

**B. Rothen Rutishauser: Session 4A: Health Effects (1)**

**Peters A. / Helmholtz Zentrum München Germany**

**Epidemiology on Health Effects of solid Nanoparticles**

---

Health benefits from low emission zones naturally could not be proven by now as one has just started to launch them. Epidemiological data from different settings, however, can be summed up as follows (Wichmann 2008):

The adverse effects of particulate matter on human health are substantial and include short-term as well as long-term consequences. Particularly, studies characterising traffic-related particles showed larger health effects than studies relying on background concentrations. In Germany this was clearly demonstrated by taking the distance from a person's residence to the next road as the size for the degree of exposition. In the rare instances, when traffic density was reduced temporarily, studies showed that human health benefits from such measures. By launching low emission zones in high density residential areas, traffic density there is clearly reduced so that considerably fewer people are directly exposed to traffic.

Additional positive health effects can be expected, as pollutants like NO<sub>2</sub> or traffic noise decline considerably. Even if to the current standard of knowledge the major environmental problem is caused by particulate matter, these aspects should not be neglected as they mean a contribution improving health in urban population.

In conclusion, it can be said that benefits from low emission zones might be more far reaching than currently can be shown by routine measurements. The more stringent low emission zones are launched, e.g. by banning the main culprits from the inner cities, like vehicles with diesel engines and, particularly, trucks without particle filters, the more effective these measures will become.

Tel. +49(89)3187 4566  
peters@gsf.de