

Supplemental Materials

Tables

Supplemental Table S1. Characterized exposure metrics for particle filtered diesel exhaust (fDE) and whole diesel exhaust (wDE) for studies on the respiratory system. NR = Not Reported; F = Female; M = Male; HEPA = High-Efficiency Particulate Air.

Respiratory System											
PM $\mu\text{g}/\text{m}^3$		NO ₂ (ppm)		Diameter (nm)		Particle number (cm ³)		Filtered air group	Filter Type	Author	Year
fDE	wDE	fDE	wDE	fDE	wDE	fDE	wDE				
18.9	292.2	0.15	0.052	75	84	NR	NR	Yes	High-efficiency particulate absorption filtration and electrostatic precipitation	Wooding <i>et al.</i>	2019
1.7	269	15.7	4.2	7-8	60-70	4.4x10 ⁵	3.2x10 ⁵	Yes	Retrofitted Diesel Particle Filter	Karthikeyan <i>et al.</i>	2013
ND	1900	NR	NR	NR	NR	NR	NR	Yes	HEPA	Gordon <i>et al.</i>	2012
NR	1220 (2-d); 1494 (4-w)	1.0 (2-d); 0.8 (4-w)	0.9 (2-d); 0.7 (4-w)	NR	NR	NR	NR	Yes	HEPA	Kodavanti <i>et al.</i>	2013

Supplemental Table S2. Characterized exposure metrics for particle filtered diesel exhaust (fDE) and whole diesel exhaust (wDE) for studies on the nervous system. NR = Not Reported; F = Female; M = Male; HEPA = High-Efficiency Particulate Air

Nervous System											
PM $\mu\text{g}/\text{m}^3$		NO ₂ (ppm)		Diameter (nm)		Particle number (cm ³)		Filtered air group	Filter Type	Author	Year
fDE	wDE	fDE	wDE	fDE	wDE	fDE	wDE				
5.5	35.5 (med) , 122 (high)	0.47	0.16 (med), 0.48 (high)	NR	23.06 (med) , 25.52 (high)	5.41	8.04x10 ⁵ (med), 1.75x10 ⁶ (high)	Yes	HEPA and charcoal filter	Win-Shwe <i>et al.</i>	2012
8.5	47.8 (med) , 129 (high)	0.46	0.18 (med), 0.47 (high)	NR	23.2 (med) , 24.98 (high)	7.54	2.21x10 ⁶ (med), 4.39x10 ⁶ (high)	Yes	HEPA and charcoal filter	Win-Shwe <i>et al.</i>	2012b
13.3	113.2	0.99	0.43	NR	25.24	5.55	2.85x10 ⁶	Yes	NR	Win-Shwe <i>et al.</i>	2016

Supplemental Table S3. Characterized exposure metrics for particle filtered diesel exhaust (fDE) and whole diesel exhaust (wDE) for studies on the reproductive/developmental systems. NR = Not Reported; F = Female; M = Male; HEPA = High-Efficiency Particulate Air; ULPA = Ultra Low Penetration Air

Reproductive/Developmental Systems											
PM $\mu\text{g}/\text{m}^3$		NO ₂ (ppm)		Diameter (nm)		Particle number (cm ³)		Filtered air group	Filter Type	Author	Year
fDE	wDE	fDE	wDE	fDE	wDE	fDE	wDE				
3.1	148.86	0.51	0.53	92.62	26.81	2.66	1.83x10 ⁶	Yes	HEPA and charcoal filters	Li <i>et al.</i>	2009
NR	1730	NR	0.79	>90% <0.05 μm		NR	NR	Yes	HEPA and charcoal filters	Watanabe <i>et al.</i>	2002
0.69	41.7 (low), 152 (high)	0.53	0.16 (low), 0.54 (high)	24.14	22.78 (low), 26.31 (high)	1.87	8.21x10 ⁵ (low), 1.8x10 ⁵ (high)	Yes	HEPA and charcoal filter	Li <i>et al.</i>	2012
3.1	148.9	NR	NR	22-27 nm		NR	NR	Yes	HEPA and charcoal filter	Li <i>et al.</i>	2013
NR	170 (low), 1710 (high)	0.1 (low), 0.8 (high)	0.1 (low), 0.79 (high)	>90% <0.05 μm		NR	NR	Yes	ULPA (Nippon Muki Co., Tokyo, Japan).	Watanabe	2005

Supplemental Table S4. Characterized exposure metrics for particle filtered diesel exhaust (fDE) and whole diesel exhaust (wDE) for studies on the cardiovascular system. NR = Not Reported; F = Female; M = Male; HEPA = High-Efficiency Particulate Air

Cardiovascular System											
PM $\mu\text{g}/\text{m}^3$		NO₂ (ppm)		Diameter (nm)		Particle number (cm³)		Filtered air group	Filter Type	Author	Year
fDE	wDE	fDE	wDE	fDE	wDE	fDE	wDE				
7.2	320	3.44	0.69	NR	NR	30-300	15000 00- 20000 0	Yes	Diesel particulate filter, continuously regenerating trap (DPF-CRT) (Johnson Matthey, Royston, UK)	Lucking <i>et al.</i>	2011
25	325	0.0001	0.0001	NR	NR	NR	NR	No	Respiratory filter (Affinity Plus PFF2/ VO AF-38, MSA, Sao Paulo, Brazil)	Vieira <i>et al.</i>	2016
0 (low, high)	153.4 (low), 512.4 (high)	NR	NR	NR	NR	NR	NR	Yes	NR	Hazari <i>et al.</i>	2011
ND	1900	NR	NR	NR	NR	NR	NR	Yes	HEPA	Gordon <i>et al.</i>	2012

NR	1220 (2-d); 1494 (4-w)	1.0 (2- d); 0.8 (4-w)	0.9 (2- d); 0.7 (4-w)	NR	NR	NR	NR	Yes	HEPA	Kodavanti <i>et al.</i>	2013
27.5	109 (low), 304.8 (med), 1012.3 (high)	NR	NR	NR	NR	NR	NR	Yes	HEPA	Campen <i>et al.</i>	2010
15 (low), 21 (high)	168 (low), 425 (high)	<0.5	<0.5	25	60 (low), 69 (high)	1428	45933 3 (low), 2.1x10 ⁶ (high)	Yes	HEPA	Lamb <i>et al.</i>	2012
NR	2500	3	3	NR	NR	NR	NR	Yes	Diesel Particle Filter (DPF)	Karoui <i>et al.</i>	2019
6 (low), 770 (high)	512 (low), 3634 (high)	NR	NR	NR	NR	NR	NR	Yes	Non-catalyzed ceramic particle trap (PERMIT Filter, Clean Air Systems, Santa Fe, NM)	Campen <i>et al.</i>	2005
3	472	0.4	0.3	21	61	1.4x10 ³	2.1x10 ⁶	Yes	HEPA	Carll <i>et al.</i>	2012

Supplemental Table S5. Characterized exposure metrics for particle filtered diesel exhaust (fDE) and whole diesel exhaust (wDE) for studies on the immune system. NR = Not Reported; ND = Not Detected; F = Female; M = Male; HEPA = High-Efficiency Particulate Air; ULPA = Ultra Low Penetration Air

Immune System											
PM $\mu\text{g}/\text{m}^3$		NO ₂ (ppm)		Diameter (nm)		Particle number (cm ³)		Filtered air group	Filter Type	Author	Year
fDE	wDE	fDE	wDE	fDE	wDE	fDE	wDE				
40	1010	2.93	1.99	NR	NR	27.28 cpm	705.2 cpm	No	HEPA	Fujimaki <i>et al.</i>	2004
40	1010	NR	NR	0.4 μm		NR	NR	No	HEPA	Fujimaki <i>et al.</i>	2005
ND	36 (low), 169 (high)	0.51	0.15 (low), 0.51 (high)	ND	26 (low), 27 (high)	ND	51000 0 (low), 14000 00 (high)	No	ULPA	Tanaka <i>et al.</i>	2013
NR	1730	NR	0.79	>90% <0.05 μm		NR	NR	Yes	HEPA (ATM 3QA Nippon Muki Co., Tokyo Japan)	Watanabe <i>et al.</i>	2002

Supplemental Table S6. Characterized exposure metrics for particle filtered diesel exhaust (fDE) and whole diesel exhaust (wDE) for studies on other systems. NR = Not Reported; F = Female; M = Male; HEPA = High-Efficiency Particulate Air

Other											
PM $\mu\text{g}/\text{m}^3$		NO ₂ (ppm)		Diameter (nm)		Particle number (cm ³)		Filtered air group	Filter Type	Author	Year
fDE	wDE	fDE	wDE	fDE	wDE	fDE	wDE				
<1	2300	NR	NR	NR	NR	NR	NR	Yes	Diesel Particle Filter (DPF)	Douki <i>et al.</i>	2018
0.69	41.7 (low), 152 (high)	0.53	0.16 (low), 0.54 (high)	24.14	22.78 (low), 26.31 (high)	1.87	8.21x10 ⁵ (low), 1.8x10 ⁵ (high)	Yes	HEPA and charcoal filter	Li <i>et al.</i>	2012b
0.69	41.7 (low), 152 (high)	0.53	0.16 (low), 0.54 (high)	24.14	22.78 (low), 26.31 (high)	1.87	8.21x10 ⁵ (low), 1.8x10 ⁵ (high)	Yes	HEPA and charcoal filters	Li <i>et al.</i>	2012
3.1	38 (low), 149 (high)	0.51	0.17 (low), 0.53 (high)	93	24 (low), 27 (high)	2.7	7.1x10 ⁵ (low), 1.8x10 ⁶ (high)	Yes	HEPA and charcoal filters	Yamagishi <i>et al.</i>	2012

Pubmed search string

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Web of Science search string

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Google Scholar keyword search

“filtered diesel exhaust”; “diesel exhaust particles”; “particle-free diesel exhaust”