Working together – NSW Skin Cancer Prevention Strategy 2023–2030



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ISBN: 978-1-76023-584-0 (online), 978-1-76023-583-3 (print)

Suggested citation

Cancer Institute NSW. Working together – NSW Skin Cancer Prevention Strategy 2023–2030.

Sydney: Cancer Institute NSW, 2023.

Acknowledgement of Country

We acknowledge the Traditional Custodians of the lands on which we work and live and recognise the continuing connection to land, waters and community. We pay our respects to Elders, past and present.

Acknowledgements

The Cancer Institute NSW would like to acknowledge and thank the many people and organisations that worked together to develop the NSW Skin Cancer Prevention Strategy 2023–2030.

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E23/18473; CI-0181-07.23

Partner organisations



Cancer Institute NSW





























Office of Sport



As more organisation partners come onboard, these logos will be updated.

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Foreword from the Minister for Health

The Hon. Ryan Park, MP Minister for Health, Minister for Regional Health



Introduction from the Cancer Institute NSW

Professor Tracey O'Brien NSW Chief Cancer Officer and CEO, Cancer Institute NSW



Skin cancer continues to be a significant health issue in NSW. More than 95% of skin cancers are caused by ultraviolet radiation (UV) from the sun. UV is at damaging levels for more than 10 months of the year in NSW, even on cool or cloudy days. Skin cancers can be prevented if we continue to work together to reduce overexposure to UV.

The successful outcomes of the previous NSW skin cancer prevention strategies were brought about by the strong investment and leadership provided by the NSW Government and the non-government sector. Excellence in collaboration among partners and effective governance facilitated the implementation of those strategies. In this third NSW Skin Cancer Prevention Strategy, we will build on our achievements and seek out new opportunities to further reduce the incidence of skin cancer in our communities.

The Cancer Institute NSW (Cancer Institute), as a pillar of NSW Health and our state's cancer control agency, will lead the implementation of this Strategy under the remit of the NSW Cancer Plan. Since its establishment in 2003, the Cancer Institute has demonstrated strong national and international leadership in cancer control, particularly in the prevention of cancer and the work to drive better outcomes through information, research, and education.

The goals of the NSW Cancer Plan include reducing the incidence of cancer. Preventing cancers such as those caused by the sun's harmful UV radiation continue to be a focus for the Cancer Institute and one where we still have gains to be made.

The success of this Skin Cancer Prevention Strategy requires a commitment beyond NSW Health. We know this is possible given the long-standing efforts and commitment of our NSW Government and non-government partners. We also recognise that effective collaboration with new partners from all parts of our community, including individuals, community organisations, and the private sector, must be harnessed and sustained.

That's why we have three goals in skin cancer prevention for NSW:

- 1 To embed skin cancer prevention initiatives across the public sector, private sector, and community.
- 2 To improve access to quality shade at work, school, play and in public spaces as part of a healthier built environment.
- 3 To increase the adoption of sun/UV protection# behaviours among those with low sun protection behaviours, those at high risk of skin cancer, and the broader community.

Working together, we can reduce the incidence of skin cancer in NSW.

This is the third Skin Cancer Prevention Strategy that has focused efforts across NSW on preventing the impact of skin cancer on our community. This Strategy recognises that skin cancer continues to be a substantial health issue and that sustained efforts in multiple areas are required to see improvements.

From 2016 to 2020 melanoma was the third most common cancer in NSW and this hasn't changed compared with the previous five years. Over the past 10 years from 2011 to 2020, melanoma incidence rates have increased. For such a preventable cancer there is still work to be done, to further reduce incidence and see incidence rates declining. Over the past 10 years melanoma mortality rates declined in both males and females. In 2016-2020, the age-standardised incidence rates were 66.5 cases per 100,000 for males and 42.5 cases per 100,000 for females.*

Much work has been done to date. Collaboration across sectors to create supportive sun safe environments has been a key strength of skin cancer prevention work in NSW over the past decade. The achievements of the last Skin Cancer Prevention Strategy include:

- Ongoing implementation of evidence-based public education campaigns.
- Increased adoption of sun protection policies and sun protection behaviours in sports settings.
- Development and implementation of the ShadeSmart Program for design professionals.
- Continued engagement with the SunSmart Program in schools.
- Quantifying and benchmarking shade in NSW playgrounds and demonstrating how existing playgrounds can be updated to decrease exposure to sun, decrease temperatures and increase usability.
- Providing sun-related training for managers of outdoor workers with a rebate for safety equipment including shade.

This Strategy will build on these achievements and give a new focus to aspects of skin cancer prevention that require further investment. Importantly, under this Strategy steps will be taken to understand the opportunities in secondary prevention of skin cancer, beginning with a review of the evidence, and collaboration with new partners in the healthcare setting.

In addition, this Strategy brings new focus to areas of understanding and activity in identifying and supporting groups in our community with low sun protective behaviours and a high risk of skin cancer.

The Cancer Institute looks forward to building on work over the last decade, together with NSW Government agencies and partners in the public sector, private sector and community, and harnessing innovations to 2030, to further prevent skin cancer in NSW.

^{# &#}x27;Sun protection' will be used throughout the Strategy to incorporate both sun and UV protection.

^{*} The data collection for the NSW Cancer Registry is based on biological sex (males and females), as gender is not currently collected.



NSW Skin Cancer Prevention Strategy 2023–2030

Vision: To reduce the incidence of skin cancer in NSW

Goals

1 To embed skin cancer prevention across the public sector, private

sector and community.

- 2 To improve access to quality shade at work, school, play and in public places as part of a healthier built environment.
- 3 To increase the adoption of sun/UV protection behaviours among those with low sun protection behaviours, those at high risk of skin cancer, and the broader community.

Strategies

Goal

- Build capacity and leadership of the public sector, private sector, and community partners to implement skin cancer prevention in their respective settings.
- Continue to develop, share, and promote adoption of evidence-based sun/ UV protection policies and procedures.
- Align skin cancer prevention with actions focused on complementary benefits of sun/UV protection.

Goal 2

- Take strategic action across priority settings with public sector, private sector and community partners to improve the availability of quality shade.
- Engage key stakeholders to improve awareness and understanding of quality shade at population level and in public infrastructure and green spaces.
- Measure and monitor the availability of quality shade in priority settings.

Goal 3

- Work together to ensure the community receives skin cancer messaging that is consistent, informed by evidence, and tailored for priority populations.
- Promote positive change in sun/UV protection knowledge, attitudes and behaviours at population level and among priority populations.
- Assess the impact of public education campaigns and other interventions that support sun/UV protection behaviours.

Priority settings

- Community
- Sport
- Education
- Recreation
- Workplaces
- Healthcare

Priority populations

- Children
- · Men 40 years+
- Adolescents

Young adults

- · Outdoor workers

Guiding principles

- · Reduce inequity
- · Build on strategic partnership

- Share responsibility
- Monitor progress and adjust activities

Skin cancer in NSW



Australia has one of the highest rates of skin cancer in the world, and skin cancer is one of the most common cancers affecting younger people in our community. We know that two out of three Australians will be treated for skin cancer during their lifetime. In 2018, an estimated 5,025 people were diagnosed with melanoma in NSW, which is expected to increase to 5,655 by 2033. Skin cancer is a major burden on the Australian health system. More money is spent on the diagnosis and treatment of skin cancer than on any other cancer. In 2017–2018, the total estimated expenditure was \$1.7 billion. A

Overexposure to UV from the sun causes more than 95% of melanoma and 99% of non-melanoma skin cancers.⁵ Skin cancers can be prevented by protecting your skin when outdoors by:





on protective clothing on SPF50+ sunscreen







SLAP on a wide-brim hat

SEEK shade

SLIDE on sunglasses

UV radiation from the sun is high (UV Index 3 and above) most of the year in NSW, even on cool or cloudy days when the sun is not visible. The term *sun protection* in this document is used to describe a range of measures and behaviours that reduce overexposure to UV radiation from the sun. Protection from the sun's harmful UV radiation is the best form of prevention of skin cancer.

Skin cancer strategies for NSW

The launch of this Strategy in 2023 is built on the successes and investments of the past two NSW skin cancer prevention strategies. This Strategy makes a commitment to continued dedicated effort across NSW Government and non-government partners, the private sector, and the community to reduce the impact of skin cancer on individuals, families, and all groups across NSW.

Over time, the incidence and impact of skin cancer has changed in NSW. Between 1988 and 2014:

- the incidence of melanoma increased in all age groups, although the rates were lowest in those under 40 years of age⁶
- invasive melanoma increased in people aged 60 and above, particularly in males
- melanoma mortality increased in males over 60 years, but overall mortality rates declined or remained stable.⁷

These results suggest that primary prevention in younger age cohorts can reduce the impact of skin cancer, and that we need to continue to improve awareness of skin cancer risk, and adoption of sun protection behaviours to successfully reduce overexposure to solar UV radiation and the incidence of skin cancer.8 Through primary prevention we can reduce rates of melanoma in the short and long term, as today's younger people age into the part of life where melanoma becomes apparent.

NSW has changed over time since colonisation and with migration. Skin cancer risk depends on personal behaviour and increases with characteristics such as skin type, hair and eye colour, number of freckles and moles, family history of skin cancer, and genetic constitution, however risk is not always determined by or limited to these characteristics. As people continue to immigrate to Australia from around the world, people of a wide variety of skin types join our already diverse population. This brings the need to ensure that people with all skin types are considered in skin cancer prevention initiatives, given the broad risk of UV overexposure in our sun-soaked environment, where the UV exposure is higher and riskier for skin cancers.

In NSW the proportion of the population born overseas has risen from 19.2% in 1971 to 29.3% in 2021. The <u>Australian Bureau of Statistics</u> states that four of the five Australian communities with the greatest proportion of people born overseas are in NSW. The top five increases in number of people by country of birth in recent years (2016–2021) are India, Nepal, China, Philippines and Vietnam. More recently arrived residents may not be aware of the UV index's high average in NSW and may not have been exposed to sun protection messages in their country of origin.

Given the diversity of NSW communities, it is important to design and implement skin cancer prevention activities with the guiding principle of reducing inequity and increasing access to culturally appropriate health information and services.







As with previous strategies, there will be an Evaluation Framework to detail how the Institute will monitor and evaluate the progress of the skin cancer prevention initiatives from 2023 to 2030.





Our goals



Between 2023 and 2030, the NSW Government and non-government sectors, private sector, and community partners will strive towards three goals for skin cancer prevention in NSW:

- 1 To embed skin cancer prevention initiatives across the public sector, private sector and community.
- To improve access to quality shade at work, school, play and in public spaces as part of a healthier built environment.
- 3 To increase the adoption of sun protection behaviours among those with low sun protection behaviours, those at high risk of skin cancer, and the broader community.

These goals are supported by strategies, priority populations, priority settings and guiding principles. As we move into the future, we will embrace new opportunities related to skin cancer prevention research, technology, campaigns, and programs.

In each of the goals, a key factor for success is leadership and 'buy-in' from sector, setting and organisational leaders with the influence to drive change at a system level. Leaders can provide the foundation for the successful adoption, scale up, and sustainability of sun protection initiatives. Similarly, champions and opinion leaders can play a key role, especially where they are highly placed and strong advocates.⁹



Goal 1: To embed skin cancer prevention initiatives across the public sector, private sector and community.

Overview

Making skin cancer prevention 'routine' across our priority settings requires a coordinated approach with the NSW Government and non-government agencies, the private sector, and the community. Collaboration across sectors to create supportive sun-safe environments has been a key strength of skin cancer prevention work in NSW over the past decade.

Between 2023 and 2030, this Strategy sets an ambitious objective to embed skin cancer prevention policy, procedures, programs and campaigns, in all our priority settings. This will require a transformational shift in the reach and impact of skin cancer prevention initiatives, from specific policies to organisation-wide approaches. To achieve this objective, this Strategy harnesses the strength of cross-sectoral strategic partnerships to drive further and deeper into our priority settings than ever before.

There are opportunities to increase the reach and impact of skin cancer prevention initiatives such as increased shade and sun protection behaviours, by linking them with complementary benefits including:

- heat management strategies that manage the risks associated with exposure to high temperatures while outdoors
- · encouraging physical activity and active transport
- enhancing social connection and wellbeing by being outdoors in a sun-safe environment.

Building on our achievements

This Strategy will build on the work of the previous two skin cancer prevention strategies, such as:

- influencing local planning and development policy in councils across NSW, to include shade to reduce overexposure to UV
- making submissions on state planning policy to embed sun safety into the built environment
- encouraging and increasing sporting and recreational organisations' adoption of sun protection policies, so people can be safer when physically active
- actively engaging with early childhood centres and schools, children and adolescents to foster sun protection behaviours early in life.

Cancer Council NSW SunSmart Program

The Cancer Council NSW's (Cancer Council) SunSmart program provides policy information, guidance, and implementation support to early childhood services and primary schools including out of school hours care, and information for secondary schools in NSW, including a template for sun protection policies.

The work carried out to promote sun protection policies and practices in schools through the SunSmart Program was found to be a particular achievement of the previous NSW Skin Cancer Prevention Strategy. It is intended that work will continue under the SunSmart Program through the term of this Strategy.

Key strategies

The information below outlines key strategies to help achieve the first goal — to embed skin cancer prevention initiatives across the public sector, private sector and community.

Build capacity and leadership among the public sector, private sector, and community partners to implement skin cancer prevention in their respective settings

This Strategy will create supportive environments for skin cancer prevention by leveraging frameworks such as the World Health Organization's Health Promoting Schools Framework and workplace health and safety models to provide contextual settings-based best practice guidance. These approaches encourage broad engagement, identify the role of leaders and champions in driving change, and suggest multi-component strategies that can be adapted to the needs and priorities of the settings.

For example, the school setting is key in protecting children and adolescents from the harms of UV. The 'Sun and UV at School' evidence-based teaching resources have been developed by the Cancer Institute in consultation with the NSW Department of Education, Cancer Council NSW, and other education and health sector representatives. Between 2023 and 2030 this Strategy will extend the reach and impact of the teaching resources in NSW schools including through the SunSmart program and the Melanoma Institute Australia SunSafe Student Ambassador Program in secondary schools.

Similar evidence-based, co-designed skin cancer prevention initiatives will continue to be tailored and developed in the period from 2023 to 2030, with current and new Strategy partners, to build capacity and leadership across sectors and settings for skin cancer prevention initiatives.



Samples from the Sun and UV teaching resources

Continue to develop, share, and promote adoption of evidence-based sun protection policies and procedures

In previous strategies much work has been done to establish and update evidence-based sun protection policies and procedures that are feasible in a range of settings, including workplaces, schools and sporting organisations. We have a growing understanding that strategic and operational procedures are fundamental to embedding sun protection as 'business as usual' across NSW, in the places residents work, learn and play, and in public spaces, as part of a healthier built environment. This growing knowledge base will support an increase in the reach and impact of sun protection policies and procedures.

Between 2023 and 2030 Strategy partners will:

- seek out strategic opportunities to maximise the promotion and adoption of policies
- support settings-based work to ensure that sun protection policies and procedures are implemented in practice.

Having a sun protection policy is a driver for improved protection measures in the workplace. The first Cancer Institute survey of NSW Government Sun Protection Policy in 2022–23 found that of the 46 agencies that completed the survey, 17 (37%) had a sun protection policy, guidelines or procedures. There was broad implementation of the sun protection control measures as per the Cancer Council NSW outdoor work health and safety guide, with an average of 12 out of 16 elements employed. The survey also found that workplace health and safety legislation is considered the strongest driver for 34 (73%) agencies, regardless of whether they have a policy currently available or not, and almost half (22) of government agencies that responded reported no barriers to sun policy implementation. The results and recommendations are being shared with government agencies.

Align skin cancer prevention with actions focused on complementary benefits of sun protection

This Strategy seeks opportunities to align skin cancer prevention initiatives with actions that are focused on the complementary benefits of skin cancer prevention. There are many complementary benefits, such as heat management, encouraging physical activity and active transport, and enhancing social connection and mental health wellbeing by facilitating being outdoors in a sun-safe environment. For example, improving the quality of shade can reduce exposure to UV radiation by up to 75%, 10 and it also provides increased thermal comfort, with surface temperatures reducing by around 20 degrees Celsius. 11

This Strategy will also support alliances to ensure that skin cancer prevention initiatives are innovative, creative, and educational. For example:

- Working with students, teachers and design professionals to develop creative and impactful resources.
- Supporting Science and Personal Development, Health and Physical Education curriculum teaching with educational resources and tools for teachers and students.



Actions for these strategies are set out in the NSW Skin Cancer Prevention Strategy Implementation Plan.

What success will look like

Successful implementation of the key strategies for Goal 1 will require workplaces, schools, universities, TAFEs, sporting and recreational organisations, public space managers, and our health services, to take a coordinated approach through strategic policy, operational procedures, programs and education. This coordinated approach reorients activity to making skin cancer prevention 'routine', while improving liveability of the environments where people work, learn and play.

Complementary benefits of skin cancer prevention

Enhancing social connection by promoting being outdoors in a sun-safe environment



Protecting individuals from skin cancer and other lifestyle cancers



Encouraging physical activity and active transport for better health outcomes



Increasing workplace safety and injury reduction (e.g sunburn, sunstroke, skin cancer)



Protecting local communities from climate impacts (climate change)



Enhancing mental health and wellbeing through promoting being outdoors in a sun-safe environment



Heat management strategies that manage exposure to high temperatures while outdoors (climate comfort)



Economic benefits including sustainable infrastructure, reduced healthcare costs, and an effective planning system



A whole of setting approach is more impactful and strengthens communities











Results from the Have your say* survey undertaken in developing this Strategy, suggest that there is an appetite among the community for skin protection activities to be widespread. Support for the broad range of sun protection activities extended across different age groups and among people regardless of their individual risk of skin cancer.



[#] Have your say is a NSW Government community engagement page maintained by the Department of Customer Service.



Goal 2: To improve access to quality shade at work, school, play and in public places as part of a healthier built environment.

Overview

Quality shade is a well-designed and correctly positioned combination of natural and built shade and can reduce solar UVR exposure by up to 75%.¹²

Shade provision across the community is critical to skin cancer prevention. Quality shade can be provided in the natural environment (e.g tree canopy and portable shade) and in the built environment (e.g covered outdoor learning areas in schools, shade structures for workplaces, playgrounds and pathways, purposeful tree planting within the built environment, and shade shelters at transport stops).¹³ Shade initiatives promote adoption of sun protection behaviours and have a co-benefit of encouraging physical activity and using active transport in outdoor spaces. The Cancer Institute will collaborate with current and new partners in this Strategy to improve access to high-quality shade where people work, learn. play and in public spaces. Improving access to shade as part of a healthier built environment is also facilitated by public education campaigns, and implementation of evidence-based policies, that promote adoption of sun protection behaviours.

Building on our achievements

This Strategy builds on the work of the previous two NSW skin cancer prevention strategies, to continue:

- educating, motivating and enabling planning and design professionals to incorporate shade in the natural and built environment
- measuring and monitoring the availability of shade in public places such as parks and playgrounds
- demonstrating the ways existing built environments can be made healthier by increasing access to high-quality shade.

The Benchmarking Shade in NSW Playgrounds project commissioned by the Cancer Institute found:

- Of the 2,592 audited NSW playgrounds, 19% (n=504) had no shade over play equipment.
- In shaded playgrounds, 70% (n=355) had at least some built and tree shade, which is considered the ideal combination for heat and UV protection. However, typically only a quarter of the playground area was shaded.

Premier's priority: Greening our cities

The Greening our City Premier's Priority achieved its aim to increase the tree canopy and green cover across Greater Sydney by planting one million trees by the end of 2022. This was part of a broader commitment by the NSW Government to plant five million trees by 2030 and bring the average canopy coverage to 40% across Greater Sydney.

Key strategies

The information below outlines key strategies to help achieve the second goal – to improve access to quality shade at work, school, play and in public places as part of a healthier built environment.

Take strategic action across priority settings with public sector, private sector, and community partners, to improve the availability of quality shade

Strategic engagement across various sectors for shared responsibility in the need to provide better access to quality shade, including:

- early childhood centres, primary and secondary schools, universities, and TAFE facilities
- staff, employers and industries with outdoor workplaces, including people holding duty of care for workplace health and safety
- State Sporting Organisations, recreation and tourism providers, and event organisers
- public buildings and infrastructure such as hospital precincts
- precinct, land use and transport planners and managers across state and local governments.

By working across priority settings, this Strategy improves the availability of, and access to, quality shade. Engage key stakeholders to improve awareness and understanding of quality shade at population level and in public infrastructure and green spaces

Providing shade in the built environment is critical to ensuring all members of the population have access to quality shade for UV protection. This includes both natural shade such as tree cover and built shade such as shade structures and shade-smart building design. Portable shade structures such as cabanas can provide quality shade in a cost-effective way and allow easy movement to adjust the shade as the UV changes through the day.

This Strategy sees partnerships with local government, state government departments, and planning and design professionals as essential to develop and support infrastructure requirements for quality shade in the built environment.

We will also raise community awareness of what quality shade is for sun protection. This will enable community members to make sun-safe choices when outdoors.

Measure and monitor the availability of quality shade in priority settings

In the previous Strategy, the Cancer Institute commissioned the Benchmarking Shade in NSW Playgrounds project that collated data about the extent of shade in over 2,500 playgrounds in 91 local government areas, between 2020 and 2021. Recommendations and opportunities for future action have been developed following this project and will be progressed in the term of this Strategy. With the benchmark methodology, datasets can be repeated and compared to monitor the availability of quality shade through to 2030.

Actions for these strategies are set out in the NSW Skin Cancer Prevention Strategy Implementation Plan.

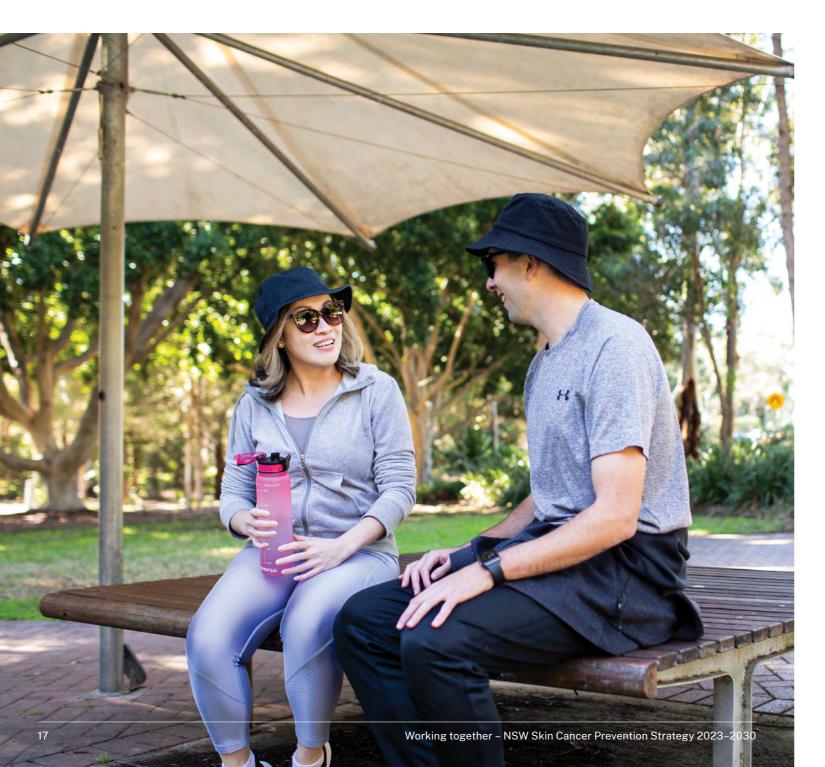
What success will look like

Successful implementation of the key strategies for Goal 2 will mean that all people in NSW live in healthier built environments that provide high-quality shade, protecting them from the sun and encouraging them to seek shade and reduce their risk of skin cancer.

In developing this Strategy, Have your say* respondents expressed their overwhelming support for there to be improved shade provision such as trees or shade systems in school yards, at the beach, bus stops, sporting events, and in public parks.

"All playgrounds, outdoor recreational areas and sports grounds/fields should have shade structures and shade sails built into the design. More shade trees should also be planted around parks, playgrounds and sporting areas to give plenty of adequate space for kids & adults to get out of the sun. There are too many places where there is little to no shade available."

* Have your say is a NSW Government community engagement page maintained by the Department of Customer Service.





Goal 3: To increase the adoption of sun/UV protection behaviours among those with low sun protection behaviours, those at high risk of skin cancer, and the broader community

Overview

In a high-UV environment such as NSW, it is critical that individuals, families and communities understand the risk of skin cancer and adopt the behaviours that are proven to provide protection from harmful UV. In NSW, UV is high enough (i.e. 3 or above) to damage skin at least 10 months of the year, 14 so people need to take action to lower their exposure to UV as they work, learn, and play in their communities.

Delivered by the Cancer Institute, NSW has a record of excellence in government-led social marketing and public education campaigns to address awareness and adoption of sun protective behaviours. The success of these campaigns is largely due to strong alignment to available evidence, extensive research and testing with audiences, use of best-practice behaviour change theory and practice, robust campaign evaluation to guide improvements over time, and coordination across stakeholders. Together with campaign and education activities by Cancer Council NSW and Melanoma Institute Australia, this has been effective in developing sun protection knowledge and awareness across the NSW population and among priority populations. In this way, social marketing and public education campaigns underpin the achievement of many other Strategy initiatives.

Building on our achievements

This Strategy builds on the work of the previous two NSW skin cancer prevention strategies to reinforce sun safe attitudes and behaviours through:

- delivering social marketing and public education campaigns, especially to populations with low sun protection behaviours, those at high risk of skin cancer, and the broader community
- co-designing and implementing tailored, innovative programs in workplace, school, and sporting and recreation settings to increase the adoption of sun protection behaviours.

Key strategies

The information below outlines key strategies to help achieve the third goal to increase the adoption of sun protection behaviours among those with low sun protection behaviours, those at high risk of skin cancer, and the broader community.

Work together to ensure the community receives skin cancer messaging that is consistent, informed by evidence, and tailored for priority populations

There has been an evolution in the development of consistent communication of information across the various organisations involved in skin cancer prevention public education activities. There is a new desire to promote sun-safe messaging in organisations that previously have not undertaken public education activities regarding sun protection, such as the Australian Institute of Landscape Architects inaugural ShadeSmart Award in 2022.

To maximise the benefit of public education, it is important there is a consistent and evidence-based approach to sun protection messages. The core, consistent messages can be communicated by a range of organisations, while retaining the unique 'voice' of each organisation for their specific audiences.

Evaluation of the previous strategy highlighted the need to improve sun protection messages, including those focused on increasing understanding of personal risk and balancing UV protection with the benefits of sunlight exposure. As part of this Strategy, the partner organisations commit to refining skin cancer prevention messaging to include:

- new evidence for messages that communicate best practice sun protection behaviours and reinforce negative impacts of overexposure to UV
- messages that increase individuals' understanding of their personal risk for skin cancer and necessary sun protection behaviours
- messages that are tailored for priority populations and settings, so individuals are more likely to adopt sun protection behaviours including Slip, Slop, Slap, Seek and Slide.

The partners of this Strategy have expertise in addressing advertising, promotion and marketing that promotes improved sun protection behaviours through advocacy strategies. Cancer Council NSW and the Melanoma Institute Australia have significant capability in this area to work to promote good sun protection behaviours and provide information about the negative impacts of tanning.

Promote positive change in sun/ protection knowledge, attitudes and behaviours at population level and among priority populations

Between 2023 and 2030 work will continue to focus on the education of children, adolescents, and young adults, along with other priority populations identified throughout the life of this Strategy. New campaigns are underway, and others will be developed across the term of this Strategy. The 'If You Could See UV' campaign (launched by the Cancer Institute in summer 2022–2023) aimed to increase sun protection behaviours among young people to reduce their lifetime risk of developing skin cancer. The campaign demonstrated the scale and danger of UV rays by depicting them as

illuminated 'Arrows' hurtling down from above, transforming them into a real and ever-present threat even on cool or cloudy days. The campaign was delivered across a range of mass media channels, including social media, YouTube, digital display, cinema, music apps and outdoor advertising. Campaign messages included:



- Melanoma is one of the most common cancers among young Australians.
- If you could see UV radiation, you would protect your skin.
- Be prepared before you go outdoors.
- Protect your skin in five simple ways: Slip, Slop, Slap, Seek, and Slide.

A new campaign also launched in 2023 targeting outdoor workers due to their higher risk of skin cancer.

Several behaviour-change initiatives have already been implemented in the school priority setting, including Cancer Council's SunSmart Program in early childhood settings and primary schools, and the Melanoma Institute SunSafe Student Ambassador Program.

Assess the impact of public education campaigns and other interventions that support sun protection behaviours

In line with best practice, public education campaigns continue to be developed and evaluated by the Cancer Institute. Each campaign will undergo a fit for purpose evaluation. The evaluations will inform the media strategy and creative content for subsequent campaigns. Evaluation of campaigns also help to guide new partnerships and initiatives.

To track progress towards meeting the goals of this Strategy, an overarching monitoring and evaluation framework will be developed by the Cancer Institute to identify how outcomes from specific strategies will contribute to the overarching goals of this Strategy and develop methods for monitoring progress and outcomes of initiatives that target priority populations identified in this Strategy.

What success will look like

Successful implementation of the key strategies for Goal 3 will mean that people in NSW, especially those with low sun protection behaviours and at high risk of skin cancer, are aware of sun protection behaviours and practice them regularly at individual, family, and community levels when outdoors.

Actions for these strategies are set out in the NSW Skin Cancer Prevention Strategy Implementation Plan.

Priority settings



As with the previous skin cancer prevention strategies, this Strategy recognises there are key places (priority settings) that present opportunities to impact people's knowledge, attitudes and beliefs about exposure to UV, and provide a greater opportunity to influence sun protection behaviours. Priority settings are places where people work, learn, and play, as well as public places. Settings have also been given priority based on the existence of an organisational influence that can support sun protection through policies, procedures, programs, education, and leadership.

The priority settings are:

- Community, including built environments, public places and transport waiting places (e.g bus stops, train stations) and corridors.
- Education, including early childhood centres, primary and secondary schools, TAFE, universities, and colleges.
- Workplaces, especially industries and workplaces where people work outdoors.
- Sport, including sporting organisations and places where sport is played.
- Recreation, including recreational organisations and places such as parks, beaches and event destinations.
- Healthcare, including primary care services and health professionals.

The opportunities for early detection of skin cancer in the Healthcare setting will be explored in the first three years of this Strategy, before further decisions are made about secondary prevention activities. While primary prevention has been and remains the focus of the NSW Skin Cancer Prevention Strategy, there is a growing need to better understand and identify opportunities to improve early detection of skin cancer. Contributing to improved early detection of skin cancer requires an understanding of the available evidence (and evidence priorities), and the establishment of new partnerships with stakeholders including healthcare consumers and healthcare providers.



Priority populations



We know that all people in NSW are at risk of overexposure to UV, so this Strategy continues to use a universal and population-level approach. However, priority populations have been identified as needing tailored and targeted skin cancer interventions, in recognition of their particular risks. The following key populations will be the priority groups through to 2030:

- Children 12 years of age and under
- Adolescents 13–17 years of age
- Young adults 18-24 years of age
- Men 40 years of age and older
- Outdoor workers

The previous Strategy undertook significant work to enhance skin cancer prevention efforts among men 40 years and over, and among outdoor workers, recognising the higher incidence of skin cancers among these groups. In this Strategy, work will expand to encompass all outdoor workers given their UV exposure risk. This will have a greater impact on reducing people's likelihood of getting skin cancer by intervening earlier. It also recognises that women work in outdoor settings, and facilitates women being a secondary audience in this area of activity.

Children 12 years of age and under

The risk of developing melanoma and other skin cancers is strongly related to high exposure to UV radiation in childhood. We also know there are opportunities to influence children's exposure to UV through early childhood and education settings, and this work continues under this Strategy.



Adolescents aged 13-17 years

Adolescents tend to adopt sun-protective behaviours less frequently than adults, and it is more challenging to achieve attitude and behaviour changes. They also spend more time in the sun than other age groups and so their skin cancer risk are high. 16 Continuing to focus on this age group remains a priority for this Strategy.

Young adults aged 18–24 years

Similarly, young adults tend to adopt less sun-protective behaviours than older adults and are at risk due to the amount of time they spend in the sun.^{17,18} This group also remains a priority for this Strategy.

Men 40 years of age and older

There is growing evidence that relative risk of melanoma increases with UV exposure in later life. 19,20 The incidence of melanoma increases dramatically for males in their 40s. There is also evidence to suggest that middle aged men have low levels of skin cancer awareness and exhibit less sun protection behaviours than women. 21,22 This increasing evidence suggests older adults, particularly males, should be targeted with specific sun protection strategies.

Cancer Institute NSW November 21, 2020 · Novem

Outdoor workers

Outdoor workers are defined as people required to work outdoors during daylight hours, where sun exposure is often unavoidable, and during peak UV times of the day. Evidence suggests that outdoor workers are at increased risk of developing skin cancer and tend to use inadequate levels of sun protection to minimise this risk.²³ Outdoor workers are exposed to over three times more UV than indoor workers, putting them at higher risk of skin cancer.^{24,25} Employers of outdoor workers and others with a duty of care for outdoor workers' health and safety.

Australian farmers are an example of a higher-risk group. Evidence from studies assessing the sun protection behaviours of Australian farmers suggests there is a need for targeted primary prevention messages to encourage farmers to:

- access sun protection clothing
- improve their sun protection behaviours
- seek early detection skin checks. 26,27,28

Areas of focus



Over the term of this Strategy, we will investigate and consult to determine appropriate activities to reduce the incidence of skin cancer in NSW. This includes understanding more about:

- groups identified in emerging research with a higher risk of skin cancer or lower adoption of sun protection behaviours
- awareness of the risks and impact of skin cancer among Aboriginal communities and opportunities to improve outcomes
- awareness of the risks and impact of skin cancer among rural and remote NSW communities and opportunities to improve outcomes
- the opportunities to improve and influence early detection of skin cancer across all communities, including primary care.

Groups at higher risk of skin cancer

An individual's risk of skin cancer from UV exposure is determined by both personal behaviours and characteristics such as skin type, hair and eye colour, number of freckles and moles, family history of skin cancer, and genetic constitution. We are beginning to generate increasing knowledge and understanding of the risks and benefits of solar radiation for people depending on a range of factors including skin type. Prevention activities for people with greater risk factors for skin cancer will continue to be a focus area for work. We also have a better understanding of how genomes contribute to the development of skin cancers. This may enable better identification of individuals at high risk of skin cancer for targeted population-level screening.²⁹

Identify your skin type

Everyone's skin is different and reacts differently to the sun. By knowing how sensitive you are to burning, you will be able to take better precautions to protect your skin.

What's my skin type?

Match your skin to the colour that best resembles your own.

Skin types 1 and 2 are at greatest risk of developing skin cancer, so make sure to be vigilant about protecting your skin. For these skin types, UV damage may occur even when UV levels are below 3. Check your skin regularly, be aware of any changes and see a doctor if you notice anything.

Skin types 3–5 can become darker with sun exposure.
This is your skin's way of signalling UV damage which can lead to skin cancer.
Always protect your skin from the sun whenever the

UV index is 3 and above.

Skin type 6 offers more

radiation than other skin

types, but skin cancers can

occur in people with very dark

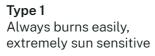
skin. Your eyes are vulnerable

to damage from UV radiation,

so wear a hat and sunglasses

and avoid excessive exposure.

protection against UV





Type 3 Sometimes burns, minimally sun sensitive



Type 6
Never burns, deeply pigmented, skin not sensitive to sun



Type 2
Always burns easily, very sun sensitive



Type 4
Burns minimally,
minimally sun sensitive



Type 5
Rarely burns, skin
not sensitive to sun



Adapted Fitzpatrick scale: cancer.nsw.gov.au/skin-type

Aboriginal people and communities

Cancer control data related to Aboriginal people in NSW demonstrates that melanoma is the fourth-most common diagnosed cancer for Aboriginal women and the fifth-most common diagnosed cancer for Aboriginal men.³⁰ Approximately one-third of melanomas are diagnosed among Aboriginal people who are under the age of 50 years, and the median age of diagnosis is 60 for Aboriginal people (and 67 for non-Aboriginal people). This data supports evidence from the literature,³ noting that the combined burden of melanoma and non-melanoma skin cancer in Aboriginal communities is significant, with lower incidence but higher mortality than the general population. There is also some evidence to suggest there are disparities in relation to access to diagnosis and treatment of skin cancer in Aboriginal communities, 32 with the authors of this study suggesting that improving skin cancer awareness to allow earlier detection and management is important.

Notwithstanding the data and information presented here, we need to collaborate with Aboriginal people and organisations, to understand more about the risks and impacts of skin cancer in Aboriginal communities, and codesign initiatives to address the issues that are identified.

Rural and remote **NSW** communities

Across NSW there is considerable regional variation in melanoma rates. Higher incidence rates occur along the coast, and these rates are generally higher in the northern parts of the State. In 2022, melanoma incidence was significantly higher among Local Health District residents of Northern NSW. Mid North Coast. Hunter New England, Central Coast and Western NSW.33 These data may inform work in rural and remote NSW communities in relation to primary prevention, and secondary prevention including early detection of skin cancers.

Secondary prevention of skin cancer

At the commencement of this Strategy, we are committing to exploring the role of secondary prevention of skin cancer. The NSW Government and non-government organisations reflected on potential secondary prevention initiatives in the evaluation of the previous Skin Cancer Prevention Strategy and in consultation for this Strategy. Stakeholders consider it the right time, at the commencement of this new, future-focused Strategy, to consider efforts beyond primary prevention of skin cancer, and include a focus on early detection.

Secondary prevention initiatives are likely to include exploring early detection of skin cancer to reorienting health services to achieve better health outcomes for people with a skin cancer diagnosis. Activities could include 'know the skin you're in' messaging to encourage people to check their own skin for changes and seek a medical skin check if needed, especially among people who are at higher risk of skin cancer. The first action will be that the Cancer Institute commission an evidence review into early detection to build on existing evidence about current approaches and new opportunities.³⁴ Some areas for consideration include:

- · effectiveness of current methods of early detection of skin cancer, considering the range of service providers and acceptability among priority
- · economic costs and benefits and the mix of public and private providers of skin checks
- the current and potential roles of a range of health practitioners in detecting skin cancer
- potential for digital innovation and the role of technology in similar health issues
- investigation of data sources for greater monitoring of keratinocyte (non-melanoma) skin cancers in primary care.

In line with our commitment to evidence-based action, further steps will be based on the review of evidence. Activity in this area will be reported through this Strategy's governance, and we aim to contribute to the generation and dissemination of evidence in this area of focus.

Guiding principles



Guiding our activity in skin cancer prevention are principles that apply across populations, settings, and investments. These guiding principles will be put into practice under each goal, with every strategy intended to reflect and contribute to the principles. The guiding principles will also support ongoing decision-making about resourcing emerging developments in skin cancer prevention and early diagnosis and taking up new opportunities as we make progress towards 2030. The principles draw upon the strengths of long-standing cross-sectoral partnerships in skin cancer prevention and communicate common values and goals.

In our work to prevent skin cancer in NSW, our guiding principles aim to:

- reduce inequity in access to skin cancer prevention policies, programs and campaigns by focusing on the needs of priority populations
- build on strategic partnerships and initiatives under previous strategies to work together to achieve the best skin cancer prevention outcomes by undertaking targeted activities that have the capacity to influence and leverage change
- share responsibility to reduce the incidence of skin cancer across the public sector, private sector, and the community by engaging setting and sector leaders and encouraging innovative and sustainable skin cancer prevention initiatives
- monitor progress and adjust activities of skin cancer prevention policies, programs and campaigns using data, information and innovation to monitor and adjust our actions in line with these learnings and insights.

The Skin Cancer Prevention Strategy guiding principles link closely with the Overriding Principles in the NSW Cancer Plan:



Equity of outcomes

Improve cancer outcomes in communities that continue to have poorer outcomes to help everyone achieve their best health.



Person-centredness

Focus on the experiences of people with cancer and those accessing screening and prevention services. to ensure they achieve outcomes that are meaningful to them.



Collaboration

Work together at the system, service and care team levels with clear roles, accountabilities and governance, to achieve the best cancer outcomes.



Working together



Since the first NSW Skin Cancer Prevention Strategy in 2012, strong partnerships have been formed to collaboratively determine the strategic approach to skin cancer prevention. This strategic approach has ensured that activity is implemented in a coordinated way across NSW Government, the public sector, private sector, and the community. The strength of collaboration was evidenced in the evaluation of the NSW Skin Cancer Prevention Strategy 2016–2022 which found three over-arching achievements underpinning implementation and delivery:



Excellence in coordination and collaboration across sectors.



Strong leadership and substantial investment by NSW Government and non-government agencies.



Effective and strong governance.

Strategy partners will build on and extend these achievements in this Strategy, to continue to work together to reduce the incidence of skin cancer in NSW. Working together means developing shared intent around the vision to reduce the incidence of skin cancer in NSW and is the platform by which we activate shared responsibility. We are more likely to achieve the shared intent by leveraging each other's activities, strengths, settings and stakeholder relationships. We can also increase the return on investment when we collaborate by creating scale and efficiency.

Further information follows on the strategic plans and partnerships that enable working together.

Future Health: Guiding the next decade of care in NSW 2022–2032



The NSW Government has released Future Health: Guiding the next decade of care in NSW 2022–2032, a roadmap for how it delivers services over the next 10 years, including the strategic priority that people are healthy and well.

"An increased focus on promoting positive health behaviours across the population, delivering early

risk-based interventions supporting people to manage their own chronic conditions and being responsible for their own health across their lifespan, will not only help strengthen the opportunity for people to benefit from wellness no matter their age, but relieve some of the pressure on the [Health] system".³⁵

This Strategy contributes to the Future Health key objectives by:

- · partnering with communities
- driving greater health literacy and access to information
- strengthening equitable outcomes and access for rural, regional and priority populations
- supporting healthy ageing
- closing the gap by prioritising programs and care for Aboriginal people
- partnering to address the social determinants of ill health
- advancing and translating research and innovation
- · accelerating digital investments
- ensuring health data and information is high-quality, integrated, accessible and utilised.

Cancer Institute NSW and the NSW Cancer Plan

The Cancer Institute provides leadership and investment in skin cancer prevention and has been the NSW Government agency with responsibility for the previous skin cancer prevention strategies. The Cancer Institute is the lead agency for cancer control in NSW and is a co-lead in many areas of the NSW Cancer Plan, alongside other organisations and across government and nongovernment sectors.

The Cancer Institute commits to extending its leadership and resources to overseeing the implementation of this Strategy to 2030 and operationalising the NSW Skin Cancer Prevention Advisory Committee to facilitate activities under the Strategy. This Strategy contributes to the Cancer Plan by:

- Aligning the vision of this Strategy to reduce the incidence of skin cancer to the Cancer Plan vision to end cancers as we know them, and to the Cancer Plan goal to reduce the incidence of cancer.
- Aligning the principles of the Cancer Plan and this Strategy, especially the principles of equity of outcomes and collaboration.



- Taking up the Cancer Plan priorities of prevention of cancer, and screening and early detection of cancer.
- Engaging the Cancer Plan system enablers of leadership and culture, data and information, technology and innovation, governance, monitoring, evaluation, and reporting.

The Cancer Institute makes a range of investments in skin cancer prevention, through its Skin and Lifestyle Cancer program portfolio and cross-divisional teams.

Some of its substantial investments:

- Oversight of the NSW Skin Cancer Prevention Strategy, leadership of governance and secretariat for the Skin Cancer Prevention Advisory Committee and working groups.
- Social marketing campaigns and social media communications promoting sun protective behaviours.
- Research, development and evaluation of skin cancer prevention initiatives.
- Engagement with key stakeholder groups including Primary Care, local health districts, NSW Government agencies (including Education, Planning and SafeWork NSW), Aboriginal community-controlled services and the Aboriginal Health and Medical Research Council.

Development of the NSW Skin Cancer Prevention Strategy 2023–2030

This Strategy has been developed within our framework of working together. Building this Strategy incorporated a range of evidence and consultation outputs, including:

- adopting the implications of the evaluation of the previous Strategy, which involved document review and consultation with cross-sector Strategy partners
- reviewing Cancer Institute data about the incidence of melanoma
- consulting with other Australian jurisdictions and national bodies regarding skin cancer prevention initiatives
- discussions with key experts and advocates, and consultation with a broader range of stakeholders
- a public survey of NSW citizens and a public sector survey to facilitate community engagement in direction-setting and prioritisation.



Related NSW Government Strategies include:

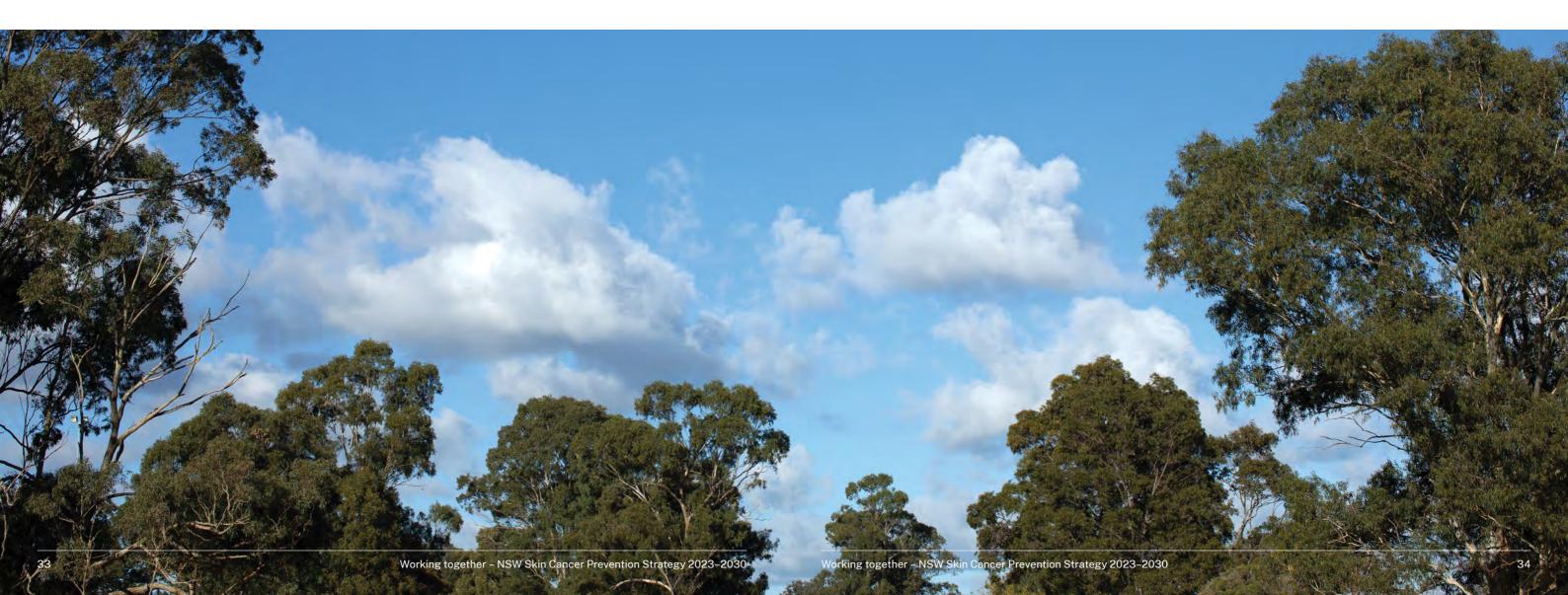
- Future Health: Guiding the next decade of care in NSW 2022–2030
- NSW Cancer Plan 2022-2027
- NSW Healthy Eating and Active Living Strategy 2022–2032
- NSW Regional Health Strategic Plan 2022–2032
- The Greening our City Premier's Priority
- NSW Climate Change Adaptation Strategy
- NSW Office of Sport Strategic Plan 2020–2024³⁶

Related national strategies include:

- The Australian Government's National Preventive Health Strategy 2021–2030, which notes skin cancer as a cancer-related burden of disease.
- The Melanoma Institute Australia's State of the Nation – A report into melanoma (2022).

NSW Skin Cancer Prevention Advisory Committee and working groups

Collaboration between member organisations of the NSW Skin Cancer Prevention Advisory Committee facilitates communication and engagement between sectors and helps define priorities and opportunities or impediments to working on skin cancer prevention. The working groups enable members to use their knowledge and experience, with a broad range of stakeholders representing priority settings and populations. The opportunities to work together demonstrate effective action and positive engagement, and this will continue and grow in the period from 2023 to 2030.



Implementation, governance and monitoring



Implementation

The Cancer Institute leads the implementation of this Strategy alongside its NSW Government and nongovernment Strategy partners. The implementation will be divided into three horizons which will allow focused attention and planning to priority actions. These horizons are:

- 2023-2025
- 2026-2027
- 2028-2030

An Implementation Plan will be developed in line with each of these phases and reviewed throughout the term of this Strategy to ensure these plans can be updated and refined as activities progress and learnings are collated. Attached to this Strategy is the foundational Implementation Plan 2023–2025 which has been populated using the key insights obtained through the development of this Strategy, the targeted consultation with current and new strategic partners, and the evaluation of the previous Strategy.

Governance

Given the success of the governance structures to date, the core elements will continue. The NSW Skin Cancer Prevention Advisory Committee, and a series of working groups, will continue and may expand to incorporate focus areas and areas of emerging interest. The governance structures will also expand to host and facilitate project groups that will enable the focus areas of work, introduce new partners in skin cancer prevention, and adopt new multi-party approaches to Strategy implementation.

These organisations have committed to participate in the governance of this Strategy:

Association of Independent Schools of NSW

Australasian College of Dermatologists

Australian Institute of Landscape Architects (AILA)

Cancer Council NSW

Cancer Institute NSW

Catholic Schools NSW

Melanoma Institute Australia

NSW Department of Education

NSW Environment Protection Authority

NSW Farmers Association

NSW Ministry of Health

Office of Sport

SafeWork NSW

Sports Medicine Australia

The Daffodil Centre – University of Sydney and Cancer Council NSW.

Additional organisations and individual experts are involved in working groups. Governance partners may be expanded to incorporate new organisations able to influence the work of the Strategy.

Evaluation, monitoring and reporting on progress

To track progress towards meeting the goals of this Strategy, an overarching monitoring and evaluation framework will:

- detail short-, medium-, and long-term outcomes and identify how outcomes from specific activities will contribute to the overarching goals of this Strategy
- articulate processes for monitoring progress and impact of the Strategy
- outline the frequency and timing of monitoring, reporting, reviews and evaluation activities.

References



- 1 Cancer Institute NSW, https://www.cancer.nsw.gov.au/prevention-and-screening/preventing-cancer/ preventing-skin-cancer. Accessed 4 July 2023
- 2 Cancer Institute NSW, Cancer statistics NSW: https://www.cancer.nsw.gov.au/research-and-data/ cancer-data-and-statistics/cancer-statistics-nsw#// Accessed 4 July 2023.
- 3 Australian Institute of Health and Welfare, Disease Expenditure in Australia 2018-19, cited in Inform Economics (2023) Cost benefit analysis skin cancer prevention summer 2022/23 campaign. Internal Cancer Institute NSW Report.
- 4 Gordon LG, Shih S, Watts C, Goldsbury D, Green AC. The economics of skin cancer prevention with implications for Australia and New Zealand: where are we now? Public Health Res Pract. 2022;32(1):e31502119. First published 22 December 2021.
- Veierød, et al. (2010). Sun and solarium exposure and melanoma risk: effects of age, pigmentary characteristics, and nevi. Cancer Epidemiology, Biomarkers & Prevention, 19(1):111-20. Available at http://www.ncbi.nlm.nih.gov/pubmed/20056629.
- 6 Gordon LG, Shih S, Watts C, Goldsbury D, Green AC. The economics of skin cancer prevention with implications for Australia and New Zealand: where are we now? Public Health Res Pract. 2022;32(1):e31502119. First published 22 December 2021.
- 7 Ibid.
- 8 Ibid.

- 9 Russo, R, King, E, Elliott, N. The formative evaluation and pre-testing of a SunSmart policy implementation support toolkit targeting sun safe hat-wearing in NSW primary schools. Health Promot J Austral. 2023. https://doi.org/10.1002/hpja.746
- 10 Parsons, P., Neale, R., Wolski, P. & Green, A. (1998), The shady side of solar protection, Medical Journal of Australia. 168: 327–330.
- 11 Pfautsch, S., & Wujeska-Klause, A. (2021). Guide to Climate-Smart Playgrounds: Research Findings and Application. https://doi.org/10.26183/2bgz-d714
- 12 Parsons, P., Neale, R., Wolski, P. & Green, A. (1998), The shady side of solar protection, Medical Journal of Australia, 168: 327–330.
- 13 King, Thompson and Groskops (2022), Integrating shade provision into the healthy built environment agenda: the approach taken in NSW, Australia, Public Health Research and Practice 32(1):e3212206.
- 14 Cancer Council NSW, https://www.cancercouncil.com.
 July 2023
- 15 Kricker A, Armstrong BK, Goumas C, Litchfield M, Begg CB, Hummer AJ, et al. (2007). Ambient UV, personal sun exposure and risk of multiple primary melanomas. Cancer causes & control: CCC, 18(3), 295–304. https://doi.org/10.1007/s10552-006-0091-x

- 16 Cancer Institute NSW (2021). Sun protection behaviours in target populations for skin cancer prevention Analysis of the 2018 NSW Adult population Health Survey. Cancer Institute NSW. Available from: https://www.cancer.nsw.gov.au/getattachment/56dba918-11f9-4e51-a682-d192d83359c2/sun-protection-behaviours-in-target-populations-fo.pdf
- 17 Australian Institute of Health and Welfare (2018). Cancers in adolescents and young adults. Cat. No. CAN 100. Canberra, Australia: AIHW. https://www.aihw.gov.au/getmedia/ed22109b-ab23-4273-8d23-7949a8922ea2/aihw-can-110.pdf.aspx?inline=true.
- 18 Veierød, et al. (2010). Sun and solarium exposure and melanoma risk: effects of age, pigmentary characteristics, and nevi. Cancer Epidemiology, Biomarkers & Prevention, 19(1):111-20. Available at http://www.ncbi.nlm.nih.gov/pubmed/20056629.
- 19 Kricker A, Armstrong BK, Goumas C, Litchfield M, Begg CB, Hummer AJ, et al. (2007). Ambient UV, personal sun exposure and risk of multiple primary melanomas. Cancer causes & control: CCC, 18(3), 295–304. https://doi.org/10.1007/s10552-006-0091-x
- 20 Veierød, et al. (2010). Sun and solarium exposure and melanoma risk: effects of age, pigmentary characteristics, and nevi. Cancer Epidemiology, Biomarkers & Prevention, 19(1):111-20. Available at http://www.ncbi.nlm.nih.gov/pubmed/20056629.
- 21 Woods, C. E., E. O'Shea, F. Barrett, L. Bookallil, L. East and K. Usher (2020). Occupational exposure: Rural Australian farmers' sun-protective behaviours. [References], Journal of Public Health. Vol.28(6), 2020, pp. 675-684.
- 22 Sideris, E. and S. J. Thomas (2020). Patients' sun practices, perceptions of skin cancer and their risk of skin cancer in rural Australia. Health Promotion Journal of Australia 31(1): 84-92.
- 23 Horsham, C., J. Auster, M. C. Sendall, M. Soneham, P. Youl, P. Crane, T. Tenkate, M. Janda and M. Kimlin (2014). Interventions to decrease skin cancer risk in outdoor workers: Update to a 2007 systematic review. BMC Research Notes 7(1).
- 24 Gies, P. & Wright, J. (2003). Measured solar ultraviolet radiation exposures of outdoor workers in Queensland in the Building and Construction Industry. Photochemistry and Photobiology, 78(4), 342-348.
- 25 Kimlin, M.G., Parisi, A.V. & Wong, J.C.F. (1998). Quantification of personal solar UV exposure of outdoor workers, indoor workers and adolescents at two locations in Southeast Queensland. Photodermatology, Photoimmunology & Photomedicine, 14, 7-1.
- 26 Woods, C. E., E. O'Shea, F. Barrett, L. Bookallil, L. East and K. Usher (2020). Occupational exposure: Rural Australian farmers' sun-protective behaviours. [References], Journal of Public Health. Vol.28(6), 2020, pp. 675-684.

- 27 Trenerry, C., C. Fletcher, C. Wilson and K. Gunn (2022) She'll Be Right, Mate: A Mixed Methods Analysis of Skin Cancer Prevention Practices among Australian Farmers — An At-Risk Group. International Journal of Environmental Research and Public Health 19(5).
- 28 D'Souza, C., N. Kramadhari, E. Skalkos, T. Dutton and J. Bailey (2021). Sun safety knowledge, practices and attitudes in rural Australian farmers: a cross-sectional study in Western New South Wales. BMC Public Health 21(1).
- 29 Cancer Council Australia, Skin cancer statistics and Issues https://wiki.cancer.org.au/skincancerstats/ Risk_factors/epidemiology Accessed: July 4 2023.
- 30 Cancer Institute NSW, Aboriginal people in NSW: Reporting for Better Cancer Outcomes. July 2022.
- 31 Heyes, C., Tait, C., Toholka, R. and Gebauer, K., (2014). Non-infectious skin disease in Indigenous Australians. Australasian Journal of Dermatology, 55(3), pp.176-184.
- 32 Slape, D. R., Saunderson, R. B., Tatian, A. H., Forstner, D. F., & Estall, V. J. (2019). Cutaneous malignancies in Indigenous Peoples of urban Sydney. Journal of medical imaging and radiation oncology, 63(2), 244–249. https://doi.org/10.1111/1754-9485.12832.
- 33 Melanoma incidence, 2018–2022 (2020–2022 are projected figures) sourced from NSW Cancer Registry data. Available from https://www.cancer.nsw.gov.au/prevention-and-screening/preventing-cancer/preventing-skin-cancer/reduce-your-skin-cancer-risk/know-the-nsw-melanoma-hotspots. Accessed 4 July 2023
- 34 Janda, M., Olsen, C. M., Mar, J., & Cust, A. E. (2022). Early detection of skin cancer in Australia-current approaches and new opportunities. Public health research & practice, 32(1), 3212204. https://doi.org/10.17061/phrp3212204.
- 35 NSW Government Ministry of Health, Future Health: Guiding the next decade of care in NSW 2022-2032, Summary https://www.health.nsw.gov.au/about/nswhealth/Documents/future-health-summary.PDF.
- 36 Office of Sport, Strategic Plan 2020-2024. https://www.sport.nsw.gov.au/sites/default/files/2021-04/Strategic_Plan_2020-24.pdf.
- 37 Australian Government Department of Health, National Preventive Health Strategy (2021) https://www.health.gov.au/resources/publications/national-preventive-health-strategy-2021-2030.
- 38 Insight Economics, State of the Nation A Report into Melanoma A National Health Priority https://melanoma.org.au/wp-content/uploads/2022/03/MIA-and-MPA_SoN-Report_Final-Report_28-March-2022.pdf (melanoma.org.au).

