

CANCER INCIDENCE BY SOCIAL GROUPS IN DENMARK

In the 1970 census, the economic status was recorded for each individual on a given day. Chronic diseases will in many cases impair work capacity, and persons who are economically inactive are therefore expected, on the average, to suffer from diseases more than persons who are economically active. The economic status on a certain day thus, to some extent, reflects health selection.

The focus in the present study was on incident cancer cases diagnosed after the census date. The health selection reflected in the economic status on the census date was, however, expected to play a role even in this case. Persons who developed lung cancer after the census date might, for instance, have suffered from respiratory symptoms already before the census date and might have been out of work for that reason. This possibility is illustrated in figure 3, which shows that the age-specific incidence rates for lung cancer in 1970–1980 were higher among the men who were economically inactive on the census date than among the men who were economically active.

The cancer incidence was tabulated across 32 socioeconomic groups for 43 cancer sites for the men and on 45 cancer sites for the women. The cancer incidence data for persons who were economically inactive on the census date and for persons who were economically active but with a marginal position in the labor market will, however, reflect the previously described selection. The data for these groups therefore carry limited information concerning the social and occupational etiology of a given disease, and they were therefore excluded from the analysis of the social structure in the cancer pattern.

Housewives form a quantitatively important group among women. From the selection point of view they represent an inhomogeneous group because some of them have decided themselves not to work and some of them have been forced out of the labor market for various reasons, including poor health. Housewives were excluded from the present analysis.

The excluded groups together represented 11 % of the male cancer patients and 55 % of the female cancer patients (table 8).

Social differences in cancer incidence among the men

Twenty socioeconomic groups were included in the analysis of the cancer pattern for the men when groups with less than 50 cancer cases were excluded. These groups are listed in table 9. The relative risks for the total cancer incidence varied between these groups

from 1.28 for “unskilled workers in shipping/fishing” to 0.68 for “self-employed, farm I.” There was thus almost a twofold difference in the total cancer incidence between these groups, as illustrated in figure 4. The persons working in agriculture carried a low overall risk of cancer, as the three socioeconomic groups working in agriculture were the three groups at the bottom of the scale in table 9. This pattern has also been seen in some neighboring countries (40). Although “unskilled workers in shipping/fishing” were at the

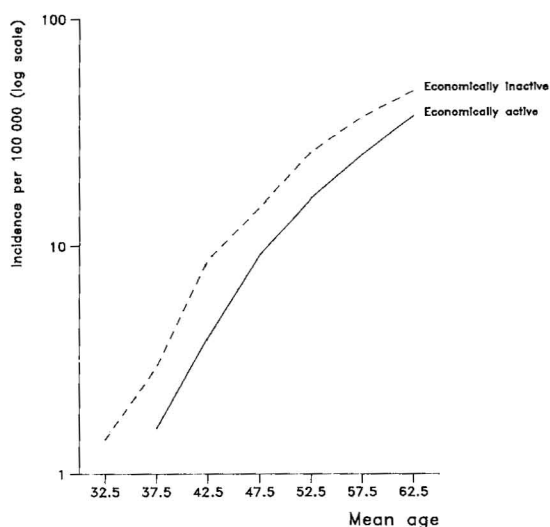


Figure 3. Age-specific incidence rates for lung cancer for economically active and economically inactive men in 1970–1980.

Table 8. Number of cancer patients excluded from the analysis of the social structure of the cancer pattern.

Socioeconomic group ^a	Men	Women
Family worker (3–4)	40	—
Unskilled worker, industry NOS (77)	482	147
Housemaid (91)	2	510
Housewife (92)	7	23 977
Pensioner (93)	4 824	5 122
Supported person (94)	228	934
Student (95)	254	107
Total excluded	5 837 ^b	30 797 ^c
All cancer patients	52 853	56 207

^a Code of the socioeconomic classification in parentheses. Data for all of the socioeconomic groups can be obtained from the authors upon request.

^b 11 %.

^c 55 %.

top of the scale in table 9, the results did not indicate a concentration of unskilled workers among the high-risk groups. On the contrary, the next groups to follow were two groups of skilled workers and "salaried employees IV." The Danish cancer mortality figures for men followed the incidence figures closely, as seen in table 9.

The social pattern in the overall cancer incidence and cancer mortality among Danish men seems thus to be

Table 9. Relative risks for the overall cancer incidence and mortality of the men in the socioeconomic groups with more than 50 cancer cases (all economically active men = 1.00).

Socioeconomic group ^a	Relative risk	
	Cancer incidence	Cancer mortality ^b
Unskilled worker, shipping/fishing (74)	1.28	1.26
Skilled worker, other building (63)	1.15	1.20
Skilled worker, other industries (64)	1.15	1.20
Salaried employees IV (54)	1.12	1.15
Skilled workers, metal industry (61)	1.11	1.18
Self-employed, other industries II (22)	1.10	1.10
Unskilled workers, cleaning (76)	1.09	1.15
Salaried employees III (53)	1.08	1.02
Unskilled workers, transport (75)	1.08	1.14
Self-employed, other industries I (21)	1.06	0.98
Self-employed, other industries III (23)	1.04	1.08
Skilled workers, wood industry (62)	1.03	1.02
Unskilled workers, manufacture (73)	1.02	1.05
Salaried employees II (52)	0.97	0.82
Unskilled workers, building (72)	0.96	0.99
Self-employed, other agriculture (13)	0.92	0.82
Salaried employees I (51)	0.92	0.78
Unskilled workers, agriculture (71)	0.77	0.80
Self-employed, farm II (12)	0.69	0.64
Self-employed, farm I (11)	0.68	0.64
All economically active (1-7)	1.00	1.00

^a Code of the socioeconomic classification in parentheses. Data for all of the socioeconomic groups can be obtained from the authors upon request.

^b Taken from reference 15.

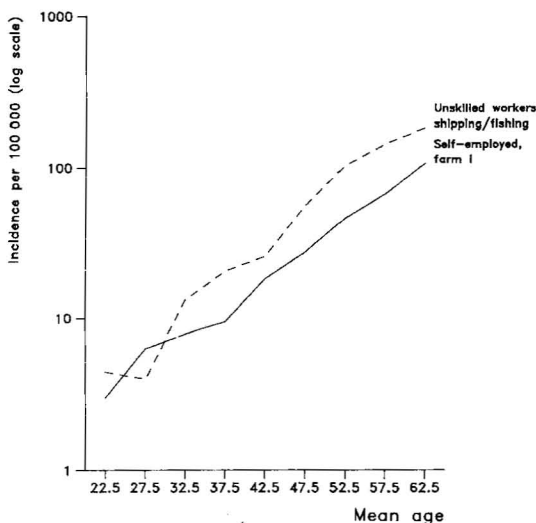


Figure 4. Age-specific incidence rates of all cancer for men in the occupational groups of self-employed, farm I and unskilled workers in shipping/fishing in 1970-1980.

less clear than the pattern of, for instance, the cancer mortality of men in the United Kingdom, where a social gradient has been found, from an SMR of 69 for "social class I" to an SMR of 154 for "social class V" (2).

A possible explanation for the lack of a social class gradient in the overall cancer risk of men in Denmark is that the transition from an agricultural to an industrial society occurred relatively late in this country. A minimum of 25 % of the unskilled workers in the manufacturing and construction industries in 1970 had worked previously in agriculture for at least 10 years (14).

"Self-employed, farm I" workers had the lowest risk for 12 specific cancer sites, which together represented 52 % of the total cumulative incidence of workers less than 75 years of age, on the basis of the cancer incidence in 1983-1985 (89). "Unskilled workers in shipping/fishing" on the other hand had the highest risk for six specific cancer sites, which together represented 45 % of the total cumulative incidence. These two groups therefore also appeared as the groups with the lowest and highest overall cancer incidence, respectively. It is noteworthy that the same pattern occurs for the mortality from the main causes of death (15). See table 10. There was about a twofold difference between these groups in both the incidence and mortality from cancer and in the mortality from circulatory diseases, and the differences were even wider for the mortality from other diseases and from accidents. As a result of these differences in mortality, farmers in the age group 22.5-72.5 thus live, on the average, 46.9 of the possible 50 years, whereas, in this age group, unskilled workers in shipping/fishing live only 41.8 years (table 10).

Table 10. Relative risks for the overall cancer incidence and the mortality from main causes of death and the expected years of life for the groups "self-employed, farm I" and "unskilled workers in shipping/fishing" in 1970-1980. (ICD = International Classification of Diseases)

	Self-employed, farm I	Unskilled workers shipping/fishing
Incidence, all cancer (ICD 7 140-205)	0.68	1.28
Mortality, all cancer ^a (ICD 8 140-209)	0.64	1.26
Mortality, circulatory diseases ^a (ICD 8 390-458)	0.67	1.25
Mortality, all other diseases ^a (ICD 8 000-136, 210-389, 460-796)	0.56	2.25
Mortality, accidents, etc ^a (ICD 8 E 800-999)	0.74	2.32
Mortality, all causes ^a	0.64	1.75
Expected years of life age 22.5-72.7 years ^a	46.9	41.8

^a Taken from reference 15.

Three socioeconomic groups were selected to illustrate the difference in the social pattern across the 43 cancer sites for which the data were tabulated for the men. These groups are "farmers" (self-employed, farm I), "academics" (salaried employees I), and "workers in building," namely, bricklayers, electricians, painters, etc (skilled workers in other building); see figure 5. Only the 30 cancer sites for which at least five cases were observed for each of the socioeconomic groups have been included. Small differences were found between the three groups in the risks for non-primary liver cancer, cancer of the prostate and eye, and for non-Hodgkin's lymphomas and leukemia. The farmer group had a high risk for cancer of the lip only, which is a disease clearly related to outdoor work. Workers in building formed a high-risk group for cancer of the mouth, pharynx, esophagus, liver, larynx, lung, and bladder, all related to tobacco and/or alcohol consumption. Skilled workers in building were also at high risk for cancer of the stomach, rectum, gallbladder, pancreas, and testis. Academics were at high risk for malignant melanoma related to intermittent sunlight exposure and for other skin cancers, for which a diagnostic bias can probably play a role. Academics were also at high risk for cancer of the small intestine and colon, cancer of the kidney and genital organs (ie, penis and scrotum), and cancer of the connective tissue. There were relatively small differences between farmers and academics in the risk of brain tumors, Hodgkin's disease, and multiple myeloma.

When cancer incidence data in the early 1970s became available from different parts of the world, Higginson & Muir (90) noted that there was a wider variation in the incidence from specific cancers than in the overall cancer incidence. They found that the overall cancer incidence for men could be reduced to about one-fifteenth of the rate in high-risk areas and to one-third of the rate in low-risk areas, if the lowest observed incidence rates for specific cancers were combined. The corresponding figures for women were one-ninth and one-third, respectively. On the basis of these observations, they suggested that 80–90 % of all cancer cases were due to external factors and were thus "theoretically preventable."

When we looked at the variation in the incidence from specific cancers among men in Denmark over socioeconomic groups, we also found wider variations than for the overall cancer incidence. Variations between a 12-fold and a twofold difference were thus apparent for 33 specific cancer sites. A 1.9-fold variation similar to that for the overall cancer incidence was found for six specific cancer sites, and variations between 1.5-fold and 1.8-fold were found for three cancer sites. See table 11.

The cumulative incidence of all cancer for men less than 75 years of age in Denmark in 1983–1985 was 36.67 per 100 (89). If we apply the lowest relative risk of 0.68 for the incidence for all cancer, as found for farmers, the cumulative rate for all men would thus

be reduced from 36.67 to 24.94 per 100, or by 32 %, if all Danish men adopted the cancer pattern of farmers.

The same calculation was made on the basis of the cumulative incidence rate and lowest relative risk for each of the 42 specific cancer sites, and for the figures added across cancer sites. Calculated in this way the cumulative rate for all cancer among Danish men would be reduced from 36.67 to 20.39 per 100, or by 44 %, if all Danish men adopted the cancer pattern of the respective low-risk groups.

The estimate based on the incidence rate for all cancer and the estimate based on the incidence rates for the specific cancer sites were thus relatively close to each other due to the fact that the majority of cancer sites for which wider social variations were found represented rare diseases. The cumulative incidence rates for the nine cancer sites among the men less than 75 years of age, for whom a fivefold or larger difference was found, together represent only 7 % of the total cumulative incidence rate.

Based on this rough estimate, the overall cancer incidence for Danish men would thus be reduced by 32–44 % if the risks for all the men were reduced to the lowest observed risks in the subgroups of Danish men. The proportion of "theoretically preventable" cases estimated from the data for Danish men is thus smaller than the proportion estimated by Higginson & Muir (90). This difference is explainable by minor variations in the living conditions in general between social groups in Denmark and those found worldwide. One should bear in mind also that these kinds of calculations are indicative only and that the result can depend greatly on the number of social groups and disease groups used in the calculation (91). The random variation in the distribution of cancer incidence across the social groups has not been taken into consideration either.

Social differences in cancer incidence among the women

Nineteen socioeconomic groups were included in the analysis of the cancer pattern of the women when groups with less than 50 cancer cases were excluded. These 19 groups are listed in table 12. The relative risks for the total cancer incidence varied between these groups from a relative risk of 1.18 for the "self-employed, other industries I," to a relative risk of 0.71 for "unskilled workers, agriculture." There was thus a more minor difference in the overall cancer incidence of the women across the socioeconomic groups than that determined for the men. This difference was in part due to the different weights of the various cancer sites among the two sexes and also to the fact that occupation was a less accurate indicator of the socioeconomic group among the women than among the men. The women in this study belonged to the generations for which a substantial proportion of women was out

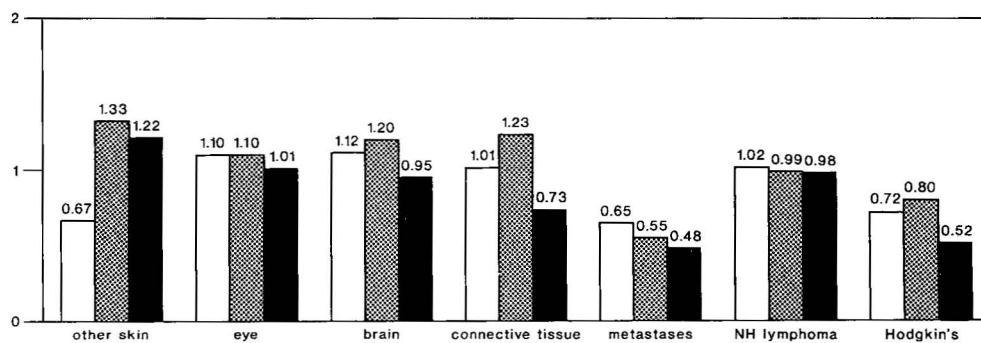
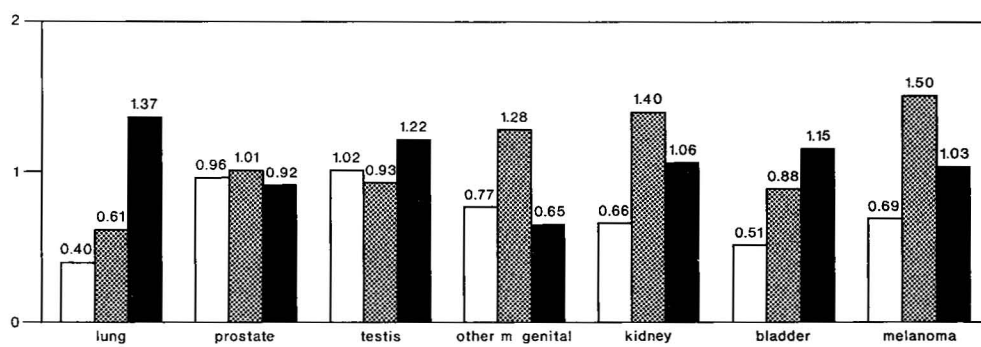
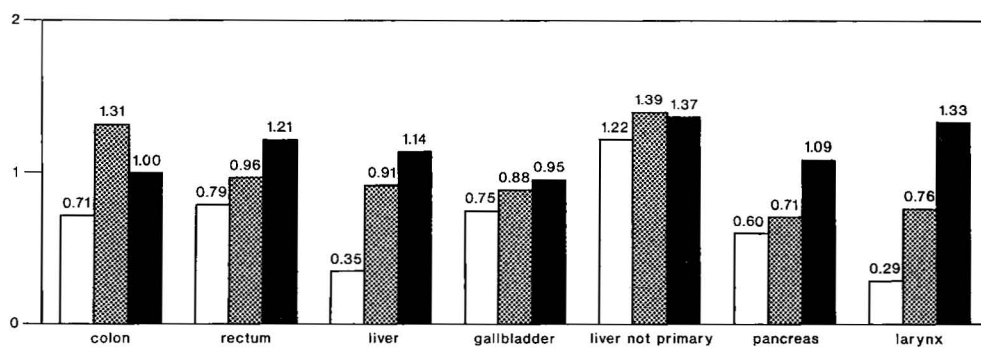
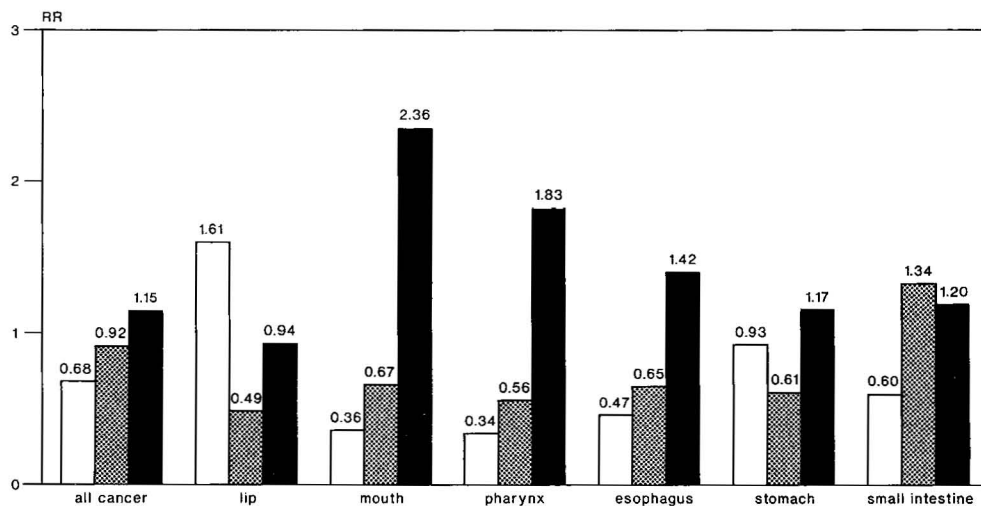


Table 11. Lowest and highest relative risks for specific cancers of the men 20–64 years of age in 20 social groups in 1970–1980 (all economically active men = 1.00) and the cumulative incidence for workers less than 75 years of age (1983–1985).

Type of cancer ^a	Relative risks ^b			Cumulative incidence ^d	Cumulative incidence x lowest relative risk
	Lowest ^c	Highest ^c	Highest/lowest		
Lip (140)	0.25	3.05	12.2	0.34	0.09
Pleura (162.2)	0.35	2.95	8.4	0.18	0.06
Liver (155.0)	0.35	2.33	6.7	0.41	0.14
Mouth (143–144)	0.36	2.36	6.6	0.24	0.09
Nasal cavity (160)	0.56	3.46	6.2	0.10	0.06
Larynx (161)	0.29	1.72	5.9	0.68	0.20
Pharynx (145–148)	0.34	1.98	5.8	0.30	0.10
Mycosis fungoides (205)	0.56	2.89	5.2	0.02	0.01
Esophagus (150)	0.38	1.90	5.0	0.48	0.18
Lung, not primary (163)	0.53	2.42	4.6	0.01	0.01
Lung (162.0, 162.1)	0.40	1.54	3.9	7.72	3.09
Melanoma (190)	0.50	1.70	3.4	0.75	0.38
Pancreas (157)	0.60	2.01	3.4	1.16	0.70
Hodgkin (201)	0.45	1.44	3.2	0.23	0.10
Other, nonspecified (199)	0.49	1.54	3.1	0.47	0.23
Bone (196)	0.72	2.24	3.1	0.06	0.04
Small intestine (152)	0.60	1.83	3.1	0.10	0.06
Breast (170)	0.80	2.42	3.0	0.05	0.04
Metastases (198)	0.48	1.43	3.0	0.53	0.25
Tongue (141)	0.74	2.13	2.9	0.13	0.10
Salivary glands (142)	0.66	1.86	2.8	0.07	0.05
Multiple myeloma (203)	0.57	1.57	2.8	0.34	0.19
Mediastinum (164)	0.72	1.95	2.7	0.04	0.03
Bladder (181)	0.51	1.29	2.5	2.90	1.48
Peritoneum (158–159)	0.72	1.69	2.4	0.12	0.09
Kidney (180)	0.60	1.40	2.3	1.20	0.72
Colon (153)	0.58	1.34	2.3	2.44	1.42
Connective tissue (197)	0.69	1.59	2.3	0.09	0.06
Other genital (179)	0.65	1.49	2.3	0.11	0.07
Other skin (191)	0.67	1.53	2.3	4.95	3.32
Endocrine glands (195)	0.73	1.66	2.3	0.06	0.04
Liver, not primary (156)	0.70	1.43	2.0	0.20	0.14
Stomach (151)	0.61	1.24	2.0	1.45	0.88
Gallbladder (155.1)	0.75	1.45	1.9	0.23	0.17
Eye (192)	0.71	1.35	1.9	0.10	0.07
Thyroid (194)	0.80	1.52	1.9	0.10	0.08
Prostate (177)	0.76	1.44	1.9	3.14	2.39
Testis (178)	0.66	1.25	1.9	0.65	0.43
Brain (193)	0.84	1.58	1.9	1.02	0.09
Rectum (154)	0.77	1.41	1.8	1.82	1.40
Non-Hodgkin's lymphoma (200, 202)	0.77	1.28	1.7	0.70	0.54
Leukemia (204)	0.81	1.21	1.5	0.99	0.80
Sum of specific sites	-	-	-	36.68	20.39
All cancer	0.68	1.28	1.9	36.67	24.94

^a Code of the International Classification of Diseases, seventh revision, in parentheses, from reference 83.

^b Data for all of the socioeconomic groups can be obtained from the authors upon request.

^c Relative risks only considered if based on ≥ 5 cancer cases.

^d Taken from reference 89.

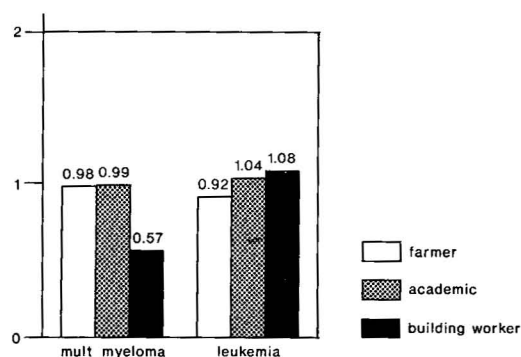


Figure 5. Relative risks for specific cancer sites for men in the occupational groups of self-employed, farm I, salaried employees I, and skilled workers, other building in 1970–1980. Relative risks considered only if based on ≥ 5 cancer cases. (m = male, NH = non-Hodgkin's, mult = multiple)

Table 12. Relative risks for the overall cancer incidence and mortality of the women in the socioeconomic groups with more than 50 cancer cases (all economically active = 1.00).

Code number	Socioeconomic group ^a	Cancer incidence	Cancer mortality ^b
21	Self-employed, other industries I	1.18	1.21
22	Self-employed, other industries II	1.15	1.07
51	Salaried employees I	1.06	1.02
64	Skilled workers, other industries	1.06	1.24
73	Unskilled workers, manufacture	1.06	1.12
23	Self-employed, other industries III	1.04	1.10
53	Salaried employees III	1.04	0.98
54	Salaried employees IV	1.04	0.99
41	Family workers, other industries I	1.00	0.88
52	Salaried employees II	1.00	0.97
43	Family workers, other industries III	0.99	0.96
76	Unskilled workers, cleaning	0.98	1.02
42	Family workers, other industries II	0.96	1.00
75	Unskilled workers, transport	0.95	1.05
33	Family workers, other agriculture	0.91	0.93
11	Self-employed, farm I	0.82	0.97
31	Family workers, farm I	0.75	0.74
32	Family workers, farm II	0.74	0.77
71	Unskilled workers, agriculture	0.71	0.80
1-7	All economically active	1.00	1.00

^a Data for all the socioeconomic groups can be obtained from the authors upon request.

^b Taken from reference 15.

Table 13. Relative risks for the overall cancer incidence and the mortality from main causes of death and the expected years of life for farmers, academics, and factory workers in 1970-1980. (ICD = International Classification of Diseases)

	Farmers	Academics	Factory workers
Incidence, all cancer (ICD 7 140-205)	0.75	1.11	1.06
Mortality, all cancer ^a (ICD 8 140-209)	0.75	1.06	1.12
Mortality, circulatory diseases ^a (ICD 8 390-458)	0.80	0.70	1.24
Mortality, all other diseases ^a (ICD 8 000-136, 210-389, 460-796)	0.57	0.80	1.29
Mortality, accidents, etc ^a (ICD 8 E 800-999)	0.59	1.85	0.97
Mortality, all causes ^a	0.71	1.04	1.15
Expected years of life age 22.5-72.5 years ^a	48.0	47.2	46.8

^a Taken from reference 15.

of the labor force during their child-bearing age. Seventy-five percent were thus active on the labor market at age 15-24 years, but only 33 % were active at age 25-34 years (14).

As for the men, the women in agriculture carried a low risk of cancer; the five socioeconomic groups at the bottom of table 12 all came from agriculture. There was, however, a considerable difference between the men and women at the high-risk end of the scale. Self-employed and well-educated women were among the groups with the highest incidence of cancer. It was more difficult to study the social pattern in the incidence for specific cancer sites among the women than among the men, because only about 25 000 cancer pa-

tients were included in the analysis for the women, whereas 47 000 cancer patients were included in the analysis for the men.

To avoid random variation from small numbers, data for some socioeconomic groups have to be aggregated. In the following, data have been combined for the women in "self-employed, other industries I," and "salaried employees I," because an academic education will normally be required in both groups. The aggregated group is called "academics." Data have also been combined for the women in "family workers, farm I," and "family workers, farm II," because these two groups only differed in the size of the area belonging to the farm where they lived and worked. The aggregated group is called "farmers."

An attempt was then made to analyze the social pattern for 44 specific cancer sites for the four selected socioeconomic groups "academics," "farmers," "clerks" (= salaried employees IV), and "factory workers" (= unskilled workers, manufacturing). However, the observed number of cancer cases was below five for at least one of these socioeconomic groups for 24 out of the 44 specific cancer sites. The pattern for the remaining 20 cancer sites is shown in figure 6. These 20 cancer sites together represented 92 % of the total cumulative incidence for workers less than 75 years of age (89).

It can be seen from figure 6 that the farmers had the lowest incidence for 18 out of the 20 cancer sites. The academics had the highest incidence for eight sites, and the factory workers had the highest incidence for seven sites.

Table 13 shows the mortality pattern for the low- and high-risk groups of women (15). The clerks, being the middle group, have been omitted. Farmers were a low-risk group for all the main causes of death among the women, as was also the case for the men. There was, however, not one group of women with a consistently high mortality across all main causes of death. The academics had an excess risk for mortality from accidents (including suicides), and to some extent from cancer. Factory workers had an excess risk for mortality from cancer, circulatory diseases, and other diseases. In the age group 22.5-72.5 years, women on farms, on the average, lived 48.0 of the possible 50 years, whereas this figure was 47.2 years for the academics and 46.8 years for the factory workers (table 13).

It is noteworthy that academics and factory workers changed positions at the top of the scale, depending on whether the cancer risk was measured with incidence rates or with mortality rates. This phenomenon was due to the fact that the contribution to the overall cancer incidence from the specific cancer sites varied considerably. See table 14. Thus, in comparison with factory workers, female academics had an excess risk of cancer of the liver, breast, corpus uteri, melanoma of skin, other skin cancers, and Hodgkin's disease. Factory workers, on the other hand, had an

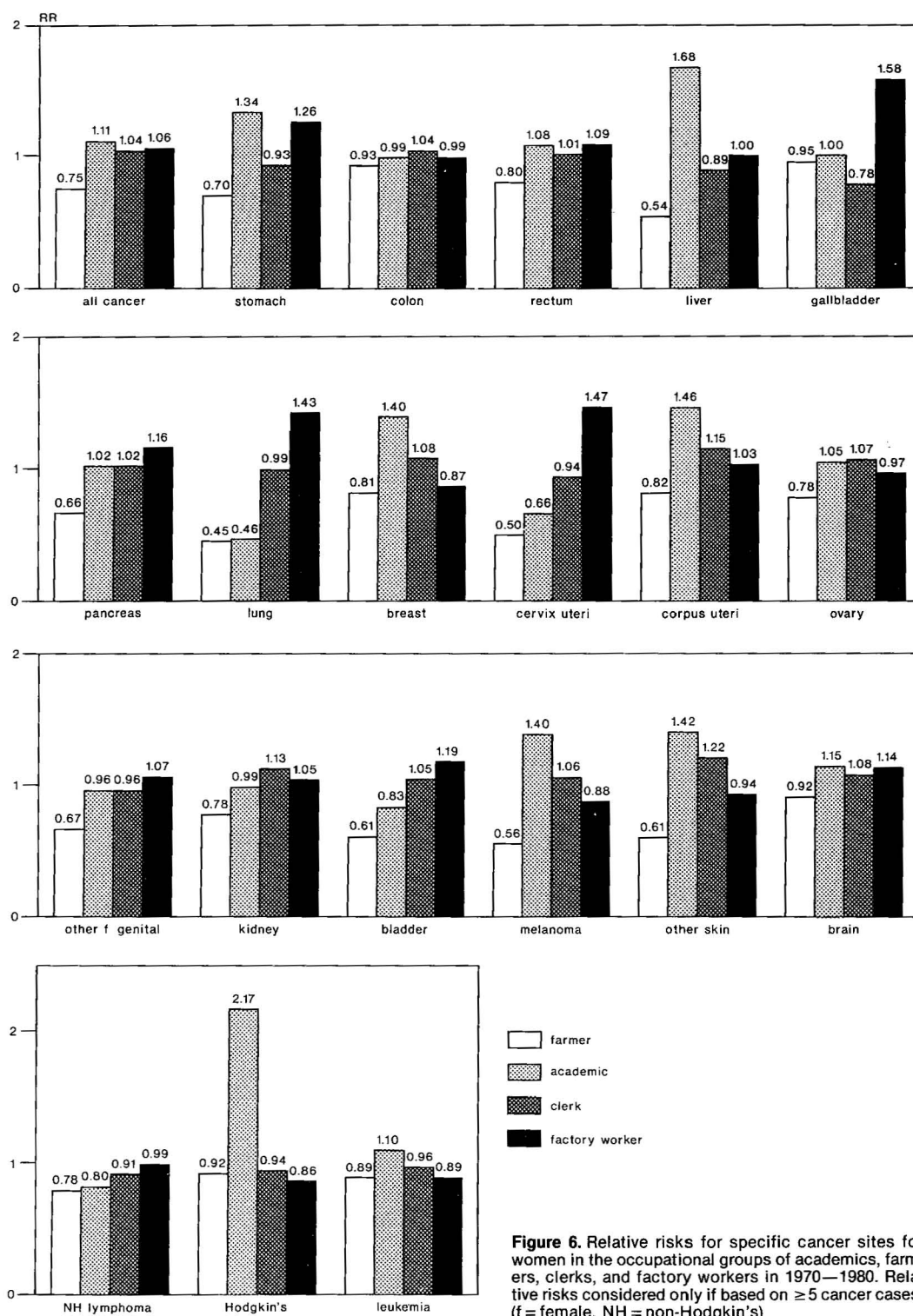


Figure 6. Relative risks for specific cancer sites for women in the occupational groups of academics, farmers, clerks, and factory workers in 1970–1980. Relative risks considered only if based on ≥ 5 cancer cases. (f = female, NH = non-Hodgkin's)

excess risk of cancer of the gallbladder, lung, cervix uteri, and bladder. The extent to which these differences in the relative risks for specific cancer sites are reflected in a difference in the overall cancer mortality

depends on the incidence and lethality of the specific cancer diseases. Breast cancer was the most frequent cancer among the women, and the risk for academics was about 1.5 times the risk for factory workers. Other

Table 14. Relative risks for specific cancer sites among the female academics and factory workers in 1970–1980 (all economically active women = 1.00), the cumulative incidence for workers less than 75 years of age (1983–1985), and the five-year relative survival for cases diagnosed in Norway in 1968–1978.

Type of cancer ^a	Socioeconomic group ^b		Academics/ factory workers ^c	Cumulative incidence ^d	5-year relative survival in Norway ^e (%)
	Academics ^c	Factory workers ^c			
Stomach (151)	1.34	1.26	1.1	0.59	12
Colon (153)	0.99	0.99	1.0	2.27	40
Rectum (154)	1.08	1.09	1.0	1.13	39
Liver (155)	1.68	1.00	1.7	0.21	7
Gallbladder (155.1)	1.00	1.58	0.6	0.39	7
Pancreas (157)	1.02	1.16	0.9	0.86	2
Lung (162.0, 162.1)	0.46	1.43	0.3	2.79	11
Breast (170)	1.40	0.87	1.6	7.25	67
Cervix uteri (171)	0.66	1.47	0.5	1.64	71
Corpus uteri (172)	1.46	1.03	1.4	1.94	75
Ovary (175)	1.05	0.97	1.1	1.70	37
Other genital (176)	0.96	1.07	0.9	0.24	..
Kidney (180)	0.99	1.05	0.9	0.79	42
Bladder (181)	0.83	1.19	0.7	0.72	35
Melanoma (190)	1.40	0.88	1.6	0.97	78
Other skin (191)	1.42	0.94	1.5	3.54	about 100
Brain (193)	1.15	1.14	1.0	0.91	36
Non-Hodgkin's lymphoma (200, 202)	0.80	0.99	0.8	0.61	38
Hodgkin's lymphoma (201)	2.17	0.86	2.5	0.12	50
Leukemia (204)	1.10	0.87	1.2	0.59	..
All cancer	1.11	1.06	1.0	31.90	..

^a Code of the International Classification of Diseases, seventh revision, in parentheses, from reference 83.

^b Data for all of the socioeconomic groups can be obtained from the authors upon request.

^c Relative risks only considered if based on ≥ 5 cancer cases.

^d Taken from reference 89.

^e Taken from reference 92.

Table 15. Lowest and highest risks for specific cancers in four social groups of women 20–64 years of age in 1970–1980 (all economically active women = 1.00) and the cumulative incidence for workers less than 75 years of age (1983–1985).

Type of cancer ^a	Relative risks ^b			Cumulative incidence ^d	Cumulative incidence x lowest relative risk
	Lowest ^c	Highest ^c	Highest/ lowest		
Lung (162.0, 1)	0.45	1.43	3.2	2.79	1.26
Liver (155.0)	0.54	1.68	3.1	0.21	0.11
Cervix uteri (171)	0.50	1.47	2.9	1.64	0.82
Hodgkin's lymphoma (201)	0.86	2.17	2.5	0.12	0.10
Melanoma (190)	0.56	1.40	2.5	0.97	0.54
Other skin (191)	0.61	1.42	2.3	0.54	2.16
Gallbladder (155.1)	0.78	1.58	2.0	0.39	0.30
Bladder (181)	0.61	1.19	2.0	0.72	0.44
Stomach (151)	0.70	1.34	1.9	0.59	0.41
Corpus uteri (172)	0.82	1.46	1.8	1.94	1.59
Pancreas (157)	0.66	1.16	1.8	0.86	0.57
Breast (170)	0.81	1.40	1.7	7.25	5.87
Other genital (176)	0.67	1.07	1.6	0.24	0.16
Kidney (180)	0.78	1.13	1.5	0.79	0.62
Ovary (175)	0.78	1.07	1.4	1.70	1.33
Rectum (154)	0.80	1.09	1.4	1.13	0.90
Non-Hodgkin's lymphoma (200, 202)	0.78	0.99	1.3	0.61	0.48
Brain (193)	0.92	1.15	1.3	0.91	0.84
Leukemia (204)	0.89	1.10	1.2	0.59	0.53
Colon (153)	0.93	1.04	1.1	2.27	2.11
Sum of specific sites	..	..	..	29.26	21.14
All cancer	0.75	1.11	1.5	31.90	23.93

^a Code of the International Classification of Diseases, seventh revision, in parentheses, from reference 83.

^b Data for all of the socioeconomic groups can be obtained from the authors upon request.

^c Relative risks only considered if based on ≥ 5 cancer cases.

^d Taken from reference 89.

skin cancers was the second most frequent cancer classification among the women, and the risk for other skin cancers was also 1.5 times higher among the academics than among the factory workers. The lethality was, however, relatively low for both of these cancer sites. The five-year relative survival was 67 % for breast cancer (92), and almost 100 % for other skin cancers. Breast and other skin cancers thus contributed to a high overall cancer incidence for the academics, but not to a high overall cancer mortality.

Lung cancer was also one of the cancer sites with a high incidence. Factory workers had a risk for lung cancer that was three times the risk for academics, a difference which considerably influenced the overall

cancer mortality, because the five-year relative survival for lung cancer is 11 % only (92).

Table 15 shows the lowest and highest relative risks for the 20 cancer sites when the four social groups of farmers, academics, clerks, and factory workers are compared. The table shows that, among the women, 25 % of the cancer cases could be prevented if all women were under the overall cancer risk recorded for farmers. The calculation based on the specific sites shows that 28 % of the cancer cases could be prevented if all women had the lowest cancer risk for each of the specific cancer sites. These figures are so close to each other because farmers have the lowest risk for 18 of the 20 cancer sites.