Results: For all cancer types (All) combined, the risk of cause-specific death was significantly decreased for group 4 ($p < 0.01$), with no difference between the other groups, see table. Breast cancer (BC) patients diagnosed during lactation displayed a significantly increased risk of dying from their cancer, $p = 0.003$, while women with malignant melanoma (MM) did not have a similar pattern. With the limitations of variable observation times, the risk of cause-specific death decreased during the three diagnostic periods (1967–1984, 1985–1994 and 1995–2004).

Patients			Cause-specific death	
	Groups	Number	Deaths	HR (95% CI)
All	1	42 337	13 780	1 (ref)
	2	547	139	0.9 (0.8−1.1)
	3	571	146	1.0 (0.8−1.2)
	4	2 056	143	0.5 (0.4−0.6)
MM	1	4 091	587	1 (ref)
	2	168	26	1.3 (0.9−2.0)
	3	132	15	1.0 (0.6−1.7)
	4	685	36	0.7 (0.5−1.1)
BC	1	14 005	4 224	1 (ref)
	2	65	28	1.2 (0.8−1.8)
	3	51	32	1.8 (1.3−2.7)
	4	130	30	0.7 (0.5−1.1)

Conclusion: The diagnosis of most cancer types during pregnancy or lactation does not increase the risk of cause-specific death, except for breast cancer diagnosed during lactation. Cancer survivors who consider post-cancer pregnancies can be informed of the generally good outcome.

1201 POSTER

Wine, liquor, beer, and risk of breast cancer

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Background: Drinking of alcoholic beverages has consistently been linked in population studies to increased risk of female breast cancer (BrCa), but data are relatively sparse about an independent role of choice of beverage type.
Materials and Methods: We did a cohort study of 70,033 women (59% white, 26% African-American, 10% Asian-American) who supplied information about demographics and habits at health examinations in 1978−85. Through 2004 BrCa was subsequently diagnosed in 2,829 women; the role of specific beverage types was studied among women taking more than one drink per month per month (n = 37,879 with 1,509 BrCa). We used Cox proportional hazards models adjusted for age, ethnicity, body mass index, education, and smoking, both with and without control for total alcohol. In one type of analysis women whose habits indicated a preponderant beverage choice were compared to women with no clear preference with these numbers: 10,570 wine (W), 3,783 liquor (L), 2,702 beer (B), and 20,824 no preference (N). In another type of analysis we examined the independent association of frequency (per day per week) of drinking each beverage type (W, L, B, and type of wine). Finally, we looked at the role of total alcohol (<1 drink/day referent) within beverage preference strata.
Results: Controlled for total alcohol, the RR's for comparison of preference groups to non-preferrers (N) were: W = 1.06 (0.94−1.20), L = 1.02 (0.87−1.21), and B = 1.02 (0.81−1.29). Also controlled for total alcohol, the RR's for frequency (per day per week) of the major types were: W = 1.02 (0.99−1.04), L = 1.01 (0.98−1.04), B = 1.01 (0.97−1.06). With wine type subsetted into red, white, etc., no disparities in BrCa risk were seen; e.g., for both red W and white W, RR per day per week = 1.01. For total alcohol (vs <1 drink per day) the RR of BrCa was 1.1 for women reporting 1−2 drinks/day and 1.3 for women reporting 3+ drinks/day (p for trend <0.001), with similar trends for total alcohol within the W, L, B, and N strata. All results were similar in subgroups stratified by age or ethnicity.
Conclusion: These data show the relation of alcohol intake to increased BrCa risk is independent of beverage choice, indicating that ethyl alcohol is the likely culprit.

1202 POSTER

Prognosis of uterine corpus cancer after tamoxifen treatment for breast cancer

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Background: Tamoxifen increases the risk of uterine corpus cancer. Since only few, mostly small, studies have examined prognosis of uterine corpus cancer following tamoxifen, we conducted a large retrospective cohort study.
Materials and Methods: We examined histopathologic and immunohistochemical characteristics of 313 patients with uterine corpus cancer following breast cancer, according to tamoxifen use. Uterine corpus cancer-specific survival in relation to tamoxifen use was examined in the same patients combined with 273 patients from a previous study with updated follow-up. Histologic review of all cancers was performed.
Results: Long-term tamoxifen users showed a higher proportion of non-endometrioid tumors than non-users (32.7% vs. 17.4%, $p = 0.004$), especially serous adenocarcinomas and carcinosarcomas. An increased proportion of FIGO stage III and IV tumors was also observed (20.0% vs. 11.3%, $p = 0.049$). Within FIGO stage I, both short-term and long-term tamoxifen users showed a higher proportion of tumors limited to the endometrium than non-users (36% vs. 23%, $p = 0.049$ and 0.004 respectively). Uterine corpus cancers in long-term tamoxifen users were more often estrogen receptor alpha-negative (37.9% vs. 19.4%, $p = 0.002$), progesterone receptor A-negative (45.3% vs. 32.6%, $p = 0.056$), progesterone receptor B-negative (47.1% vs. 13.6%, $p = 0.030$) and P53-positive (26.7% vs. 13.6%, $p = 0.015$) than uterine corpus cancers in non-users. In the pooled dataset (n = 545), 3-year uterine corpus cancer-specific survival was worse for long-term tamoxifen users than for non-users (82% for $\geqslant$2 years tamoxifen vs. 93% for non-users, $p = 0.0001$). The survival difference remained after adjustment for histologic and immunohistochemical characteristics in a Cox model (HR for $\geqslant$2 years tamoxifen = 2.4; 95% CI = 1.2−4.6).
Conclusions: Tamoxifen-associated tumors have less favorable histologic features and a worse survival, even though part of the tumors are diagnosed at a relatively early stage. Further investigation is needed to identify other tumor characteristics responsible for the relatively poor survival. Our results can be applied when weighing risks and benefits of tamoxifen versus other hormonal agents used in the prevention and treatment of breast cancer.

1203 POSTER

Trends in cancer incidence in 13 to 24 year olds in England, 1979–2003

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Background: Cancer in teenagers and young adults is a major health problem and is the most common natural cause of death in those aged 15 to 24 years in England. The distribution of cancer types in 13 to 24 year olds is different from both children and older adults, so trends over time might be expected to follow different patterns as well.
Materials and Methods: Incidence data on all cases of registered neoplasms in England from 1979 to 2003 inclusive were supplied by the Office for National Statistics. Cancer cases were grouped according to a morphology-based diagnostic scheme developed specifically for this age group. All malignant tumours except non-melanoma skin cancer were included as were non-malignant intracranial and intraspinal neoplasms. Incidence rates were calculated for five successive five year time periods and standardised to the European standard population. The significance of variability over time assessed using Poisson regression.

Results: There were 39,129 neoplasms with an overall incidence rate of 193.8 cases per million person year at risk, a rate that has increased at 1.5% per annum. Cancer incidence in all of the main groups increased over time, but the changes differed by cancer group (Table 1). The greatest increases were for melanoma, which nearly doubled between 1979–1983 and 1989–1993, before the rate of increase slowed, and germ cell tumours, which showed a steadier trend.

Table 1: Cancer incidence in 13 to 24 year olds in England 1979–2003

Cancer group	Rate per million person years at risk by period						Annual trend		
	1979–1983	1984–1988	1989–1993	1994–1998	1999–2003	1979–2003	%	95% CI	P-value
Leukaemia	20.0	20.9	21.8	22.4	22.8	21.5	0.7	(0.2, 1.1)	0.002
Lymphoma	39.5	43.9	47.4	46.0	50.0	45.1	1.1	(0.8, 1.3)	<0.0001
CNS tumours	26.8	27.7	31.1	30.5	31.1	29.3	0.8	(0.4, 1.2)	<0.0001
Bone tumours	11.0	11.4	11.8	13.4	13.1	12.0	1.0	(0.5, 1.6)	0.0003
Soft tissue sarcomas	8.6	10.9	11.2	9.9	10.9	10.3	0.7	(0.1, 1.4)	0.02
Germ cell tumours	18.7	22.6	25.2	29.3	33.2	25.4	2.9	(2.5, 3.3)	<0.0001
Melanoma	8.9	13.2	16.1	18.9	20.3	15.1	3.8	(3.3, 4.3)	<0.0001
Carcinomas	27.4	29.4	28.4	35.1	39.7	31.6	1.8	(1.5, 2.2)	<0.0001
Other specified neoplasms	2.1	2.0	2.6	2.1	2.1	2.2	0.0	(−1.3, 1.4)	0.96
Unspecified neoplasms	0.5	1.3	1.9	1.3	0.9	1.2	1.5	(−0.3, 3.4)	0.10
All	163.6	183.3	197.5	208.8	224.0	193.8	1.5	(1.4, 1.7)	<0.0001

Conclusion: Over a 25 year period the incidence rate of neoplasms in 13 to 24 year olds in England increased by 37%.

1204 POSTER

Epidemiology of haematological cancers in children and young adults aged 0−24 years in the north of England

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Background: Incidence and survival rates for childhood cancer are well documented, particularly those focusing on haematological malignancies. However, little data exist on the entire childhood and young adult age range (0−24 years), with a notable paucity of information available for 15−24 year-olds. We describe and contrast the epidemiology of haematological tumours in children and young people exploiting two population-based registers in northern England.
Materials: Eligible cases were those diagnosed with leukaemia or lymphoma aged 0−24 years from 1990–2002, resident in the former Yorkshire and Northern Region Health Authorities. Age-standardised incidence rates were examined by age, sex, region and period of diagnosis and differences tested using Poisson regression. Survival rates were compared using Cox regression.
Results: 1682 subjects were included (950 leukaemias, 732 lymphomas). Incidence rates for ALL were significantly higher for 0−9 year-olds (30−55/100,000 person-years) and significantly lower for 15−24 year-olds (10−13/100,000 pyrs) compared to 10−14 year-olds (17/100,000 pyrs). Hodgkin's lymphoma (HL) showed the reverse distribution by age, representing the most common subtype amongst 15−24 year-olds (34/100,000 pyrs). Females exhibited significantly lower rates of ALL, HL and NHL than males overall. No significant changes in incidence occurred over time and did not differ by Region. Fewer than 40% of leukaemia patients entered clinical trials aged 15−24 in contrast to 80% of 0−14 year-olds. Excluding NHL, survival rates were significantly poorer for 15−24s compared to 0−14 year-olds, with risk of death most marked for leukaemia (HR = 3.1; 95% CI 2.4−3.9). Survival rates improved over time more markedly for 0−14 year-olds than 15−24s. No differences in survival were seen by deprivation quintile or Region.
Conclusions: Although no temporal changes in incidence were observed, survival rates were consistently lower and improved less quickly for 15−24 s compared to 0−14 year-olds across all diagnostic groups. Trial accrual rates need to be improved amongst 15−24 year-olds and long-term survival carefully monitored.

1205 POSTER

Physical activity, body size and composition, and risk of ovarian cancer

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Background: Previous studies of the relationship between ovarian cancer and physical activity have produced conflicting results, showing positive, inverse and no associations. Similarly, previous studies of the relationship between ovarian cancer and anthropometric measurements have shown either no association or a positive association. We further investigated these potential associations in the Melbourne Collaborative Cohort Study.
Materials and Methods: In a prospective cohort study of 24,479 women aged 27−75 years old at recruitment between 1990 and 1994, body measurements were taken directly and participants were interviewed about their physical activity, including frequency and intensity, as well as about risk factors and protective factors for ovarian cancer. Fat mass and fat free mass were estimated from bioelectrical impedance analysis, and central adiposity was estimated by measuring waist circumference. Among 22,122 women who contributed 289,386 person-years, 90 ovarian cancers were ascertained using the population cancer registry.
Results: After adjusting for all covariates, compared to those with no physical activity, the hazard ratio (HR) for women with high levels of physical activity (accounting for both frequency and intensity of activity) was 2.02 (95% CI 0.93−4.38), whereas the HR for women with medium levels was 2.01 (95% CI 1.01−4.00), and the HR for women with low levels was 1.70 (95% CI 0.80−3.62) (p-trend, 0.06).
There was no association between ovarian cancer and any anthropometric measurement. Adjusted for all covariates including physical activity, the HR for women with a body mass index (BMI) of $\geqslant$30 kg/m^2 or higher compared to a BMI < 25 kg/m^2 was 1.06 (95% CI 0.57−1.96). For each 10 kg increase in fat mass and fat free mass (FFM), the HR was 1.08 (95% CI 0.81−1.45) and 0.89 (95% CI 0.46−1.71), respectively. For each 10 cm increase in waist circumference, the HR was 0.87 (95% CI 0.68−1.11). For each 10 cm increase in height, the HR was 1.10 (95% CI 0.72−1.68).
Conclusion: In this cohort study, there was some evidence to suggest a relationship between higher levels of physical activity and ovarian cancer risk. There was no association between anthropometric measurements and ovarian cancer risk.

1206 POSTER

Longitudinal Trends of CNS Tumours in England – 1979 to 2003

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Background: The overall incidence of CNS tumours increased worldwide in the 1970s and 1980s. We aim to analyse the current trends in England by sex, behaviour, age group and histology.
Materials and Methods: Data on all CNS tumours diagnosed in England from 1979 to 2003 was analysed. For description, the tumours were classified according to the recent WHO Classification.
Results: There were 134,516 CNS tumours diagnosed in this period. The overall incidence increased steadily (9.2/100,000/year in 1979) and peaked in the late 1990s (12.8/100,000/year). Since the year 2000 it has shown some decline. This trend is similar for males and females and for benign and malignant tumours. The increase has been maximum in the young and the elderly. Analysis by histology revealed 3 clear trends. First were tumours which continue to rise steadily over this time period like astrocytomas (pilocytic astrocytoma, anaplastic astrocytoma, glioblastoma), meningiomas, ependymal tumours and supratentorial primitive neuroectodermal tumours. Second were tumours which after an initial rise continue to decline steadily including astrocytoma NOS (Not Otherwise Specified) and glioma NOS. The third trend includes; medulloblastoma, pituitary tumours and unspecified tumours where, after an initial rise, the incidence has remained static.
Conclusions: While the increase in the overall incidence of CNS tumours in England has levelled off, there are still specific age groups (children and elderly) and specific pathologies (astrocytomas and meningiomas) where the increase continues and is particularly marked. Only part of this increase can be attributed to better diagnostic techniques and to a relative decrease in NOS tumours.