explore 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 NXK2–1 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.

**Salivary Cortisol and Depression - Is There an Association in a Random Sample of Public Sector Employees?**

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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 3,536 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-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