



**Karolinska  
Institutet**

**Department of Neurobiology, Care Sciences and Society (NCS)**

# **On the effects of Tactile Touch in Parkinson's Disease patients**

*"The Parkitouch study"*

**AKADEMISK AVHANDLING**

som för avläggande av medicine doktorsexamen vid Karolinska Institutet offentligen försvaras i lokal B 64, Karolinska Universitetssjukhuset Huddinge, Geriatriska kliniken.

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## *Background*

*Tactile Touch as a treatment modality is, in broad terms, scientifically unexplored. Patients use Complementary and Alternative Medicine (CAM) forms of treatment outside the area of pharmaceuticals to a great extent, particularly patients suffering from chronic diseases. Delineating and evaluating patients' own experiences of alleviation using different treatment forms are important tasks for modern health services.*

## *Aims*

*This thesis aims to describe, compare and evaluate short- and long-term effects of two different forms of CAM treatments in Parkinson's Disease (PD) patients with chronic pain. Outcome measures are the impact of Tactile Touch (TT) and the active control group Rest To Music (RTM) on non-motor symptoms such as subjective pain experiences and sleeping patterns, as well as the effects of interventions on Health Related Quality of Life (HRQoL). Other aims are to describe the hypothalamic–pituitary–adrenal (HPA) -axis function in PD with and without longstanding pain and to study the effects of interventions on salivary cortisol concentrations as a surrogate marker for stress.*

## *Patients and methods*

*Forty-five patients with stable and well defined PD for more than two years and with chronic PD related pain for three days or more per week during at least three months before study start were recruited from routine health care visits at sites in Southern Sweden. They were blindly randomized to TT (n=29) or RTM (n=16). TT was performed following detailed instructions, RTM prolonged for the same time as TT. External circumstances; music, aromas, room temperature etc. were identical in both groups; RTM only excluding the specific massage. Interventions were performed ten times during an eight week period after randomization. Follow up period was 26 weeks. Salivary cortisol was sampled in a cotton swab four times during 24 hours (at 8am, 1pm, 8pm and 8am the next morning) at five occasions during the 34-week-long study. In addition, samples from participants were taken immediately before, immediately after, and 30' after the end of the interventions at two occasions. The cortisol samples were analyzed with a well-established radio immunological technique (Cortisol RIA<sup>1125</sup>) at the same time and at the same laboratory.*

## *Results*

- 1. The diurnal pattern of cortisol secretion indicates a normal HPA-axis function in PD with and without chronic PD-related pain.*
- 2. Significantly elevated morning cortisol concentrations, compared to those in a healthy reference group from the same area matched by age and gender, are detected.*
- 3. No effects on diurnal salivary cortisol concentrations are seen that are due to the severity of PD measured by the Unified Parkinson Disease Rating Scale (UPDRS I-IV).*
- 4. Significantly decreased salivary cortisol concentrations are found after intervention with TT and to a lesser extent after RTM, no significant differences between groups.*
- 5. PD-related pain precedes the diagnosis of PD in one third of the participants and in half of the patients it is present during all their waking hours.*
- 6. Polypharmacy is common; One quarter of all participants are prescribed analgesics of which paracetamol is the most common. Only 1/3 report pain relief with analgesics. Almost all (9/10) use medication for anxiety/insomnia and one of five use antidepressants.*
- 7. A significant decrease in pain experience (VAS) is registered in TT but not in RTM at week three. A significant decrease in pain measured by the VAS scale is found in both groups from screening to the last follow up at week 34.*
- 8. Sleep, measured by the Parkinson Disease Sleep Scale (PDSS) improves significantly within the TT group after the initial treatments, however differences between groups do not quite reach significance at the 0.05 level.*
- 9. HRQoL, compared to a Swedish healthy reference population ( SF-36, Swe ver.) improves in both groups but normal values of HRQoL are only achieved in the short-term follow-up in the TT group.*

## *Conclusions*

*The HPA-axis function in PD with and without chronic pain seems to be intact. Increased morning salivary cortisol is shown. PD with chronic PD-related pain has negative effects on HRQoL. Benefits from both treatment forms with TT and RTM are shown and in different respects concerning pain, sleep and HRQoL. The positive short term effects in both groups are not significantly better in TT compared to RTM. Long-term effects are sparse.*