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## Creating healthy habits from the start

The skin, our body's largest organ, serves as the first line of defence against various environmental threats. However, this protective barrier is vulnerable to cumulative damage from what is known as the 'exposome'—the collection of environmental and lifestyle factors that impact our health over time. The exposome, or "everything that influences our body that isn't genetic," includes a complex set of external factors to which our skin is constantly exposed. These elements—sun radiation, tobacco, climate, diet, stress, sleep and pollution—are intertwined and can interact, sometimes enhancing or counteracting each other's effects. This cumulative impact can contribute to long-term skin damage and premature ageing, underscoring the importance of a healthy lifestyle as a vital defence. By making conscious choices, we can help protect our skin's DNA from damage and reduce the risk of adverse effects, including various skin lesions and even skin cancer.

### **Sun radiation and skin health**

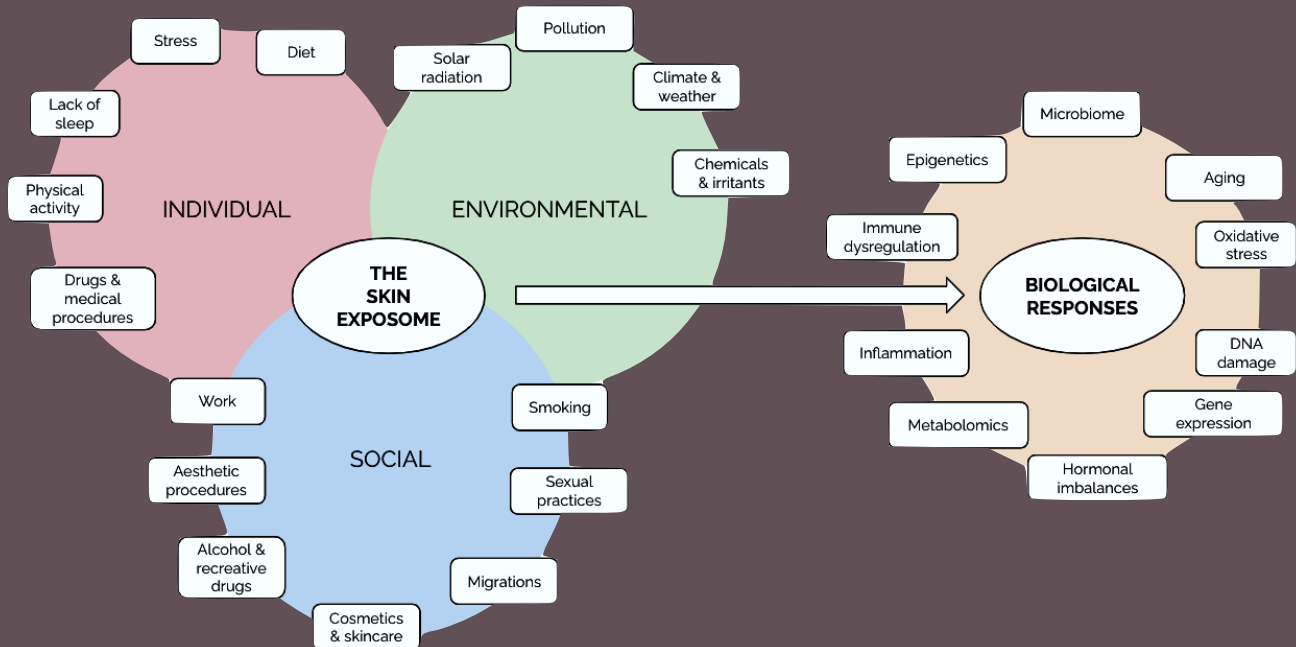
Among these factors, ultraviolet radiation (UV) ρ from the sun stands out as a primary source of harm. Prolonged and unprotected exposure to UV rays significantly increases the risk of skin damage, including DNA alterations that may lead to skin cancers. Studies have shown a direct link between early-life sunburns and a heightened risk of developing malignant melanoma and non-melanoma skin cancers.

Genetic analysis in these studies confirms that unprotected sun exposure during early childhood ρ is a critical health factor contributing to the development of these cancers. These findings underscore the importance of early sun protection, especially during infancy, when the skin is most susceptible.

Skin cancer is now the most frequently diagnosed cancer globally, with over 1.5 million cases ρ reported in 2022 alone. This includes approximately 330,000 new cases of melanoma and nearly 60,000 melanoma-related deaths worldwide. These alarming statistics emphasise the urgent need for preventive strategies, particularly for young populations, to mitigate the cumulative impact of environmental damage on skin health. Alarming, the rates of melanoma continue to rise, especially in countries like Australia, New Zealand, and across Europe.

Early and cumulative exposure to these rays significantly raises the risk of skin damage, which can eventually lead to severe conditions such as skin cancer and premature ageing ρ. **More than 50% of an individual's lifetime sun exposure occurs during childhood and adolescence**, underscoring the urgent need for precautionary measures from a young age to counteract the cumulative impact of UV exposure ρ.

# Exposome



## Building good skin care habits

Awareness of the risks to skin health—including sun exposure as well as other environmental and lifestyle factors—should begin early in life. Even at an early age, children are capable of understanding the basics of skin protection and adopting certain care habits under adult supervision. For example, learning about sun safety enables them to grasp the link between sun exposure and skin damage, encouraging them to apply sunscreen or seek shade. This early awareness also positions children as potential advocates for healthy practices within their social circles.

Research consistently shows that children educated on the importance of skin protection are more likely to maintain these habits into adolescence and adulthood. Early learning equips them with the tools to make informed

choices and embrace skin care habits independently, thereby significantly reducing the risk of long-term damage. Moreover, this reinforced awareness establishes a positive behavioural model that gradually becomes a core aspect of their healthy lifestyles.

Ultimately, educating children about skin health from an early age not only fosters long-lasting habits but also supports a longer and more protected life. Children can easily grasp the value of skin health when presented in ways that are engaging, accessible, and adaptable to their diverse environments and circumstances. By introducing these practices in a compelling way, we help instil behaviours that will safeguard them through every stage of their lives.

## The children's ecosystem, an ally

Creating equitable opportunities for children to understand the importance of skin health

requires recognising the diverse environments they navigate daily, such as schools, sports programs, family gatherings, friendships, and broader community settings. These environments serve as touchpoints where essential habits can be taught, modelled, and reinforced. For example, schools can incorporate sun protection lessons into their health education curricula or encourage sunscreen use before outdoor activities, while sports programs can make hats, sunglasses, and sunscreen integral parts of athletic routines. In the family environment, parents and siblings can set positive examples, helping younger children understand that these habits are routine and essential. Friends and social groups play a key role as well, as children are more likely to adopt and maintain habits if they see their peers doing the same.

The goal is both to establish lifelong habits and to empower children to become advocates for skin protection within their communities. Empowered children can influence their peers, family members, and others around them, helping to spread awareness and foster a culture of health and prevention. This ripple effect is particularly powerful in diverse communities where sun protection practices may vary.

An equitable approach to promoting healthy habits ensures that children from all backgrounds—regardless of socioeconomic status or regional differences—receive access to the same quality of information and resources. In some areas, where children may have limited access to protective products or health education, community-based programs and initiatives in schools can fill the gap, offering resources and information that promote long-term wellness. When designing, it is essential to consider diverse realities and environments children exist in and emphasise equity. Many of these aspects are out of their direct control and are highly influenced by their caretakers and surroundings.

### **Inclusive and accessible for diverse contexts and realities**

Ethics and design go hand in hand and new solutions should not be created without first considering the ethical implications of the information it is based on. Failing to do so risks excluding large groups of people who are still affected by the problem, but whose needs are not addressed by the solution. Cennyd Bowles (Future Ethics, 2020) distinguishes between two dimensions of diversity: **inherent diversity** (which includes innate traits such as gender, ethnicity, age, sexuality) and **acquired diversity** (which includes perspectives gained through experience). Both dimensions are important to consider when assessing personal biases, as well as those of others.

As designers, our ‘superpower’ is research, and we must approach this research inclusively. While it is virtually impossible to include every user group in our studies, it is vital to carefully consider the criteria for selecting user samples, ensuring as many relevant perspectives as possible.

In terms of inclusivity, the [NSPCC](#) <sup>9</sup> emphasises that when conducting research involving children, we should consider factors such as disabilities, language barriers, and family socioeconomic backgrounds. Children face different types of discrimination in their daily lives, which could in turn become barriers for them to participate in research based projects. Designers have an opportunity to address these barriers so groups with different social and cultural backgrounds can also be included, thus improving the study’s overall quality.

“Fortunately, our powers of imagination can be increased. Seeking out news, books, films and other sources of stories about the human condition can help us to better envision the lives of others, even those in very different circumstances from our own” - Shannon Vallor (In Future Ethics).

### **Leveraging technology**

In fostering skin protection and healthy exposome-related habits in children, technology can play a pivotal role by enabling personalised, interactive, and data-driven approaches. By focusing on solutions that adapt to individual needs, encourage active participation, and provide real-time feedback, technological integration offers opportunities to make habit-building engaging and impactful. A few technology examples (but we encourage you to look further) are: AR, AI and wearable technology.

For ISDIN, using the latest (or anticipating on future) technology, is an important differentiator. A technology-driven approach also helps to develop long-lasting, healthy behaviours by integrating fun, education, and sustainability into everyday routines. The use of technology ensures scalability, allowing the program to reach a global audience while being personalised to fit the diverse needs of children across different cultures and regions.

## The ISDIN Challenge: Creating healthy habits from the start

ISDIN challenges design students to create innovative solutions that foster healthy skin care habits in children. These habits should not only protect against harmful UV exposure and other threatening factors but also integrate seamlessly into children's lives, making them engaging, sustainable, and adaptable to different social and cultural contexts.

### The objectives

- **Inform and engage:** Make learning about skin care fun and interactive, ensuring children understand its importance and feel motivated to take responsibility for their health.
- **Be inclusive and accessible:** Recognise the diverse realities children live in, including socio-economic, cultural, and environmental differences and often shaped by their caretakers and surroundings. Design a solution that can be used by children from all backgrounds, with a focus on equity and inclusivity.
- **Integrate technology thoughtfully:** Consider leveraging and integrating innovative technologies to make the service informative, engaging, personalised and sustainable.
- **Incorporate play and exploration:** Include playful elements that encourage curiosity and creativity while reinforcing healthy behaviours.
- **Promote long-term habit formation:** Ensure that the proposed service concept instils habits children can carry into adulthood, reducing cumulative skin damage and future health risks.
- **Focus on safety and sustainability:** Ensure that the solution is child-safe, respects privacy, and supports long-term sustainability.

### Design principles

When designing your solution, consider these guidelines inspired by the Children's Design Guide:

- **Design for inclusion:** Ensure all children, regardless of their abilities or backgrounds, can engage with and benefit from the solution.
- **Design for play and learning:** Include elements that make sun protection an enjoyable and meaningful experience.
- **Design for safety:** Prioritise safety, both in the physical design of the artefacts of your service concept and in its messaging or data use.
- **Design for empowerment:** Enable children to take an active role in their own skin health, fostering awareness and advocacy within their communities.
- **Design for sustainability:** Prioritise eco-friendly materials, minimise waste, and inspire children to view skin care as an act of environmental responsibility.

### Questions to consider

- How can your solution adapt to **diverse cultural, environmental, and economic contexts**?
- How might you use **storytelling, play, or technology** to make building healthier skin habits more engaging?
- What **ethical considerations** must you address to ensure your service is inclusive and equitable?
- How can your design **scale** to reach broader audiences while maintaining personal relevance?

### Your mission

Design a service that promotes good skin protection habits in children, preparing them for a healthier future. Leverage creativity, research, and empathy to create a service that is not only effective but also inspiring and impactful. Help shape a healthier, safer world—starting with our youngest generation!

## About ISDIN

This is a challenge offered to you by [ISDIN](#). ISDIN is an international pharmaceutical company and a leader in the Spanish dermatology market, specialising in solutions for the main dermatology conditions and needs. Nearly celebrating our 50th anniversary, we have become a global benchmark in dermatology. With an industry-leading understanding of sun protection & enjoyable textures, we are strongly committed, together with dermatologists and pharmacists, to providing comprehensive solutions for skin treatment, prevention and maintenance fighting the main diseases and conditions affecting the skin and the mucosa.

ISDIN is a B Corp certified company, reflecting our dedication to the wellbeing of employees, customers, and the environment. We are dedicated to being a force for good, donating 1% of our sales directly to the community through charitable initiatives and becoming a leader in the fight against skin cancer.

Committed to eradicating skin cancer through education, research, and awareness, at ISDIN we have already begun where we can have the greatest impact: with dermatologists, at-risk communities, and the next generation. Through educational programs on sun protection, ISDIN has already raised awareness among over 7

million children—and counting. For nearly 30 years and across 12 countries, ISDIN's School Sun Protection Program has collaborated with health professionals and teachers to guide children how to enjoy the sun safely.

ISDIN is also committed to comprehensive care by addressing the effects of the exposome on skin health. In 2024, Dr. Yolanda Gilaberte, Head of the Dermatology Department at Miguel Servet Hospital and President of the Spanish Academy of Dermatology, joined forces with the ISD, a nonprofit organisation that, in collaboration with the University of Barcelona, researches and trains dermatologists worldwide. Together, we will support exposome research and, as a result, provide tools and promote good habits through knowledge.

# ISDIN

