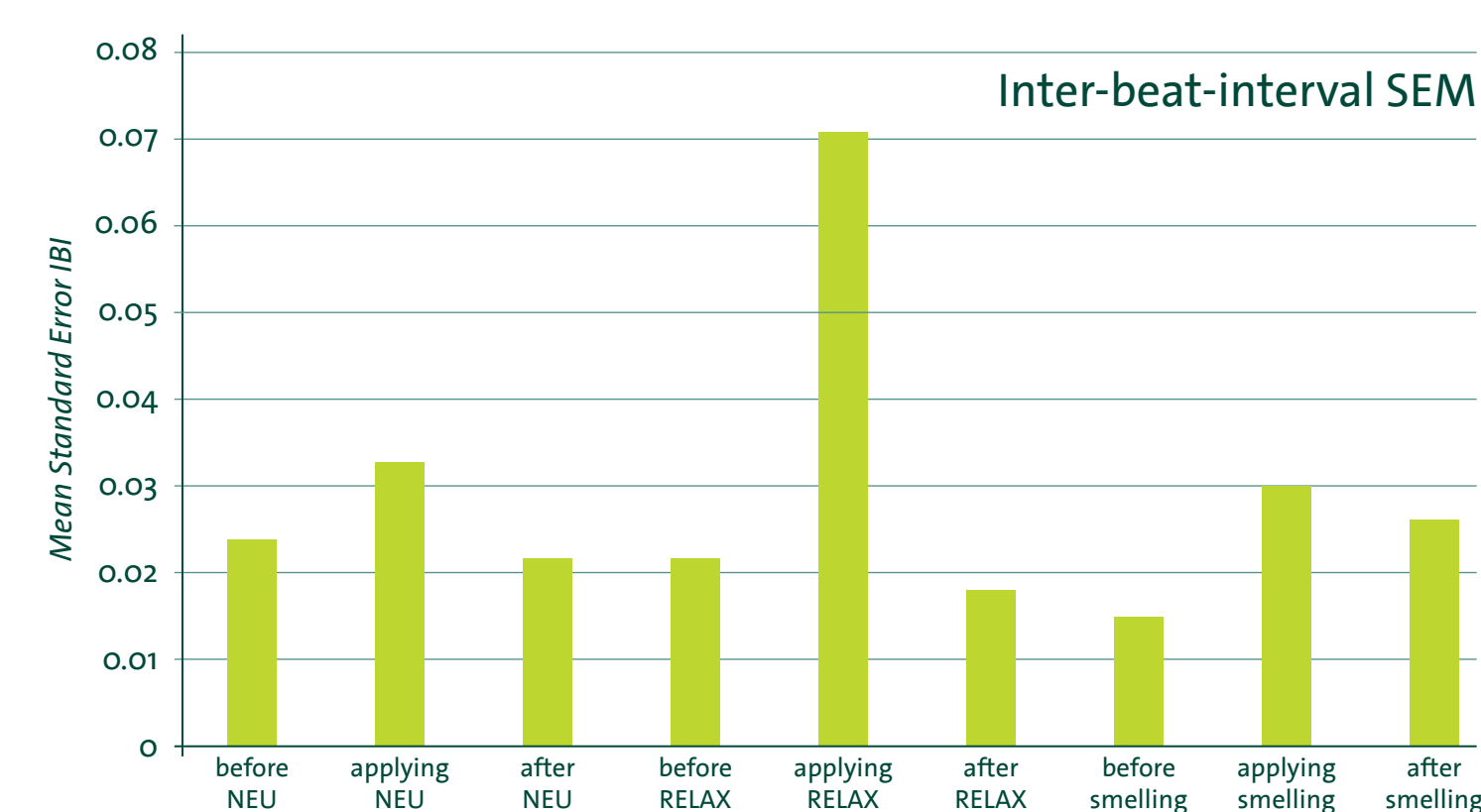


Figure 4. Mean standard error inter-beat intervals during the nine test phases. Significant differences ($\alpha=5\%$):

- Applying RELAX > all other test phases

- The participants spent less time sitting upright after using the RELAX shampoo compared to before the application. The NEU shampoo had the opposite effect.

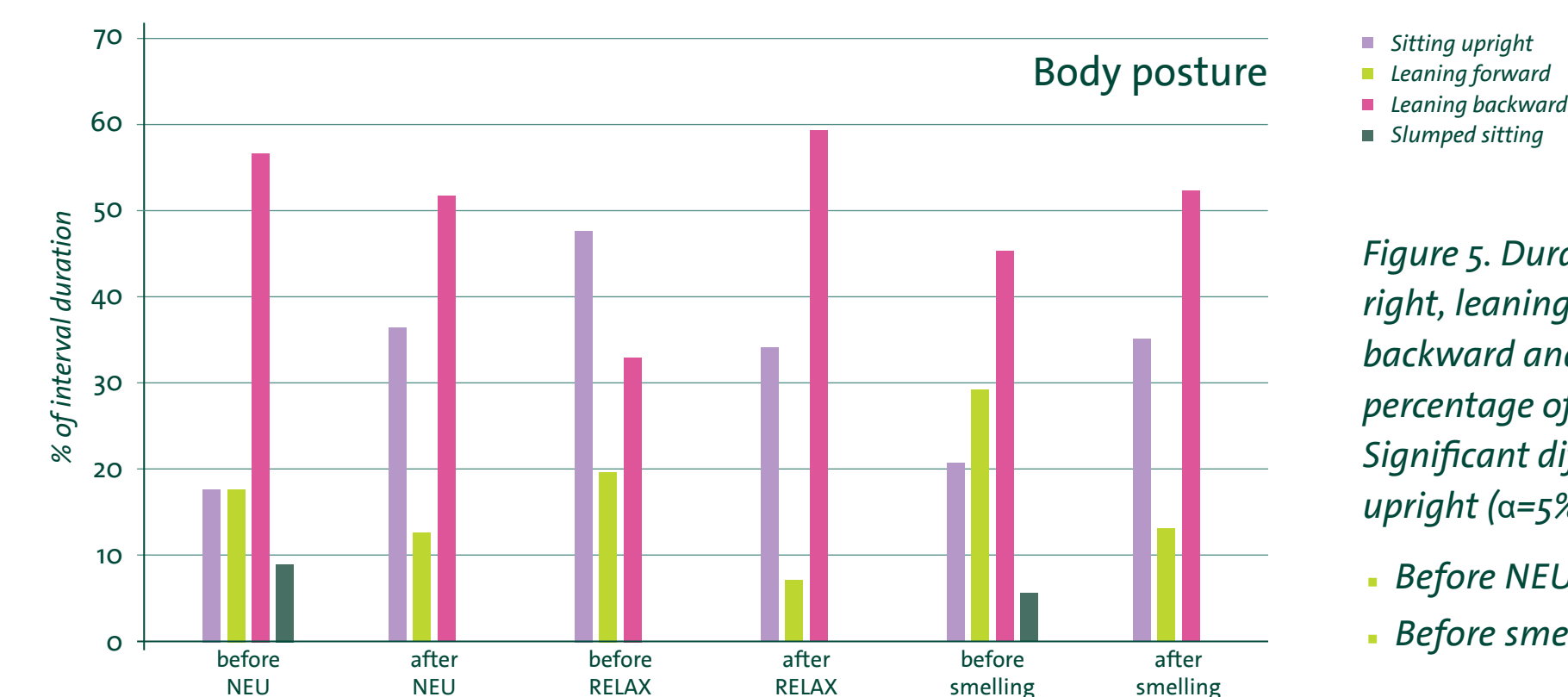


Figure 5. Duration of sitting upright, leaning forward, leaning backward and slumped sitting as percentage of test phase duration. Significant differences for sitting upright ($\alpha=5\%$):

- Before NEU < before RELAX
- Before smelling < before RELAX

However, not all the results pointed to relaxing effects of the RELAX shampoo:

- Neither the RELAX shampoo, nor the NEU shampoo had an effect on blood pressure.
- Applying the RELAX shampoo did not affect heart rate.
- There was no difference in leg movements between the two shampoos.
- The number of posture switches was also similar for the RELAX shampoo and the NEU shampoo.

CONCLUSION

The RELAX shampoo had both physiological and behavioral effects that pointed to relaxation. The shampoo decreased participants' mean EDA, led to increased inter-beat interval variation and a decrease in the time spent sitting upright. Smelling the RELAX shampoo from the bottle decreased participant's heart rate. This study supported an emotional product claim based on objective evidence. The shampoo is on the market since April 2017: www.klorane.com/uk-en/hair/peony.



REFERENCES

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- Herz, R. S. (2009). Aromatherapy Facts and Fictions: A scientific Analysis of Olfactory Effects on Mood, Physiology and Behavior. *International Journal of Neuroscience*, 119:2, 263-290.