National Cancer Registry Ireland **Cancer Trends**

Melanoma of skin

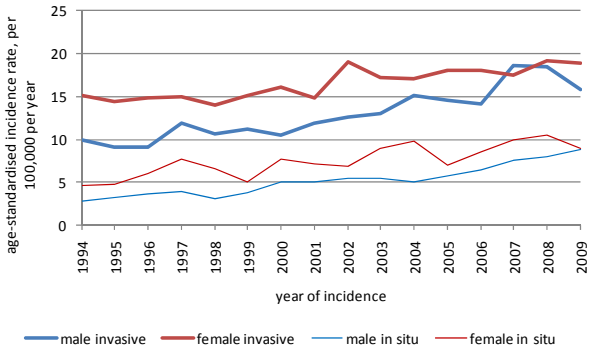
Primary sites of melanoma

90% of invasive melanoma arises in the skin, 5% in the eye and the remainder in a variety of sites including vulva (0.5%) nasal cavity (0.4%) and anus (0.2%). 2.4% of the melanomas are diagnosed as of "unknown primary site" but most are likely to have been cutaneous in origin. Almost all (99.5%) *in situ* melanomas are in the skin. This report describes only primary melanoma of the skin (invasive and *in situ).*

Time trends

In 2008 there were 443 invasive and 226 *in situ* melanomas in women and 372 invasive and 159 *in situ* melanomas in men. Both invasive and *in situ* melanomas are increasing in number—invasive melanoma by 5.8% annually for males and 3.8% for females; *in situ* melanoma by 9.1% for males and 6.5% for females. Age-standardised incidence rates are also increasing: by 4.5% annually for invasive melanoma in men and 2.0% in women and by 7.3% and 4.6 % respectively for *in situ* lesions (Figure 1).

Figure 1. Melanoma of skin: age-standardised incidence rate 1994-2009

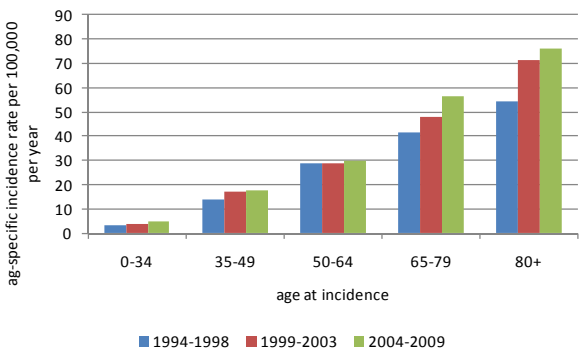


Age profile

The age-specific incidence rate for both invasive and *in situ melanoma* increased with age for both sexes (Figures 2 and 3) and also with time. Between 1994-1998 and 2004-2009, increases in both invasive and *in situ melanoma* occurred for almost all age groups. The largest increases were in the older age groups in both sexes, particularly for men, although there was a 44% increase (although from a low base) in the incidence of invasive melanoma for women under 35.

Figure 2. Invasive melanoma by age, sex and period of diagnosis 1994-2009

a. female



b. male

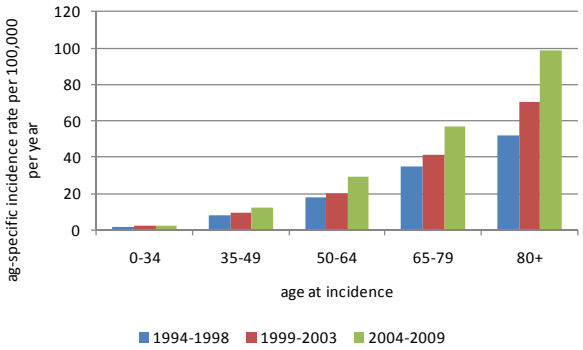
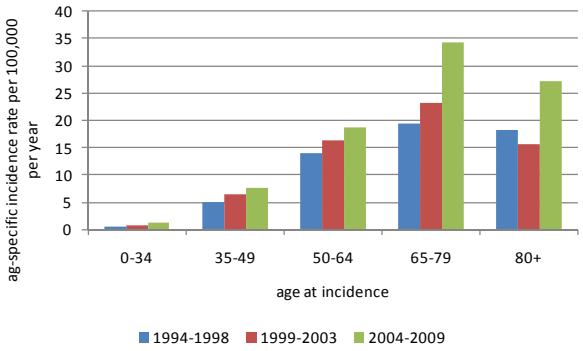
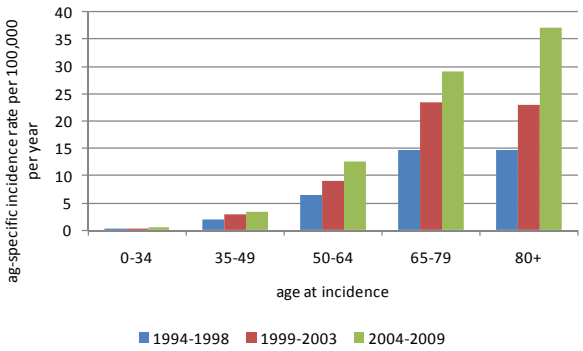


Figure 3. *In situ* melanoma by age, sex and period of diagnosis 1994-2009

a. female



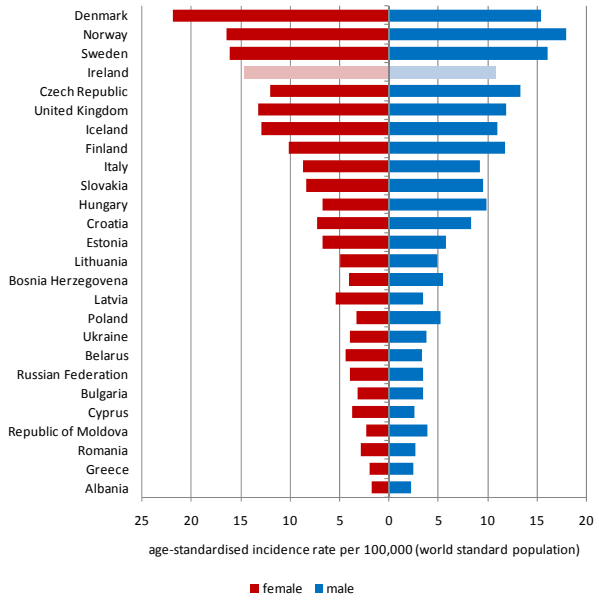
b. male



Geographical variation

Within Europe, invasive melanoma incidence, for both men and women, is highest in Scandinavia and lowest in south-eastern Europe (Figure 4).[1] The incidence for women in Ireland is one of the highest in Europe (4th highest of the 26 countries shown here). The incidence rate for men in Ireland is lower in relative terms (8th of 26) but still above the European average.

Figure 4. Estimated melanoma incidence, 2008 (age-standardised rate)[1]



Melanoma thickness

Thickness, or depth of invasion, is an important prognostic factor for melanoma. 23% of invasive melanomas were <=0.75mm and 22% between 0.75mm and 1.5mm. Thinner lesions were more common in women, while thicker (T4, >4 mm) were commoner in men (Figure 5). Uptake of screening and/or better awareness may be responsible for some of this difference between sexes. The number of cases of *in situ* melanomas increased by 138% and thin lesions (T1; <=0.75 mm) by 161% between 1994-1998 and 2004-2008*, while lesions thicker than 0.75 mm increased by 75% over the same period (Figure 6).

Figure 5. Melanoma thickness 1994-2008*, by sex

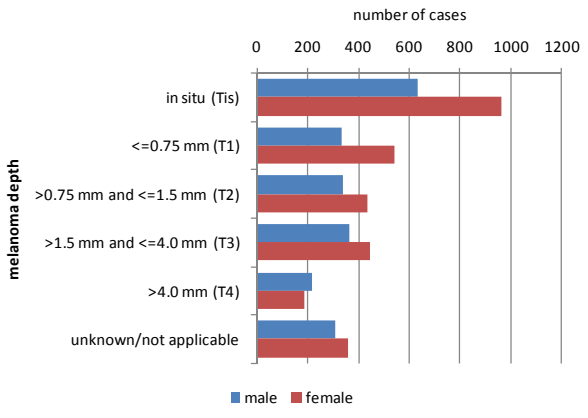
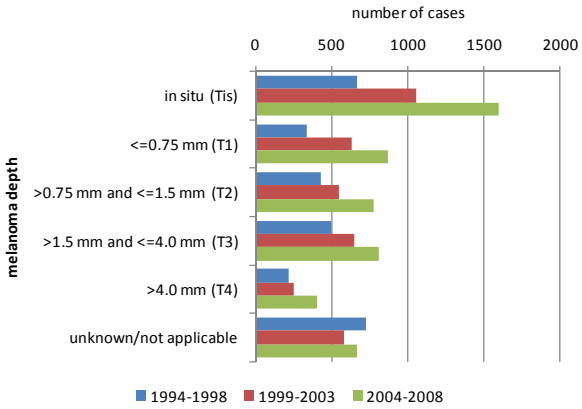


Figure 6. Melanoma thickness 1994-2008*, by period

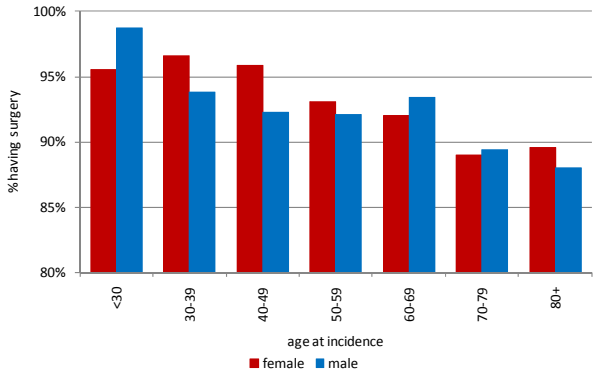


Treatment

Overall, 90% of patients diagnosed with invasive melanoma in 2004-2008* had definitive surgery. This percentage fell with age, from 97% for those under 30, to 89% for those over 80 (Figure 7). Women were slightly more likely than men to have surgery (93% v 92%). Only 7% of patients with invasive melanoma had chemotherapy in 2004-2008; 8% had radiotherapy.

88% of *in situ* melanomas diagnosed in 2004-2008 were recorded as having surgery. However, some *in situ* melanomas not recorded as having surgery may have been completely excised at biopsy. 97% of *in situ* melanomas had either surgery or biopsy.

Figure 7. Patients having surgery for invasive melanoma 2004-2008*, by age & sex



Data on tumour size, thickness and treatment for 2009 was incomplete and is excluded

Survival

Overall survival for cases of invasive melanoma diagnosed in 1994-2008 was 88% (95% confidence interval 87%-89%) for women five years after diagnosis, and 79% (77%-81%) for men. There was no significant change in survival over this period. Age, sex, tumour thickness and having surgery were all independent prognostic factors; the hazard ratio for men was 61% greater than for women when all other factors were allowed for (Figure 8). Melanoma survival in Ireland was close to the European average for both men and women, although poorer than in Northern Ireland, especially for men (Figure 9).[2]

Figure 8. Survival: multivariate hazard ratios for main prognostic factors 1994-2008 (adjusted for year of diagnosis)

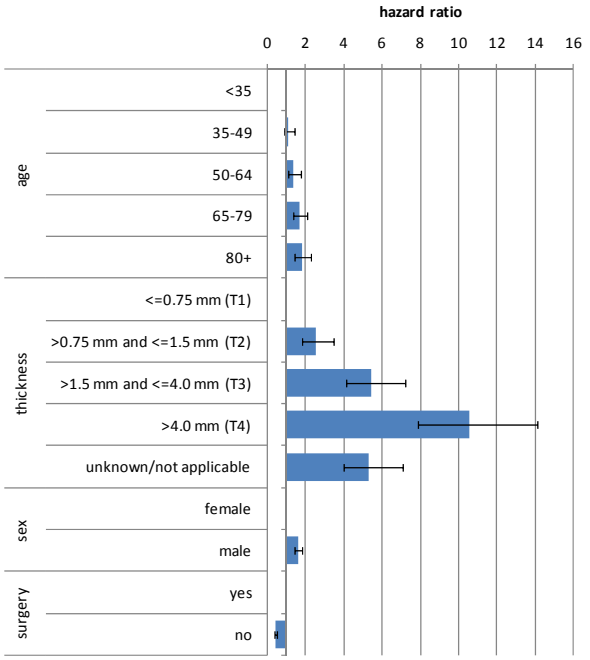
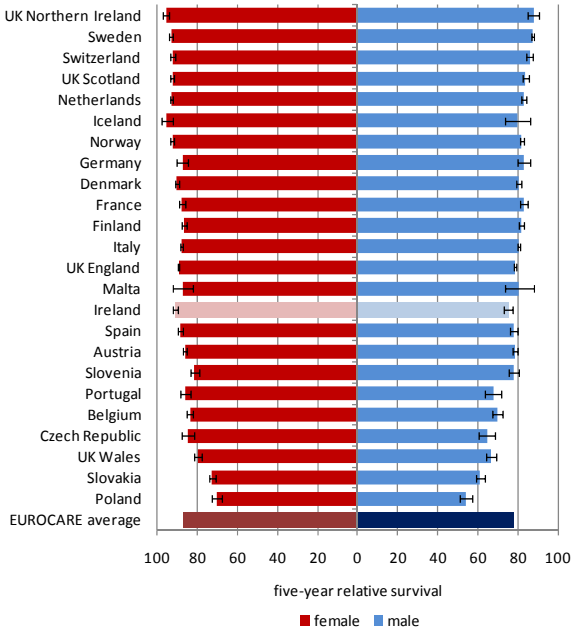


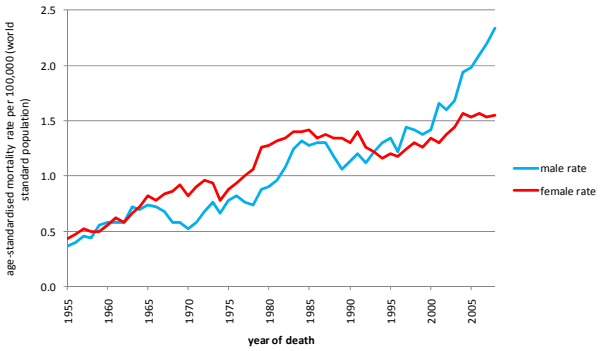
Figure 9. Five-year relative survival for cases diagnosed 1995-1999[2]



Mortality

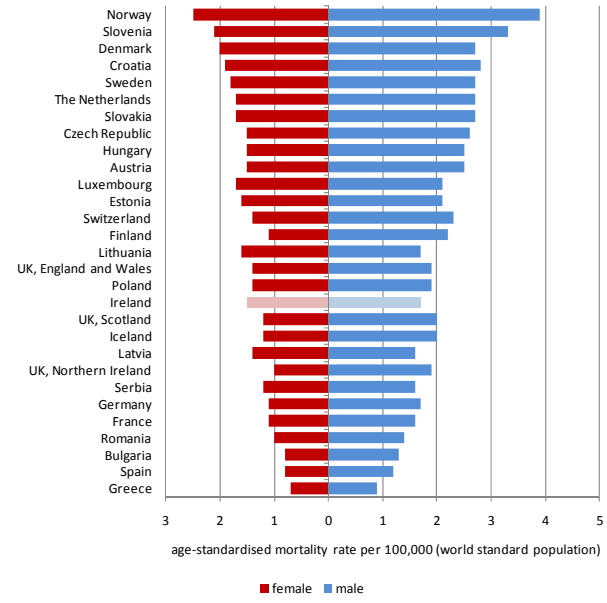
Deaths from malignant melanoma increased from 16 a year in 1955-1960 to 113 a year in 2004-2007.[3] Some of the increase in earlier years is almost certainly due to improving quality of diagnosis and certification, but the continuing increase in male mortality rates since the 1990s, in contrast with the relatively small increase for women (Figure 10), is a cause for concern.

Figure 10. Age-standardised mortality rate for melanoma 1995-2007: five-year moving average[3]



Melanoma mortality for women in Ireland in 2001-2005 was 11th highest of the 29 European countries shown in Figure 11, while male mortality was 20th.[3] Male mortality was higher than female in all countries shown, although the male/female ratio in Ireland was one of the lowest. The much lower mortality and better survival for melanoma in Northern Ireland compared to Ireland is striking.

Figure 11. Melanoma mortality, 2001-2005 (age-standardised rate)[3]



1. European Cancer Observatory (ECO) www-dep.iarc.fr
2. EUROCARE 4 www.eurocare.it
3. WHO Mortality Database www-dep.iarc.fr

