

## The Societal Cost of Skin Cancer Continues to Increase

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Skin cancer is one of the most rapidly increasing cancers among the Swedish population, which makes it a serious burden on public health. Skin cancer also has a significant economic impact on society. In 2011 the societal cost of skin cancer amounted to €177.6 million that is an increase of 27% since 2005. When adjusting for inflation this increase is 14%. This article is a synopsis of an article published in *Acta Dermato-Venereologica* (1) and presents the societal costs related to skin cancer in Sweden 2011. In 2008 our research group conducted a similar study that estimated the annual cost of skin cancer in Sweden 2005 (2). The present study utilizes the same data sources and methods as the study conducted in 2008, making it possible for us to draw reliable conclusions about the cost development associated with skin cancer in Sweden.

Table I summarizes the annual cost associated with skin cancer in Sweden 2011. The costs are referred to the diagnoses cutaneous malignant melanoma (CMM), non-melanoma skin cancer (NMSC), melanoma and carcinoma *in situ*, melanocytic naevi (MN), and actinic keratosis (AK).

Direct health care-related costs represent 57.5% of all costs related to skin cancer in Sweden 2011. Indirect costs, due to mortality and morbidity, represent 42.5% of the total cost. The major cost driver is related to mortality and life years lost, representing 37% of the total cost of skin cancer. As found in 2005, melanoma is the diagnosis that represents the largest

cost to society, at almost €93 million and 52.6% of the total cost. Cost arising due to life years lost (production loss) is the major cost driver in melanoma. Looking at direct healthcare costs alone, however, non-melanoma skin cancers are those that are most costly, at an annual cost of €42.8 million.

Although cost-of-illness studies of the kind presented in our study are useful for providing summary figures for the magnitude of the impact of particular diseases, it should be noted that they are unlikely to be useful for setting priorities in terms of funding for prevention and treatment. For such purposes cost-effectiveness analyses, taking into account outcomes in terms of changes in survival and quality of life associated with specific interventions aimed at treating and preventing a particular health condition, are needed. It would therefore be of great interest to assess the cost-effectiveness of preventative programs in future research. The research group is currently working to develop a basic prototype model to assess the cost-effectiveness of a preventive program in a Swedish setting. The model will be basic and should be considered as a foundation for development and refinement in the future.

### References

1. Eriksson T, Tinghög G. Societal cost of skin cancer in Sweden in 2011. *Acta Derm Venereol* 2015; 95: 347–348.
2. Tinghög G, Carlsson P, Synnerstad I, Rosdahl I. Societal cost of skin cancer in Sweden in 2005. *Acta Derm Venereol* 2008; 88: 467–473.

Table I. Cost of skin cancer in Sweden 2011, presented in €1,000 (figures in parentheses represent percentage of total cost)

	CMM €/1,000 (%)	NMSC €/1,000 (%)	MIS/CIS €/1,000 (%)	MN €/1,000 (%)	AK €/1,000 (%)	Total €/1,000 (%)
<i>Direct costs</i>	21,593 (12.2)	39,163 (22)	1,099 (0.6)	21,959 (12.4)	18,393 (10.4)	102,206 (57.5)
Inpatient care	8,803 (5)	6,384 (3.6)	154 (0.1)	199 (0.1)	187 (0.1)	15,727 (8.9)
Outpatient/primary care	12,789 (7.2)	32,779 (18.4)	945 (0.5)	21,760 (12.3)	18,206 (10.3)	86,479 (48.7)
<i>Indirect costs*</i>	71,783 (40.4)	3,641 (2.1)				75,424 (42.5)
Mortality	64,523 (36.3)	1,682 (1)				66,204 (37.3)
Morbidity	7,260 (4.1)	1,959 (1.1)				9,220 (5.2)
<i>Total costs</i>	93,376 (52.6)	42,804 (24.1)	1,099 (0.6)	21,959 (12.4)	18,393 (10.4)	177,630 (100)

\*3% discount rate.

CMM: cutaneous malignant melanoma; NMSC: non-melanoma skin cancer; MIS: melanoma *in situ*; CIS: cancer *in situ* in the skin; MN: melanocytic naevi; AK: actinic keratosis.