

BfR suggests the introduction of a maximum level for cadmium in chocolate

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Chocolate is one of the foods that may contain cadmium. Cadmium can cause kidney damage in humans and when inhaled, it is deemed to be carcinogenic. So far there are no legally binding maximum levels for cadmium in chocolate either on the EU level or in Germany. The European maximum levels for heavy metals in food are currently being revised. The Federal Institute for Risk Assessment (BfR) has suggested a maximum level for cadmium in chocolate after assessing possible cadmium intake from chocolate consumption and its health consequences.

The cocoa content in chocolate varies. In the case of plain chocolate, the cocoa content is between 50 and 99%. The main components of chocolate are ground cocoa beans that are called the cocoa mass. Depending on the state of the soil, cocoa beans and the cocoa mass made from it may contain very different levels of cadmium. Chocolate with a high cocoa mass proportion in particular, like plain chocolate, may contain high levels of cadmium.

Consumers mainly ingest cadmium orally from the contaminated food and inhalationally from cigarette smoke. The provisional tolerable weekly intake (PTWI) of cadmium that can be taken in daily over a lifetime without any health risks established by the World Health Organisation (WHO) is 0.007 milligram per kilogram body weight.

Based on exposure estimations, BfR recommends establishing a maximum level for cadmium in chocolate of between 0.1 and 0.3 milligram per kilogram. Assuming a weekly chocolate intake of 150g at these maximum levels, an adult would take in an amount of cadmium that corresponds to around 3% (at 0.1mg/kg) and 10% (at 0.3mg/kg) of the PTWI. In other foods with statutory maximum levels, proportions of this scale are accepted. For children, however, depending on their age and an average intake of 150g/week, a maximum level of cadmium of 0.1mg/kg would exhaust just under one eighth of the PTWI, a maximum level of 0.3mg/kg would exhaust almost half of it.

In its assessment BfR plans to include more recent consumption data for chocolate which are expected at the end of this year from the National Food Consumption Study II in order to assess consumer exposure to cadmium as realistically as possible.

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