

Supporting information for paper entitled

"Relationship between aerosol exposure and lung deposition dose"

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Table S1 Total integrated particle concentrations (number, surface area and mass) of particle size distributions of combustion-derived particles from various combustion processes and printer emissions from (Keskinen and Rönkkö 2010; Scungio et al. 2017; Stephens et al. 2013; Tiwari et al. 2014) and ambient air (measured by The Swiss National Air Pollution Monitoring Network NABEL) and calculated main modes of the respective size distributions.

	Number (#/cm ³)	Surface area (m ² /cm ³)	Mass (g/cm ³)	Main mode (nm)
3D printer	15151	4.37E-10	1.74E-17	65.20
NABEL Zürich summer	22184	6.20E-10	1.97E-17	86.23
NABEL Zürich winter	66364	2.31E-09	1.35E-16	45.92
LPG	874955	9.79E-09	8.56E-17	64.88
Laser printer median	1145541	1.61E-08	4.56E-16	37.27
Coal	3654590	6.55E-08	6.66E-16	73.41
Dung cake	8782303	2.30E-06	5.13E-14	267.75
Firewood	12924311	8.74E-07	1.54E-14	156.96
Kerosine	14067870	2.97E-06	6.57E-14	231.00
Laser printer worst case	18487931	3.58E-08	4.45E-16	11.83
Diesel	3028486301	1.75E-05	1.62E-13	58.85

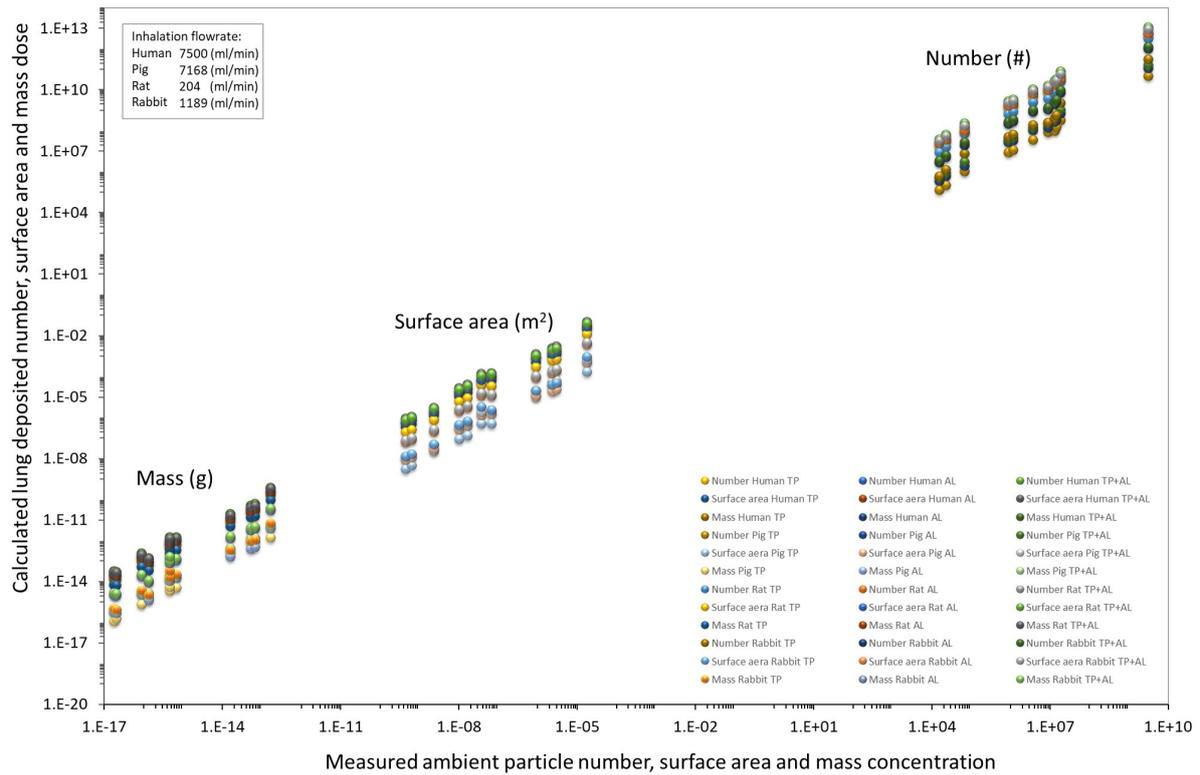


Figure S1 Lung deposited particle dose in the alveolar + trachea-bronchial, alveolar and trachea-bronchial for various aerosols, calculated based on different concentration metrics (number, surface area and mass) for human beings, pigs, rats and rabbits versus the measured ambient particle concentrations (number, surface area and mass).

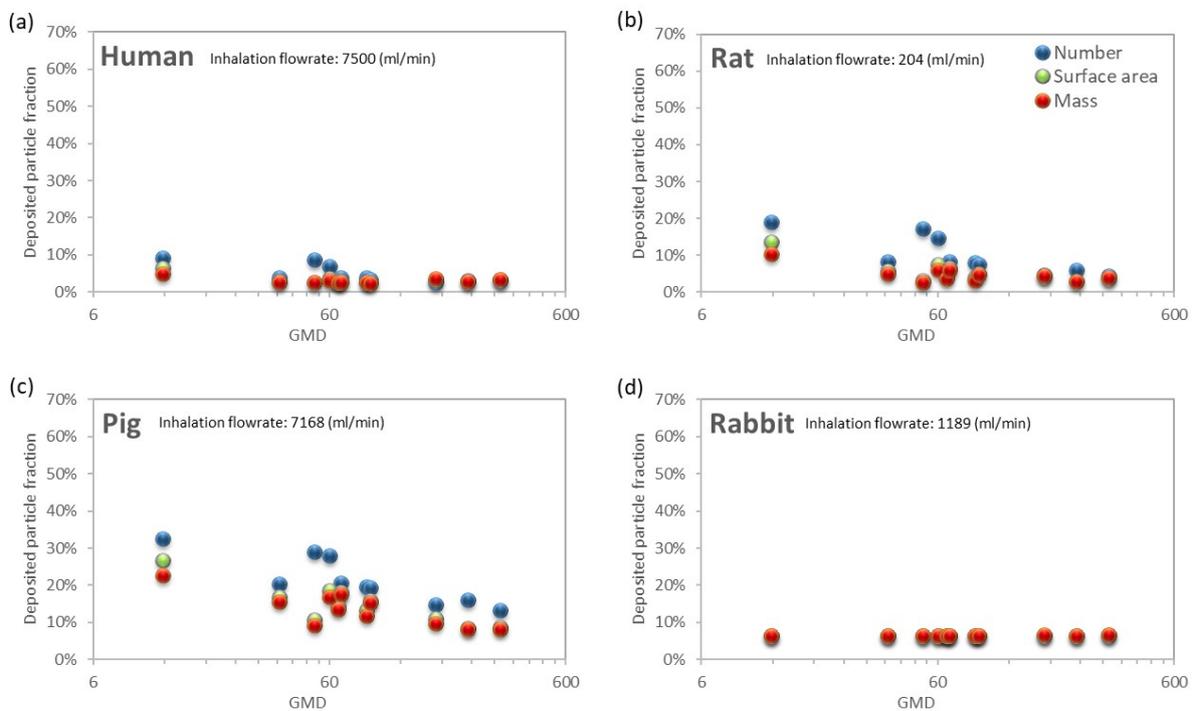


Figure S2 Deposited particle fraction in the head airways region for various aerosols, calculated based on different concentration metrics (number, surface area and mass) for human beings (a), rats (b), pigs (c), and rabbits (d) versus the diameter of the main mode of measured ambient particle size distributions (number, surface area and mass).

Table S2 Average deposited particle fraction in the head airways region for various aerosols calculated based on different concentration metrics (number, surface area and mass) for human beings, pigs, rats and rabbits.

	Number	Surface area	Mass
	Head	Head	Head
Human	4.68%	3.22%	3.04%
Pig	20.90%	14.75%	13.50%
Rat	9.49%	5.48%	4.82%
Rabbit	6.31%	6.35%	6.38%