RISK CHARACTERISATION

CONTAM Opinion on dioxins and DL-PCBs in food and feed

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Chair WG Dioxins in food

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efsa
European Food Safety Authority

Setting of the TWI

- TWI rounded to **2 pg TEQ/kg bw/week**
  - So sevenfold lower than previous TWI set by SCF
- For sum PCDD/Fs and DL-PCBs, based on TEQ
  - Recommendation to evaluate the TEFs, in particular that of PCB-126

Weekly exposure (sum-TEQ; 29)

Age class [a]	N	Mean dietary exposure (pg WHO_{2005}-TEQ/kg bw per week)					
		Minimum[b]		Median[b]		Maximum[b]	
		LB	UB	LB	UB	LB	UB
Adolescents	17	2.1	2.7	4.6	5.5	8.9	10.5
Adults	17	2.9	3.4	4.5	5.3	7.8	9.1
Elderly	14	2.7	3.6	4.7	5.4	8.9	9.6
Very elderly	12	3.0	4.0	4.5	5.1	8.5	9.2

TWI = 2 pg TEQ/kg bw per week

Weekly exposure (sum-TEQ; 29)

Age class [a]	N	Mean dietary exposure (pg WHO_{2005}-TEQ/kg bw per week)					
		Minimum[b]		Median[b]		Maximum[b]	
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Adolescents	17	2.1	2.7	4.6	5.5	8.9	10.5
Adults	17	2.9	3.4	4.5	5.3	7.8	9.1
Elderly	14	2.7	3.6	4.7	5.4	8.9	9.6
Very elderly	12	3.0	4.0	4.5	5.1	8.5	9.2
Age class [a]	**N**	**95th percentile dietary exposure (pg WHO_{2005}-TEQ/kg bw per week)**					
		Minimum[b]		Median[b]		Maximum[b]	
		LB	UB	LB	UB	LB	UB
Adolescents	17	6.4	7.5	13.5	14.6	28.4	30.4
Adults	17	6.6	8.3	13.6	14.6	20.1	21.8
Elderly	14	5.3	6.5	14.9	16.7	25.3	26.7
Very elderly	9	5.9	7.3	13.3	14.9	17.9	19.5

TWI = 2 pg TEQ/kg bw per week

Weekly exposure (PCDD/F-TEQ)

Age class [a]	N	Mean dietary exposure (pg WHO_{2005}-TEQ/kg bw per week)					
		Minimum[b]		Median[b]		Maximum[b]	
		LB	UB	LB	UB	LB	UB
Adolescents	17	0.8	1.2	1.7	2.4	3.4	4.8
Adults	17	1.0	1.4	1.8	2.4	2.5	3.6
Elderly	14	1.3	1.8	1.6	2.2	2.9	3.6
Very elderly	12	1.4	1.9	1.6	2.2	2.7	3.5

TWI = 2 pg TEQ/kg bw per week

Weekly exposure (PCDD/F-TEQ)

Age class [a]	N	Mean dietary exposure (pg WHO_{2005}-TEQ/kg bw per week)					
		Minimum[b]		Median[b]		Maximum[b]	
		LB	UB	LB	UB	LB	UB
Adolescents	17	0.8	1.2	1.7	2.4	3.4	4.8
Adults	17	1.0	1.4	1.8	2.4	2.5	3.6
Elderly	14	1.3	1.8	1.6	2.2	2.9	3.6
Very elderly	12	1.4	1.9	1.6	2.2	2.7	3.5
Age class [a]	**N**	**95th percentile dietary exposure (pg WHO_{2005}-TEQ/kg bw per week)**					
		Minimum[b]		Median[b]		Maximum[b]	
		LB	UB	LB	UB	LB	UB
Adolescents	17	2.1	3.0	4.1	5.6	9.1	11.3
Adults	17	2.9	3.5	4.0	5.0	6.8	7.8
Elderly	14	2.5	3.6	4.8	6.0	9.0	9.6
Very elderly	9	2.7	3.9	4.8	5.8	6.1	7.2

TWI = 2 pg TEQ/kg bw per week

CONCLUSIONS

- Large exceedance of TWI when focussing on sum PCDD/Fs and DL-PCBs
- But lower if toxicity PCB-126 would be lower
- Strong recommendation to review the TEFs, in particular that of PCB-126

Human milk levels

- To avoid exceedance critical serum level in boys of 7.0 pg/g fat, human milk should be below 5.9 pg/g fat
- What about current human milk levels in Europe?
- Comparison with data last WHO round
  - Pooled samples from about 50 mothers/sample

WHO human milk studies

Country	Year	PCDD/Fs	DL-PCBs	PCDD/F/DL-PCBs
		(pg WHO_{2005}-TEQ/g fat)		
Belgium	2015	4.0	2.5	6.5
Bulgaria	2014	4.2	2.0	6.1
Croatia	2014	2.4	2.4	4.8
Czech Republic	2014	3.8	3.5	7.4
Georgia	2014	3.1	3.4	6.6
Lithuania	2015	4.2	3.2	7.3
Moldavia	2015	4.4	4.7	9.1
Romania	2014	5.7	3.9	9.6
The Netherlands	2014	4.5	2.7	7.2
Mean		4.0	3.1	7.2

- PCDD/F levels on average <5.9 pg TEQ/g fat, total TEQ above

Malisch and Schäechtele, 2018. Selected data from WHO/UNEP-coordinated exposure studies 2000–2015 (data submitted to EFSA)