

[Haubenhofer D, Kirchengast S. \(2007\). Dog Handlers' and Dogs' Emotional and Cortisol Secretion Responses Associated with Animal-Assisted Therapy Sessions, Society and Animals, 15:2: 127-150.](#)

Research question: As the benefits of animal-assisted therapy on humans are recognized within healthcare environments, what are the emotional and physiological effects, judged by cortisol levels in saliva, on the dog handler-dog teams who worked in animal-assisted health care service while they were exposed to the same situations?

Sample: Saliva from thirteen dog-handler teams consisting of 13 handlers (n = 655) and 18 companion dogs (n = 554) were collected between March 2004 and February 2005 in order to test cortisol levels in the dogs and their handlers. Twelve dog handlers were female and one male, with ages ranging from 28 to 68 years. The dogs were all of different breeds with fifteen being female (four (4) neutered) and four (4) male (one (1) neutered), ages ranging between two (2) and nine (9) years old. Dogs and handlers were familiar with their testing environments and had completed the same kind of training through the Austrian organization *Tiere als Therapie* (translated as Animals as Therapy).

Methodology: Salivette tubes were used in the saliva collection and handlers were taught to apply cotton swabs of the Salivettes to themselves and the dogs. Two control periods were established - a series of three (3) non-consecutive days without therapeutic work but still containing typical daily activities - before and after the three (3) consecutive months of active animal-supported therapy. Questionnaires examining associated emotions toward therapy (featuring groups of positive [no perception of distress] and negative emotions [indicating physical or emotional eustress or distress]) of the handlers and the observed emotions of the dogs were self-administered during the control periods. During the control and therapy periods, handlers collected saliva samples, from themselves and the dogs, three times a day at 8 a.m., 2 p.m., and 8 p.m., placing the samples immediately in the freezer. Therapy sessions occurred at primary schools, hospitals, rehabilitation centers, and homes for the elderly. How time was spent was determined by patient's' abilities - children played while elderly talked with and hugged the dogs. Sessions usually lasted between one (1) and three (3) hours with no breaks and some were between five (5) and eight (8) hours with frequent breaks for the dogs. Some teams did only short or long sessions while others completed both. All teams attended nine (9) to 50 sessions during the sample period. At the end of the study, the saliva was tested for cortisol with a special enzyme-immunoassay (EIA) - a double-antibody, biotin-linked EIA used for detecting very low concentrations of hormones - and frequency scales were created from the questionnaires with answers chosen by more than 50% of the handlers defined as main answers.

Findings: Handlers reported emotions from their daily lives (non-therapy days) for themselves and the dogs, with positive emotions of "interesting", "joyful", and "pleasant" representing the handlers and "calm", "hardly encumbering", "hardly straining", and "uneventful" for the dogs. No negative emotions were associated with the dogs. When reporting on their typical therapeutic

work, handlers associated more negative emotions for the dogs and themselves. Answers for “before therapy” were mostly positive for the handlers and negative for the dogs. Responses for “after therapy” were largely negative with the handlers describing themselves as: “emotionally strained”, “irritated”, “overstrained”, and “physically strained” and describing the dogs as: “physically strained”, “stressed”, and “tired”. The average level of cortisol for handlers ranged between 4.03nmol/L and 39.8nmol/L. The average cortisol concentration for the dogs ranged between 0.3nmol/L and 11.3nmol/L. Handlers and dogs showed lower concentrations of cortisol on control days than therapy days - the difference being significant for handlers ($Z = -2.79$) and for dogs ($Z = -4.24$). Handlers had significantly higher cortisol concentrations before therapy than after with no such trend appearing in the levels of the dogs. Cortisol concentrations of the handlers was directly proportional with the length of the sessions and the concentrations of the dogs peaked at 3 hours, declined, and had a smaller peak at seven (7) hours. Handlers associated more negative emotions regarding therapeutic work to their dogs than to themselves where they chose mostly positive emotions. This shows that there is an unconscious level of distress for handlers caused by therapy. Therapeutic work is a source of increased cortisol secretions, impacting both mentally and physiologically the dog handler-dog teams who work in animal-assisted health care service.

Strengths: The study was conducted and samples were collected in environments and by people that the dogs and handlers were already familiar with. Handlers were also careful not to associate their own emotions in the questionnaire with those of their dogs.

Limitations: Without the questionnaire, there is no way to differentiate between distress and eustress, so the actual impact on the animal and handler cannot be determined. Additionally, the sample size was relatively small and had only one male participant which may have skewed the results. Also, all of the therapy sessions occurred at different times, so that not all handlers were able to take a saliva sample at the same time everyday. Finally, this study was not conducted within a laboratory environment and so stressors not directly related to therapy could not be avoided.

Summary by Bethany Whitfield