

CONCENTRATION OF DIOXINS (PCDD/F) AND PCBS IN FISH FROM THE TYNE RIVER ESTUARY, UK, WITH DIETARY INTAKE ESTIMATES

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Background and Aims: The River Tyne estuary is located in a densely populated conurbation of one million people with long standing but now largely historic industrial heritage resulting in significant contamination along the shores. Contemporary discharges are from some upstream industries and raw sewage during storm events. Angling takes place on the Tyne estuary and caught fish is consumed in part by deprived populations for whom it may represent a regular part of the diet. Building on work carried out by the UK Food Standards Agency, we aimed to investigate for the first time PCDD/Fs and PCBs in a range of wild fish species and sample types from an estuarine river and to estimate potential risk to consumers.

Methods: We determined the concentrations of contaminants in different fish species and sample types. We collected a minimum of two kg each of Codling (*Gadus morhua*) n=8, Whiting (*Merlangius merlangus*) n=22, Flounder (*Platichthys flesus*) n=19 and Eel (*Anguilla anguilla*) (Jan to June 09) n=14. Laboratory analysis was carried out by the Food and Environment Research Agency.

Results: Concentrations varied many-fold with, for example, sums of WHO TEQ (upper) in ng/kg: composites of whiting 0.15, flounder: 0.28, eel: 3.71, cod: 0.17, cod liver: 51.5. Whiting and cod had marginally higher concentrations of PCDD/F and PCBs than previous UK studies, eel concentrations were within the range of earlier studies.

Conclusions: Based on the FSA recommendation for a daily intake of <2pg WHO-TEQ/kg bodyweight for girls and women of reproductive age and < 8pg WHO-TEQ/kg bodyweight for males showed that girls and women of reproductive age should be advised not to consume Tyne eel more than once a week and all persons should be recommended to consume Tyne cod liver only very occasionally.

References:

Food Standards Agency (2006) Food survey information sheet 10/06. *Food Standards Agency*, London.