explored by Spearman rank correlation coefficients (r_s). We further applied supervised and unsupervised classification to investigate protein patterns by type of lung tissue.
Results Occupational exposure was associated with an up-regulation of NOTCH1 (radon: r_s = 0.18, 95% CI 0.02–0.33; arsenic: r_s = 0.23, 95% CI 0.07–0.38). MUC1 classified lung cancer from cancer-free tissue (failure rate of 2.1%), and HIF1A and NKX2–1 discriminated the major subtypes of lung cancer with a failure rate of 8.4%.
Conclusions These results suggest that the radiation-sensitive protein NOTCH1 can be up-regulated in lung tissue from uranium miners by level of exposure to pulmonary carcinogens. The distinct phenotypes of the major subtypes of lung cancer could be discriminated with cancer-related proteins.

115 SALIVARY CORTISOL AND DEPRESSION - IS THERE AN ASSOCIATION IN A RANDOM SAMPLE OF PUBLIC SECTOR EMPLOYEES?

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Objective To examine if salivary cortisol is associated with depressive symptoms and clinical depression among public sector employees.
Method In 2007, 10,036 public sector employees received a questionnaire along with salivary cortisol test tubes for home administration. A morning (30 min after awakening) and evening (2000 h) salivary sample were collected. 3,536 employees returned questionnaires and valid saliva samples. A subsample of participants (n = 387) collected three morning saliva samples (at awakening, 20min and 40min after awakening) plus an evening sample (2000 h). Participants were approached again in 2009 with questionnaire and salivary test tubes (n = 2,408). Participants with self-reported depressive symptoms (Common Mental Disorder Questionnaire) were invited to a SCAN interview (Schedules for Clinical Assessment in Neuropsychiatry, version 2.1) to determine clinical depression. The repeated cross-sectional data were analysed with logistic regression. Odds ratios of depressive symptoms and of clinical depression were estimated for morning, evening, mean and the difference between morning and evening cortisol (slope). For the subsample, CAR (awakening cortisol response) and AUC (the area under the curve) cortisol measures were calculated. We adjusted for gender, age, income, education, family history of depression, physical activity and alcohol consumption.
Results In 2007 the median level of cortisol was 12.5 nmol/l in the morning and 2.1 nmol/l in the evening. None of the measures of salivary cortisol were associated with self-reported depressive symptoms or clinical depression, neither in 2007 or 2009. E.g. in 2007, the odds ratios of depressive symptoms by a one unit increase in morning and evening cortisol (log[nmol/litre saliva]) were 0.97 (95% CI: 0.83–1.13) and 1.05 (0.92–1.20), respectively, and of clinical depression 1.08 (95% CI: 0.35–3.36) and 0.66 (0.30–1.45), respectively.
Conclusion Salivary cortisol was not associated to self-reported symptoms of depression or to clinical depression.

116 EFFECTS 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.

117 METABOLOMICS EXPERIMENT AMONG WORKERS EXPOSED TO 2, 3, 7, 8-TETRACHLORODIBENZO-P-DIOXIN (TCDD)

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