

**Supplementary Table 1.** Estimates of regression models using urinary PAHs as dependent variables. Beta-coefficients ( $\beta$ ) of COT-U are shown regardless of the significance level, whereas only  $\beta$  values below the 0.10 significance level are illustrated for the other covariates.

Fixed variables	PAH	1-OHPYR	Nap	Acy	Ace	Flu	Phe	Ant	Flt	Pyr	Chr
	Sample size	287	294	313	305	313	301	306	313	311	310
	Box & Cox $\lambda$ transformation <sup>a</sup>	0.06	-0.34	-0.28	-0.08	0.27	-0.75	0.71	0.11	0.14	-0.09
	R <sup>2</sup>	0.36**	0.33**	0.14**	0.14*	0.23**	0.22**	0.48**	0.11*	0.08	0.23**
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
	Sampling day	0.007**		0.002**	-0.002**			0.009**	ns	ns	0.005**
	Day 0		-0.056**			ns	0.008*	ns			
	Day 1		ns			0.095**	0.029**	ns			
	Day 2		-0.040**			ns	ns	ns			
	SWI exposure (ref. level 1)										
	level 2	ns	-0.061*	-0.179*	ns	ns	ns	ns	ns	ns	-0.295**
	level 3	ns	ns	ns	ns	0.152*	ns	ns	ns	ns	-0.255**
	level 4 (highest)	ns	ns	ns	ns	0.175**	ns	ns	ns	ns	ns
	Gender (ref. male)	ns	ns	ns	ns	ns	0.018*	ns	ns	ns	0.219**
	Age, years	-0.011**	ns	ns	ns	ns	ns	ns	ns	ns	ns
	Education level (ref. low)	0.243*	ns	ns	ns	ns	ns	ns	ns	ns	ns
	Citizenship (ref. Italian)	ns	0.109**	ns	ns	0.126*	0.053**	ns	0.189**	0.150**	0.284*
	BMI, kg/cm2	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	Cotinine, $\mu$ g/L	0.043**	0.002	-0.003	-0.003	0.003	-0.000	0.015	0.009	0.004	-0.015
	Creatinine, g/L	0.680**	-0.049**	ns	ns	-0.059**	0.028**	0.093*	ns	ns	ns
	Residence zone (ref. rural)										
	industrial	ns	0.205**	0.378**	ns	ns	ns	ns	ns	ns	ns
	urban	ns	0.076*	ns	ns	-0.226**	ns	ns	ns	ns	ns

	mixed	ns	0.072*	ns	ns	-0.130*	ns	ns	ns	ns	ns
	Temperature, °C	ns	ns	ns	-0.031**	ns	-0.003**	ns	0.010*	ns	ns
	Precipitation, mm	ns	ns	0.026*	ns	ns	ns	-0.021*	ns	ns	ns
	Outdoor traffic exposure (ref. low)										
	medium	ns	ns	ns	ns	0.127**	ns	0.109*	ns	ns	ns
	high	ns	ns	0.227*	ns	ns	ns	ns	ns	ns	ns
	Heating exposure as NOx µg/m3	ns	ns	0.010*	ns	0.009**	ns	ns	ns	ns	ns
	Time spent at home, h	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	Residential distance from major road, m	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	Occupational exposure to PAH	ns	ns	ns	ns	ns		ns	ns	ns	ns
PAH-specific variates	Mold on the residence wall	ns	0.049*	0.168*	ns	0.117*	0.018*	0.199**	0.109*	ns	ns
	Medication <sup>b</sup>			ns	0.179*						
	Nutritional supplement <sup>b</sup>						ns		0.098*	ns	ns
	Char-grilled food <sup>b</sup>	ns		ns	ns			-0.114*			
	Tuna <sup>b</sup>			ns	0.360**						
	Paint use <sup>b</sup>						ns	0.304*			ns
	Coffee <sup>b</sup>	0.267*						ns		ns	ns
	wine <sup>b</sup>		0.042**								
	Whole cereals <sup>b</sup>									ns	ns
	fish <sup>b</sup>										ns

ns = not significant

\*\* p-value <0.05

\*p-value <0.1

<sup>a</sup> Logarithmic transformation if  $\lambda$  of the Box-Cox transformation equals to zero.

<sup>b</sup> Previous week