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SUMMARY REPORT ON TESTING PROTECTIVE INFLUENCE ON HUMAN ORGANISM AGAINST CELL PHONE RADIATION

FOR THE PRODUCT

Perun PROTECTOR

Place and date: Ljubljana, 15th February 2019
No.: 10/19

Customer	Research institution
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General information about testing

Date of tests: 29th January – 5th February 2019.
Place: BION Institute, Ljubljana, Slovenia.
Purpose: Testing of a supposedly protective influence of the product Perun PROTECTOR from mobile phone microwave radiation on the human organism.
Method: measurement of various physiological parameters (see Table 1)
No. of groups: 2 (verum and control; each with 11 testees)

Protocol: Scientific clinical study design (including double blind test) with 2 different treatments were performed, **both** exposed to the cell phone radiation:
a) exposure to a possible protective influence of the Perun PROTECTOR (**verum group**) or
b) sham exposure to control sticker (**control group**) (see Figure 2).

Every single measurement lasted 25 minutes and was divided into 3 phases:
(1) **preparation phase** – intended as a reference for analysis;
(2) **calling phase** – intended to measure the response of the testee to calling with a cell phone;
(3) **standby phase** – intended to measure the response to a cell phone radiation with phone in the standby mode (no calling).

Figure 1: The Perun PROTECTOR (left) and control sticker (right) used for the purpose of testing. Both stickers were covered with other sticker during testing.

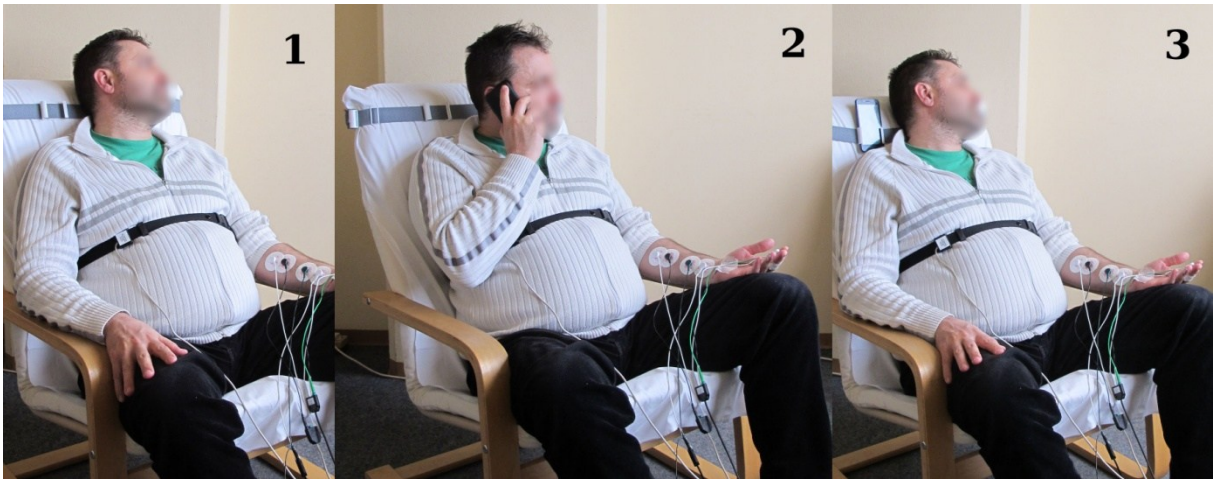


Figure 2: Situation during all three phases of testing: (1) preparation, (2) calling and (3) standby phase.

Results with discussion

Statistical analysis of the measured physiological parameters demonstrated significant differences between the product-exposed group (11 testees) and the control one (11 testees) for five parameters during calling or during standby phase (Sign test and Wilcoxon signed rank test, Table 1). The strongest influence of the tested product was demonstrated on the respiration rate as there were significant differences during calling (2nd phase) as well as the standby phase (3rd). The product influenced muscle activity, heart rate, finger temperature and heart rate variability to some lesser degree as the statistics confirmed significant differences only during the standby phase.

Table 1: Summary statistics of the Sign test (preparation and calling phase) and Wilcoxon signed rank test (standby phase) made on the basis of thirty-second medians for each individual parameter in a preparation, calling and standby phase. P-values are corrected with Holm-Bonferroni correction for multiple comparisons. Values shaded in green represent statistically significant differences between verum and sham exposures ($p < 0,05$). Marks: EMG – muscle activity, HR – heart rate, SC – skin conductance, RR – respiration rate, TMP – finger temperature, HRV – heart rate variability, TED – thorax expansion depth.

phase	EMG	HR	SC	RR	TMP	HRV	TED
preparation	1,000	1,000	1,000	1,000	1,000	1,000	1,000
calling	1,000	1,000	1,000	**0,014**	1,000	1,000	0,656
standby	**0,003**	**0,016**	1,000	**0,001**	**0,003**	**0,004**	1,000

Response of respiration rate to the tested protective influence of the Perun PROTECTOR was very quick as the difference between the two compared groups emerged even at the beginning of the calling phase (Figure 3). Respiration rate for the exposed group (verum) was constantly higher than for the control one during both the calling and the standby phase. In the third phase the values for respiration rate in the control group were around 1 while values in the exposed group were around 1,1. Higher respiration rate together with higher finger temperature and heart rate indicate more active metabolism. At the same time, lower muscle activity and heart rate variability indicate higher relaxation for the exposed (verum) group.

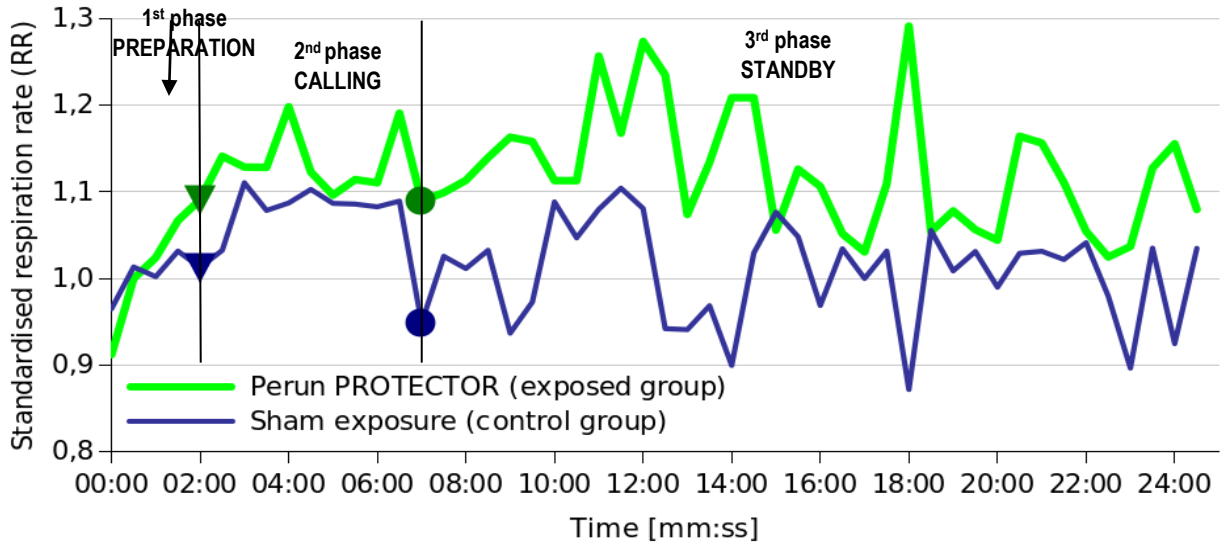
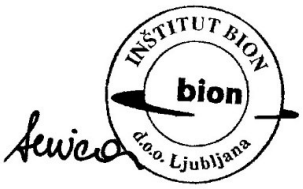


Figure 3: Exposure to cell phone radiation: standardized median respiration rate for the Perun PROTECTOR protected group (green line; n=11) and the control one (blue line, n=11).

For the customer the elaborated results for all measured parameters are available at the BION Institute.

Conclusion

The scientific testing of the supposed protective influence of the product Perun PROTECTOR demonstrated a statistically significant effect as demonstrated by monitoring different physiological parameters in the 2 groups of testees (n=11 for each group). The tested product demonstrated the strongest influence on respiration rate. In general, the product Perun PROTECTOR showed a protective influence on testees since the verum group reacted to the cell phone radiation via more conspicuous relaxation and more active metabolism, which were absent or lesser in the sham exposed group.

The product Perun PROTECTOR met all the criteria required to obtain the *Certificate of Protective Influence on Human Organism against Cell Phone Radiation* No. 0250.

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