Salivary cortisol and depression - is there an effect on cortisol in saliva from going to work and other saliva sampling circumstances. Results from a large epidemiological study

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Objectives To examine the effects of going to work and other saliva sampling circumstances on the concentration of cortisol in saliva.

Methods The study is a cross sectional population study of 3536 working persons with data on cortisol concentrations in saliva samples, one in the morning and one in the evening, and information on saliva sampling circumstances recorded by questionnaire. We studied the effects on cortisol from sampling on a work day compared to a day off; number of hours worked; smoking; leisure time physical activity; sleep problems the night before sampling and other sampling circumstances. These factors were included as covariates in ordinary least square regression analyses with the log of cortisol in saliva (nmol/l) as the dependent variable. We adjusted for effects of age, sex and saliva sampling times and time from awakening.

Results Saliva sampling times were the major determinants of cortisol concentrations in saliva, including linear and quadratic effects. Morning cortisol was 23% higher on work days than on non-work days (p < 0.0001), controlling for sampling and awakening times and other potential confounders. This effect was independent of age, indicating that the acute and rather strong HPA axis response to an anticipated stressor (going to work) was not attenuated by almost daily repeats during many years of work. Working seven hours increased the mean of morning and evening cortisol by 11% (p < 0.0001). Smoking, leisure time physical activity and use of painkillers also had significant effects.

Conclusions The anticipation of going to work seems to elicit a rather strong acute increase in morning cortisol. This response was not attenuated by increasing age as one would expect if frequently repeated HPA-axis activations eventually leads to a reduced HPA-axis response to acute stressors.

Metabolomics experiment among workers exposed to 2, 3, 7, 8-tetrachlorodibenzop-dioxin (TCDD)

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Objectives Previous occupational studies suggest that 2,3,7,8-tetrachlorodibenzop-dioxin (TCDD) exposure may be associated...