

# KIDNEY CANCER

**Table 16.1: Characteristics of the cohort**

	Males	Females
First primary cancer	4,233	2,674
Age at diagnosis		
Mean	61.9	61.6
<65 years	2,263	1,340
=>65 years	1,970	1,334
Total person-years	20,300	14,148
Mean follow-up (years)	4.8	5.3
Histological confirmation (%)	88.4	86.5
Squamous and transitional	0.2	0.0
Adenocarcinoma	83.0	79.4
Other specific carcinoma	0.1	0.2
Unspecified carcinoma	2.6	2.6
Sarcomas and soft tissue	0.3	0.3
Other specified types	2.2	4.0
No histological confirmation	11.6	13.5
Second primary cancers		
Non-simultaneous	391	167
Simultaneous	64	16

**Table 16.2: Cumulative risk (%) of the most common second primary cancers**

	Sex	Follow-up years					
		1	5	10	15	20	23
All cancers	M	1.6	6.0	10.7	13.5	15.0	15.9
All cancers	F	1.3	3.5	7.1	9.6	12.2	14.6
Colon	M	0.2	0.6	1.3	1.5	1.9	1.9
Colon	F	0.3	0.5	0.6	0.8	1.5	1.5
Lung	M	0.1	0.8	1.4	1.9	1.9	1.9
Lung	F	0.2	0.3	1.0	1.3	1.5	1.5
Prostate	M	0.5	1.9	3.3	3.8	4.1	4.1

*All other cancers have 10-year cumulative risk of < 0.5% for both sexes.*

## Common second cancers

From Table 16.2 a man's 10-year cumulative risk of contracting a second cancer following kidney cancer is seen to be higher than that for a woman (1 in 9 compared with 1 in 14), and a male excess is seen for both of the principal cancer types to which both sexes are susceptible namely colon and lung cancer.

## Age-specific Incidence

The principal feature of Figure 16.1 is that the age incidence curves for the second primary cancers are orders of magnitude higher at early ages and the curves begin to converge with increasing age.

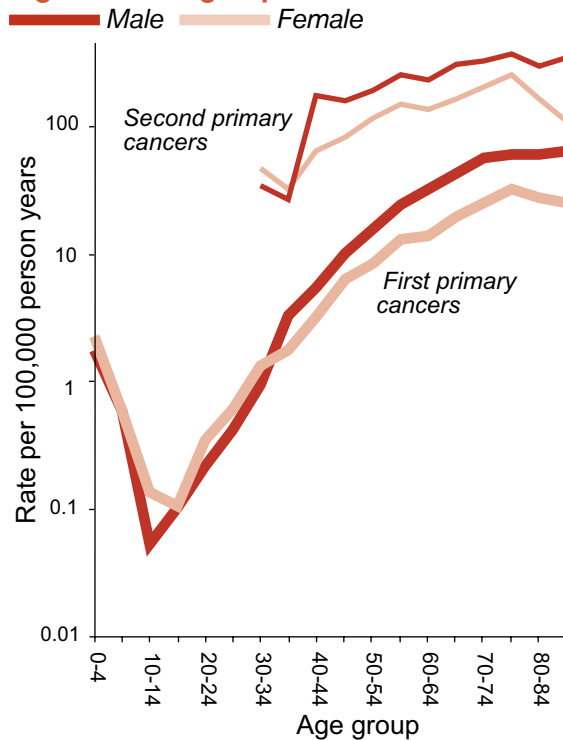
## Trends in the SIRs

The trends in Figure 16.2 show increasing SIRs during the first 7-8 years following a diagnosis of kidney cancer and decreasing risks thereafter.

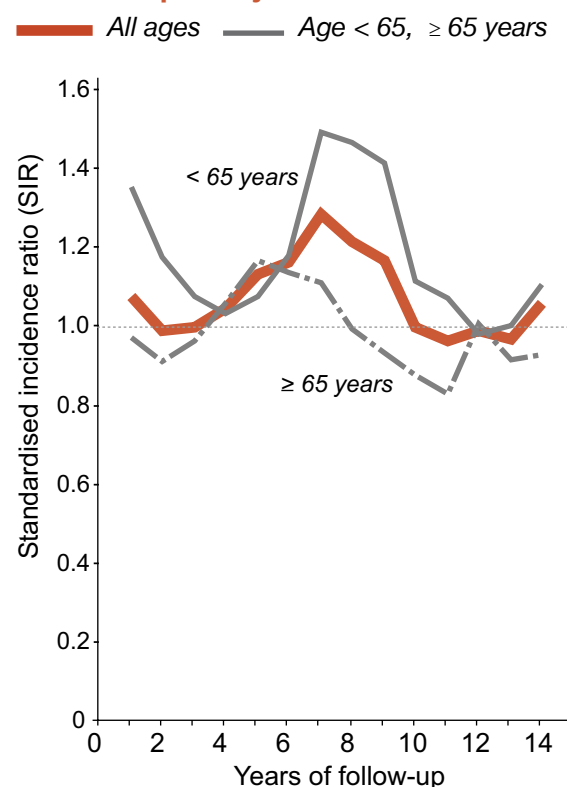
Trends in SIRs for specific cancer types by period of follow-up can be found in Table 16.4 (page 90) separately for men and women. Overall 23-year SIRs are given in Table 1.3 (pages 58-61). The overall 23-year SIRs are 1.10 for men and 1.11 for women (neither significantly greater than 1). The only statistically significant SIRs for men are renal pelvis 7.71 and thyroid 4.52 and for women are renal pelvis 8.57 and thyroid 6.25.



**Figure 16.1: Age-specific rates**



**Figure 16.2: Trends in the annual SIR for all second primary cancers**



### Trends in SIRs with age

In Figure 16.2 the general pattern is similar for both age groups, with the under 65 year age group having consistently higher SIRs than older people at any time during follow-up.

Estimates of overall 23-year SIRs by age group and sex are to be found in Table 16.5 (page 91). The younger age group has a 25% higher SIR than the older age group but SIRs are not significantly greater than 1 except for males aged under 65 years. The SIRs are 1.25 for men first diagnosed before 65 years of age compared with 1.01 for those diagnosed at an older age. The SIRs for women are 1.26 and 1.00 respectively.

For the under 65 year age group the significant SIRs for men are renal pelvis 16.66, kidney 2.74 - there are no significant SIRs for older men.

For women under age 65 the significant SIRs are renal pelvis 17.23, kidney 5.34, thyroid 8.91 and lung 2.12 - there are no significant SIRs for older women.

### Comments

Younger people diagnosed with kidney cancer were at increased risk of a second kidney cancer in the contralateral kidney, probably because of genetic susceptibility, although increased surveillance of the other kidney may also have contributed.

Other studies have also found increased risks of thyroid cancer following kidney cancer. The reasons are unclear, but might include genetic syndromes.

Smoking is a risk factor for kidney cancer, but apart from cancer of the renal pelvis, the risk of no other smoking-related cancers was elevated following kidney cancer.

# RENAL PELVIS CANCER

**Table 17.1: Characteristics of the cohort**

	Males	Females
First primary cancer	755	555
Age at diagnosis		
Mean	67.1	70.4
<65 years	282	176
=>65 years	473	379
Total person-years	4,090	2,617
Mean follow-up (years)	5.4	4.7
Histological confirmation (%)	96.3	96.2
Squamous and transitional	90.3	87.2
Adenocarcinoma	2.9	3.8
Other specific carcinoma	0.1	0.4
Unspecified carcinoma	2.3	2.9
Sarcomas and soft tissue	0.3	0.7
Other specified types	0.4	1.1
No histological confirmation	3.7	4.0
Second primary cancers		
Non-simultaneous	140	50
Simultaneous	17	6

**Table 17.2: Cumulative risk (%) of the most common second primary cancers**

	Sex	Follow-up years					
		1	5	10	15	20	23
All cancers	M	4.5	10.3	17.8	21.0	23.4	23.4
All cancers	F	2.4	5.4	9.1	11.1	12.9	12.9
Colon	M	0.4	0.7	1.7	2.1	2.7	2.7
Colon	F	0.7	1.3	2.6	3.0	3.0	3.0
Pancreas	M	0.4	0.4	1.1	1.1	1.1	1.1
Pancreas	F	0.2	0.4	1.0	1.0	1.0	1.0
Lung	M	0.4	1.8	3.5	4.6	5.2	5.2
Lung	F	0.4	0.8	1.3	2.3	2.9	2.9
Melanoma	M	0.1	0.4	1.0	1.0	1.0	1.0
Melanoma	F	0.0	0.2	0.5	0.5	0.5	0.5
Prostate	M	1.3	3.3	5.6	6.4	6.4	6.4
Bladder	M	0.7	1.7	1.9	2.2	2.2	2.2
Bladder	F	0.0	0.2	0.2	0.2	0.2	0.2

All other cancers have 10-year cumulative risk of less than 0.5 % for both sexes.

## Common second cancers

From Table 17.2 a man's 10-year cumulative risk of contracting a second cancer following renal pelvis cancer is seen to be higher than that for a woman (1 in 6 compared with 1 in 11), and a male excess is seen for cancers of the lung, pancreas, melanoma and bladder, all of which have strong associations with smoking. There is a female excess for colon cancer.

## Age-specific Incidence

The principal feature of Figure 17.1 is that the age incidence curves for the second primary cancers are orders of magnitude higher at early ages and the curves begin to converge with increasing age.

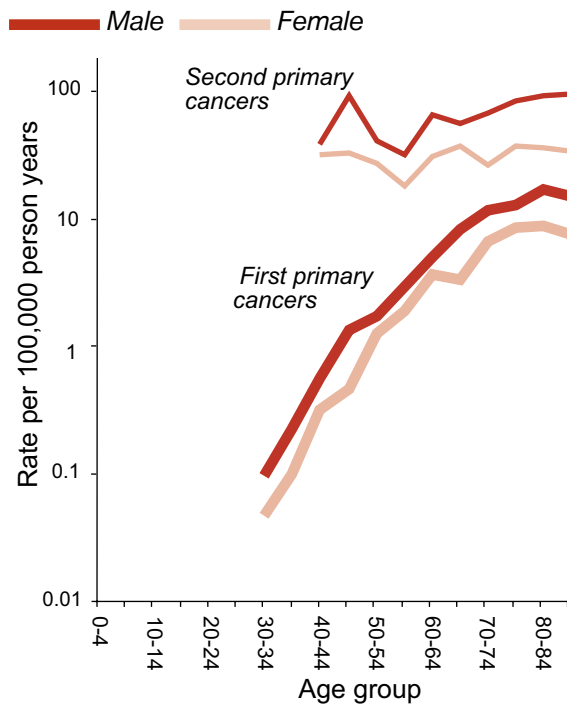
## Trends in the SIRs

The trends in Figure 17.2 show initial increased SIRs following a diagnosis of renal pelvis cancer decreasing over the first five years of follow-up, increasing again between 5 and 10 years and decreasing again.

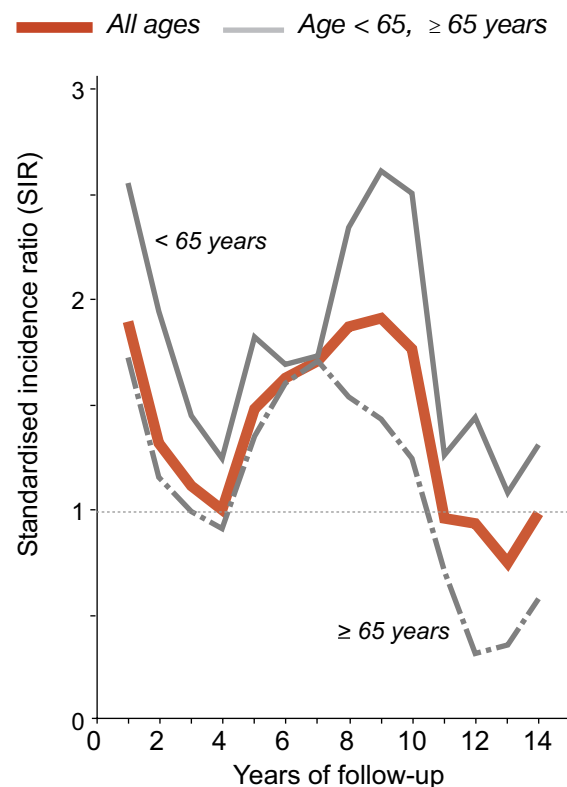
Trends in SIRs for specific cancer types by period of follow-up can be found in Table 17.4 (page 92) separately for men and women. Overall 23-year SIRs are given in Table 1.3 (pages 58-61). The statistically significant overall 23-year SIRs are 1.62 for men and 1.39 for women. There are statistically significant SIRs for men for cancers of the bladder 4.69, pancreas 2.95, lung 2.18 and prostate 1.72 and for women for cancers of the lung 2.91, colon 2.84 and colorectum 2.17.



**Figure 17.1: Age-specific rates**



**Figure 17.2: Trends in the annual SIR for all second primary cancers**



**Trends in SIRs with age**

In Figure 17.2 the overall pattern of decreasing initially followed by increasing SIRs is observed for both age groups.

Estimates of overall 23-year SIRs by age group and sex are to be found in Table 17.5 (page 93). For men, the younger age group has a 50% higher SIR than the older age group whilst the SIR is higher for older women. The SIRs are 2.07 for men first diagnosed before 65 years of age compared with 1.43 for those diagnosed at an older age. The SIRs for women are 1.28 and 1.44 respectively. These SIRs are significantly greater than 1 for all groups except women aged under 65 years.

For the under 65 year age group the highest SIRs for men are bladder 10.18, pancreas 5.26, colon 3.14, lung 3.73 and colorectum 2.32.

For women under age 65 years the highest SIRs are colon 5.27 and colorectum 3.63.

**Comments**

Cancers of the renal pelvis were rare and there were few second primary cancers.

Smoking is a strong risk factor and could account for much of the associations with lung cancer, pancreatic cancer and bladder cancer.

Cancer of the renal pelvis is a Lynch syndrome associated cancer, which might explain part of the increased risk for colorectal cancer.

# BLADDER CANCER

**Table 18.1: Characteristics of the cohort**

	Males	Females
First primary cancer	7,680	2,685
Age at diagnosis		
Mean	69.0	70.9
<65 years	2,502	763
=>65 years	5,178	1,922
Total person-years	51,684	18,003
Mean follow-up (years)	6.7	6.7
Histological confirmation (%)	95.3	92.0
Squamous and transitional	90.6	85.4
Adenocarcinoma	1.5	1.9
Other specific carcinoma	0.4	0.4
Unspecified carcinoma	2.4	3.5
Sarcomas and soft tissue	0.1	0.5
Other specified types	0.2	0.4
No histological confirmation	4.7	8.0
Second primary cancers		
Non-simultaneous	1351	262
Simultaneous	180	25

**Table 18.2: Cumulative risk (%) of the most common second primary cancers**

	Sex	Follow-up years						
		1	5	10	15	20	23	
All cancers	M	3.1	9.7	14.7	18.2	20.0	21.3	
All cancers	F	1.3	4.4	7.8	10.2	11.9	12.8	
Colon	M	0.2	0.8	1.3	1.7	2.0	2.1	
Colon	F	0.2	0.6	1.0	1.4	1.5	2.2	
Rectum	M	0.2	0.5	0.8	1.0	1.0	1.0	
Rectum	F	0.0	0.0	0.1	0.1	0.1	0.1	
Pancreas	M	0.1	0.3	0.4	0.6	0.6	0.6	
Pancreas	F	0.1	0.3	0.3	0.4	0.6	0.6	
Lung	M	0.4	1.8	2.9	3.8	4.4	4.6	
Lung	F	0.2	0.6	1.4	1.9	2.2	2.2	
Melanoma	M	0.1	0.3	0.5	0.7	0.7	0.7	
Melanoma	F	0.1	0.3	0.4	0.6	0.6	0.6	
Breast	F	0.3	1.1	1.6	2.2	2.2	2.5	
Prostate	M	1.5	3.2	4.5	5.6	5.9	6.1	
Ill defined prim	M	0	0.4	0.6	0.7	0.7	0.7	
Ill defined prim	F	0.1	0.2	0.2	0.3	0.5	0.5	

*All other cancers have 10-year cumulative risk of less than 0.5 % for both sexes.*

## Common second cancers

From Table 18.2 a man's 10-year cumulative risk of contracting a second cancer following bladder cancer is seen to be higher than that for a woman (1 in 7 compared with 1 in 13). A male excess is seen in all of the major cancer types to which both sexes are susceptible. The excess is twofold for lung cancer, which has strong associations with smoking.

## Age-specific Incidence

The principal feature of Figure 18.1 is that the age incidence curves for the second primary cancers are higher at early ages and run parallel to those for first primaries.

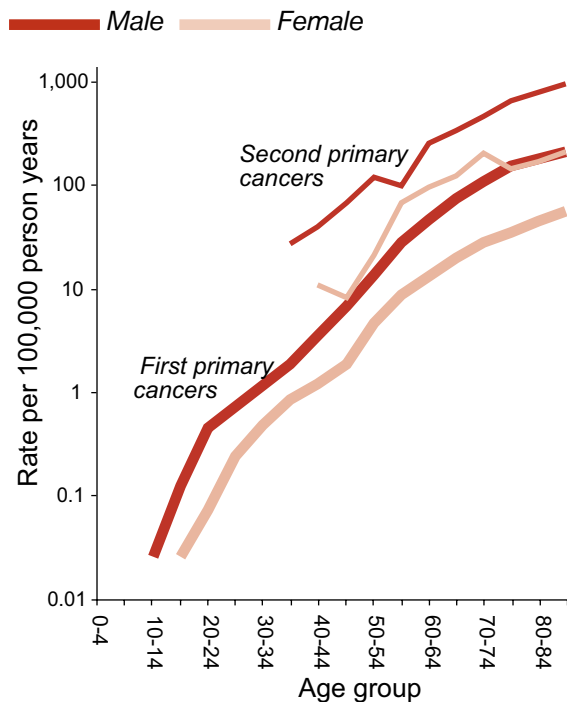
## Trends in SIRs

The trends in Figure 18.2 show an increased SIR following diagnosis of the first primary decreasing to less than 1 after about 7 years of follow-up.

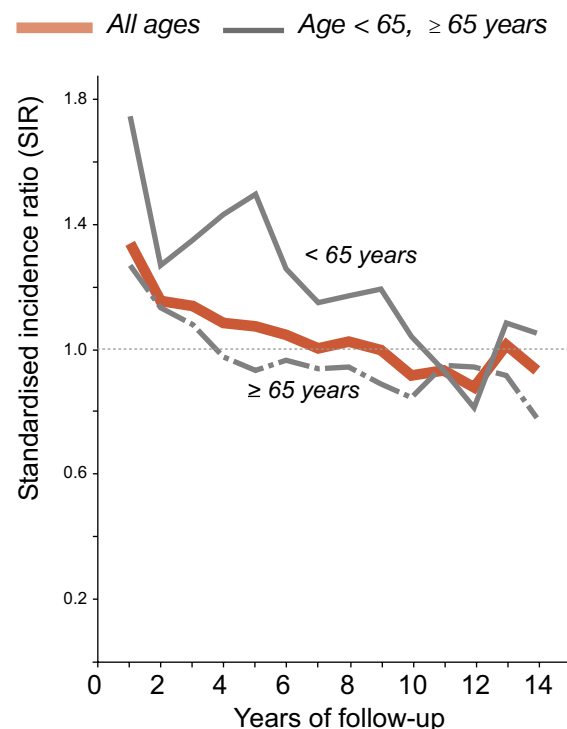
Trends in SIRs for specific cancer types by period of follow-up can be found in Table 18.4 (page 94) separately for men and women. Overall 23-year SIRs are given in Table 1.3 (pages 58-61). The overall 23-year SIRs are 1.12 for men and 1.06 for women. The only SIRs less than 1 are for bladder cancer for men 0.06 and for rectal cancer for women 0.29. Statistically significant SIRs are observed for many types of second cancer for men - renal pelvis 2.81, lung 1.59, pancreas 1.42, prostate 1.16, myeloma 1.67 and AML 1.83. For women only lung cancer 2.13 has a significant increased SIR.



**Figure 18.1: Age-specific rates**



**Figure 18.2: Trends in the annual SIR for all second primary cancers**



### Trends in SIRs with age

In Figure 18.2 the general pattern of decreasing SIRs with increasing follow-up is observed for both age groups, with the under 65 year age group having SIRs greater than 1 for around ten years whilst for older people there was only an increased SIR in the first 3-4 years.

Estimates of overall 23-year SIRs by age group and sex are to be found in Table 18.5 (page 95). The younger age group has a slightly higher SIR than the older age group. The SIRs are 1.20 for men first diagnosed before 65 years of age compared with 1.08 for those diagnosed at an older age. The SIRs for women are 1.31 and 0.94 respectively (SIR significant in all groups except women aged over 65 years).

For the under 65 year age group the significantly high SIRs for men are for lung 1.71, renal pelvis 3.79 and low for bladder 0.26.

For women under age 65 the only significant SIRs are for lung 3.23.

### Comments

Overall, the risk of a second primary cancer following bladder cancer is not as great as it is for most other cancers.

Bladder cancer is associated with smoking, and the risk of other smoking-related cancers including lung cancer and cancer of the renal pelvis is elevated following a diagnosis of bladder cancer.

Cancer registry coding rules would usually record multiple occurrences of carcinoma in the urinary tract as being related to the same primary if they were all of the same morphology, such as the common transitional cell carcinoma. The course of the disease is such that cancers are frequently multifocal, either synchronously or asynchronously, with tumours appearing throughout the urinary tract. As such, it may be difficult to ascertain second primary tumours for these cancers.