Incidence of kidney cancer in the UK

The definition of kidney cancer includes cancers of the renal parenchyma (90%), the renal pelvis (5%) and the ureter (5%). Cancers of the renal parenchyma are also known as renal cell carcinomas (RCC). There are five subgroups of RCCs;

- Conventional or clear cell RCC – this can also be called non-papillary RCC and accounts for 75-80% of RCC cases
- Papillary or chromophilic RCC accounts for 10-15% of RCC cases
- Chromophobe RCC
- Collecting duct carcinoma
- Unclassified renal cell carcinoma, the latter three of which together make up the remaining 5-15% of RCC tumours.

Kidney cancer accounts for 3% of all new cases of cancer diagnosed in men and just over 2% of all cancers in women in the UK (excluding non-melanoma skin cancer)[1-4].

Kidney cancer is therefore a relatively rare cancer; however, some reports have indicated an increasing incidence globally, including the UK. This increase is due in part to the wider application of diagnostic imaging techniques leading to the incidental detection of asymptomatic kidney tumours[5-7].

Incidence of kidney cancer by age and sex

Kidney cancer is the eighth most common cancer in adults in the UK, with 9,286 new cases diagnosed in 2009 and 3,848 deaths from kidney cancer in 2008. This accounts for over 2% of all cancer deaths in the UK[1-4].

In UK men, it is the sixth most common cancer, with 5,706 new cases diagnosed in 2009, and in UK women it ranks ninth with 3,580 new cases diagnosed in 2009. This is a male to female ratio of approximately 3:2 for incidence in the UK (data from Cancer Research UK)[1-4].

It has been estimated that the lifetime risk of developing kidney cancer is 1 in 56 for men and 1 in 90 for women (Cancer Research UK).

The number of new cases and rates for kidney cancer in the UK and its constituent countries in 2009[1-4] are shown in **Table 1**.

Table 1: Number of new cases and rates of kidney cancer in the UK, 2009

Country	New Cases	Crude Rate	ASR[1]
England			
Men	4721	18.5	15.3
Women	2886	11.0	7.9
Total	7607	14.7	11.4
Wales			
Men	328	22.4	16.7
Women	228	14.9	9.9
Total	556	18.5	13.0
Scotland			
Men	505	20.1	16.3
Women	374	14.0	9.5
Total	879	16.9	12.6
Northern Ireland			

	Men	152	17.3	16.3
	Women	92	10.1	8.0
	Total	244	13.6	11.7
UK				
	Men	5706	18.8	15.5
	Women	3580	11.4	8.2
	Total	9286	15.0	11.6

[1] Directly age-standardised rate (ASR) per 100,000 using European standard populations

Kidney cancer is rare in young adults and children, but rates begin to rise after the age of 40. Nearly three quarters of people diagnosed with kidney cancer (73%) are over 60 years old and the highest rates are in the 60-64 age range for men and 75-79 age range for women.

Kidney cancer rarely afflicts children and about 85 paediatric cases are diagnosed in the UK each year. About 75% of childhood kidney cancer occurs in the under-fives. The most common paediatric kidney cancer is Wilm's tumour. Others include hereditary kidney cancer syndromes, such as von Hippel-Lindau disease (see Childhood Kidney Cancer fact sheet for more information).

Figure 1 shows the incidence of kidney cancer by age-group, UK, 2007-2009

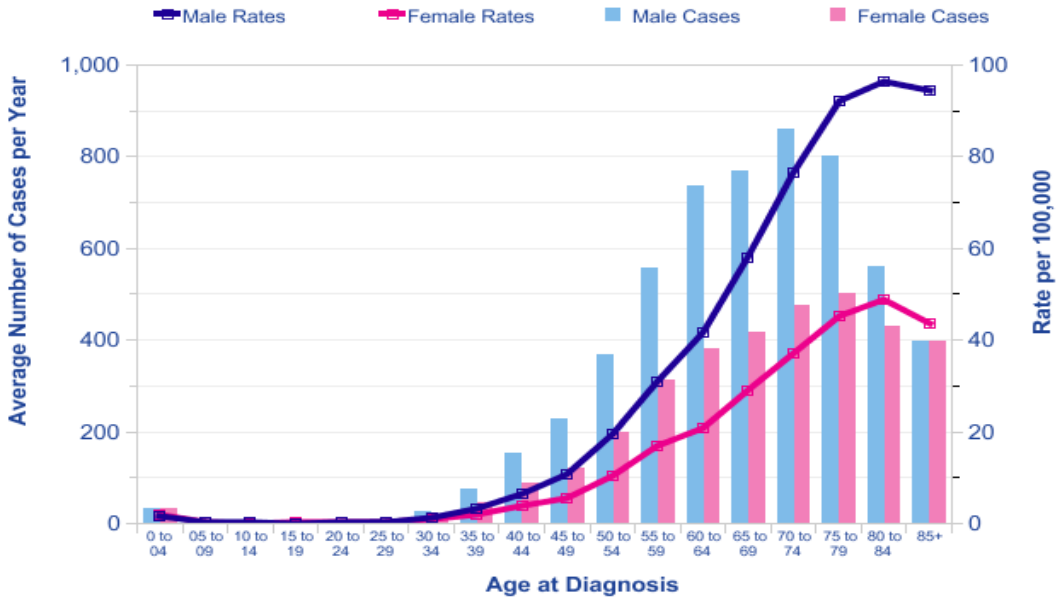

Figure courtesy of Cancer Research UK

Geographic variations in the incidence of kidney cancer

The incidence of kidney cancer varies between different regions of the UK and Ireland for both men and women. In Scotland, parts of Wales, the south west and the north of England, the age-standardised rates for women are higher than the UK average, while the incidence in London, the South East and East Midlands are below average. This distribution of kidney cancer follows the geographical pattern of two known risk factors for kidney cancer, namely smoking and obesity[8].

Table 2 presents the geographic spread of the incidence of newly diagnosed kidney cancer for males and females in England[1]. The data are presented by region of England for the year 2011. Age standardised rates per 100,000 people using the European standard populations and mortality:incidence ratios are also presented. The mortality:incidence ratio gives an indication of the number of people who died from kidney cancer in 2011, the higher the ratio, the greater the number of people who died from kidney cancer.

Table 2: Incidence of newly diagnosed kidney cancer and mortality for males and females by region of England, 2011[1]

	Males			Females		
Country/Region	**Incidence**	**ASR[1]**	**Mortality: Incidence Ratio**	**Incidence**	**ASR[1]**	**Mortality: Incidence Ratio**
England	4405	14.0	0.44	2736	7.5	0.45
North East	245	15.1	0.41	177	9.2	0.40
North West	554	13.0	0.50	398	8.1	0.48
Yorkshire and The Humber	507	15.9	0.41	329	8.7	0.37
East Midlands	391	13.8	0.46	201	6.4	0.53
West Midlands	486	14.3	0.46	310	8.0	0.57
East	523	14.1	0.41	315	7.3	0.42
London	429	12.0	0.40	260	6.2	0.46
South East	729	13.7	0.47	420	6.8	0.41
South West	541	15.0	0.42	326	8.2	0.40

[1] Directly age-standardised rate (ASR) per 100,000 using European standard populations

Trends in the incidence of kidney cancer

The global incidence of kidney cancer has been increasing since the 1970s. In Great Britain, the incidence of kidney cancer in men has more than doubled from 7.1 per 100,000 in 1975 to 15.5 per 100,000 in 2009. In women, the incidence has more than doubled over the same period from 3.2 to 8.2 per 100,000 (**Figure 2**). Most of this increase has occurred in people over the age of 60[1-4].

This increase in incidence is due, in part, to the introduction of new imaging techniques, such as ultrasound, computed tomography (CT) and magnetic resonance imaging (MRI), resulting in the incidental detection of asymptomatic disease. However, studies in the USA and UK have shown that some of this increase in incidence is in fact real and not solely attributed to incidentally-detected tumours[7].

Figure 2 European age-standardised incidence rates, Great Britain, 1975-2009

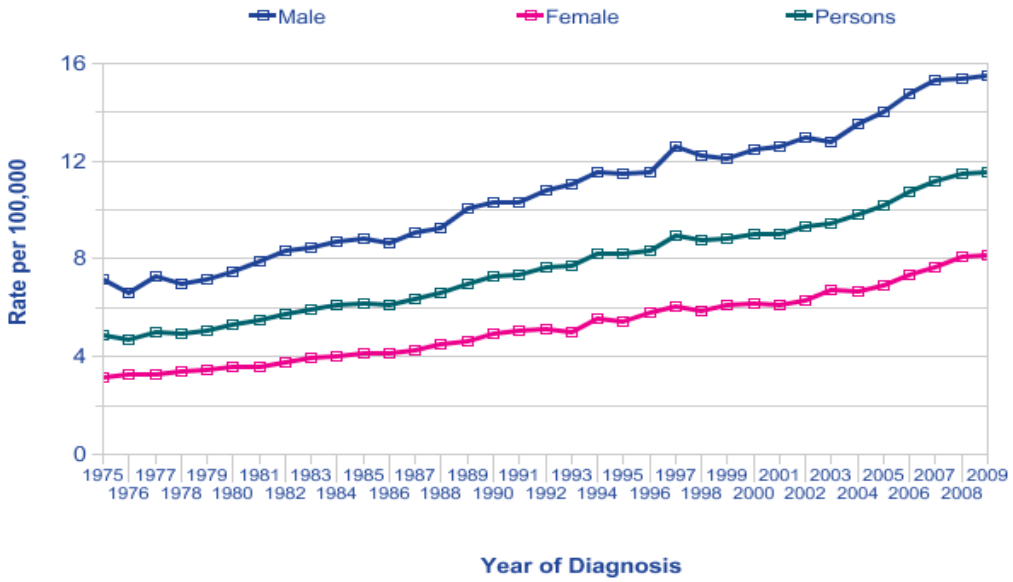

Figure courtesy of Cancer Research UK

The increasing incidence of kidney cancer by age groups for both men and women in Great Britain between 1975 and 2009 can be seen in **Figure 3.**

Figure 3 European age-standardised incidence rates by age, Great Britain 1975-2009

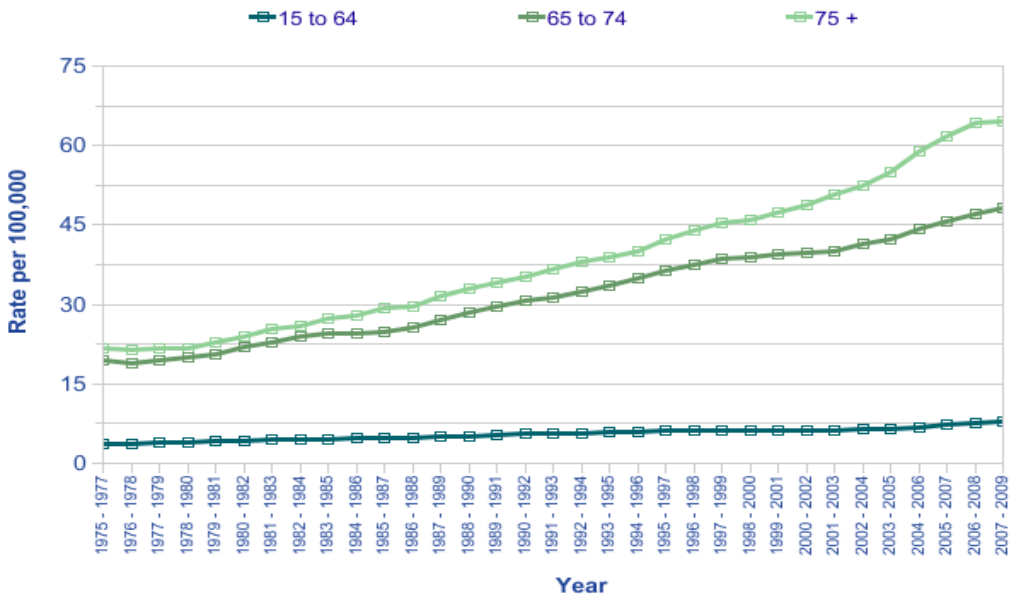

Figure courtesy of Cancer Research UK

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