Abstract: Here we review epidemiologic studies dealing with the dietary intake and the body burden of polychlorinated dibenzo-p-dioxins (PCDDs)/polychlorinated dibenzo-furans (PCDFs)/polychlorinated biphenyls (PCBs) in the general population, and potential adverse health effects of these substances, especially on the risk of diabetes mellitus and endometriosis, and on thyroid function and the neurodevelopment of infants. The mean or median intake of dioxin-related compounds among the general populations of various countries is lower than the maximum tolerable daily intake (TDI) set by the WHO in 1998 (4pg TEQ/kg/day). However, there have been few reports on the distribution of intake and the proportion of subjects whose exposure levels exceed the maximum TDI. At present, it remains unclear whether background exposure to dioxin-related compounds is associated with increased risk of diabetes (because of lack of longitudinal studies), endometriosis (because of lack of studies with sufficient statistical power), or altered thyroid function (because of inconsistent results on humans). Consistent results have been reported for the association between exposure to background levels of PCBs/dioxins, especially trans-placental PCBs, and defective neurodevelopment of infants in the U.S. and Europe. Thus, efforts should be made to further decrease the body burden among women of reproductive age by reducing the release of PCDDs/PCDFs/PCBs into the environment.

Keywords: dioxin-related compounds, diabetes, thyroid function, endometriosis, neurodevelopment
Dietary intake of PCDDs/PCDFs/co-PCBs
Blood levels of PCDDs/PCDFs and related factors

K. Arisawa et al.

Background PCDDs/PCDFs exposure and potential health effects
Potential health effects associated with low levels of exposure to PCDDs/PCDFs/PCBs

Diabetes mellitus

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Background PCDDs/PCDFs/PCBs exposure and potential health effects

Endometriosis

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Thyroid function

α

β

BSF
Neurodevelopment of infants

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**Table 1:** Overview of Studies on Background PCDDs/PCDFs/PCBs Exposure and Potential Health Effects

*Note: Details of each study are provided in the table above.*
Background PCDDs/PCDFs/PCBs exposure and potential health effects

Macca mulatta

Accumulation