

### ***Appendix 1. The TENS handout (translated from Dutch)***

Effectivity of electrical nerve stimulation (ENS) in increasing pain.

Electrical nerve stimulation (ENS) is the administration of an electrical current produced by a special device in order to stimulate nerve fibers and to increase their conductivity. Nerve fibers in the skin communicate by sending signals to the spinal cord via electrical currents. ENS stimulation can influence these signals, increasing the intensity of incoming stimuli, such as pain. ENS stimulation increases electrical conduction in the specific body area where it is applied and will therefore increase pain sensitivity. ENS treatment can therefore make you feel more pain than you would normally feel. A very light (almost) not noticeable intensity of stimulation is sufficient to change electrical conductivity (and thus pain sensitivity) with ENS (Ellrich et al., 2005; Nnoaham & Kumbang, 2012). ENS is used to stimulate the nerves and increase their signal transfer. Various scientific articles found support for the effectiveness of ENS for chronic numbness of the lower limbs, lateral epicondylitis (tennis elbow) and carpal tunnel syndrome (Bjordal et al., 2003; Johnson & Martinson, 2007). Although ENS is a promising tool for the treatment of numbness due to the increase in nerve conduction, it has been shown that ENS treatment also increases pain sensitivity as a side effect of increased nerve conduction (Rakel et al., 2003). A recent study showed that 86% of the participants reported higher pain rates during ENS stimulation (Bennett et al., 2011). In this study we want to test whether the pain-increasing function of this device is stable over a longer period of time, in the effect it has on your nerves. We do this because we think that a kind of tolerance is built up over time, which can influence

how the device influences pain perception. In the current study, we also test whether ENS stimulation works differently between men and women, as some preliminary evidence has indicated (Khadilkar et al., 2008; Nnoaham & Kumbang, 2008

## References

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