



APPENDIX AVAILABLE ON REQUEST

Research Report 143

Measurement and Modeling of Exposure to Selected Air Toxics for Health Effects Studies and Verification by Biomarkers

Roy M. Harrison et al.

Appendix 23. Percentage Contribution of Microenvironment to Personal Exposure

Note: Appendices Available on the Web appear in a different order than in the original Investigators' Report. HEI has not changed these documents.

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APPENDIX 23: PERCENTAGE CONTRIBUTION OF MICROENVIRONMENT TO PERSONAL EXPOSURE

Table A23.1. Percentage contribution of microenvironment to personal exposure - All population (Sample size = 500)

MICROENVIRONMENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ART GALLERY/MUSEUM	0.4	1.0	0.7	0.8	1.0	1.0	0.2	0.9	0.8	0.5	0.2	0.9	0.3	0.9	1.4
BUS	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BUS STOP	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1
CAR PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAR/TAXI	4.7	8.8	6.9	6.3	7.6	7.8	0.9	7.0	4.4	3.0	0.8	5.6	0.9	3.9	7.1
FRIENDS/RELATIVES HOUSE	3.2	2.6	2.6	2.7	2.8	2.7	4.0	3.1	4.9	4.4	4.6	1.7	5.5	3.2	2.1
GARDEN/COURTYARD/BALCONY/BEER GARDEN	0.2	0.7	0.3	0.4	0.4	0.4	0.1	0.3	0.2	0.2	0.0	0.3	0.1	0.5	0.2
GP SURGERY/HEALTH CENTRE/HOSPITAL/	0.4	0.5	0.5	0.5	0.5	0.5	0.7	0.5	1.3	1.2	0.8	1.6	0.3	1.1	0.5
GYM/LEISURE CENTRE/SWIMMING BATHS	0.1	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.5	0.1	0.4	0.1	0.5	0.0
HAIRDRESSERS/TANNING OR BEAUTY OR NAIL SALON	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HOME	64.9	59.1	67.9	57.9	58.7	51.3	43.1	60.5	70.8	64.0	78.9	66.3	35.3	69.5	50.2
LABORATORY	9.5	2.1	0.8	5.0	1.9	5.3	0.0	1.6	0.3	0.6	0.2	0.4	0.0	0.3	0.5
LIBRARY	0.1	0.2	0.1	0.2	0.2	0.2	0.0	0.2	0.1	0.3	0.0	0.1	0.1	0.2	0.0
OTHER	0.0	0.1	0.5	0.2	0.3	0.3	0.1	0.4	0.1	0.2	0.1	0.1	0.1	0.2	0.0
OTHER INDOORS	0.7	1.7	1.1	1.5	1.5	1.5	0.9	1.4	1.8	2.3	0.6	1.9	0.6	2.1	0.2
PARK/RESEVOIR/LAKE/CANAL/ WOODLAND/FOREST	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.0
PUB/BAR/SOCIAL CLUB	1.7	5.8	3.9	4.4	3.7	5.5	32.8	3.5	2.3	4.7	2.0	2.9	37.8	2.2	19.8
RESTAURANT/CAFE/TEA ROOM	0.7	1.7	1.1	1.2	1.1	1.3	8.9	1.1	0.8	1.4	1.4	1.1	12.8	0.8	10.6
SHOPPING CENTRE	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.0
SHOPS	0.1	0.2	0.8	0.3	0.5	0.5	0.1	0.5	0.1	0.2	0.1	0.2	0.2	0.3	0.0
STREET	1.6	2.6	1.4	1.8	1.9	1.9	0.4	1.8	1.4	0.8	0.1	1.5	0.4	1.0	2.0
SUPERMARKET/RETAIL PARK	0.2	0.3	1.2	0.5	0.7	0.7	0.2	0.8	0.2	0.3	0.2	0.2	0.2	0.5	0.0
TRAIN	0.1	0.4	0.4	0.3	0.4	0.4	0.1	0.4	0.4	0.4	0.3	0.4	0.2	0.9	0.3
TUBE	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.7	0.1	0.2	0.1	0.7	0.1
WORK/EDUCATIONAL INSTITUTE - OFFICE	10.9	10.9	8.8	15.0	16.0	17.6	6.9	15.0	9.3	14.1	9.4	13.6	4.8	11.2	4.9

1: n-Hexane; 2: Benzene; 3: Toluene; 4: Ethylbenzene; 5: p-Xylene; 6: m-Xylene; 7: Pyridine; 8: o-Xylene; 9: 1,3,5-Trimethylbenzene; 10: Styrene; 11: p-Isopropyltoluene; 12: 1,2,4-Trimethylbenzene; 13: 3-Ethenylpyridine; 14: Naphthalene; 15: 1,3-Butadiene

APPENDIX 23: PERCENTAGE CONTRIBUTION OF MICROENVIRONMENT TO PERSONAL EXPOSURE

Table A23.2. Percentage contribution of microenvironment to personal exposure - ETS exposed population (Sample size = 67)

MICROENVIRONMENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ART GALLERY/MUSEUM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.0
BUS	0.7	1.5	1.0	1.2	1.4	1.4	0.1	1.3	1.1	0.7	0.3	1.2	0.2	1.5	1.6
CAR PARK	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
CAR/TAXI	2.3	3.6	4.9	3.3	4.1	4.2	0.5	4.4	1.9	1.8	0.7	2.6	0.4	3.1	1.1
FRIENDS/RELATIVES HOUSE	5.9	5.3	5.6	4.5	4.3	3.8	6.9	4.1	5.9	6.2	7.6	3.3	9.3	6.8	2.3
GARDEN/COURTYARD/BALCONY/BEER GARDEN	0.3	0.7	0.3	0.4	0.4	0.4	0.1	0.3	0.2	0.2	0.0	0.3	0.0	0.7	0.1
GP SURGERY/HEALTH CENTRE/HOSPITAL/	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.8	0.7	0.5	1.0	0.1	0.8	0.2
GYM/LEISURE CENTRE/SWIMMING BATHS	0.2	0.4	0.3	0.4	0.4	0.4	0.1	0.4	0.4	0.4	0.2	0.4	0.1	0.6	0.0
HOME	69.9	55.2	57.2	55.9	54.9	50.3	35.9	56.0	70.1	59.9	72.0	64.4	39.2	59.2	37.4
LABORATORY	0.0	0.4	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1
OTHER	0.0	0.5	1.9	0.9	1.2	1.2	0.2	1.4	0.3	0.6	0.3	0.4	0.2	0.9	0.0
OTHER INDOORS	0.4	0.8	0.7	0.8	0.9	0.8	0.3	0.8	0.8	0.9	0.3	0.9	0.1	1.3	0.1
PUB/BAR/SOCIAL CLUB	5.1	15.0	11.3	12.0	10.5	14.6	46.8	10.1	5.7	11.8	5.9	7.8	41.9	7.2	37.1
RESTAURANT/CAFE/TEA ROOM	0.9	1.6	1.2	1.6	1.3	1.5	4.7	1.3	0.7	1.3	1.3	1.1	6.0	0.9	14.9
SHOPPING CENTRE	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
SHOPS	0.3	0.4	1.6	0.7	1.0	1.0	0.2	1.2	0.3	0.5	0.2	0.4	0.1	0.8	0.0
STREET	1.8	2.7	1.4	1.8	1.9	1.9	0.2	1.8	1.4	0.7	0.1	1.6	0.2	1.2	1.4
SUPERMARKET/RETAIL PARK	0.0	0.0	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
TRAIN	0.2	0.6	0.6	0.6	0.7	0.7	0.1	0.7	0.7	0.6	0.5	0.8	0.2	2.0	0.2
TUBE	0.1	0.2	0.1	0.1	0.2	0.2	0.0	0.1	0.2	0.5	0.1	0.2	0.0	0.6	0.1
WORK/EDUCATIONAL INSTITUTE - OFFICE	11.6	10.5	11.0	15.0	16.1	16.9	3.4	15.3	9.5	12.9	9.7	13.4	2.0	12.2	3.6

1: n-Hexane; 2: Benzene; 3: Toluene; 4: Ethylbenzene; 5: p-Xylene; 6: m-Xylene; 7: Pyridine; 8: o-Xylene; 9: 1,3,5-Trimethylbenzene; 10: Styrene; 11: p-Isopropyltoluene; 12: 1,2,4-Trimethylbenzene; 13: 3-Ethenylpyridine; 14: Naphthalene; 15: 1,3-Butadiene

APPENDIX 23: PERCENTAGE CONTRIBUTION OF MICROENVIRONMENT TO PERSONAL EXPOSURE

Table A23.3. Percentage contribution of microenvironment to personal exposure - Non ETS Population (Sample size = 433)

MICROENVIRONMENT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BUS	0.4	0.9	0.6	0.8	0.9	0.9	0.2	0.8	0.7	0.5	0.2	0.8	0.4	0.8	1.3
BUS STOP	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1
CAR PARK	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1
CAR/TAXI	5.1	9.8	7.3	6.9	8.2	8.5	1.0	7.5	4.9	3.3	0.8	6.2	1.3	4.0	8.9
FRIENDS/RELATIVES HOUSE	2.8	2.1	2.1	2.4	2.5	2.5	2.8	3.0	4.7	4.1	4.1	1.3	3.1	2.6	2.1
GARDEN/COURTYARD/BALCON Y/BEER GARDEN	0.2	0.6	0.3	0.4	0.4	0.4	0.2	0.3	0.2	0.2	0.0	0.3	0.1	0.5	0.2
GP SURGERY/HEALTH CENTRE/HOSPITAL/	0.5	0.5	0.6	0.5	0.5	0.5	0.9	0.5	1.4	1.3	0.8	1.7	0.4	1.1	0.6
GYM/LEISURE CENTRE/SWIMMING BATHS	0.1	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.5	0.1	0.4	0.2	0.4	0.0
HAIRDRESSERS/TANNING OR BEAUTY OR NAIL SALON	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HOME	64.0	59.8	70.0	58.3	59.4	51.5	45.9	61.3	71.0	64.9	80.0	66.7	33.0	71.2	54.2
LABORATORY	11.1	2.5	0.9	5.9	2.3	6.4	0.0	1.9	0.3	0.7	0.2	0.4	0.0	0.3	0.6
LIBRARY	0.1	0.3	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.4	0.0	0.2	0.1	0.2	0.0
OTHER	0.0	0.1	0.3	0.1	0.2	0.2	0.1	0.2	0.0	0.1	0.0	0.1	0.1	0.1	0.0
OTHER INDOORS	0.7	1.9	1.2	1.6	1.6	1.7	1.2	1.6	2.0	2.5	0.6	2.1	0.9	2.2	0.2
PARK/RESEVOIR/LAKE/CANAL/ WOODLAND/FOREST	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.3	0.3	0.1	0.0
PUB/BAR/SOCIAL CLUB	1.2	4.0	2.5	3.0	2.4	3.7	27.1	2.2	1.6	3.3	1.3	2.0	35.3	1.4	14.5
RESTAURANT/CAFE/TEA ROOM	0.7	1.7	1.0	1.2	1.0	1.3	10.6	1.0	0.8	1.4	1.4	1.0	17.0	0.8	9.2
SHOPPING CENTRE	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.1	0.1	0.1	0.0
SHOPS	0.1	0.2	0.6	0.3	0.4	0.4	0.1	0.4	0.1	0.2	0.1	0.1	0.2	0.2	0.0
STREET	1.5	2.6	1.4	1.8	1.9	1.9	0.5	1.8	1.4	0.8	0.1	1.5	0.6	1.0	2.1
SUPERMARKET/RETAIL PARK	0.2	0.4	1.4	0.6	0.8	0.9	0.3	0.9	0.2	0.4	0.2	0.3	0.3	0.5	0.0
TRAIN	0.1	0.4	0.3	0.3	0.3	0.4	0.2	0.3	0.3	0.3	0.2	0.4	0.3	0.7	0.3
TUBE	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.7	0.1	0.3	0.1	0.7	0.1
WORK/EDUCATIONAL INSTITUTE - OFFICE	10.8	11.0	8.4	14.9	16.0	17.7	8.3	15.0	9.3	14.3	9.4	13.6	6.4	11.0	5.3

1: n-Hexane; 2: Benzene; 3: Toluene; 4: Ethylbenzene; 5: p-Xylene; 6: m-Xylene; 7: Pyridine;
8: o-Xylene; 9: 1,3,5-Trimethylbenzene; 10: Styrene; 11: p-Isopropyltoluene;
12: 1,2,4-Trimethylbenzene; 13: 3-Ethenylpyridine; 14: Naphthalene; 15: 1,3-Butadiene