CORRESPONDENCE

Does occupational exposure to dust prevent colorectal cancer?

Editor—A recent report found that increased rates of stomach cancer coincide with decreased rates of colorectal cancer in populations exposed to dust.¹ The report's author first noticed this in a cohort of Ontario miners, one of the populations considered in the report.

The table compares mortalities in that

cohort with those in the general male population of Ontario. The mortalities for several diseases (silicotuberculosis, stomach cancer, lung cancer, and pneumoconiosis) are increased; mortalities for some other diseases (chronic lymphatic and myelogenous leukaemia, nasal and laryngeal cancer) are greater than in the general population but the increases are not large enough to be considered real and the mortalities for many of the remaining diseases are much less than those in the comparison

population. Because the diseases in the first group are associated with exposures in the mines, should one then suggest that exposure to dust protects workers from those diseases such as pancreatic cancer, oesophageal cancer, bladder cancer, heart disease, and cirrhosis of the liver for which mortalities are lower than in the comparison population?

As Finkelstein remarks, because of the healthy worker effect, comparisons of mortalities in working populations with those in the general population give biased results. And as noted in another report,² additional personal identifying information increases the mortalities found in occupational groups. Perhaps these two factors explain much of the deficit of mortality from colorectal cancer and other diseases found in populations exposed to dust.

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1 Finkelstein MM. Does occupational exposure to dust prevent colorectal cancer? *Occup Environ Med* 1995;52:145-9.

2 Kusiak RA, Ritchie AC, Muller J, Springer J. Mortality from lung cancer in Ontario uranium miners. *Br J Ind Med* 1993;50:920-8.

Author's reply—Kusiak and colleagues have performed some brilliant work in collecting and analysing data about the mortality of Ontario miners and I am pleased to receive his remarks. The intent of my paper was to comment on the tendency of epidemiologists to focus on "positive" associations and to ignore "negative" ones. My comments on causation were largely "tongue in cheek". Nevertheless, as Kusiak points out, there were other disease causes and tumour sites in the Ontario mining population with lower than expected mortality. It is not implausible that some of these might be influenced by dust exposure. The oesophagus lies on the ingestion pathway, and the bladder on the route of excretion. The challenge of course is to identify causality in an environment of confounding and multiple comparisons. Consistency of any of these findings across several cohorts might lead one to explore what factors are confounding the association or to consider the possibility of causality.

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Back pain and male parenthood

Editor—The article "Backpain and parenthood" written by Finkelstein raises new and interesting issues concerning male parenthood as a risk factor for back pain.¹ It was mentioned that this finding had never been reported before. We have reported similar results of an association between self reported work impairment due to back pain and caring for children at home, in a population of 269 male aircraft assembly workers.² We had treated this factor as a potential confounder but had not specifically reported

Mortalities up to age 75 in Ontario miners between 1955 and 1986

Cause of death	Observed	Expected	SMR	95% Confidence interval
All causes	8571	8616.59	99	97-102
All diseases causes:	6930	7666.64	90	88-93
Infective diseases:	52	52.80	98	74-129
Silicotuberculosis	7	1.06	659	265-1357
Respiratory tuberculosis	14	14.43	97	53-163
Other tuberculosis	3	3.75	80	17-234
Other infective diseases	28	33.55	83	55-121
Malignant neoplasms:	2117	2114.52	100	96-104
Digestive organs:	576	657.92	88	81-95
Oesophagus	37	57.90	64	45-88
Stomach	178	140.67	127	109-147
Intestinal and rectum	217	270.13	80	70-92
Liver	20	23.41	85	52-132
Pancreas	95	117.58	81	65-99
Other digestive	29	48.23	60	40-86
Respiratory system:	970	756.43	128	120-137
Nose, nasal cavities, etc	6	5.24	115	42-249
Larynx	34	32.40	105	73-147
Trachea, bronchus and lung	926	712.91	130	122-139
Other respiratory	4	5.88	68	19-174
Lymphatic and haematopoietic:	162	195.88	83	70-96
Chronic lymphatic leukaemia	18	15.95	113	67-178
Chronic myelogenous leukaemia	16	12.38	129	74-210
Other leukaemia	25	39.84	63	41-93
Multiple myeloma	25	29.22	86	55-126
Others	78	98.48	79	63-99
Other malignant neoplasms:	409	504.29	81	73-89
Bone	7	7.42	94	38-194
Kidney	54	53.68	101	76-131
Bladder	28	56.12	50	33-72
Brain	78	83.36	94	74-117
Prostate	84	97.28	86	69-107
Skin	16	34.63	46	26-75
Others	142	171.79	83	70-97
Endocrine, nutritional, and metabolic diseases	87	145.87	60	48-74
Diseases of the circulatory system:	3585	4090.94	88	85-91
Ischaemic heart disease	2677	3116.35	86	83-89
Cerebrovascular disease	408	453.58	90	81-99
Other	500	521.02	96	88-105
Diseases of the respiratory system:	450	438.34	103	93-113
Influenza	4	7.80	51	14-131
Pneumonia	145	147.41	98	83-116
Bronchitis, emphysema and asthma	146	147.34	99	84-117
Acute respiratory infections except influenza	4	3.44	116	32-298
Pneumoconiosis	68	20.40	333	259-423
Other	83	111.95	74	59-92
Diseases of the digestive system:	344	431.83	80	71-89
Cirrhosis of the liver	189	246.70	77	66-88
Other	155	185.13	84	71-98
Congenital anomalies	8	20.38	39	17-77
Other diseases:	287	371.97	77	68-87
Diseases of the urinary system	69	77.50	89	69-113
Other	181	246.88	73	63-85
Unknown disease cause	37	47.58	78	55-107
Accidents, poisonings, and violence:	1641	949.95	173	164-181
Motor vehicle traffic accidents	391	272.66	143	130-158
Water transport accidents	74	32.77	226	177-284
Accidental poisonings	59	46.29	127	97-164
Accidental falls	133	75.06	177	148-210
Motor vehicle non-traffic accidents	12	8.10	148	77-259
Natural and environmental factors	13	13.03	100	53-171
Drowning	38	31.01	123	87-168
Other violent deaths	26	21.96	118	77-173
Inhalation and ingestion of food	21	20.42	103	64-157
Blow from falling or projected missile	204	21.94	930	807-1067
Firearms and explosives	50	7.85	637	473-840
Other vehicle accidents	41	6.10	672	482-911
Other machinery accidents	40	15.13	264	189-360
Suicide	339	263.22	129	115-143
Homicide	31	27.61	112	76-159
Other accidents	169	86.80	195	166-226