

Sheep's liver may be highly contaminated with dioxins and PCBs

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Although a decrease in contamination has been observed for many years, dioxins and polychlorinated biphenyls (PCBs) still constitute a general problem for human beings even today. Because of their stability these substances occur ubiquitously in the environment and accumulate in fatty tissue. Dioxins are undesirable by-products that are inevitably formed during certain industrial and incineration processes. PCBs were important industrial chemicals. Animals ingest the various substances in these two substance groups from feed which means that foods like meat, milk and eggs in particular may have especially high levels of these substances. Some of the 200 different dioxin and PCB compounds are suspected of being carcinogenic or possibly cancer-promoting. Results from animal experiments can only be applied to a limited degree to humans because the effects of these substances vary considerably from species to species. We do, however, know that they mainly accumulate in fatty tissue and in the liver.

Sheep's liver is one of the foods with the highest levels of dioxin contamination from animals living on land. The generic term, sheep's liver, encompasses the liver of lambs, sheep and wethers. In Germany very few people eat sheep's liver. The main consumers are people of Turkish or Greek origin. The Federal Institute for Risk Assessment (BfR) has 140 measuring results for sheep's liver samples from six different federal states. The dioxin and PCB levels were very high in most of the samples and the majority exceeded the maximum levels that apply within the EU. So far, no regional differences could be identified which means that an elevated level of contamination must initially be assumed for the entire country. Based on these data BfR carried out a health risk assessment of sheep's liver and examined whether an intake recommendation would be appropriate.

No direct health risk for consumers can be established from the BfR model calculations: sheep's liver, in which the maximum levels for dioxins and PCBs set by the EU have not been exceeded, is safe for consumption. It has, however, been demonstrated that even the once-weekly consumption of 250 g (heavy consumers) of sheep's liver with inadmissible levels of dioxins and PCBs from the food law angle (as were found in very many of the samples) would considerably exceed the tolerable weekly intake for lifelong consumption established by the EU Scientific Committee on Food (SCF). However, the life-long, weekly consumption of highly contaminated sheep's liver is unlikely.

In principle, consumers should ingest as low levels as possible of dioxins and PCBs from food. As consumers already have a permanent background exposure to dioxins and PCBs in the most varied foods, the Institute must – on the basis of the latest data available – advise for precautionary reasons against the consumption of a food like sheep's liver with such a high level of contamination. This is particularly the case as the data from food control up to now show that frequent exceedings of the maximum levels are to be expected. Action must be taken to ensure that absolute compliance with the maximum levels is guaranteed. At the present time BfR cannot comment on the contamination of imported sheep's liver as it has no data at its disposal. The Institute recommends the collection of these data. In contrast to sheep's liver, there are no health concerns about the consumption of lamb or mutton. Far lower levels of dioxins and PCBs accumulate in muscle meat.

The full version of the BfR Opinion in German is available on http://www.bfr.bund.de/cm/208/schafleber_kann_stark_mit_dioxinen_und_pcb_belastet_sein.pdf