

Burden of Occupational Cancer in Ontario: Major Workplace Carcinogens and Prevention of Exposure

Supplementary Table

Prepared by Cancer Care Ontario, Prevention and Cancer
Control (Population Health and Prevention) and the
Occupational Cancer Research Centre

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95% Confidence intervals for estimates of the burden of occupational cancer in Ontario

Carcinogen	Cancer site	Annual burden of occupational cancer in Ontario	95% confidence interval ¹
Priority carcinogens			
Solar ultraviolet radiation	Non-melanoma skin	1400	1300-2800
Asbestos	Lung	630	390-1000
	Mesothelioma	140	NA ²
	Larynx	15	<5 to 55
	Ovary	<5	<5 to 10
Diesel engine exhaust	Lung	170	110-480
	Bladder	45	30-120
Silica (crystalline)	Lung	200	140-530
Welding fumes	Lung	100	70-290
Nickel compounds	Lung	80	60-280
Environmental tobacco smoke at work	Lung	50	45-70
	Pharynx	10	10-25
	Larynx	5	<5 to 10
Radon ³	Lung	60	50-160
Chromium (VI)	Lung	25	15-90
Arsenic	Lung	20	15-70
Benzene	Leukemia	10	5-15
	Multiple myeloma	<5	<5 to 5
Secondary carcinogens			
Polycyclic aromatic hydrocarbons	Lung	60	45-200
	Skin	15	10-70
	Bladder	30	20-90
Artificial ultraviolet radiation	Eye melanoma	5	<5 to 15
Wood dust	Sinonasal	<5	<5 to 10
	Nasopharynx	<5	<5 to 5
Formaldehyde	Leukemia	<5	<5 to 5
	Nasopharynx	<5	<5
Carcinogens of special interest			
Pesticides	Multiple	NA	NA
Shiftwork involving circadian disruption	Breast	180-460	120-1200 ⁴
Antineoplastic agents	NA	NA	NA
Nanoparticles	NA	NA	NA
Sedentary work	NA	NA	NA

Data source: Occupational Burden of Cancer study

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Table notes:

NA: not available

¹95% confidence intervals are the range of values that are likely to contain the actual annual burden of occupational cancer numbers in the Ontario population. Monte Carlo simulation was used to estimate 95% confidence intervals (CI) for the annual burden of occupational cancer in Ontario. Random samples were drawn from the distribution of each of the two components in Levin's equation (relative risk, RR, and the proportion exposed, PrE). The variance of the RR component was estimated based on the RR point estimate and its 95% CI as reported in the selected meta-analysis. The PrE was assumed to follow a log-normal distribution with a constant geometric standard deviation set to 2.7. Ten thousand samples were drawn from both the RR component and the PrE component. The 2.5th and 97.5th percentiles of the resulting attributable fractions were used as the 95% CI lower and upper limits, respectively.

² 95% confidence intervals were not estimated for asbestos and mesothelioma since the attributable fraction was not estimated from Levin's equation. The only established cause of mesothelioma is asbestos and asbestos-like fibres.

³ The 95% confidence intervals for radon accounted for variance in PrE only.

⁴ The 95% CI for shiftwork describes the lower bound of the lower burden estimate and the upper bound of the upper burden estimate.