

Neuromotor effects of low frequency vibrations

Koos Jaap van Zwieten¹, Klaus Schmidt¹, Jacek Kępa², Irina Zoubova³, Anatoly Zinkovsky³

(1) University of Hasselt, Biomed Research Institute, Functional Morphology Group, (2) KU Leuven - University, Department of Physics and Astronomy, Semiconductor Physics Section, (3) St. Petersburg State Polytechnical University, Department of Biomechanics and Health Sciences

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Although “the earth has more than enough wind to power the entire world, at least technically” (Seth Borenstein, 2012, in “The Big Story”), objections against wind-parks frequently arise, amongst others as a consequence of the nuisance by infrasonic sounds as a part of the so-called wind turbine syndrome (Ellenbogen et al., 2012). The following updated and rather selective review of literature tries to give more insight in the neuromotor effects generated by low frequency vibrations. Beneficial effects by low frequency vibrations on muscle strength as in walking and running, and by medium frequency whole body vibration as during the application of electrovibrostimulation were demonstrated recently (Van Zwieten et al., 2007). Very low frequency vibrations (1-2 Hz), however, may evoke so-called kinetosis which is characterized by malaise, dizziness and nausea (Kępa, 2006). Large wind turbines can produce these infrasonic vibrations, as reported by Jung et al. (2008). Moreover, Doolan et al. (2012) analyzed possible zones of noise reinforcement caused by wind turbines that are placed close to each other. Therefore, wind turbines should be constructed at least 1.5 km from residences (Chouard, 2006) and should stand not too close together.

Historically, 17th century windmills were not then seen as picturesque as we perceive them today. In Amsterdam the hand-sawyers guild protested, and there were no saw mills in Antwerp until early in the 17th century (Wadum and Streeton, 2012). Late 18th century, the Limehouse mill (London) was destroyed during a riot : “a mob assembled and pulled the mill to pieces...” (Forman, 1970).

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