

SCIENCE OF BEAUTY

With so many people turning to cosmeceuticals for revolutionary skincare solutions, the question is: do science and beauty mix?

Words by **Milly Nolan**

Lotions and potions, scalpels and syringes: while there was once a great divide between cosmetics and medicine, a barrage of new technology has started to close that gap. These days, lunchtime facelifts (non-surgical treatments to tighten and tone the skin) are fast becoming part of standard beauty routines while the cosmeceutical industry (a melding of the cosmetics and pharmaceutical worlds) is often the preferred choice for those who are wary of invasive procedures.

Blurring the boundary between cosmetics and medicine, cosmeceuticals are non-prescription, over-the-counter formulations that sell themselves on the basis of science while tapping into the global preoccupation with remaining youthful – an ever-expanding market.

Cosmeceuticals may not be a new concept – the word appeared in beauty circles as early as the 1970s – but it has become a burgeoning industry thanks to the backing of large-scale research and marketing campaigns. Not to be confused with nutricosmetics (orally ingested), cosmeceutical products, such as creams, lotions and ointments, are applied topically, offering a “drug-like” effect to help improve the appearance of the skin.

According to Dr Diana Howard, vice-president of Technical Development at the International Dermal Institute, “Because [cosmeceuticals] contain active ingredients that influence the biological structure and function[ing] of the skin, they act more along the lines of pharmaceuticals than cosmetics.”

The cosmeceutical industry is results driven. Products offer an extensive range of biologically active ingredients, each promising drug-like benefits and a dramatic, rejuvenating effect on the skin.

Dr Mark Izzard, surgeon for the Skin Institute, New Zealand, uses a simple analogy to describe the difference between cosmetics and cosmeceuticals: “Cosmetics should be thought of as products that sit on the skin, just as paint does a fence. If you were to use a paint that contained UV protection, you would be doing more than just camouflaging

the fence underneath; you would be prolonging the life span of the paint.” Cosmeceuticals have a physical effect on the skin, as the active ingredients are absorbed into the epidermis (like a sponge absorbs water), whereas cosmetics sit on the skin’s surface.

Ingredients listed in cosmeceuticals may seem impressive (and they certainly appear as if they have been cooked up in a laboratory), though this is not always the case. Some of the more popular active ingredients in cosmeceuticals include quite common ingredients: retinoids, to speed up the skin renewal process; alpha hydroxy acids (AHAs), used in chemical peels; and vitamins, phytochemicals, enzymes, antioxidants and essential oils.

Cosmeceuticals claim to be multi-tasking beauty products designed to

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protect the skin from UV damage; reduce free radical damage; improve skin lipid barriers; brighten and unify colour; tone and smooth texture; reduce pore size; and decrease fine lines and wrinkles.

DISPELLING THE MYTH

The rapid growth of the cosmeceutical industry suggests two things: beauty-conscious buyers are responding positively to scientific-sounding terms, and those people desire better skin without going to great lengths to get it.

While the labelling of cosmeceutical products can certainly sound convincing, it’s important to note that not all companies will be reputable and not all products will deliver what they promise.

Industry regulations, for example, are not as tight as in other industries. Cosmeceutical products are not required to undergo the same testing

ASK THE EXPERTS: ARE COSMECEUTICALS EFFECTIVE?



Dr Diana Howard, vice-president of Technical Development, the International Dermal Institute

“Cosmeceutical products are effective if they contain an efficacious amount of the active ingredients.”



Dr Des Fernandes, plastic surgeon and founder of Environ Skincare

“The effectiveness of a product doesn’t stem from the name, because there are many products calling themselves cosmeceuticals that have virtually no effect. You need to trust the company producing the product.”



Regis Haberkorn, chief operating officer, Puri

“When I entered this industry more than 32 years ago, the only way to stay looking young was avoiding the sun and covering imperfections. Since that time we have made incredible discoveries in skin biochemistry.”



Dr Mark Izzard, surgeon, the Skin Institute, New Zealand

“There are many effective products on the market that contain both drugs and cosmetics, such as retinoids, vitamin A derivatives, niacinamide and hydroxy acids. Ask your specialist for evidence behind the product.”

for effectiveness and quality as required in the pharmaceutical industry.

Most countries, including Australia and the US, have no official classification of cosmeceuticals. According to the US Food and Drug Administration (FDA), the Food, Drug, and Cosmetic Act “does not recognise any such category as ‘cosmeceuticals’”.

It goes on to say, “A product can be a drug, a cosmetic, or a combination of both, but the term ‘cosmeceutical’ has no meaning under the law.”

Cosmeceuticals made in the US are not subject to the FDA’s rigorous approval process and are not controlled by them either. This gives manufacturers the right to market their product as a cosmeceutical despite testing not being mandatory. However, safety testing is required.

FACT FROM FICTION

To assess whether a cosmeceutical is likely to live up to its claims, it’s best to rely on expert advice.

“The problem with cosmeceuticals is the more active a product is, the more hand-holding is needed in terms of how to use it and whether you should be aware of any side effects,” says Jackie Smith, clinical advisor and nurse specialist at Caci Medispa.

COSMECEUTICAL TIPS

- Speak with your dermatologist or beauty therapist about the best options for your skincare needs and have them prescribe products specifically suited to you.
- Buy cosmeceutical products sold in reputable spas and skin clinics; they are often developed by physicians and contain high-quality active ingredients.
- Look for ingredients that have undergone substantial research and development.



“From scars and acne to fine lines and wrinkles, there are endless products available for a range of skincare needs.”

- Question what the product claims to do (does it sound far-fetched?) and what kinds of studies have been conducted to demonstrate those claims.
- Trust your instincts. Is the product’s claimed benefit something you can reasonably expect to occur? If it sounds too good to be true, it probably is.
- Stick with products and brands that you know are reputable to reduce your risk of buying unreliable products.
- Be wary of website claims; many are biased even if they claim to be objective.

- In most cases, products need to have concentrations of at least 10 per cent of the active ingredient to be effective. Check the label for concentrations; many products don’t tell you how much is in them, which could mean not very much.
- Try to sample the product before buying it. You need to know whether you’re allergic to it, and you want to make sure your skin responds well to the product. As every person has different skin and stressors, it’s likely that products will work differently for each person.

ARE COSMECEUTICALS FOR YOU?
From scars and acne to fine lines and wrinkles, there are endless products available for a range of skincare needs. “I prefer to use damage as the indicator of what [cosmeceutical] products should be used, rather than age or skin type,” says Regis Haberkorn, chief operating officer at Priori. “What we do to ourselves, including diet, exercise and lifestyle, has an impact on what we look like. Age and skin type have minimal impact at best.”

GETTY

COMMON COSMECEUTICAL INGREDIENTS

RETINOIDS

The class of chemical compounds known as retinoids is derived from vitamin A. Creams containing retinol and retinaldehyde (both retinoids) can be obtained over the counter at pharmacies and supermarkets. Topical retinoids containing tretinoin or isotretinoin require a doctor’s prescription.

Vitamin A, which is known to have several biological effects on the skin, has demonstrated the ability to reverse the signs of ageing. Vitamin A and its derivatives have two main functions: they act as antioxidants and they activate specific genes and proteins.

A study published in *Archives of Dermatology* (May, 2008) stated, “Retinol improves any kind of ageing, photo-ageing as well as natural ageing.” The journal’s co-author, John J. Voorhees, MD, of the Department of Dermatology at the University Michigan Medical School, also wrote: “You can rub retinol anywhere and it will help to treat the signs of ageing.”

ALPHA HYDROXY ACIDS

Alpha hydroxy acids (AHAs) are derived from natural sources such as fruit and milk. The different types of AHAs include glycolic, lactic, citric, mandelic, malic and tartaric acids. AHAs help to

increase the skin’s natural exfoliation and cell renewal rate so the skin appears smoother and softer.

If you have dull or dry skin, uneven pigmentation or fine lines and wrinkles, you may benefit from cosmeceuticals containing AHAs. However, studies have shown that AHAs may increase sensitivity to UV radiation, so always apply sunscreen and avoid long periods of exposure to sunlight when you’re using cosmeceuticals containing AHAs.

BETA HYDROXY ACID

Salicylic acid is a beta hydroxy acid (BHA). Acting mainly as an exfoliant, salicylic acid is reported to improve the appearance of wrinkles, roughness and mottled pigmentation on photodamaged skin. As BHAs are oil soluble, they’re able to penetrate further into the sebaceous follicles than AHAs, which are water soluble. This makes salicylic acid ideal for oily complexions and skin troubled by blackheads and whiteheads.

ANTIOXIDANTS

Antioxidants are a category of nutrients that have the ability to defend the cells against free radicals (highly reactive, unstable molecules). The skin is frequently exposed to trillions of free radicals; they are produced in the body through normal, necessary chemical reactions and by external

COSMECEUTICALS
PRODUCTS CONTAINING BENEFICIAL ACTIVE INGREDIENTS

DERMALOGICA
Antioxidant Hydrmist, RRP \$64
A spray-on formula that delivers highly active vitamin C combined with collagen-stimulating peptides to encourage firmness and elasticity.

JOYCE BLOK
Natural Skin Care Serum CEF, RRP \$135
This serum contains a blend of antioxidants, such as ferulic acid, that offer remarkable protection against UV damage.

DR SEBAGH
Essential Glow from Mecca Cosmetica, RRP \$220
This formula contains anti-ageing peptides and a multi-mineral complex that helps to encourage cellular renewal. Apply each day under moisturiser for a soft and radiant glow.

LEAF & RUSHER
Active Serum from Mecca Cosmetica, RRP \$248
Leaf & Rusher’s signature product is a light, velvety serum specially formulated to improve the skin’s tone, texture and firmness.

MURAD
Age Spot and Pigment Lightening Gel, RRP \$102
This gel helps to fade age spots and freckles for clarity and brightness.

PRIORI
Perfection Facial Gel Advanced AHA, RRP \$120
This gel helps to minimise break-outs and reduces the appearance of fine lines and wrinkles.

MD FORMULATIONS
Vit-A-Plus Clearing Complex, RRP \$160
For problem skin, this oil-free formula reduces the appearance of enlarged pores and blemishes.

ENVIRON
C-Boost, RRP \$82
This oil-soluble formula helps to treat photo-ageing, pigmentation and freckles while refining the skin.

COMMON COSMECEUTICAL INGREDIENTS

◀ factors such as pollution, drugs, UV radiation, X-rays, stress, strenuous exercise and smoking.

By defending the cells against free radicals, antioxidants can help to slow the internal and external ageing processes. Cosmeceuticals containing antioxidant-rich vitamins and extracts in their formulations provide benefits directly to the skin.

Green and white tea, grape seed polyphenols, olive leaf extract, lycopene, idebenone and coenzyme Q10 are some of the most popular antioxidants used in skincare products.

VITAMIN C

The roles of topical vitamin C (L-ascorbic acid) are varied. Vitamin C is a water-soluble antioxidant that combats free radicals and regenerates vitamin E.

Vitamin C has been used effectively to stimulate collagen repair, thus diminishing some of the effects of photo-ageing on the skin, such as pigmentation, fine lines and wrinkles. Vitamin C also protects against or lessens the severity of sunburn.

“Research has shown that when we supply adequate doses of vitamin C topically, we not only increase the antioxidant protection of the skin and reduce the dangers of developing sunburn, we also stimulate the fibroblast to make more collagen and elastin,

and persuade the [skin’s] melanocyte to make less melanin,” says Dr Des Fernandes, founder of Environ Skincare.

VITAMIN E

Vitamin E is a fat-soluble vitamin that exists in eight different forms, all of which have antioxidant properties. Alpha-tocopherol is the most active form of vitamin E and it possesses superior antioxidant properties.

Studies have shown that vitamin E helps to protect the skin from UV damage and improve the texture and moisture content of the skin.

NIACINAMIDE

Niacinamide (also known as nicotinamide and nicotinic acid amide) is a basic amide of the vitamin B group and is one of the most popular vitamins on the market. The main reason for its surge in popularity is its stability: it has been proven to remain stable in the presence of oxygen, acid and high temperatures. Niacinamide is also inexpensive to formulate.

Most of niacinamide’s known effects are the result of increased epidermal turnover and the protection of the skin’s immune function.

Niacinamide is effective in treating rosacea, acne, sun damage and hyperpigmentation, resulting in healthier, more viable skin.




HYALURONIC ACID

Hyaluronic acid, or hyaluronan, is an acid found naturally in the body that helps to retain the skin’s natural moisture. As you age and the skin is exposed to environmental pollutants and the sun’s UV rays, skin cells gradually lose the ability to produce hyaluronic acid. Topically applied, hyaluronic acid accelerates wound repair and regenerates the functioning of the epidermis.

PEPTIDES

Peptides are proteins that boost collagen production. Copper peptides, Matrixyl (palmitoyl pentapeptide-3) and acetyl hexapeptide-3 are popular peptides in cosmeceuticals.

“There are so many exciting new peptides that stimulate collagen, fight pigment formation and prevent inflammation,” says Dr Diana Howard, vice-president of Technical Development at the International Dermal Institute. 

COSMECEUTICALS

PRODUCTS CONTAINING BENEFICIAL ACTIVE INGREDIENTS



RATIONALE
Niacinamide Serum from Skin Institute, RRP \$171

This vitamin B serum helps to improve signs of sun damage, including wrinkles and dryness.



ZELENS
Skin Science Radical Defence Serum from Mecca Cosmetics, RRP \$345

This serum contains powerful antioxidants that protect and repair the skin from free radical damage.



MONODERMÀ
E5, RRP \$80

Especially effective on stressed or very dry skin, these potent capsules help to fight the skin’s ageing.



DR. LEWINN'S
Cosmetic Lift Kit, RRP \$190

This kit helps to diminish fine lines and wrinkles, refine skin texture and fade age spots and acne scars.