hi Healthy Ireland

nccp National Cancer Control Programme

An Roinn Sláinte
Department of Health

National Skin Cancer Prevention Plan 2023-2026

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Abbreviations

BCC	Basal Cell Carcinoma
DCEDIY	Department of Children, Equality, Disability, Integration & Youth
DOH FEHU	Department of Health (Food and Environmental Health Unit)
ELC	Early Learning Centre
EU	European Union
GAA	Gaelic Athletic Association
GP	General Practitioner
HI	Healthy Ireland
HSA	Health and Safety Authority
HSE	Health Service Executive
HSE EHS	HSE Environmental Health Service
IARC	International Agency for Research on Cancer
ICPN	Irish Cancer Prevention Network
NCCA	National Council for Curriculum and Assessment
NCCP	National Cancer Control Programme
NCRI	National Cancer Registry of Ireland
NMSC	Non-Melanoma Skin Cancer
PPE	Personal Protective Equipment
SCC	Squamous Cell Carcinoma
SCHEER	Scientific Committee on Health, Environmental and Emerging Risks
SPF	Sun Protection Factor
SPHE	Social Personal Health Education
UPF	Ultraviolet Protection Factor
UVA	Ultraviolet A
UVB	Ultraviolet B
UVC	Ultraviolet C
UV	Ultraviolet Radiation
WHO	World Health Organisation

Foreword from Minister of State for Public Health, Wellbeing and the National Drugs Strategy

Skin cancer is the most commonly diagnosed cancer in Ireland, and most cases are preventable. The first national Skin Cancer Prevention Plan 2019-2022 was a landmark commitment which arose from the National Cancer Strategy 2017-2026. It focused on reducing risk across the population, by embracing the Healthy Ireland approach of collaboration and partnership.

This Skin Cancer Prevention Plan 2023-2026 will continue to raise awareness of the actions we can all take to reduce risk, and it outlines the importance of a multi-sectoral approach. The key objectives of the plan will only be delivered through effective partnerships between key stakeholders from Government, the not-for-profit, health and private sectors working alongside sporting, education and leisure partners.

The goal of Healthy Ireland is to empower everyone to take charge of our health and wellbeing, to make the healthy choice the easy choice, and to make disease prevention a priority in all our lives. The Skin Cancer Prevention Plan outlines actions we can take to reduce our risk of skin cancer such as following the SunSmart code and avoiding use of sunbeds, and it sets out how we can support people to adopt these behaviours.

The Sláintecare Integration Fund supported the implementation of the Skin Cancer Prevention Plan 2019-2022 by funding a Cancer Prevention Co-ordinator. The annual SunSmart campaign aligns with this by encouraging people to protect their skin from the sun, thereby reducing risk.

As the Minister of State at the Department of Health, I wish to thank everyone who contributed to the development of the Skin Cancer Prevention Plan 2023-2026. I look forward to ongoing collaboration with these sectors to deliver on the ultimate aim of the plan which is to reverse the rising incidence of skin cancer in Ireland.

Hildegarde Naughton

Hildegarde Naughton, Minister of State for Public Health, Wellbeing and the National Drugs Strategy

Foreword from National Cancer Control Programme Director

The National Cancer Control Programme (NCCP) is the Directorate of the Health Service Executive (HSE) with responsibility for reducing the impact of cancer across the disease continuum, including actions to reduce our incidence of cancer.

In conjunction with Healthy Ireland, NCCP has led on the implementation of the first Skin Cancer Prevention Plan 2019-2022. The significant progress made to date is a testament to the dedicated implementation group and its collaboration with a significant network of partners across all sectors of society. Examples of outcomes from the implementation of the 2019-2022 Plan include:

- SunSmart branding developed and publicised;
- Annual SunSmart campaign incorporating radio campaign, social media as well as media coverage both in press and TV;
- Introduction of SunSmart lesson plans in primary schools;
- Provision of UV protective clothing and SunSmart games pack to children's summer camps;
- Development of an online repository of resources for outdoor worker organisations;
- Research undertaken on the economic cost of skin cancer in Ireland.

Skin cancer prevention is a long term goal. Preventative measures need to be taken from childhood through to advanced age in order to prevent skin cancer occurrence. As a result, we continue our commitment to reducing the burden of skin cancer in Ireland with the new National Skin Cancer Prevention Plan 2023-2026.

This plan will continue to drive and support collaboration between government departments, statutory bodies, healthcare services and professionals, non-governmental organisations and public patient representatives. The aim of the National Skin Cancer Prevention Plan 2023-2026 is to build on the work already done to date in key action areas including education, media campaigns, environmental measures and policy changes across multiple settings. Ultimately, with sustained commitment to skin cancer prevention, we will work towards reversing the current trend of increasing incidence of skin cancer in Ireland by raising awareness of the importance of adopting SunSmart behaviours from a young age and sustaining these behaviours through adulthood.

Prof Risteard O'Laoide, National Director, National Cancer Control Programme

Acknowledgements

The National Skin Cancer Prevention Plan 2023-2026 was drawn up by the National Cancer Control Programme in conjunction with Healthy Ireland, Department of Health. This was very much dependent on the input of all members of the current Skin Cancer Prevention Plan Implementation Group, who are individually acknowledged in Appendix 1. Particular thanks to Maria McEnery, NCCP Cancer Prevention Officer and Skin Cancer Prevention Coordinator who drafted this Plan and liaised with key stakeholders in its development.

The authors wish to acknowledge partners in the development of the Action Areas and for their commitment to undertake the actions outlined in the National Skin Cancer Prevention Plan 2023-2026. These partners include key stakeholders in the Department of Health and in the Health Service Executive. Other stakeholders of note include governmental departments, Met Éireann, the Health and Safety Authority as well as those in education, early years settings, outdoor worker organisations, and sporting and recreational bodies.

Introduction 1

The National Cancer Strategy 2017-2026[1] aims to reduce the cancer burden in Ireland. Cancer prevention is a cornerstone of the National Cancer Strategy as it offers the most cost-effective, long-term approach for cancer control. The National Skin Cancer Prevention Plan 2019-2022[2] was developed in response to the National Cancer Strategy 2017-2026, which recommended the development of a skin cancer prevention plan as a matter of priority (Recommendation 3). This recommendation was in response to the fact that non-melanoma skin cancer (NMSC) is the most common cancer in Ireland and the increasing incidence rate of melanoma, which was increasing by 5% per year in men, and 2.5% per year in women at that time[1].

This National Skin Cancer Prevention Plan 2023-2026 outlines the further action required in the coming years to tackle our high rates of skin cancer. The plan also aligns with and seeks to deliver on a number of other key national and international strategies as follows:

National Cancer Strategy 2017-2026[1]

Cancer prevention is a cornerstone of National Cancer Strategy 2017-2026 as it offers the most cost-effective, long-term approach for cancer control. The development of the National Skin Cancer Prevention Plan is listed under recommendation 3, and priority groups are highlighted, including children, outdoor workers, sunbed users and those who pursue outdoor leisure activities.

Healthy Ireland Strategic Action Plan 2021-2025[3]

The Healthy Ireland Strategic Action Plan 2021-2025 aims to improve the health and wellbeing of everyone living in Ireland.

Department of Health Climate Change Adaptation Plan for the health sector (2019-2024)[4]

Ultraviolet radiation (UV), sun exposure and the associated risk of skin cancer is a high priority action in response to climate change. It is a priority area listed in the Department of Health Climate Adaptation Plan.

Climate Action Plan 2021[5]

The Climate Action Plan 2021 includes the following actions:

Action 483: Assess implementation of the National Skin Cancer Prevention Plan with focus on actions relevant to climate change.

Action 485: Review the current and emerging building infrastructure and its potential associations with climate-sensitive UV health impacts in the indoor and outdoor architectural environment.

HSE Health Protection Strategy 2022-2027[6]

One of the key objectives of the HSE Health Protection Strategy 2022-2027 is to advocate regarding non-infectious disease hazards related to the environment which includes climate change.

Europe's Beating Cancer Plan[7]

Europe's Beating Cancer Plan aims to "explore measures to prevent exposure to ultraviolet radiation including from sunbeds" (Action 18). Any national measures under the National Skin Cancer Prevention Plan 2023 will be aligned with any actions arising from Europe's Beating Cancer Plan.

Developing the National Skin Cancer Prevention Plan 2023-2026

Steps in the development of the Plan included the following:

- A workshop was held with the National Skin Cancer Prevention Plan Implementation Group to review the 2019-2022 plan and consider the direction and focus of the new National Skin Cancer Prevention Plan 2023-2026.
- A literature review was undertaken with the Health Service Executive (HSE) library to examine the evidence base.
- The National Cancer Control Programme (NCCP) conducted a number of individual consultation meetings with health care professionals, cancer charities, research institutions, professional associations, local governments, government agencies and non-government organisations.
- A draft plan was developed and circulated to key stakeholders for feedback prior to public consultation.
- A public consultation was held in October 2022 to gather feedback from a broader range of stakeholders and the general public.

Epidemiology of Skin Cancer in Ireland

2

Skin cancer is the most common cancer in Ireland, with an average of 12,668 new cases (melanoma and non-melanoma skin cancer combined) diagnosed each year for 2018-2020[8]. The number of people being diagnosed with skin cancer in Ireland is rising rapidly. The National Cancer Registry of Ireland (NCRI) projections suggest that the average number of cases diagnosed each year may double between 2015 and 2045[9].

Skin cancer can be classified into two groups: non-melanoma skin cancer (NMSC) and melanoma skin cancer.

Non-melanoma skin cancer

Incidence

NMSC is by far the most common skin cancer, accounting for 91% of skin cancers and accounting for 26% of overall cancer cases diagnosed in Ireland in the period 2018-2020.

There are a several types of NMSC. The most common are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) with a combined total of 11,400 cases per year.[8]

BCC is the most common form of NMSC. BCCs account for 69% of all NMSCs in Ireland.[11] BCCs usually grow slowly over months or years and most cases are diagnosed in middle aged and older adults. BCCs tend to develop on skin that is exposed to the sun, such as the head and neck[10] but can also affect the face, lower legs and back. For BCC and melanoma intermittent/recreational UV radiation is the main risk factor[11]. BCCs are rarely invasive, meaning they don't tend to spread but can be 'locally destructive' if left untreated[10].

SCCs are usually faster growing than BCCs. They develop mainly on skin that is exposed to the sun, including the head such as ears and lips, neck, forearms and back of the hand. They can also develop on skin that was damaged in the past - e.g. on areas of skin where there is (or was) scarring, sunburn or ulceration[12]. Long-term chronic sun exposure is the leading risk factor for SCC's[13]. SCCs can become invasive and spread to lymph nodes and other parts of the body[12].

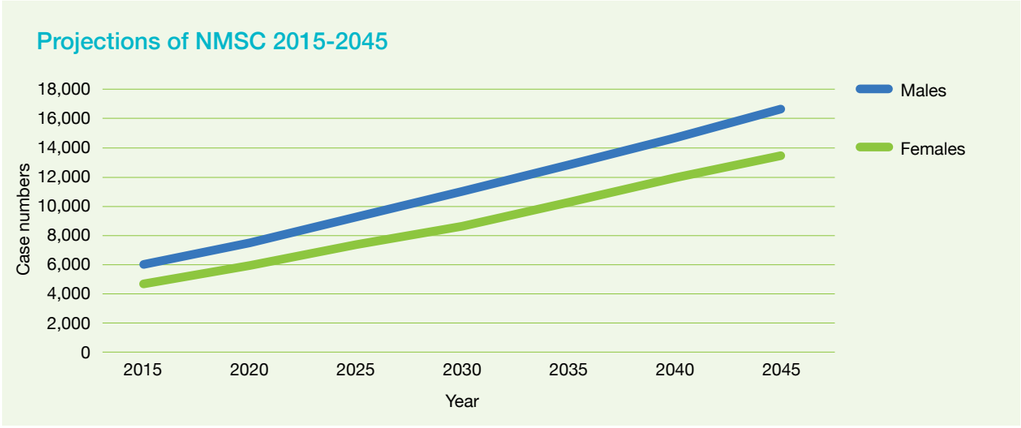


Figure 1: NMSC Future Projections for Ireland 2015-2045

Between the years 2015 and 2045, the average number of people diagnosed with NMSC each year is projected to increase from 6,004 to 16,623 (+177%) for males and from 4,669 to 13,503 (+189%) for females[9].

Melanoma skin cancer

Melanoma skin cancer is less common than NMSC and accounts for 9% of skin cancers[11].

Incidence rates, trend and projections

Excluding NMSC, melanoma skin cancer is the fourth most commonly diagnosed cancer in both males and females in Ireland, and accounted for approximately 1 in 20 (4.8%) new invasive cancer cases diagnosed between 2018-2020[8]. Over 1,100 people are diagnosed with melanoma annually with approximately equal numbers of cases occurring in males and females[8].

Irish cancer registry data has demonstrated increasing incidence rates of melanoma skin cancer among males between the years 1994 and 2014, with subsequent stabilisation from 2014 to 2019[14]. By contrast, melanoma incidence rates in females have continued to increase from 1994-2019.

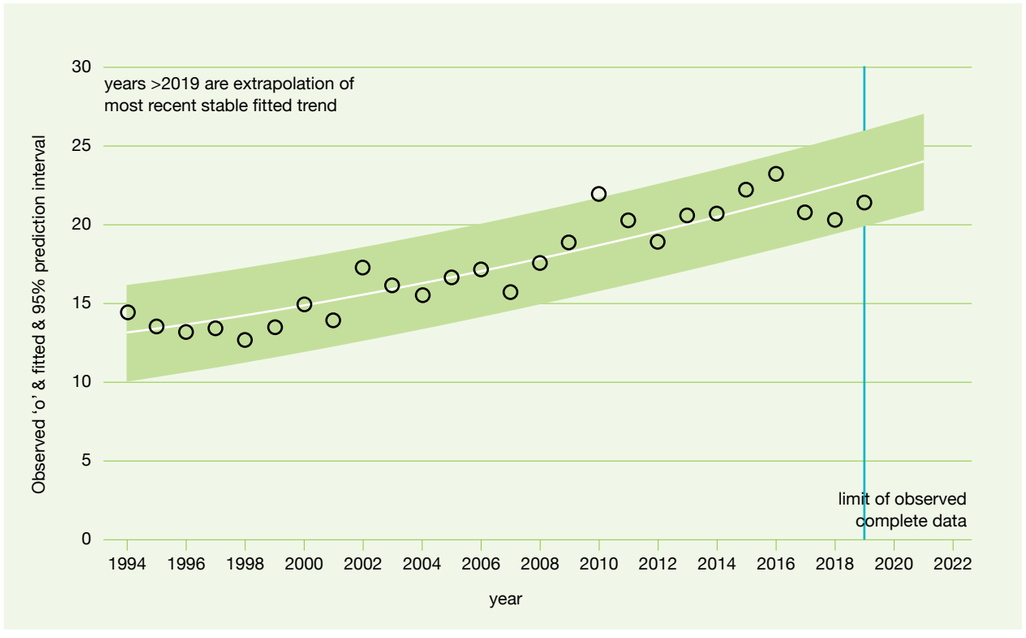


Figure 2: Melanoma of skin: Trend in females per 100,000 1994-2019 (age standardised to 1976 European Standard Population)

In females, the incidence of melanoma of the skin has been increasing at a rate of on average 2.3% per year up to 2019[14].

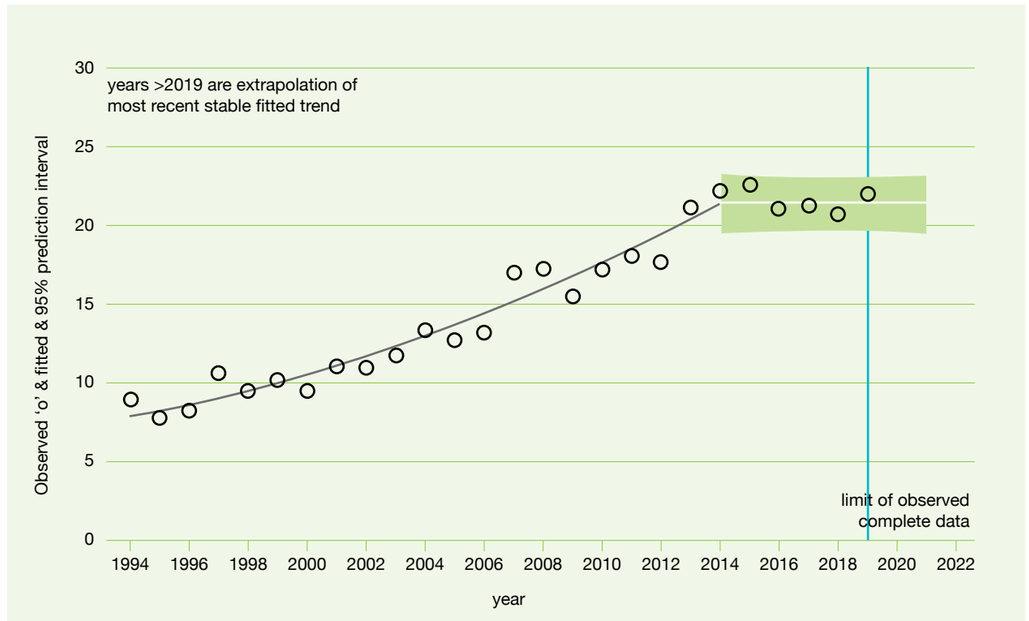


Figure 3: Melanoma of skin: Trend in males 1994-2019 (age standardised to 1976 European Standard Population)

In males, the incidence of melanoma of the skin increased significantly during 1994-2014 followed by a levelling off in 2014-2019[14].

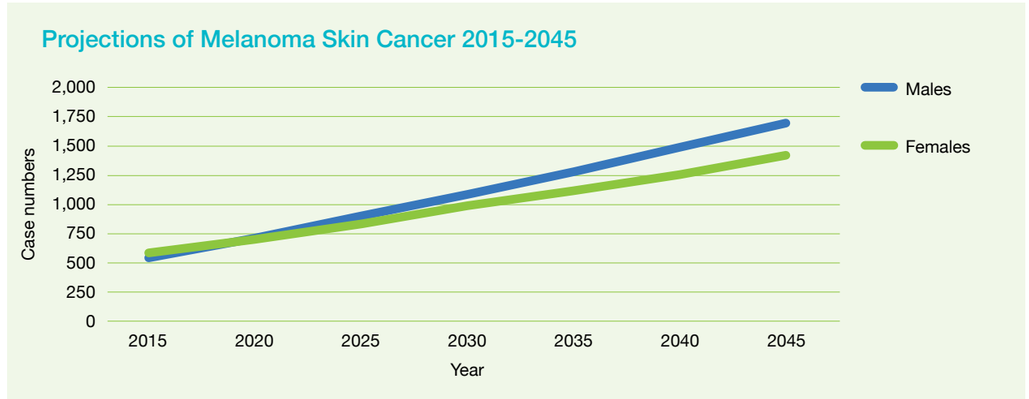


Figure 4: Melanoma Skin Cancer Future Projections for Ireland 2015-2045

Between 2015 and 2045, it is projected that the number of cases of melanoma diagnosed each year among males will increase from 546 to 1,678 (+207%), and the number of cases diagnosed each year among females will increase from 584 to 1,400 (+140%)[9].

Median age at diagnosis of melanoma skin cancer is younger than for many other cancers. Figure 5 demonstrates that there is a higher proportion of males and females diagnosed with melanoma skin cancer under the age of 50 compared to all invasive cancers.

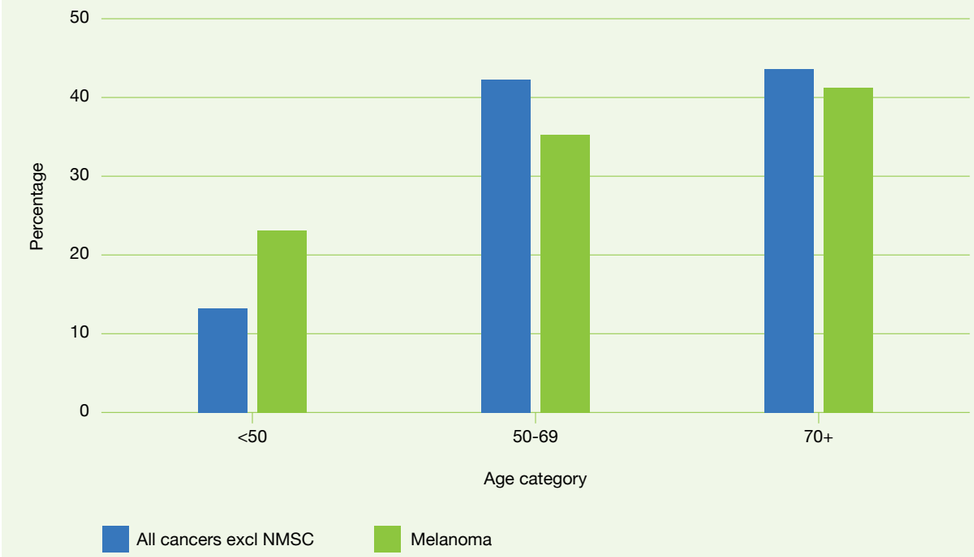


Figure 5: Age at diagnosis

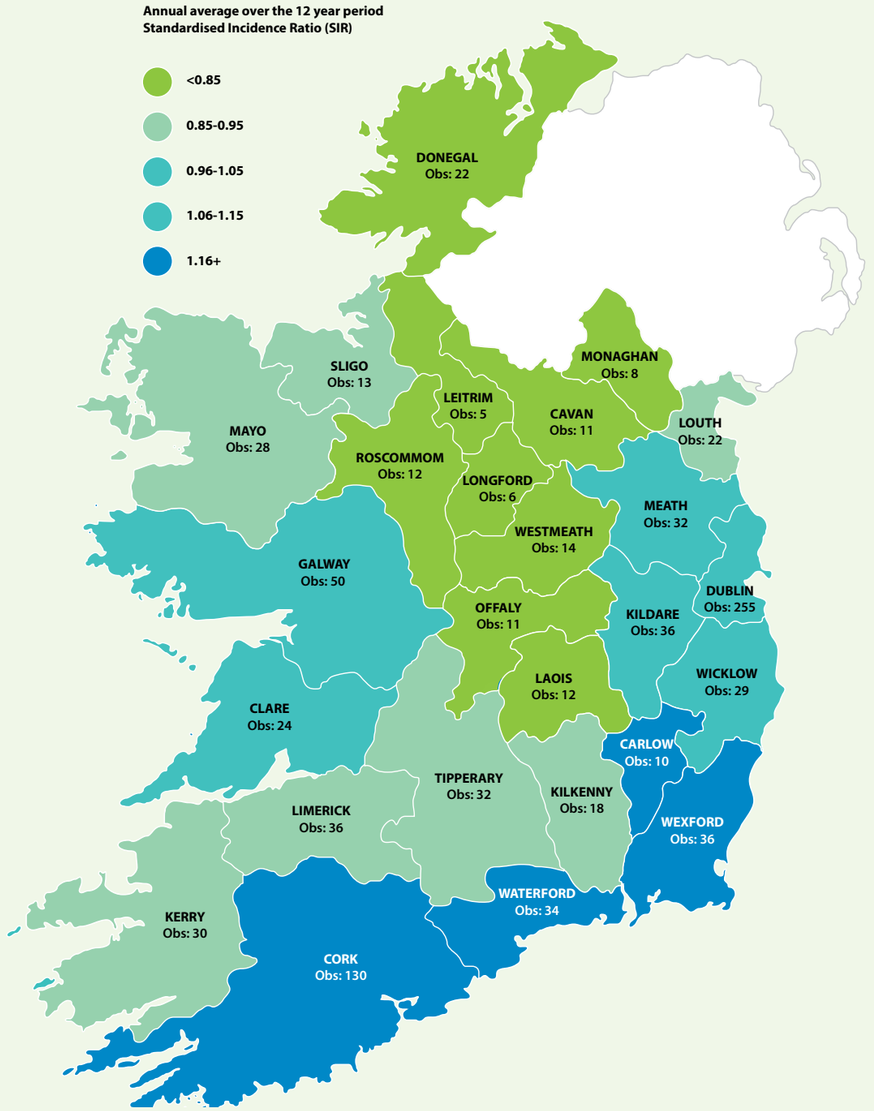


Figure 6: Map of incidence of skin melanoma by county in Ireland 2006-2017.

Figure 6 illustrates incidence of melanoma skin cancer by county, with the highest incidence rates observed in the south-eastern and southernmost counties.

Mortality

Melanoma is the most serious type of skin cancer as if not detected early, it can spread to other parts of the body, where it becomes difficult to treat and can be fatal. While melanoma skin cancer is not a leading cause of cancer death in Ireland, it does give rise to over 160 deaths per year[8].

Skin Cancer and Deprivation

Melanoma and NMSC are known to occur more frequently in more affluent populations compared to more deprived populations. A recent NCRI report[15] demonstrated that those residing in the least deprived quintile of the population have a higher risk of melanoma compared to those in the most deprived quintile. Research suggests that this may be due in part to more exposure to UV radiation among those in more affluent populations usually due to repeated sun exposure during leisure activities[16, 17].

Figure 7 (below) demonstrates the correlation between melanoma and deprivation for males and females in Ireland (2014-2018)[15].

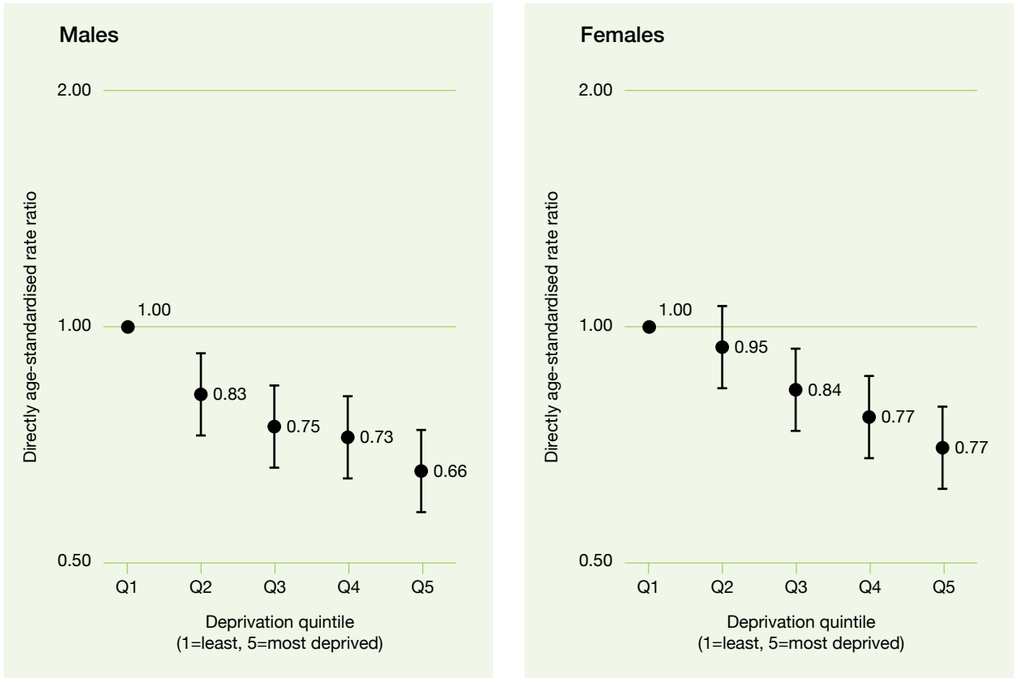


Figure 7 Age-standardised incidence rate ratios and 95% confidence intervals for melanoma by deprivation quintiles, 2014-2018[15]

Economic cost of skin cancer in Ireland

Although most cases of skin cancer (both melanoma and NMSC) are potentially preventable, the number of cases diagnosed each year, continues to rise. This is due to multiple factors, including demographic change with an ageing population.

Recent research conducted in Ireland,[18] has explored for the first time the economic burden of melanoma skin cancer to the Irish healthcare system. Patients with the earliest stage of melanoma skin cancer (stage IA) were the least costly to treat compared to those with late stage melanoma skin cancer (stage IV). The study found that the cost of managing a case of melanoma diagnosed at stage IV was more than 25 times higher than for a case diagnosed at stage IA (stage IV €122,985 versus stage IA €4,269). Given the increasing incidence of melanoma and health price inflation, management of melanoma will continue to present a challenge to healthcare services in Ireland into the future. The findings of the research study highlight the importance of prevention and early diagnosis to minimise the financial burden of melanoma skin cancer in Ireland.

Risk Factors for Skin Cancer

3

While anyone can get skin cancer, some people are at greater risk. Each person's risk of getting skin cancer is influenced by multiple factors – things that we can change ('modifiable' risk factors, e.g. exposure to ultraviolet radiation (UV) present in sunlight or from artificial sources, such as sunbeds) and things that we cannot change ('non-modifiable' risk factors, e.g. our age, genetics and skin colour).

Risk factors for NMSC and melanoma skin cancer are outlined in Table 1:

NMSC	Melanoma
UV exposure from the sun or sunbeds	Occasional, intense UV exposure from the sun or sunbeds
A previous NMSC	Sunburn, particularly during childhood
A family history of skin cancer	Sunbed use
Pale skin that burns easily	A previous melanoma or NMSC
A large number of moles or freckles	Multiple large or unusual moles
Immunosuppression	Immunosuppression
Sunbed use	Many moles (of different sizes, shapes and colours)
	A pale complexion: pale skin, blue eyes, red/ blonde hair, freckles
	A family history of melanoma

Table 1: Risk factors for NMSC and melanoma skin cancer

Non-modifiable risk factors for skin cancer

Skin type

A person's natural skin colour influences their sensitivity to UV radiation and skin cancer risk, and can be broadly classified according to the Fitzpatrick Skin Type Classification Scale (Figure 8). The Fitzpatrick Skin Type Classification Scale considers skin colour and how the skin reacts to sunlight, with a range from 1 (lightest skin colour, high risk of burning) to 6 (darkest skin colour, low risk of burning)[19]. The scale can be used as a starting point for assessing personal risk. A person's skin type is genetically determined and does not change based on level of tanning[20]. Most people living in Ireland have fair skin - Fitzpatrick skin type 1 or 2[21]. People with these skin types burn easily and tan poorly so are particularly vulnerable to UV damage and, as a result, are at a higher risk of skin cancer. UV damage includes sunburn, skin ageing, hyperpigmentation and skin cancer.

People with darker skin tend to be comparatively less vulnerable to UV damage than people with a lighter skin colour[22, 23, 24]. Although there is a lower incidence of skin cancer in individuals with dark skin or skin which darkens easily when exposed to sunlight and rarely if ever burns, such as Fitzpatrick skin type 5 or 6, those that occur are often detected later at a more advanced/ dangerous stage which makes it more difficult to treat[25].

Score	Description	Female	Male
0–6 Type I	**Pale white skin** Extremely sensitive skin, always burns, never tans *Example: red hair with freckles*		
7–13 Type II	**White skin** Very sensitive skin, burns easily, tans minimally *Example: fair skinned, fair haired Caucasians, northern Asians*		
14–20 Type III	**Light brown skin** Sensitive skin, sometimes burns, slowly tans to light brown *Example: darker Caucasians, some Asians*		
21–27 Type IV	**Moderate brown skin** Mildly sensitive, burns minimally, always tans to moderate brown *Example: Mediterranean and Middle Eastern Caucasians, southern Asians*		
28–34 Type V	**Dark brown skin** Resistant skin, rarely burns, tans well *Example: some Hispanics, some Africans*		
35+ Type VI	**Deeply pigmented dark brown to black skin** Very resistant skin, never burns, deeply pigmented *Example: darker Africans, Indigenous Australians*		

* The information published here is not intended to take the place of medical advice. Please seek advice from a qualified health care professional.

Source: Commonwealth of Australia, Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)

Figure 8: Fitzpatrick Skin Type Classification Scale

Special precautions due to immunosuppression

People who are immunosuppressed include people who have had an organ transplant or are taking medication that weakens their immune system. People who are immunosuppressed are at a significantly increased risk of skin cancer and need to take great care to protect their skin from UV[26, 27, 28].

Modifiable risk factors for skin cancer

Exposure to Ultraviolet radiation (UV)

Exposure to UV radiation is the main risk factor for skin cancer. UV radiation is emitted naturally from the sun and is also generated from artificial sources such as sunbeds. Exposure to UV radiation is considered a modifiable risk factor for skin cancer because we can limit our exposure by protecting our skin from the sun and refraining from sunbed use.

The sun and UV radiation

The sun sends energy to Earth in a number of different ways: visible light that can be seen, infrared radiation that can be felt as heat or temperature, and UV radiation that cannot be seen or felt[29]. Levels of UV radiation can be high even on cool and overcast days.

UV radiation is divided into three wavelengths: UVA, UVB and UVC. As sunlight passes through the atmosphere, all of UVC and most UVB radiation is absorbed by the atmosphere. Therefore, the UV radiation reaching the Earth's surface is largely composed of UVA and UVB[30].

UVA rays have a longer wavelength than UVB, and penetrate deeper into the skin. It is strongly associated with skin ageing such as wrinkles[30]. UVA can pass through glass and light cloud cover. The strength of UVA rays remains relatively consistent during the day, all year round. Therefore we are exposed to large doses of UVA throughout our lifetime.

UVB has a shorter wavelength. The strength of UVB fluctuates according to the time of day and time of year - the higher the sun in the sky, the greater the intensity of UVB[31]. UVB is mainly responsible for skin burning.

Both UVA and UVB can cause damage to skin cells that can lead to skin cancer. These rays can also cause eye damage, including cataracts[32]. UV radiation can also reflect off surfaces like concrete, water, sand and snow, and cause significant damage to skin[30].

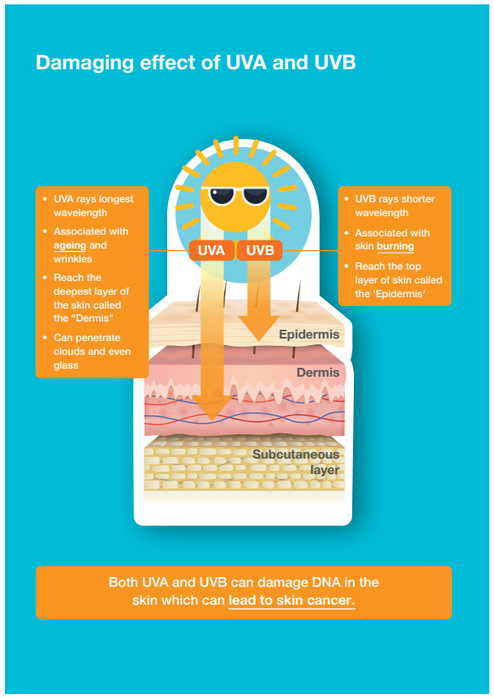


Figure 9: Damaging effect of UVA and UVB

UV Index

The UV index is an international standard measurement used by the World Health Organization (WHO) to quantify the level of UV from the sun at the surface of the earth at a particular place and time. The UV index is reported as a whole number between 0 and 11(+), with 0 indicating absolutely no sunlight and 11 indicating extreme radiation. The value of the UV index in Ireland will vary according to the time of year, time of day and dense cloud cover. The higher the UV index the greater the risk of skin damage particularly sunburn[33, 34] which is mainly caused by UVB[35]. The UV index is most likely to reach 3 or above in Ireland between April and September, meaning it is particularly important to take precautions to protect skin at that time of year. The actual amount of UV radiation reaching an individual in a particular location will also depend on factors such as altitude and reflection from surfaces.

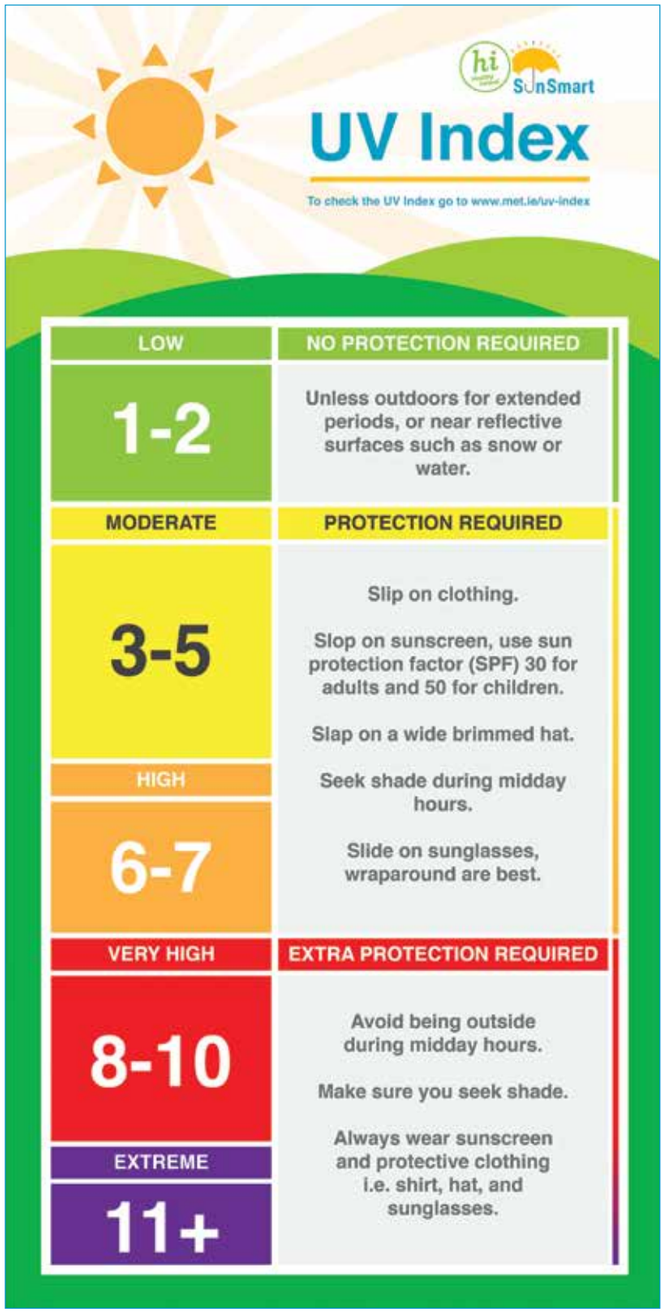


Figure 10: UV Index

Chronic and intermittent UV exposure

Chronic UV exposure refers to frequent or recurring outdoor exposure to UV from the sun over the longer term. Outdoor workers typically have chronic UV radiation exposure and, studies have shown, are particularly high risk of developing SCC, a form of NMSC[36, 37].

Intermittent exposure refers to occasional, intense bursts of UV exposure and sunburn such as during recreational outdoor activities or holidaying in a hot country. Melanoma and BCC risk appears most strongly related to intermittent UV radiation exposure[9, 38, 39].

Sunburn

Both occasional and chronic sun exposure can be harmful. Sunburn is the most immediate visible sign of overexposure to UV radiation and damage to the skin. Exposure causing sunburn is the most damaging but frequent non-burning exposures also significantly increase the risk of skin cancer[40, 41].

UV exposure in childhood

Playing and spending time outdoors is good for children. But it is important to protect their skin when outside in the sun. Children are particularly vulnerable to UV radiation during childhood. Children's skin is more vulnerable to damage from UV and this damage is cumulative, adding up over a lifetime. UV exposure during the first 10–15 years of life makes a disproportionately large contribution to lifetime risk of skin cancer[42]. Severe sunburn during childhood (3 or more instances before the age of 20) is associated with a 2-4 times higher risk of developing melanoma in later life[43]. To minimise this risk, skin protection during childhood is extremely important. Research has shown levels of self-reported childhood sunburn in Ireland are high[44].

A note on climate change

Ireland's climate is changing with the average annual temperatures projected to increase of, on average, 0.8°C compared with 1900. By the middle of this century (2041 – 2060) the average annual temperatures are projected to increase by between 1–1.2°C and 1.3–1.6°C depending on the emissions trajectory[45]. The number of extreme weather events including warm days is expected to increase and heat waves are expected to occur more frequently here in Ireland. Increasing temperatures may change human behaviour with increased exposure to sunlight through sunbathing and outdoor leisure activity. This in turn is expected to have a significant impact on rates of skin cancer[46].

A note on vitamin D*

Vitamin D is essential for bone development and for maintaining musculoskeletal health. Our skin makes vitamin D in sunlight following exposure to UVB in sunlight[47]. Vitamin D is also found in certain foods, such as egg yolks, fresh or tinned oily fish, some margarines and fortified cereals and from supplements. A balance is needed between exposing the skin to the sun which increases skin cancer risk and obtaining enough sun exposure to generate adequate vitamin D levels. The amount of sunlight required to make sufficient vitamin D varies from person to person and is influenced by many factors including a person's skin type, the amount of skin exposed, season, time of day, and weather conditions. It is generally short and less than the amount of time needed for the skin to redden or burn.

UV radiation and sunbeds

Sunbeds also emit UV radiation and are the most common artificial source of UV. Exposure to sunbeds increases the risk of developing skin cancer, a risk which can be avoided by not using sunbeds. International Agency for Research on Cancer (IARC) classifies the use of UV-emitting tanning devices, such as sunbeds, as carcinogenic to humans[48]. The European Commission Scientific Committee on Health, Environmental and Emerging Risks (SCHEER) has stated that there is no safe limit for exposure to UV radiation from sunbeds[49]. People who use sunbeds for the first time before the age of 35 increase their risk of developing melanoma by 75 per cent[48].

Tanning culture

Overexposure of skin to UV from the sun or sunbeds increases the risk of developing skin cancer. There is no such thing as a healthy tan.

In terms of a cultural shift, social attitudes moved away from sun-protection towards sun-seeking around the late 1920s[50]. Tanning as a 'fashion trend' first emerged during the 20th century when it came to be associated with health, wealth, fashion and celebrity [51].

There is evidence that, for some, the perceived aesthetic benefits of sun tanning outweigh the risks[52]. A study conducted amongst university students in Cork found that despite knowledge about the dangers of sun tanning, deliberate sun tanning is a form of strongly motivated risk-taking and is most prevalent in younger women[53].

* The primary purpose of this plan is to increase awareness and adoption of skin cancer prevention behaviours in order to reverse the rising incidence of skin cancer in Ireland. Therefore, this plan does not include activities for addressing issues associated with vitamin D or the early diagnosis of skin cancers and is not within the scope of this plan.

4 Skin Cancer Prevention Behaviours – Evidence Base and International Practice

A robust body of evidence highlights the key skin cancer prevention protective behaviours. These behaviours are adopted by international programmes and tailored to their population. Research has shown that wearing sun-protective clothing, limiting time spent in the sun and wearing sunscreen reduces UV exposure and the risk of sunburn[54, 55]. However of all the sun protection behaviours, sunscreen remains the most frequently used sun protection measure among the Irish population[56, 57]. Sunscreen requires proper use, including application before going out in the sun, applying a sufficient quantity and reapplication throughout the day.

Clothing (Long sleeve top, wide-brimmed hat, sunglasses)

A Ultraviolet Protection Factor (UPF) label indicates how much UV (both UVB and UVA) a fabric allows to reach the skin. Clothes labelled with an UPF of at least 40 block UV radiation from passing through[58].

Wearing clothing that covers as much skin as possible, such as long-sleeved shirts, long pants or skirts, can provide protection from UV radiation[59]. Clothes made from close-woven material that do not allow sunlight through offer the best protection.

Synthetic fabrics often have a tighter weave, but natural fabrics such as cotton can also be tightly woven and are comfortable to wear[60]. If clothing gets wet or stretched, it may lose some of its protective qualities. Dark clothes block more UV radiation than light-coloured clothes.

To protect skin and eyes from UV radiation damage, wear a hat that shields the face, eyes, ears, and back of neck. Wide-brimmed, bucket or legionnaire hats offer the best protection from UV. Baseball or peaked caps and sun visors are not recommended, as these styles do not protect the ears, cheeks or neck[61, 62].

The sun's UV radiation can contribute to melanomas in the eye[63, 64]. Sunglasses should provide as close to 100% UV-protection as possible. Wraparound sunglasses are best. Choose sunglasses that meet the EN ISO 12312-1 standard[32].

Shade and limiting time in mid-day sun

Shade provides good protection from UV radiation and most forms of shade can reduce UV exposure by up to 75%[65]. Shade can come naturally from trees and shrubs, or artificially from permanent or portable structures such as canopies. Shade alone is not sufficient and reflection from nearby surfaces may lead to a substantial amount of UV exposure. Shade should always be combined with personal sun protection such a hat, clothing, sunscreen and sunglasses.

Sunscreen

A broad spectrum (UVA/UVB) water-resistant sunscreen with a high UVA protection and Sun Protection Factor (SPF) of at least 30+ for adults and 50+ for children should be used.

The SPF number in sunscreen indicates the level of protection from UVB only. You should also check the level of UVA protection in the sunscreen that you use. The EU recommends that the UVA protection offered in sunscreen should be at least one third of the SPF. Sunscreen products meeting this requirement are eligible to display a UVA logo, with the letters UVA enclosed within a circle.

UVA star rating system range from 0-5, and indicate the level of protection the sunscreen provides against UVA, compared with the level of protection it provides against UVB (i.e. the ratio between the level of UVA and UVB protection offered by the product). The higher the number of stars, the greater the level of protection against UVA.

Sunscreen should be applied 20 minutes before going out in the sun so that it can be absorbed into the skin, then re-applied every 2 hours and after sweating, swimming or towel drying. The average-sized adult should apply at least one teaspoon of sunscreen to each arm, leg, front of body and back of body and head (including the face, ears and neck) – that is, 35ml (seven teaspoons) of sunscreen for one full body application[66]. Sunscreen should be easily accessible and expiry dates checked regularly. No sunscreen offers 100% protection from UV radiation; it should be used alongside other protective measures such as clothing and shade.

Figure 11: Sunscreen explained

International practice – skin cancer prevention

Skin cancer is largely preventable by protecting skin from UV radiation. Internationally, there have been significant efforts to reduce the incidence of skin cancer, through implementation of various strategies and initiatives to increase skin protective behaviours in the population.

Australia

The Slip! Slop! Slap! Australian campaign was 'aired' in summer of 1980-81. SunSmart came later (1988-1989)[67]. Notable successes have been achieved with these campaigns, with melanoma rates slowing down and beginning to plateau as well as improvements in sun protection behaviours.

The SunSmart campaign included[68]

- a mass-media campaign,
- a SunSmart Schools programme,
- a SunSmart Early Childhood programme,
- workplace and healthcare professional training.

Figure 12: Sid the Seagull SunSmart Campaign Australia

Denmark

The Danish Sun Safety Campaign has significantly reduced sunbed use in Denmark since 2007. Prior to the Danish Sun Safety Campaign, Denmark had one of the highest reported frequencies of sunbed use in the world. In May 2007, an 'anti-sunbed' campaign launched, with a target audience of young people aged 15–25 years. The campaign made links between sunbed use, negative cosmetic effects and skin damage, and also offered educational programmes. Since the campaign, there has been a reduction in sunbed use in Denmark from 2007–2015, from 32% to 13% for women and 18% to 8% for men[69].

Northern Ireland

The Northern Ireland 'Skin Cancer Prevention Strategy and Action Plan 2011-21[70] was launched in July 2011 and focused on the prevention and early detection of skin cancer. The aim of the plan was to reduce the incidence of skin cancer and deaths from skin cancer in Northern Ireland. Care in the Sun website (www.careinthesun.org/) was set up as part of the strategy, with an action plan to increase awareness about dangers of too much UV radiation from sunlight and sunbeds, as well as increasing awareness about the early signs of skin cancer.

Skin Cancer Prevention – Ireland

5

In line with the scientific evidence and international best practice, the key skin cancer prevention behaviours recommended for the Irish population and defined in skin cancer prevention plan are:

Know the UV index: When the UV index is 3 or above you need to protect your skin. In Ireland, the UV index is usually 3 or above from April to September, even when it is cloudy. Stay safe by limiting time in the sun when UV is strongest, typically between the hours of 11:00am-3:00pm

Slip on clothing: Cover skin as much as possible, wear long sleeves, collared t-shirts, clothes made from close-woven material that does not allow sunlight through.

Slop on broad-spectrum (UVA/UVB) sunscreen. Apply sunscreen with a SPF of at least 30+ for adults and 50+ for children that has a high UVA protection, and is water resistant. Reapply regularly. No sunscreen can provide 100% protection, it should be used alongside other protective measures such as clothing and shade

Slap on a wide brimmed hat: Protect your face, ears and neck

Seek shade: Use a sunshade on your buggy or pram, sit in cover of trees to avoid direct sunlight. Keep babies and children out of direct sunlight

Slide on sunglasses: Guard your eyes from harm wearing sunglasses with UV protection

Do not deliberately try to get a suntan

Avoid getting a sunburn

Never use a sunbed

Current attitudes, behaviours and awareness of sun protection in Ireland

Research to explore people's knowledge, attitude and behaviour in relation to sun protection and sunbed use was undertaken as part of the first Skin Cancer Prevention Plan 2019-2022[2]. Sunscreen was consistently shown to be the most commonly used sun protective behaviour among the Irish population. The findings of this research has informed the current iteration of the Plan.

Healthy Ireland Survey Findings 2019[56]

92%

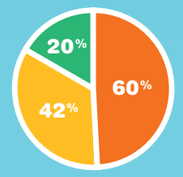
report using a form of sun protection when in the sun for more than 30 minutes at a time

The most commonly used forms of sun protection are **sunscreen** of factor 30 or higher (68%)

60% wear sunglasses

42% reported wearing a hat

20% reported keeping their skin covered



31% report that they limit the time they spend in hot sun

3% use sunbeds either regularly or from time-to-time

Healthy Ireland Survey Findings 2022[57]

86%

of people frequently use at least one method of sun protection during the summer while in Ireland

Using sunscreen of at least factor 30 (62%) is the most common method of sun protection during the summer in Ireland

Wearing long sleeves, a hat, or sunglasses (60%)

40% limit time spent in the sun

3% reporting that they use sunbeds either regularly or from time to time

Note: The 2019 survey was completed using face-to-face interviews, and the most recent survey (2022) was completed using telephone to ensure optimal infection control during the COVID-19 pandemic. Questions on sun protection included in the 2019 survey were adapted in the 2022 survey due to the change in survey methodology from face-to-face to telephone. Therefore it is difficult to directly compare the findings of 2019 vs 2022.

Children's exposures to ultraviolet radiation – a risk profile for future skin cancers in Ireland[44]

83%

of school children reported sometimes and always using sunscreen

72% of schoolchildren reported that they wear sunglasses on a sunny day. Boys (50%) more frequently reported wearing hats than girls (44%). **50%** reported wearing protective clothing to cover arms and legs when in the sun

3% of 10 to 17 year olds reported using a sunbed. Providing a sunbed service, or the hire or sale of a sunbed to anyone under the age of 18 is a breach of the Public Health (Sunbeds) Act 2014

Nine out of 10 (88%) school children aged 10 to 17 reported at least one experience of sunburn

Around three quarters (74%) reported sunburn at least once during the past year

National Survey on Cancer Awareness and Attitudes[71]

95%

reported using at least one form of sun protection

75% use sunscreen of at least factor 30

The most commonly used form of sun protection is wearing long sleeves, a hat or sunglasses, with **79%** reporting that they do so

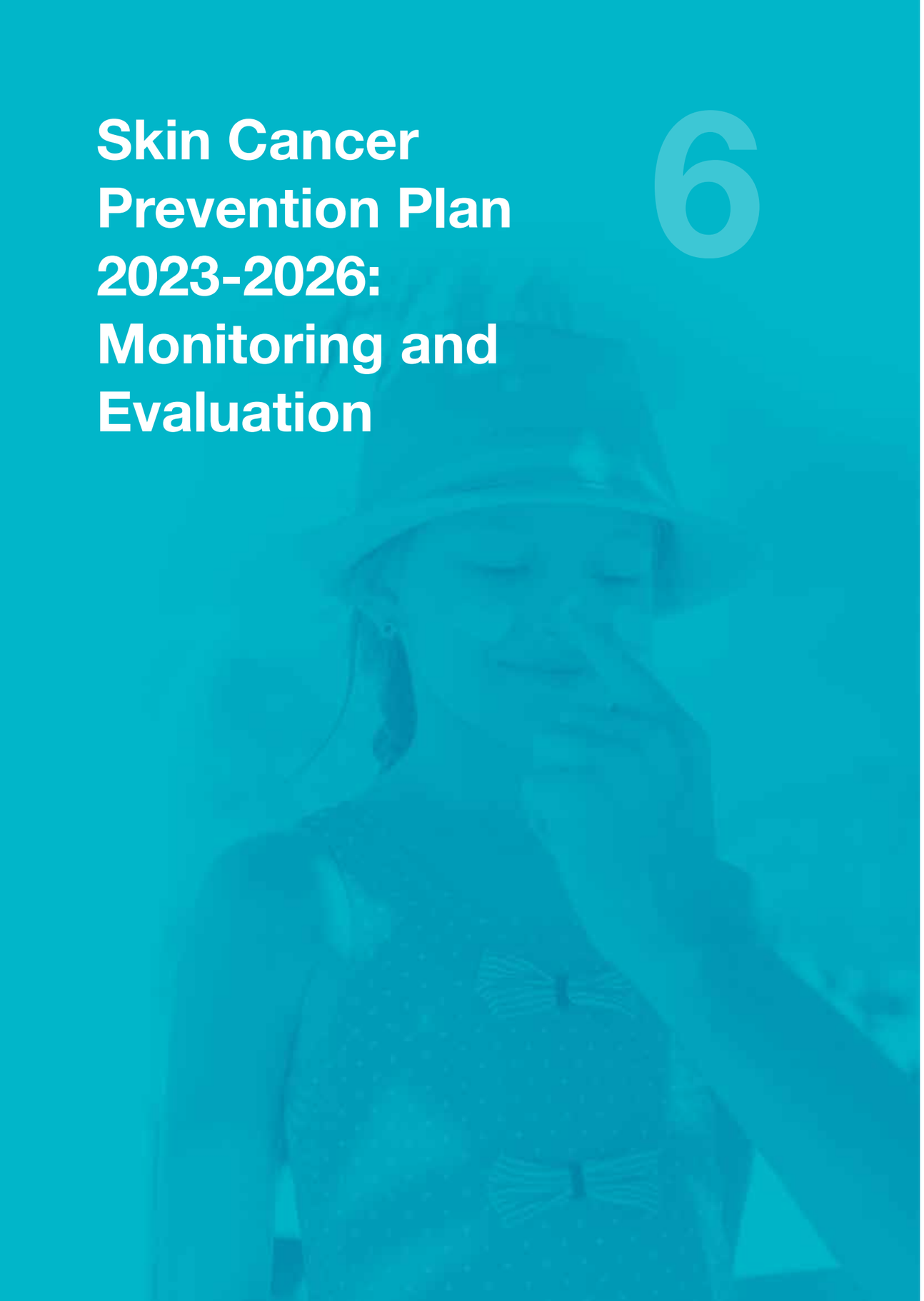
Limiting the amount of time spent in the sun (63%) the least commonly used form of sun protection

99%

parents/ guardians reported that they use at least one form of sun protection method for their child, including 97% who say that they use sunscreen of at least factor 50

Skin Cancer Prevention Plan 2023-2026: Monitoring and Evaluation

6



Outcome measures

The first Skin Cancer Prevention Plan 2019-2022 set out a number of long, medium and short term outcome measures to evaluate the effectiveness of the plan. Impacts on skin cancer rates will not be measurable in the short-term. Evaluations on the first Skin Cancer Prevention Plan 2019-2022[2] examined changes in sun protection awareness and behaviour and whether they are sustained over time. These will be measured in this plan also to continue evaluating the plan's effectiveness. Key medium-term outcomes are increases in individual's knowledge, awareness and behaviour change for sun protection. Ongoing monitoring and annual evaluation reports provide the opportunity to learn from and improve on existing interventions and messaging and adjust if necessary.

- The engagement of the SunSmart campaign via social media from 2020 was over 120,000 compared to the 2022 campaign which had over 300,000.
- Improvements in sun protective behaviours have been measured in the Healthy Ireland survey which showed an increase in people limiting time spent in the sun (31% in 2019[56] to 40% in 2022[57]).

Review

The Skin Cancer Prevention Plan Implementation Group will provide an annual report to the Department of Health reporting on progress made against the action areas and updating on any new developments made as part of the Plan. A formal review will be undertaken at the end of each calendar year to assess the progress and impact of the Plan against its objectives, targets and action areas. Learning from ongoing review of implementation will also inform the development of future plans.

Skin Cancer Prevention Plan 2023-2026: Vision and Action Areas

7

Vision

Consistent with the previous plan the vision of the National Skin Cancer Prevention Plan 2023-2026 is to increase awareness and adoption of skin cancer prevention behaviours, in order to reverse the rising incidence of skin cancer in Ireland.

What we are doing

We are facilitating a coordinated, collaborative approach to reducing the rising incidence of skin cancer in Ireland. This is being achieved by strengthening existing partnerships and continuing to develop new partnerships with key stakeholders such as cross governmental agencies, statutory bodies, healthcare professionals, community and voluntary organisations, patients, private sector organisations, and the wider public.

The plan uses a multi-strategy approach to contribute to reducing the rising incidence and mortality of skin cancer which includes:

- Education,
- Public awareness and behavioural change campaigns,
- Environmental measures,
- Policy changes.

The strategies will run across multiple settings including early learning centres, schools, workplaces, recreation and community settings.

The aim of the plan is to:

1. Increase awareness of skin cancer prevention
2. Improve adoption of skin cancer preventative behaviours
3. Monitor change and evaluate plan effectiveness

How we are doing it:

This plan aims to build on the previous plan to reduce the rising incidence of skin cancer across the Irish population. There are high risk groups who have been identified and need a more targeted approach which are:

- Children
- Adolescents and young people
- Outdoor workers
- Sports, recreation and tourism
- Sunbed users

The thematic areas detailed below elaborate on specific actions to be undertaken to implement the plan and how priority populations will be engaged.

Action Area 1:
Improve skin cancer prevention awareness and behaviours

Action Area 2:
Children (0-12 years)

Action Area 3:
Adolescents and young adults (13-24 years)

Action Area 4:
Outdoor workers

Action Area 5:
Sports, recreation and tourism

Action Area 6:
Sunbeds and other artificial UV sources

Action Area 7:
Oversight, monitoring, research and evaluation

Action Area 1: Improve skin cancer prevention awareness and behaviours

Surveys have shown that awareness of the need to protect from the dangers of too much sun has increased among the Irish population, with between 92%[56]- 95%[57] of the population using a form of sun protection. Sunscreen use is the most commonly used form of sun protection[44, 56, 57, 71]. Use of other sun protective behaviours such as seeking shade, covering up and wearing a hat is less common and requires additional focus. In addition, high levels of awareness do not always translate into behaviour change and further work is required in shaping social norms to protect skin from UV radiation.

Ref	Action	Lead Responsibility	Partners	Timeframe
1.1	Ensure that skin cancer prevention messaging is evidence based and in line with best practice.	NCCP	Implementation group	Annually
1.2	Develop resources to increase awareness of skin cancer prevention.	NCCP, HI	Implementation group	2023-2026
1.3	Provide avenues to support and work with stakeholders to implement skin cancer prevention awareness raising activities.	NCCP, HI	Implementation group	2023-2026
1.4	Develop and deliver an annual SunSmart communications plan to raise awareness of skin cancer prevention behaviours.	NCCP, HI	HSE Communications, ICPN, Implementation group	2023-2026
1.5	Integrate skin cancer prevention education into existing educational and training avenues for health and social care professionals.	NCCP	Professional education and training bodies including healthcare professional training bodies	2023-2026
1.6	Identify opportunities to include primary prevention messages in work to improve early diagnosis of skin cancer, and vice versa.	NCCP, HI	NCCP Early Diagnosis of Cancer Function	2023-2026
1.7	Continue engagement with Met Éireann to provide accurate and location-specific UV Index readings through the Met Éireann website and app.	Met Éireann	NCCP, HI	2025
1.8	Continue to collaborate with Met Éireann to deliver ongoing UV protection messaging to the public.	NCCP, HI	Met Éireann	Ongoing

Action Area 2: Children (0-12 years)

Exposure to UV radiation during childhood is particularly harmful. UV exposure during the first 10–15 years of life makes a disproportionately large contribution to lifetime risk of skin cancer[42]. Severe sunburn during childhood (3 or more instances before the age of 20) is associated with a 2-4 times higher risk of developing melanoma in later life[72]. Yet it has been found nearly 90% of 10- to 17-year-olds said they have experienced sunburn in their lifetime[44]. Parents and guardians have a key role to play to protect children's skin from UV exposure and ensuring adequate sun protection for children. Early Learning Centres (ELC) and schools also offer the ideal setting for educational and behavioural interventions to be implemented. Behaviours learned at a young age are more likely to be adopted for life. The existing Social, Personal Health Education (SPHE) and Science curricula at primary level provide the vehicle to address key UV and skin cancer prevention information and messaging in these settings.

Ref	Action	Lead Responsibility	Partners	Timeframe
2.1	Involve parents/guardians and parent groups in the development and promotion of skin protection resources for babies and children.	NCCP, Implementation group	DCEDIY	2023-2026
2.2	Engage ELC's to communicate up to date messages and advice about skin protection.	NCCP, Implementation group	The Better Start programme, Tusla, County City Childcare Committees	2023-2026
2.3	Identify opportunities to include messages about skin protection for children and parents.	Implementation group	DCEDIY	2023-2026
2.4	Continue to develop and disseminate resources in relation to skin protection for use in primary schools.	NCCP, Implementation group	NCCA, Scoilnet.ie	Ongoing
2.5	Scale up a SunSmart competition to promote messages and advice about skin protection for children.	NCCP, HI	Implementation group	2023-2026
2.6	In line with the updating of the Quality and Regulatory Framework/s for ELC settings, include current messages and advice about skin cancer prevention for young children.	Implementation group	Tusla	2023-2026

Action Area 3: **Adolescents and Young Adults (13-24 years)**

Adolescents spend more time in the sun than any other group and many do not see the relevance of sun protection[73]. Those aged under 35 are less likely to use at least one method of sun protection than those older than this (83% and 88% respectively)[57]. Reports indicate that there is a steady decline in sun protection behaviours from childhood to adolescence[74]. Therefore it is important that this population have specific target messaging and interventions. Research conducted with young people (12-18 years) in the previous Skin Cancer Prevention Plan 2019-2022 will help inform the development of initiatives.

Ref	Action	Lead Responsibility	Partners	Timeframe
3.1	Develop resources to increase awareness of UV risk and skin protection for adolescents and young adults using findings from previous research.	Implementation group		2023-2026
3.2	Engage with relevant partners to ensure sun safety is included in curricular resources for post-primary school students.	NCCP, HI	Scoilnet, HSE Education Programme	2023-2026
3.3	Identify and engage with stakeholders who work with adolescents and young adults to develop initiatives for young adults.	NCCP, HI	Higher Education Institutes, Union of Students of Ireland	2023-2026
3.4	Develop and disseminate resources in relation to skin protection for use in post primary schools, colleges and universities.	Implementation group	Spunout.ie Scoilnet.ie, Irish Second-Level Students' Union, Teachers Union of Ireland, Union of Students of Ireland	2023-2026

Action Area 4: **Outdoor Workers**

Outdoor workers are exposed routinely to high levels of UV radiation that can cause skin cancer. Outdoor workers can be exposed to between 2-3 times more UV radiation than indoor workers putting them at increased risk[75]. Research has highlighted that employers that adopt comprehensive approaches to occupational sun protection for their employees such as administrative policies, environmental controls, provide personal protective equipment (PPE) and employee education could be an effective way to increase outdoor workers use of sun protection and in turn reduce skin cancer rates in the outdoor worker industry[76].

Ref	Action	Lead Responsibility	Partners	Timeframe
4.1	Continue to identify and pursue opportunities to raise awareness of UV risk and skin cancer prevention among outdoor workers through the development of training and education.	Implementation group	Employer bodies, Employee representative groups, HSA	Ongoing
4.2	Promote resources to support employers to adopt policies for UV risk and skin cancer prevention for outdoor workers.	Implementation group	Employer bodies, Employee representative groups, HSA	Ongoing
4.3	Incorporate skin cancer prevention messaging and behaviours into healthy workplaces initiatives.	HI	Healthy workplace partners	Ongoing
4.4	Continue to partner with relevant stakeholders to develop skin cancer prevention best practice in the workplace.	Implementation group	Employer bodies, Employee representative groups, HSA	Ongoing

7. Skin Cancer Prevention Plan 2023-2026: Vision and Action Areas

Action Area 5: **Sport, Recreation and Tourism**

Increasing participation in sport and recreation is important for physical fitness and health. Many people participate in outdoor sport and leisure activities, and spend time in parks, open spaces, beaches and tourist sites. Promoting a safe environment including UV radiation protection for all in these settings is important and where key messages about UV radiation protection can be shared. Officials, coaches, trainers and other organisers of outdoor sports and recreational activities can act as positive role models for younger members in all aspects of sun protective behaviours.

Ref	Action	Lead Responsibility	Partners	Timeframe
5.1	Promote evidence informed messages on skin cancer prevention for those who participate in, or spectate at, outdoor sport, physical activity or leisure activities including tourism.	Sport Ireland, Implementation group	Sport national governing bodies, Local Sports Partnerships, GAA	2023-2026
5.2	Work with sports organisations to engage officials, coaches and sportspeople to champion UV protection behaviours and encourage skin protection among participants in recreation and community settings.	Implementation group	Sport national governing bodies, Local Sports Partnerships, GAA	2023-2026
5.3	Work with groups responsible for management of outdoor recreation areas to identify means of maximising skin protection including shade structures.	HI	Implementation group	2023-2026
5.4	Engage with local authorities to increase opportunities for sun protection in outdoor settings.	Implementation group	Depts. of Public Health, HSE Health & Wellbeing	2023-2026

Action Area 6: **Sunbeds and other artificial UV sources**

IARC classifies UV-emitting tanning devices as a Group 1 carcinogen[48]. Sunbeds emit UVA and UVB radiation. Most sunbeds in Europe emit UV radiation at levels equivalent to midday tropical sun[77]. Some sunbeds can emit UV radiation with an intensity equivalent to a UV index of >11 which means extreme risk of harm from unprotected sun exposure[78]. Research in Ireland[57] has shown that those aged 15 to 34 are most likely to use sunbeds now or in the future which is why a focus of this plan will be on this age cohort. This plan will continue to build on work already underway to reduce demand for sunbeds and other artificial sources of UV radiation.

Ref	Action	Lead Responsibility	Partners	Timeframe
6.1	Further raise awareness of the risk of sunbed use through education and communication channels.	NCCP, HI, HSE Communications	Implementation group	Ongoing
6.2	Review the health information provided to sunbed users as set out in Public Health (Sunbeds) (Health Information) Regulations 2015 (S.I. No. 50 of 2015).	DOH (FEHU)	NCCP, HSE/EHS	2023-2026
6.3	Develop, disseminate, and evaluate education and community outreach initiatives tailored to population groups where usage of sunbeds is highest.	Implementation group		2023-2026
6.4	Conduct research on sunbed use, characteristics, and motivations for tanning among the Irish population.	NCCP	Implementation group, Research bodies	2023-2026
6.5	Monitor and review implementation and enforcement by the HSE Environmental Health Service of the Public Health Sunbeds Legislation.	DOH (FEHU)	HSE/EHS	Ongoing
6.6	Update review on other emerging artificial sources of UV.	Implementation group		Ongoing
6.7	Explore feasibility of evidence-based fiscal measures on sunbeds in Ireland.	Implementation group		2026

Action Area 7: **Oversight, monitoring, research and evaluation**

The Implementation group will consider the need for additional research to assist effective implementation and monitoring as the plan progresses. Learning from ongoing review of implementation will also inform the development of future plans.

Ref	Action	Lead Responsibility	Partners	Timeframe
7.1	Re-establish an implementation group with key stakeholders.	NCCP, HI	Implementation group	2023
7.2	Report on implementation of this plan through National Cancer Strategy 2017-2026.	NCCP, HI	Implementation group	2023-2026
7.3	Identify, collate and conduct research to monitor changes in skin cancer prevention awareness and behaviours.	NCCP	Implementation group	2023-2026
7.4	Undertake annual review of implementation of plan and evaluate as appropriate the impact of targeted initiatives and interventions.	NCCP, HI	Implementation group	Annually
7.5	Assess the impact of an annual SunSmart communications campaign to ensure alignment with best practice, including tracking awareness, knowledge and behaviour change.	NCCP, HI	Implementation group	Annually
7.6	Conduct research and an evaluation to assess the use and effectiveness of shade in a range of settings in Ireland.	NCCP	Implementation group, Research bodies	2023-2026

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