

## From Internal exposure to PDI and comparison to ADI

### Feedback from HBM4EU

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**Glyphosate (GLY) exposure in EU - Human biomonitoring data from the HBM4EU project completed with data from the international scientific literature**

Reference	Country	Study type	Population	Urine sample type	Method	Glyphosate (ug/L)		
						LOD/LOQ	%>LOD or %>LOQ	Max or P95
HBM4EU aligned study adults (UBA_ESB) Samples from 2015, 2016, 2017, 2018, 2019, 2021	Germany	Environmental Specimen Bank Study: cross-sectional	250 adults	24h	GC-MS/MS	LOQ=0.1	30%>LOQ	P95=0.29
Four HBM4EU aligned studies children (Germany, Slovenia, Belgium, Cyprus)	Germany, Slovenia, Belgium, Cyprus	3 Cross-sectional studies, one children cohort	Approximately 150-300 children	first morning	MS/MS	LOQ=0.1	Approx. 45%>LOQ	Average 0.51 Range approx. 0.2-1.0
Lemke et al. (2021)	Germany	GerES V: cross-sectional	2144 persons 3-17 y old	first morning	GC-MS/MS	LOQ=0.1	52%>LOQ	P95=0.51
Ruiz et al. (2021)	Spain	Cross-sectional	97 breastfeeding mothers	first morning	LC-MS/MS	LOQ=0.1	54%≥LOQ	P95=0.62
Faniband et al. (2021)**	Sweden	Cross-sectional	197 young adults	spot	LC-MS/MS	LOD=0.1	20%>LOD	P95=0.24
Stajniko et al. (2020)	Slovenia – January to March 2018	Cross-sectional	246 persons 7-10 & 12-15 y old	first morning	GC-MS/MS	LOQ=0.1	27%>LOQ	P95=0.19
	Slovenia – March to June 2018	Cross-sectional	225 persons 7-10 & 12-15 y old	first morning	GC-MS/MS	LOQ=0.1	22%>LOQ	P95=0.19
Soukup et al. (2020)*	Germany	KarMeN; cross-sectional	301 adults	24h	LC-MS/MS	0.05/0.2	8%≥LOQ	Max=1.37
Connolly et al. (2018)*	Ireland	Pilot	50 adults	spot	LC-MS/MS	LOQ=0.5	20%	Max=1.35
Conrad et al. (2017)*	Germany	General population	399 adults	24h	GC-MS/MS	LOQ=0.1	32%	Max=2.80

\*: Listed in study of Conolly et al. (2020)

\*\* : Concentrations density adjusted

## From Internal exposure (urinary conc.) to Predicted Daily Intake (PDI) to Relative to ADI

	P95 / Max	Population	BW	VOL	FUE	PDI	PDI	PDI/ADI	P95 or
	ug/L		kg	L/day	RWC	µg/d	µg/kg bw/d	%	Max
						(Css x VOL) / FUE	[ (Css x VOL) / FUE ] / bw		
HBM4EU aligned study adults (UBA_ESB) Samples from 2015, 2016, 2017, 2018, 2019, 2021	0.29	adults	75	2.0	0.005	116	1.5	1.5%	P95
Four HBM4EU aligned studies children (Germany, Slovenia, Belgium, Cyprus)	0.51 (mean)	children	30	0.7	0.005	73	2.4	2.4%	P95 (mean)
Lemke et al. (2021)	0.51	3-17y	30	0.7	0.005	73	2.4	2.4%	P95
Ruiz et al. (2021)	0.62	breastfeeding mothers	75	2.0	0.005	248	3.3	3.3%	P95
Faniband et al. (2021)	0.24	young adults	75	2.0	0.005	96	1.3	1.3%	P95
Stajnko et al. (2020)	0.19	7-10 & 12-15y	30	0.7	0.005	27	0.9	0.9%	P95
Soukup et al. (2020)	1.37	adults	75	2.0	0.005	548	7.3	7.3%	Max
Connolly et al. (2018)	1.35	adults	75	2.0	0.005	540	7.2	7.2%	Max
Conrad et al. (2017)	2.80	adults	75	2.0	0.005	1120	14.9	14.9%	Max
	Unadjusted for creatinine	Age	Assumed Body Weight	Urinary volume	Reasonable worst case (RWC) for 24 hrs excretion			ADI	
					Taken from Fig. 1 in Zoller et al., 2020			100 ug/kg bw/d	

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