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PCB LEVELS IN HUMAN ADIPOSE TISSUE AND POPULATION DENSITY

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It appears that the levels of PCB's in samples of human adipose tissue from industrialized countries increase with increasing population density. The relationship (Fig. 1) can be expressed by equations *a* or *b*. In the case *b*, the concentration of PCB's will asymptotically approach a value of 10.4 mg/kg.

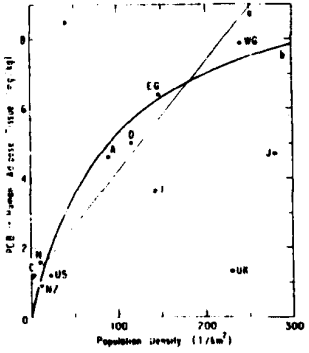

Figure 1. PCB in human adipose tissue as a function of population density.

a PCB = 0.031PD + 1.07
b PCB = PD/(9.41 + 0.096PD)
(PCB = concentration of PCB in human adipose tissue, mg/kg; PD = population density, km^{-2}

C = Canada, N = Norway, NZ = New Zealand, US = United States, A = Austria, D = Denmark, I = Israel, EG = East Germany, WG = West Germany, UK = United Kingdom, J = Japan
I, J, and UK were not considered in deriving the equations *a*, *b*.

Data (1) were used for Austria, Denmark, and the United Kingdom. The following references were used for other countries: Canada (2), East Germany, Israel (3), West Germany (4), Japan (5), New Zealand (6), Norway (7), and the U.S. (8). Population densities given in (9) were used.

The accuracy of the PCB data is obviously limited by sampling problems and PCB quantitation uncertainties, but the suggested relationship deserves further attention, since it may be useful for predictive purposes and may help to point out certain anomalies. For example, the reported levels of PCB in the United Kingdom and in Japan are much lower than those predicted by the relationship. It remains to be answered whether this is due to unrepresentative samples, or to geographical peculiarities of both countries (islands, extending in the north-south direction, with prevailing cross winds).

No data could be found for the levels of PCB's in human adipose tissue in the Netherlands (population density 394) and Belgium (population density 319). It would be interesting to see whether the levels are as high as predicted by the apparent relationship a or b (Fig. 1).

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