



# Christie Clinical Outcomes Melanoma

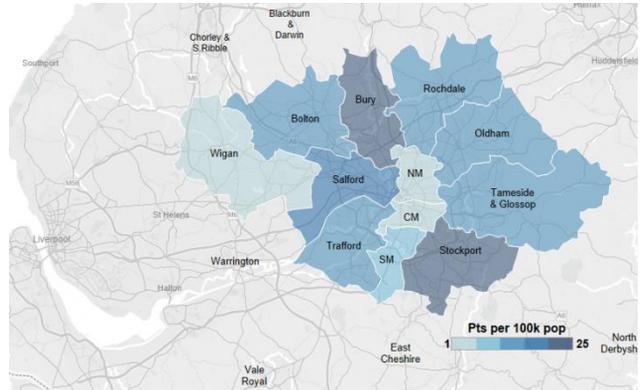
## Incidence of Melanoma in North West England

Malignant melanoma is the fifth most common cancer in the UK. Approximately 1600 cases of melanoma are diagnosed each year in the North West of England<sup>1</sup> which represent approximately 19 new diagnoses per year per 100,000 population. Rates of melanoma in the North West are similar to those for England as a whole.

## Referrals to The Christie

1410 melanoma patients have been newly referred to The Christie for treatment in the past 3 years. Approximately 50% of these patients are new diagnoses. Other patients are referred for further treatment or with recurring disease.

The majority of Christie patients are residents of the North West of England and in particular around the Greater Manchester region. A small number of patients travel from outside the NW for treatment. Referral rates within Greater Manchester range from 2.5 per 100,000 population in Wigan CCG to 24 per 100,000 in Stockport CCG (Map 1). Median age of patients referred is 64 years with males being slightly older than females (males 66 years, females 61 years).



Map 1. Number of new Christie patients referred each year with melanoma per 100,000 CCG resident population. Depth of colour is relative to the number of patients from the same CCG.

## Melanoma diagnoses by stage

Disease stage describes the size and spread of cancer. For melanoma, the International Union Against Cancer (UICC) TNM staging system describes the thickness of the melanoma (The T value) (Fig 1) and whether or not the melanoma has spread to lymph nodes (Stage 3) or other parts of the body (stage 4). Among those patients referred to The Christie, 37% are Stage I, 24% are Stage IIa, 13% are stage IIb and 26% are stage IIc. 11% of patients referred have nodal involvement (Stage III) and 17% have metastatic disease (Stage IV).

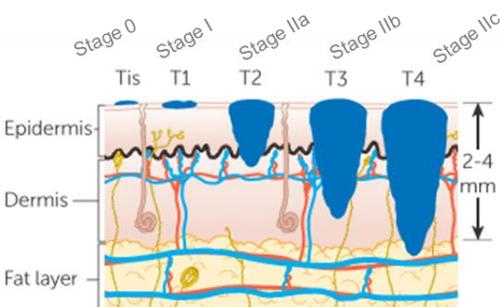


Fig. 1. Stage of skin melanomas where there is no nodal involvement or metastatic spread (adapted from CRUK).

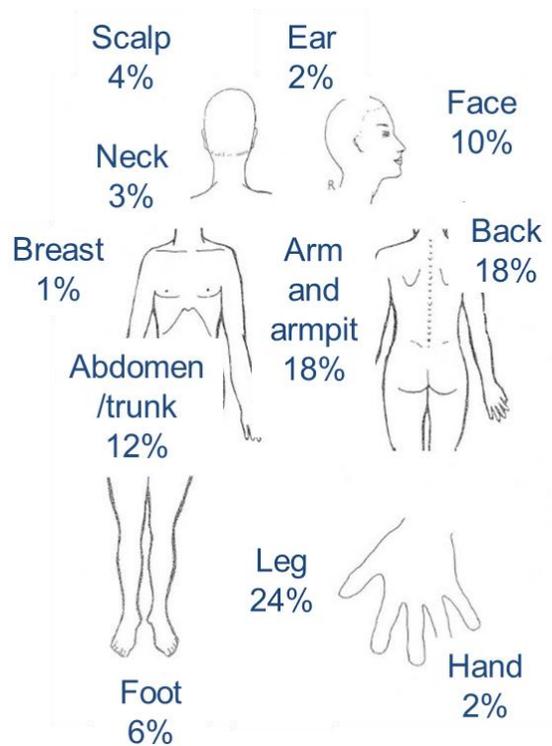


Fig. 2. Distribution of skin melanomas by site of body where primary site is known (based on 2013-2014 melanoma audit data N = 912).

## Melanoma types

Melanomas can occur on the skin, in the eye and within mucosal tissue. Among patients referred to The Christie, the majority have melanomas of the skin (95%). 3% of patients have ocular/uveal melanomas and 2% have mucosal melanomas. Skin melanomas can occur on any part of the body, the most common site being legs, arms and the back (Fig 2). Males are more likely to have skin melanomas on the trunk (stomach, back and chest) than females (Fig 3).

<sup>1</sup> Office for National Statistics

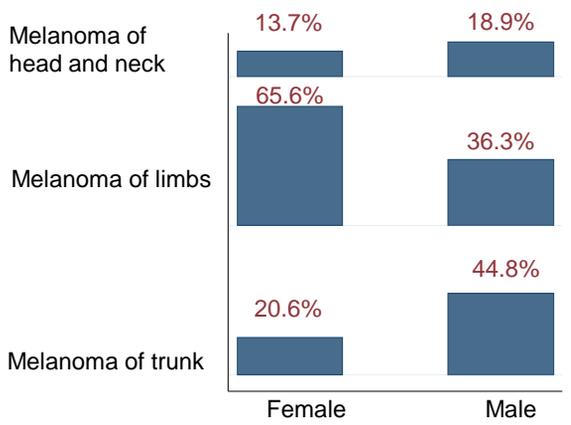


Fig. 3. Location of skin melanomas by sex. Numbers above the bars are percentage of patients in that group for males and females respectively.

### Melanoma genotypes

Approximately 40-60% of melanomas contain a mutation in the *BRAF* gene. Some studies have shown that *BRAF* mutations are associated with features of high-risk melanoma, including melanomas in the trunk of the body (stomach, back, and chest), earlier age of onset, lack of chronic skin damage, and shortened survival. These studies have led to the development of novel treatments aimed at inhibiting the expression of mutated *BRAF*. Among patients referred to The Christie (2013-2014) who were tested for the *BRAF* gene, 35% carried the *BRAF* mutation. Among those tested, there was a higher proportion of patients with melanomas of the trunk in the *BRAF* mutation positive group than among those without the *BRAF* mutation (wild type) (Fig 4). There was also a higher proportion of Stage III and IV diagnoses among those with *BRAF* mutations (83% stage III and IV) compared with the wild type *BRAF* gene (68% stage III & IV). Those with the *BRAF* mutation were also younger on average than those without the mutation (Fig 5).

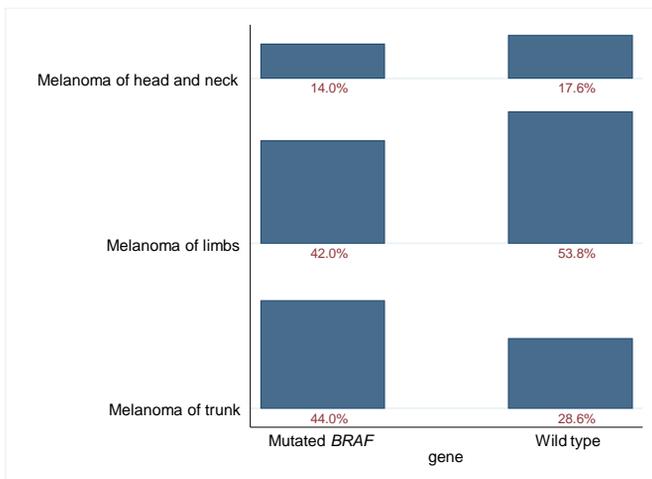


Fig. 4. Location of skin melanomas among patients tested for the *BRAF* gene by mutation status. Numbers below the bars are percentage of patients in that group for wild type and mutated *BRAF* respectively.

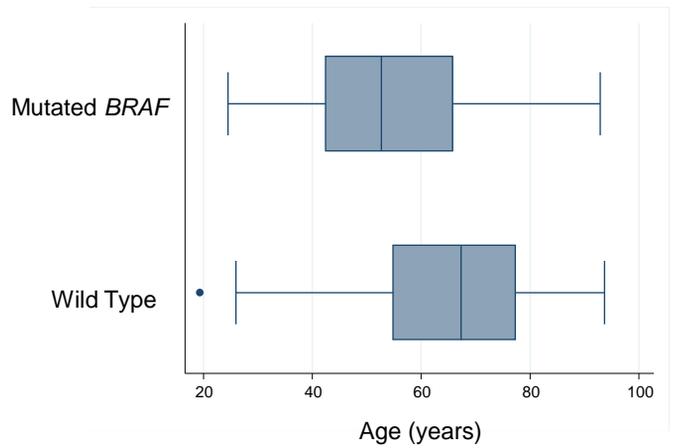


Fig. 5. Age distribution of patients referred to The Christie with a diagnosis of melanoma by *BRAF* gene mutation status.

### Survival Outcomes

In the UK one year net survival for all skin melanomas (all stages of disease) is estimated to be 96.5% for men and 97.9% for women (CRUK 2015). By stage of disease, one year survival ranges from 99%-100% for stage I to 10%-35% for stage IV. Among all patients referred to The Christie with melanoma of the skin, one year crude survival for males and females is 94% and 97% respectively (Fig 6). By stage, one year crude survival is 99% for stage I and 61% for stage IV (Fig 7).

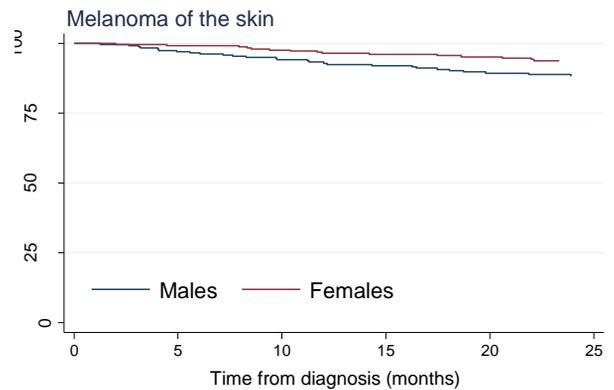


Fig.6. Survival estimates for patients referred to The Christie with a skin melanoma diagnosis (2013-2014) by gender (follow up to December 2015).

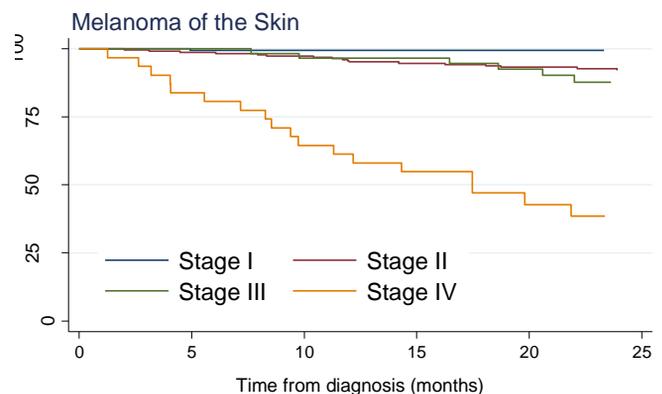


Fig.7. Survival estimates for patients referred to The Christie with a skin melanoma diagnosis (2013-2014) by stage of disease (TNM) (follow up to December 2015).