

The Skin We're In: What Role Does Skin Science Play As We Grow Older?

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Experts recognise that taking care of our appearance as we grow older can have a hugely positive effect on our self-esteem, helping people to experience ageing differently, in a more positive way.

As cosmetic science enhances our understanding of how our bodies age, new products are being created that are right at the cutting edge of biological understanding. But can skin science really bring psychological as well as physiological benefits?

The Cosmetic, Toiletry and Perfumery Association (CTPA) invited scientists, academics, journalists and bloggers to a Media Panel event on 4 October, 2012 to discuss this conundrum and discover first-hand the new technologies being harnessed to make us look - and feel - good as we grow older.



This factsheet features an overview of the technologies exhibited at the event, as well as extracts from presentations given by the three key-note speakers:

- **Professor Mark Birch-Machin, Professor of Molecular Dermatology, Newcastle Biomedicine:** has wide experience and expertise in areas including nanotechnology, mitochondrial DNA and ageing, sunscreen testing and sun-safe awareness.
- **Dr Julian Mason, Consultant Old Age Psychiatrist, Berkshire Healthcare NHS Trust:** an expert on the topic of self-esteem in connection with appearance and ageing, drawing on his own experiences and research as a practising clinician.
- **Dr Chris Flower, Director-General of the CTPA:** a Chartered Biologist and toxicologist, Chris has led the CTPA's growing body of research on self-esteem since 2004, when the Association published The Self Esteem Society, the first in a series of reports on the subject.


 The Cosmetic, Toiletry & Perfumery Association Limited
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The CTPA media panels are knowledge-sharing sessions with health and beauty journalists, designed to provide key insights into topical issues and access to leading experts.

Why does caring for our skin make a positive contribution to a sense of well-being?

In the 200 years from the middle of the 17th century to the middle of the 19th century the mirror gradually crept into everyone's lives, and because of the mirror we can see very well how others see us. Plus, the proliferation of images on the internet mean we're more aware of how we look – and how others might perceive us – than ever before.



The skin is the main organ that we can easily and regularly inspect ourselves to assess its quality, which demonstrates just how important it is to us, every day. It is important to make good choices about our skin, not only for health and hygiene reasons, but because it has a significant bearing on how we see ourselves, and how others see us. The results of good skincare and the tactile process of skincare therefore make a positive contribution to a sense of well-being.

What role does caring for our skin play on our self-esteem?

Skincare is a relevant and important part of staying mentally healthy.

Whether we like it or not, our skin is a calling card that we cannot conceal so it is perfectly reasonable to let our appearance contribute to our sense of self and well-being, and to take care of our skin as part of taking care of ourselves overall.

Why should we look after our skin as we age?

As we get older there are changes throughout our bodies that affect us all. It is essential that we think about these changes and see if there is anything we can do to enhance the experience of ageing. Making the best of the skin we have been given is not pandering to pressure or stereotypes; as people age, they should be given the opportunity to hear about products that may positively alter their experience of ageing.

Looking good, feeling great: what role can cosmetics play?

The contributory factors to self-esteem are complex and far-reaching, and there are many different points of view. Over the years the CTPA has built up a body of work to understand better the issues around self-esteem and in particular what role the cosmetics industry can play in helping people to feel good by taking care of their appearances.

The CTPA's research suggests that feeling confident in one's physical appearance is an increasingly important factor in boosting self-esteem, in particular among women. For instance, in 2004 just over half of women surveyed by an independent research specialist rated their looks as very important to their self-esteem, compared with nearly three quarters of women in 2009. With this in mind, the cosmetics industry can play a growing role in supporting self-esteem.

What factors affect our self-esteem?

71% confidence in one's appearance

70% having a supportive family

44% having a rewarding job

40% learning new skills

33% being financially successful

Independent research based on a BMRB survey of 2011 and British adults aged 16+ which took place between 23 –25 April 2004 and by YouGov among 2013 UK adults aged 18+ carried out between 1– 3 April 2009

How 'sunsafe' are we?

Most of us understand that we should use sunscreen as part of a regime to stay safe in the sun. But most of us don't apply sun protection products as liberally as we should, and do not consider what the sun's harmful rays can mean for our skin in the longer term. People equate a tan with looking youthful, but the reality is that a tan means we have damaged our skin and really the only safe tan is a self-tan. When it comes to aspirations for our skin, we shouldn't seek a result that equates to "youth". It is much better for us to aim for skin that is as healthy-looking as possible, and to look after ourselves so that we feel as energetic and lively as possible as we grow older.

What is the legacy of sun damage?

The effects of sun damage carry a legacy later in life, even after the sunburn or tan fades. Sunburn damages the DNA of our skin cells, building up 'sunburnt DNA' in layers within the skin. In fact, this damage can occur even at exposures that do not lead to sunburn. Each exposure to the sun adds another layer of damage to our 'tower of sunburnt DNA', which means that even if our skin may not show visible signs of sun exposure, each exposure is logged, never to be forgotten, and it is from this sustained damage that our skin can prematurely age and there are increasing risks of cancer.



What role does nanotechnology play in sunscreens?

One of the most commonly used nanomaterials in cosmetics is titanium dioxide, and in the case of sunscreens it is used to reflect and scatter UV light. Because nanomaterials are very small (a nanometre is a millionth of a millimetre), using titanium dioxide in its nano form helps ensure that sunscreen spreads fully and evenly across the skin, providing the protective layer without leaving tell-tale white marks. These small particles are actually more efficient at protecting the skin from UV rays. However, they're not so small that they can be absorbed through the skin, which is a very effective barrier.

The science behind smarter products

Understanding how the body ages is a vital step towards creating innovative new products that are right at the edge of biological understanding.

Measuring and visualising crow's feet

Desktop 3D skin-imaging technology uses optical, contact-less, highly precise imaging as a measurement device. This is used for the investigation and documentation of skin microstructure and provides fast, direct assessment of the skin's surface, including fine lines, roughness and crow's feet. It can be used to track changes over time.

Tissue engineering

For the safety evaluation of products and ingredients, whereby reconstructed tissue models are obtained by culturing adult human keratinocytes, which result in the reconstruction of an epidermis or upper layer of the skin. The tissue that is engineered is a widely adopted and recognised model for the safety evaluation of products and ingredients.

Complexion analysis

A freestanding camera unit sends high-quality photographs to a high-speed computer which provides skin evaluations. The complexion analysis can be plotted as a diagram, and includes measurement of pore depth, individual analysis of the skin condition, measurement of wrinkles, analysis of pigment disturbances and representation of UV damage.

Profiling hair health

A hand-held tool uses an infra-red light to measure hair diameter - which changes with age - and the grade of hair damage, providing a score for the quality and health of the hair.