

# Research Review™

## EDUCATIONAL SERIES

### Personal Care Products: Ingredients, Labelling, and Regulations

#### About the Reviewers



##### Shaun Holt

BPharm (Hons), MBChB (Hons)

Professor Shaun Holt is a New Zealand-based doctor, researcher, author, commentator, speaker and advisor. He holds degrees in pharmacy and medicine (both with Honours), has been the principal investigator in over 50 clinical trials, and has written more than 180 publications in medical literature. He is an Adjunct Professor in the School of Biological Sciences, Victoria University of Wellington, an Honorary Research Fellow at the Medical Research Institute of New Zealand, an advisor to the Asthma and Respiratory Foundation of New Zealand and Natural Products New Zealand, and a regular contributor on TV One's Breakfast programme and on national radio shows in New Zealand. He has started two clinical trials organizations and is the Scientific Director and a founder of HoneyLab. Shaun is the author of eight books including the bestseller "Natural Remedies That Really Work". He was a finalist in the 2015 New Zealander of the Year Awards in the Innovator category. More info at [www.flavors.me/shaunholt](http://www.flavors.me/shaunholt)



##### Professor Michael Roberts

BPharm, MSc, PhD, DSc, Dip Tert Ed, MBA, FACP FAAHMS

Mike Roberts is an NHMRC Senior Principal Research Fellow; Professor of Therapeutics & Pharmaceutical Science in the School of Pharmacy and Medical Sciences at the University of South Australia; and Professor of Clinical Pharmacology & Therapeutics in the School of Medicine; as well as being Director of the Therapeutics Research Centre (TRC), based jointly at the Basil Hetzel Institute associated with The Queen Elizabeth Hospital in Adelaide and at the Translational Research Institute associated with the Princess Alexandra Hospital in Brisbane.

Mike has been a registered pharmacist since 1971 and has worked as a community pharmacy in three states of Australia and New Zealand as well as being actively involved in hospital practice. He has published more than 500 peer reviewed papers and book chapters, as well as 6 books and is also active in support to government, industry and his profession.



##### Dr Brett MacFarlane

BPharm (Hons), PhD, FACP  
Education and Research Manager  
The Australian College of Pharmacy

Brett graduated with honours from the School of Pharmacy at the University of Queensland. He then completed a PhD in skin science at the UQ School of Medicine. He has worked in community pharmacy as a pharmacist and manager for a number of years. Brett contributes to the College's research, continuing professional development activities and their educational products in the area of clinical knowledge and skills. He aims to help pharmacists develop the knowledge and skills necessary to allow them to become the pivotal skin care professionals in the community.

The past decade has witnessed rapid growth in the popularity of so-called natural and organic personal care products. The growing market has attracted new brands and the increased competition has led to intensified marketing efforts to differentiate products. Consequently, there exists the potential for claims on the labels of personal care products to be overstated or even false, specifically with respect to ingredients, and for necessary labelling requirements to be omitted.

To better inform the selection and recommendation of personal care products, including skin cleansers and moisturisers, this review discusses the different claims that are made on product labels and the standards and regulations that govern product ingredients and labelling. It also discusses consumer concerns around certain ingredients and the potential implications of ingredient substitution.

#### Why are standards for ingredients and labelling important?

The intention of standards and regulations for the composition and labelling of personal care products is to protect the health and safety of users.<sup>1,2</sup> Personal care product ingredients must be legally permitted for use and must be listed on the ingredients label in descending order calculated by either mass or volume, in addition to other ingredients labelling requirements.<sup>3,4</sup> Additionally, standards prohibit many substances from being used as ingredients and also restrict the quantities of other substances. Ingredient labels that are absent, incomplete, or inaccurate can result in consumers exposing themselves to ingredients that are harmful or to which they are sensitive or allergic.<sup>5</sup> True allergy to personal care products is rare, however, but can be serious depending on the site of application, e.g. around the eyes. Mild adverse reactions, including tingling, burning, itch, and redness, are more common than allergy.

There is evidence of an increasing awareness among consumers regarding what they put on their bodies, including concerns about specific ingredients used in personal care products.<sup>6,7</sup> In a 2015 survey of women (aged ≥18 years) in the US, 60% of 1104 respondents stated that they read cosmetic product ingredient labels prior to purchase and that the presence of certain ingredients would deter them from purchasing.<sup>7</sup>

#### Ingredients concerns

Consumer concerns about ingredients are related to those that may be potentially harmful.<sup>5,8</sup> They also often relate to individuals with high sensitivity or allergic reactions to certain product constituents.<sup>9</sup> These reactions include mild skin irritation and dermatitis, especially contact dermatitis, and more serious reactions such as toxicity reactions and sun sensitivity. Consumers who are susceptible to these conditions rely on the accuracy of ingredient or compositional information on the labels of personal care products to avoid exposure to ingredients that might trigger a sensitivity reaction. However, this does depend somewhat on consumers having an understanding of ingredients to be able to assess the potential for a particular product to trigger a sensitivity reaction.

Increasing public awareness of potential ingredient hazards associated with the use of some consumer products has been noted in Australia.<sup>6</sup> The 2015 survey of adult women in the US provides insight into some of the ingredients that concern consumers.<sup>7</sup> The most commonly cited ingredients that would deter purchase were sulphates (29% of women) and parabens (22%).

#### Sulphates

Much of the consumer concern around sulphates is that they cause skin irritation but there is also a perception that they can cause cancer. Sodium lauryl sulphate (SLS) and sodium lauryl ether sulphate (SLES), also known as sodium laureth sulphate, are anionic surfactants used in many personal care cleansing products for their emulsifying (foaming) property, which facilitates the removal of oil from the hair and skin.<sup>9,10</sup>

The [National Industrial Chemicals Notification and Assessment Scheme \(NICNAS\)](#), which is the Australian government's regulatory body for industrial chemicals, has conducted comprehensive reviews of SLES<sup>11</sup> and SLS.<sup>12</sup> The conclusion of these reviews was that neither SLES nor SLS are skin sensitizers and that neither compound is likely to cause skin irritation at the concentrations typically used in skin care products. It is important to note, however, that the potential for an ingredient to cause a skin reaction also depends on product formulation, frequency and duration of application, skin site, and ethnicity. The NICNAS report also concluded that SLES and SLS are unlikely to be carcinogenic.<sup>11,12</sup>

## Parabens

Concerns about the safety of parabens primarily relate to potential oestrogenic activity. Parabens are preservatives that are approved for and extensively used in personal care products and NICNAS has also conducted comprehensive reviews of parabens.<sup>13</sup> NICNAS concluded that available data do not indicate any risks associated with exposure to these compounds. Although there have been reports of weak oestrogenic activity with parabens, there are no established adverse outcome pathways for weak oestrogenic activity. However, potential risk should be considered in the context of concentration, formulation, frequency and duration of application, and skin site. The type of paraben used should also be taken into consideration as the oestrogenic activities of parabens are believed to be proportional to their molecular structural length and degree of branching. The [European Union's Scientific Committee on Consumer Safety \(SCCS\)](#) opinion on the use of parabens in cosmetic products proposed that propylparaben and butylparaben should be used at lower concentrations than methylparaben and ethylparaben.<sup>14</sup> Most personal care products contain multiple different parabens as this enables the concentration of each to be reduced and hence the potential for adverse reactions to theoretically be less.

## Product preservation

There is a general lack of awareness of the important role that preservatives, and hence parabens, play in preventing microbial contamination of personal care products and the potential risk to the consumer should they not be included as an ingredient.<sup>15</sup> The primary reason for the inclusion of preservatives in personal care products is user health and safety.<sup>16</sup> Once a product is opened, its contents can come into contact with micro-organisms, especially in the warm and moist environments of bathrooms where many personal care products are used and stored.<sup>15</sup> Microbial contamination of a personal care product leads to product spoilage and loss of product performance. It can also cause skin irritations or infections, particularly on damaged or broken skin. The importance of adequately preserved personal care products cannot be overstated. Indeed, it is likely that the risk of an adverse reaction is higher for an inadequately preserved personal care product than for a paraben-containing product.

## Substituting ingredients

In response to consumers' ingredient concerns, a common approach used in the manufacture and marketing of personal care products has been to replace ingredients perceived to be 'unsafe' with alternative compounds and to emphasise on labels the ingredients that products do not contain, e.g. 'paraben free', 'sulphate free'.

In terms of consumer psychology, the 'free from'

claim on product labels can create an element of anxiety around particular ingredients hence perpetuating the concern. A more important implication of ingredient substitution is that the replacement ingredients lack the activity of the original compound thus negatively affecting product performance.

## Rules and regulations

The standards and regulations for the ingredients and packaging of personal care products and the agencies that establish them in Australia and New Zealand are summarised in **Table 1**.

	Australia	New Zealand
Regulation of personal care products	<ul style="list-style-type: none"> <li>Cosmetic Standards 2007</li> <li>Therapeutic Goods (Excluded goods) Order No.1 of 2011 – for products with therapeutic claims</li> </ul>	<ul style="list-style-type: none"> <li>Cosmetic Products Group Standard 2006 (as amended by July 2012)</li> <li>Hazardous Substances and New Organisms Act 1996</li> </ul>
Regulation of product safety*		
Regulation of personal care product ingredients	<ul style="list-style-type: none"> <li>National Industrial Chemicals Notification and Assessment Scheme (NICNAS)</li> <li>Industrial Chemicals Notification and Assessment Act 1989</li> <li>Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP), Poison Standard</li> </ul>	<ul style="list-style-type: none"> <li>Cosmetic Products Group Standard 2006 (as amended by July 2012) – schedules 4, 5, 6, 7, and 8</li> </ul>
Labelling requirements	<ul style="list-style-type: none"> <li>Trade Practices (Consumer Product Information Standards) (Cosmetics) Regulations 1991 (Cosmetics ingredient labelling standard)</li> </ul>	<ul style="list-style-type: none"> <li>Cosmetic Products Group Standard 2006 (as amended by July 2012) – Schedule 1 Part 2</li> </ul>

**Table 1.** Summary of the standards and regulations for personal care and cosmetic products in Australia and New Zealand. \*There are no set standards for product safety; however, under Australian Consumer Law and the New Zealand Commerce Commission regulations, suppliers must ensure that goods are safe and of acceptable quality and fit for any disclosed purpose.

## New Zealand

The [Environmental Protection Agency \(EPA\)](#) sets the rules for personal care products.<sup>1</sup> These rules are contained in the [Cosmetics Products Group Standard \(CPGS\)](#).<sup>17</sup> Any entity that imports, manufactures, or sells anything is covered by the CPGS.

The CPGS prohibits many substances from being used as ingredients in personal care products and restricts the quantities of other ingredients.<sup>17</sup> Personal care products making therapeutic claims are regulated through [Medsafe](#).

The CPGS also specifies labelling and packaging requirements.<sup>17</sup> Product labels or packaging must contain a list of hazardous ingredients, using common chemical names or their International Nomenclature of Cosmetic Ingredients (INCI) names. The label must also have contact details for the manufacturer or supplier, and must show the manufacturer's original source or batch code.

The CPGS came into force in 2006. It is broadly based on [European Union cosmetic products regulations](#), which are generally considered to be 'the gold standard' (see **Highlights Box**, page 3).<sup>1</sup>

Although the EPA sets the rules for personal care products, other agencies enforce the rules.<sup>1</sup> The EPA's role and responsibilities are defined by legislation as specified in the [Hazardous Substances and New Organisms Act](#), which makes the EPA responsible for setting rules for hazardous substances. Other agencies are responsible under the Act to enforce specific areas.

Other laws are also applicable.<sup>1</sup> For example, the [Commerce Commission](#) and [Consumer Affairs](#) are responsible for efficacy claims on products. Manufacturers and suppliers are responsible for ensuring that their products are safe and comply with the law.

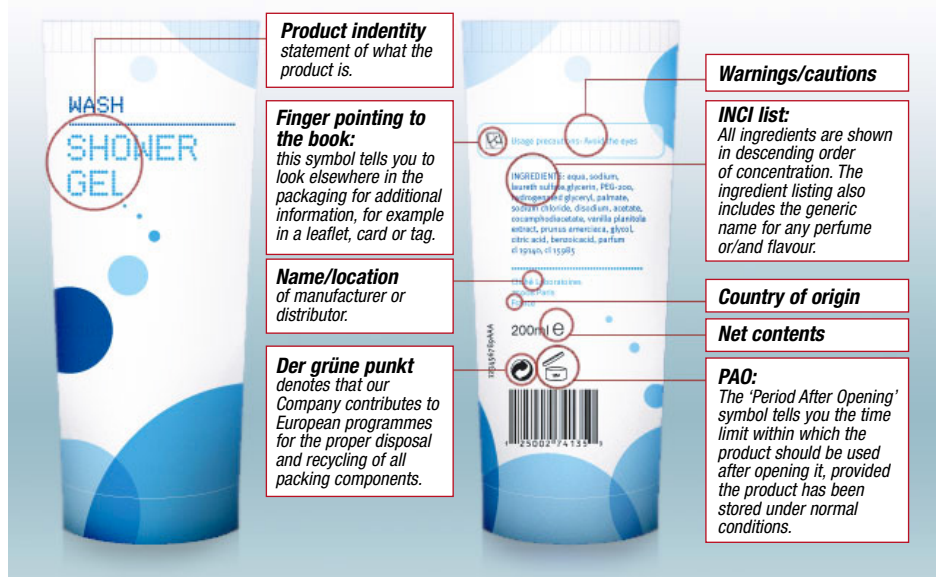
In addition, the [Cosmetic Toiletry and Fragrance Association \(CFTA\)](#), which represents toiletry and fragrance businesses in New Zealand, enforces its own ethics code. It requires members to be truthful about their products or face disciplinary action if they are not. The CFTA is a voluntary membership organisation, however, and not all companies that market personal care products in New Zealand are members.

### European Union labelling requirements: The gold standard

In the European Union, personal care product container labels must list all ingredients included in the product formulation using standardised terms based on the INCI and in order of decreasing quantity (**Figure 1**).<sup>18,19</sup> The Regulation also requires other information to be included on product labels, including:

- Function of the product.
- Name and address of the manufacturer, importer, or distributor.
- Date of minimum durability, or Period After Opening (PAO) for products lasting >30 months.
- Precautions to be observed in use.
- Goods identification reference (e.g. a batch number/manufacturing code).

The INCI is an international system for the naming of personal care product ingredients. In countries where the INCI is a legal requirement for personal care product packaging, it helps to ensure consumer safety by allowing customers to accurately identify ingredients in cosmetic products. In terms of known allergens being listed on labels, use of the INCC database names should ensure that all are listed.



**Figure 1.** Product details that constitute 'ideal' labelling, as per European Union labelling requirements.<sup>19</sup>

### Australia

Cosmetic ingredients, including those described as 'natural', must be legally permitted for use in Australia.<sup>3</sup> They must also meet requirements under the [Industrial Chemicals \(Notification and Assessment\) Act 1989](#), which is administered by the [NICNAS](#), and comply with the [Cosmetics Standards 2007](#) and the [Trade Practices \(Consumer Product Information Standards\) \(Cosmetics\) Regulations 1991 \(Table 1\)](#). Personal care products making therapeutic claims are regulated by the [Therapeutic Goods Administration](#).

By law, suppliers in Australia must ensure that ingredients used in personal care products are declared on the label.<sup>3</sup> The mandatory information standard for ingredients labelling on personal care products is prescribed by the Trade Practices (Consumer Product Information Standards) Cosmetics Regulations 1991 (**Table 1**). The mandatory information standard enables consumers to identify the presence of ingredients to which they may be allergic, sensitive, or about which they may have concerns. It also allows the comparison of different cosmetic products.

### Monitoring and enforcement

In New Zealand, companies that make claims about their products that are misleading or false can face investigation by the [Commerce Commission](#) under the [Fair Trading Act 1986](#).

The Fair Trading Act prohibits false and misleading consumer information and it is a requirement of the act that all claims are substantiated.<sup>20</sup> Any company can be approached and investigated under the Act. The Act enables both businesses and consumers to seek their own remedies when its provisions are breached.

The Commerce Commission is also empowered to take [enforcement action](#) and will do so when allegations are sufficiently serious to meet its [enforcement criteria](#).<sup>21,22</sup> However, only the courts can rule on breaches of the Fair Trading Act and award appropriate penalties, which can be substantial and the resulting damage to a

company or individual's reputation can be severe. Although the EPA and CPGS set rules and regulations regarding composition and labelling in New Zealand and the Commerce Commission and Consumer Affairs enforce the rules and regulations, there is no active routine monitoring of personal care products by agencies in New Zealand. The system is largely reliant on self-enforcement by the industry and on the public lodging formal complaints.

The [Australian Competition and Consumer Commission \(ACCC\)](#) serves a similar role to New Zealand's Commerce Commission.<sup>3</sup> It investigates inaccuracies in product labelling that would mislead consumers about the composition of products and therefore prevent them from making an informed decision about their purchase. These include listing all chemical ingredients contained in the product, using INCI names, and listing a product's ingredients from greatest to least amount (see **Highlights Box**).

### Australian Competition and Consumer Commission (ACCC): Labelling requirements

The ACCC states that ingredients must be declared using either their common chemical names or their INCI names.<sup>3</sup> The INCI system allows the consumer to unequivocally identify the ingredient content. INCI names are listed in the [International Cosmetic Ingredient Dictionary](#) and are published by the [Personal Care Products Council](#).

The ingredients list should be prominent, clearly legible, and listed in descending order by either their mass or volume.<sup>4</sup> Alternatively, ingredients can be listed in the following order:

1. Ingredients in concentrations of  $\geq 1\%$  in descending order by volume or mass
2. Ingredients in concentrations of  $< 1\%$  in any order.

Claims on product labels are regulated by the ACCC such that no claims can be made that are untrue.<sup>3</sup> The ACCC is concerned with consumer claims whereas the TGA is concerned with pre-market therapeutic claims, which require supporting evidence. The ACCC receives personal care product mandatory injury reports and consumer complaints about personal care products, and conducts regulatory audits and product surveys in response to these reports.<sup>2</sup> The ACCC also conducts a national surveillance programme on industry compliance with cosmetic labelling requirements.



However, the ACCC cannot pursue all the complaints it receives or issues that come to its attention about the conduct of traders or businesses.<sup>23</sup> Its role is to focus on those circumstances that will, or have the potential to, harm the competitive process or result in widespread consumer detriment. The ACCC therefore exercises its discretion to direct resources to matters that provide the greatest overall benefit for competition and consumers. The ACCC will also tend to prioritise enforcement action in relation to the conduct of larger companies ahead of smaller businesses. This reflects the potential for greater consumer detriment from the actions of larger companies, and the likelihood that conduct of larger businesses may influence the behaviour of other market participants.

## Organic and natural products

In the US consumer survey of adult women, 40% of respondents said that they intended to increase their spending on natural personal care products.<sup>7</sup> Mirroring this trend, consumers in Australia and New Zealand increased their spend on natural or organic personal care products for babies by 64% between 2013 and 2015.<sup>24</sup> These data are evidence of the rapidly growing preference for products that are branded as being organic or natural.

The growing popularity of natural or organic products may increase the pressure on manufacturers to produce personal care products with fewer or less effective 'natural' preservatives.<sup>2</sup> These products must still be covered by quality assurance programmes to ensure their safety.

Formal definitions of the terms 'natural' and 'organic' have been established. NICNAS has published a [definition of a naturally-occurring chemical](#) and there is an Australian standard for growers and manufacturers wishing to label their products 'organic' and 'biodynamic' ([AS 6000-2009](#)). The [International Standards Organization \(ISO\)](#) has developed [guidelines on technical definitions and criteria for natural and organic cosmetic ingredients and products](#). These definitions and standards serve as reference points for determining whether a product is natural or organic.

As with any other label claims, misleading, false, or deceptive 'natural' or 'organic' claims are against the law and regulated by the ACCC in Australia,<sup>25</sup> and by the Commerce Commission through the Fair Trading Act 1986 in New Zealand.

For example, manufacturer/suppliers must be able to demonstrate that products labelled as 'organic' are produced organically and claims that products are 'certified organic' must be backed up with a certificate. Organic certification guarantees that the product has been audited throughout the production chain to comply with organic standards. However, organic certification is provided by multiple private bodies and their certification standards may vary.<sup>25</sup>

### Take-home messages

- Product standards prevent the inclusion of hazardous ingredients and restrict the amounts of certain other ingredients.
- Product standards also define how ingredients should be listed on product labels so that consumers are fully informed.
- Claims on product labels are regulated under New Zealand and Australian law such that no claims can be made that are misleading or untrue.
- Product labels and claims are not routinely actively monitored and tested.
- Regulatory body reviews indicate that consumer concerns about the safety of sulphates (skin sensitisation) and parabens (oestrogenic activity) are largely unfounded.
- Preservatives, such as parabens, are included in personal care products to maintain product effectiveness and safety.
- Ingredient substitution may compromise product performance and/or safety.
- There are formal definitions of 'natural' and 'organic', which should help to inform determination of a product as being natural or organic.
- Organic certification should guarantee that a product is organic; however, there is no universal standard for certification of organic products.

## Expert's concluding comments – Shaun Holt

When it comes to consumers assessing the labels on personal healthcare products, confusion and fear seem to dominate the perception of some ingredients. Activist groups, politicians, and the media often play a key role in this, with consumers facing a constant stream of scare stories, with the usual scenario being that the ingredients are "linked to higher rates of cancer". And I do not recall a single example of a media story stating that a previous ingredient health scare that had been reported in the media, had been investigated and that there was actually no need for any concern after all.

There is a strong perception that all that is natural is safe, but this is patently not true – cyanide is a natural product. But conversely, there is often unnecessary fear, usually as a result of scientific ignorance. One of the most notorious examples of this are the many times when people have been told about the risks of dihydrogen monoxide and how it kills lots of people each year, causes burns, is used in nuclear power plants, and has been found in cancerous tumours. People and groups have campaigned against it . . . only to find out later that dihydrogen monoxide is in fact another name for . . . water.

The American Council on Science and Health (ACSH) has highlighted a number of scare stories related to ingredients in a range of products, including cosmetics, perfumes, and health products. Helpfully, they trace the origins of the scares and discuss the media coverage that has been generated before presenting the scientific truth proving that the scare is without foundation. For example, a study claimed to have found a link between phthalates in make-up and a higher level of diabetes. Media stories were everywhere and led to an increase in 'chemical-free' make-up products (although of course every substance in every product is a chemical). The ACSH reviewed the data and concluded that there was no valid scientific evidence that warranted the scare.

The media, personal healthcare product manufacturers, and regulatory bodies all need to play a role in developing a common-sense approach to personal healthcare product labelling, so that real risks are put in perspective and consumers have accurate information on which they can make an informed choice.

### ABOUT RESEARCH REVIEW

Research Review is an independent medical publishing organisation producing electronic publications in a wide variety of specialist areas. Research Review publications are intended for New Zealand medical professionals.

### SUBSCRIBE AT NO COST TO ANY RESEARCH REVIEW

NZ health professionals can subscribe to or download previous editions of Research Review publications at [www.researchreview.co.nz](http://www.researchreview.co.nz)

**Privacy Policy:** Research Review will record your email details on a secure database and will not release them to anyone without your prior approval. Research Review and you have the right to inspect, update or delete your details at any time. **Disclaimer:** This publication is not intended as a replacement for regular medical education but to assist in the process. The reviews are a summarised interpretation of the published studies and reflect the opinion of the writer rather than opinions of the research group or scientific journal. It is suggested readers review the full trial data before forming a final conclusion on its merits.

## Expert's concluding comments – Professor Michael Roberts & Dr Brett MacFarlane

Personal care products, such as skin cleansers and moisturisers, play a key role in skin protection and health, with archaeological research suggesting such products have been used by humans for almost 100,000 years. More elegant products for a variety of indications have been described over the centuries in the Egyptian, Greek, Chinese, Persian, and other writings. Today, there is a plethora of personal care products available that are generally regulated by stringent requirements within Australia and New Zealand in relation to the actual ingredients present, essential labelling, and regulations. These regulations are supported by effective pre- and post-marketing surveillance by the [Australian Consumer and Competition Commission \(ACCC\)](#).

This review discusses the different claims that are made on product labels in terms of the Australian and New Zealand standards and regulations that govern product ingredients and labelling. Of paramount importance for all personal care products is their acceptance by consumers and their safety. Acceptance is often dictated by consumers' perceptions of the appearance, smell, and feel of products.

In today's environment of preservative- and antioxidant-free products, there is always the potential for microbial contamination and ingredient breakdown of such products. It is our personal view that it is essential for health professionals to advise consumers of these risks and to mitigate against these risks by appropriate verbal advice and labelling.

There may be key challenges in how those products are used and if they are discarded before their use-by-date. An [ACCC report](#) suggests that about 70% of women never wash makeup sponges or brushes and replace cosmetics only when they run out.<sup>26</sup> As this report points out, "For cosmetic products more generally, there are no specific Australian regulations that regulate the microbiological quality of cosmetics; mandate quantitative limits on microbial growth in cosmetics; or legally require expiry dates or period after opening (PAO) labels on all cosmetic products." In contrast, the European regulations specify that the microbiological specifications of the raw materials and the finished product must be included in the product information file and a safety assessment of the finished cosmetic product must be performed before that product can be placed on the EU market.

Thus, in being aware of these limitations of supplying Australian preservative- and antioxidant-free personal care products to consumers, Australian health professionals must give appropriate advice on their use and storage. In particular, we suggest that consumers be counselled to discard all such products after a finite time. It is Professor Roberts' personal view that shelf life and storage conditions similar to that now prescribed for eye drops (28 days after opening) is a good guideline. In addition, storing the product in a refrigerator could also help minimise bacterial growth and possible ingredient breakdown.

Dr MacFarlane reiterates these points. Apart from microbial contamination, as product containers are repeatedly opened during use conditions and the contents exposed to the atmosphere, oxidation of ingredients (particularly fragrances) make them more sensitising to the skin. Therefore, people who keep products for long periods of time can increase their risk of developing sensitivities.

It is important to consider personal care products as a whole rather than just a list of ingredients because certain ingredients can enhance the penetration of others such as SLS and parabens through the skin. Some formulations may lead to negligible penetration whereas others may cause significant penetration with uncertain sequelae at certain skin sites in susceptible individuals, especially after repeated applications for an extended duration of time. These considerations are important because although SLS is fairly innocuous in most formulations, it is the "gold standard" for skin patch irritation tests and clearly enhancing its penetration by ingredient substitution is most undesirable.

Dr MacFarlane believes the common practice of considering how long a person has used a skin care product for may mislead health professionals into believing it is not responsible for the person's sensitivity. Repeated application of usually innocuous ingredients can cause sensitisation over time. Therefore, the "Oh but I have been using this for ages, it can't be the cause of my rash" is not always true. Health professionals need to consider a long history of product use as a potential risk for sensitisation not always as an argument against it.

However, in making the above comments, Professor Roberts also observes that, at the concentrations described, almost all of the ingredients approved by [National Industrial Chemicals Notification and Assessment Scheme \(NICNAS\)](#) are in the category of generally being regarded as safe and, most importantly, Australia has a track record of having very few personal care product recalls. Thus, on balance, it could be argued that current Australian requirements are adequate and the more stringent European requirements place an unnecessarily onerous burden on manufacturers to guarantee their product safety. However, as a concluding comment, Professor Roberts would argue that it is "better to be safe than sorry" and if we really want to export our products overseas, as being urged by the Australian Government, my own personal view is that it is in the Australian Government's and the manufacturers' best interest that we modify our regulations to conform with those now applied by the EU for their personal care products.

This review also refers to organic or natural personal care products. In a recent [Choice article](#),<sup>27</sup> it is pointed out that the authenticity of such products is best proven through certification through bodies such as COSMOS, Australian Certified Organic, Natrue and NSF. It further points out that many natural ingredients, such as lavender oil, tea tree oil, lanolin, cinnamon compounds, and essential oils, can cause skin irritation and allergy. The article also points out that skin sun damage may be exacerbated by citrus oils; hormone disruption in boys has been associated with personal care products containing lavender oil and tea tree oils; goat milk and nut soap and moisturisers have been the cause of corresponding food allergies; and effects are most profound when the products are applied to broken or inflamed skin.

This unfortunately flies in the face of consumers' desires for more 'natural' skin care to protect them from damaging manmade ingredients. Dr MacFarlane says that natural essential oils like lavender and citrus are actually some of the more sensitising fragrances while the manmade ones like bisabolol are often less sensitising. In my opinion, the best approach is to just avoid fragrant smelling skin care products completely regardless of the 'all natural' or 'fragrance free' package claims.

In conclusion, consumers should be instructed "to beware" when using personal care products. In principle, the available products use ingredients in concentrations that are fairly innocuous, as recognised by current Australian and New Zealand regulatory requirements. However, certain products, are comprised of potential skin irritants (SLS, parabens, oxybenzone) for example in a product containing one or more skin penetration enhancers (e.g. propylene glycol, fatty acids, fatty acid esters). Potentially irritant natural ingredients should always be treated with caution and products should be ceased if they cause irritation and/or allergic responses. Particular care should be noted in repeatedly applying to thin (e.g. under eyes), inflamed, broken, and/or young skin of sensitive individuals. Finally, personal care products do not last indefinitely once opened, especially for preservative-free and/or antioxidant-free personal care products. The consumer should always be aware of the potential for microbial spoilage and ingredient breakdown. Health professionals need to upskill on the knowledge of personal care products and take a greater role in advising consumers of their most appropriate use.

### REFERENCES

1. Anonymous. Frequently-asked questions about cosmetics, toiletries and face paint. Wellington: Environmental Protection Authority. Available from: [http://www.epa.govt.nz/hazardous-substances/pop\\_hs\\_topics/Pages/FAQs-about-cosmetics.aspx](http://www.epa.govt.nz/hazardous-substances/pop_hs_topics/Pages/FAQs-about-cosmetics.aspx). [Date accessed: 11/02/16].
2. Rickard D. Cosmetic compliance and safety and the Australian Consumer Law. Accord Cosmetic and Personal Care Conference 2014; 22 October; Sydney, NSW. Transcript. Canberra, ACT: Australian Competition and Consumer Commission. Available from: <https://www.accc.gov.au/speech/cosmetic-compliance-and-safety-and-the-australian-consumer-law>. [Date accessed: 18/02/16].
3. Anonymous. Product safety bulletin: Chemicals in cosmetics. August 2014. Canberra, ACT: Australian Competition and Consumer Commission. 2014. Available from: [http://www.productsafety.gov.au/system/files/Supplier%20Bulletin%20-%20Chemicals%20in%20cosmetics\\_0.pdf](http://www.productsafety.gov.au/system/files/Supplier%20Bulletin%20-%20Chemicals%20in%20cosmetics_0.pdf).
4. Anonymous. Product safety: Ingredients labelling on cosmetics. Supplier Guide. Canberra, ACT: Australia Competition and Consumer Commission. August 2014:1-24. Available from: <http://www.productsafety.gov.au/content/index.phtml/itemId/991380>.
5. Bray K. Chemicals in cosmetics. Are your cosmetics killing you? Marrickville, NSW: Choice. Last update date: 09/03/16. Available from: <https://www.choice.com.au/health-and-body/beauty-and-personal-care/skin-care-and-cosmetics/articles/chemicals-in-cosmetics#allergens>. [Date accessed: 08/07/16].
6. Anonymous. Europeans' attitudes toward chemicals in consumer products: Risk perception of potential health hazards (Eurobarometer 71.1, August 2009). Brussels: European Union. Available from: [http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_314\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_314_en.pdf)
7. Anonymous. Poll: Nearly 60% of American women read beauty product labels, check for harmful ingredients. New York, New York: Drug Store News. Last update date: 05/08/15. Available from: <http://www.drugstorenews.com/article/poll-nearly-60-us-women-check-beauty-products-harmful-ingredients>. [Date accessed].
8. Juhász ML, et al. A review of selected chemical additives in cosmetic products. *Dermatol Ther*. 2014;27(6):317-22.
9. Anonymous. Common myths about some ingredients. Products and Ingredients. Brussels: Cosmetics Europe - The Personal Care Association. Available from: <https://www.cosmeticseurope.eu/safety-and-science-cosmetics-europe/products-and-ingredients/common-myths-about-some-ingredients.html>. [Date accessed: 18/02/16].
10. Anonymous. Sodium lauryl sulfate and sodium laureth sulfate. Cosmeticsinfo.org. Washington, DC: Personal Care Products Council. Available from: <http://www.cosmeticsinfo.org/sodium-lauryl-sulfate-and-sodium-laureth-sulfate>. [Accessed: 11/07/16].
11. Anonymous. Human health tier II assessment for sodium and ammonium laureth sulfate. Inventory Multi-tiered assessment and prioritisation (IMAP). Sydney, NSW: National Industrial Chemicals Notification and Assessment Scheme. Last update date: 21/01/16. Available from: [http://www.nicnas.gov.au/chemical-information/imap-assessments/imap-group-assessment-report?assessment\\_id=177#cas-A\\_9004-82-4](http://www.nicnas.gov.au/chemical-information/imap-assessments/imap-group-assessment-report?assessment_id=177#cas-A_9004-82-4). [Date accessed: 10/02/16].
12. Anonymous. Human health tier II Assessment for sodium, ammonium, and potassium lauryl sulfate. Inventory multi-tiered assessment and prioritisation. Sydney, NSW: National Industrial Chemicals Notification and Assessment Scheme. Last update date: 21/01/16. Available from: [http://www.nicnas.gov.au/chemical-information/imap-assessments/imap-group-assessment-report?assessment\\_id=184#cas-A\\_151-21-3](http://www.nicnas.gov.au/chemical-information/imap-assessments/imap-group-assessment-report?assessment_id=184#cas-A_151-21-3). [Date accessed: 10/02/16].
13. Anonymous. Human health tier II assessment for parabens. Inventory Multi-tiered assessment and prioritisation (IMAP). Sydney, NSW: National Industrial Chemicals and Notification and Assessment Scheme. Last update date: 21/01/16. Available from: [http://www.nicnas.gov.au/chemical-information/imap-assessments/imap-group-assessment-report?assessment\\_id=1714#cas-A\\_94-13-3](http://www.nicnas.gov.au/chemical-information/imap-assessments/imap-group-assessment-report?assessment_id=1714#cas-A_94-13-3). [Date accessed: 10/02/16].
14. Anonymous. Parabens. Cosmetic ingredient review (CIR): Expert panel meeting. 5-6 March 2012. Brussels: European Commission's Scientific Committee on Consumer Safety (SCCS) Available from: [http://www.cir-safety.org/sites/default/files/paraben\\_build.pdf](http://www.cir-safety.org/sites/default/files/paraben_build.pdf)
15. Anonymous. ICCR Working Group on Cosmetic Product Preservation. ICCR-8; 8-10 July 2014; Ottawa, Canada. International Cooperation on Cosmetics Regulation. Available from: [http://www.iccrnet.org/files/2214/5071/7390/2015-12\\_General\\_and\\_Technical\\_Frequently\\_Asked\\_Questions\\_FAQs\\_on\\_Preservatives\\_in\\_Cosmetics.pdf](http://www.iccrnet.org/files/2214/5071/7390/2015-12_General_and_Technical_Frequently_Asked_Questions_FAQs_on_Preservatives_in_Cosmetics.pdf). [Date accessed: 19/02/16].
16. Anonymous. Preservatives. Brussels: Cosmetics Europe - The Personal Care Association. Available from: <https://www.cosmeticseurope.eu/safety-and-science-cosmetics-europe/products-and-ingredients/preservatives.html>. [Date accessed: 19/02/16].
17. Anonymous. Cosmetic products group standard 2006 (as amended July 2012). Wellington: Environmental Protection Agency. 2006. Available from: <http://www.epa.govt.nz/Publications/Cosmetic%20Products%20Group%20Standard.pdf>.
18. Anonymous. Cosmetics Europe: Guidelines on cosmetic product labelling 2011. Brussels: Cosmetics Europe - The Personal Care Association. Available from: <https://cosmeticseurope.eu/publications-cosmetics-europe-association/guidelines.html?view=item&id=84>.
19. Anonymous. Labelling. Brussels: Cosmetics Europe - The Personal Care Association. Available from: <https://www.cosmeticseurope.eu/using-cosmetics-colipa-the-european-cosmetic-cosmetics-association/labelling.html>. [Date accessed: 18/02/16].
20. Anonymous. Fair Trading Act: Unsubstantiated claims. Wellington: Commerce Commission New Zealand. Last update date: February 2014. Available from: <http://www.comcom.govt.nz/fair-trading/fair-trading-act-fact-sheets/unsubstantiated-representations/>. [Date accessed: 22/04/16].
21. Anonymous. Enforcement criteria. The Commission. Wellington: Commerce Commission New Zealand. Last update date: June 2014. Available from: <http://www.comcom.govt.nz/the-commission/commission-policies/enforcement-criteria/>. [Date accessed: 24/04/16].
22. Anonymous. Enforcement of the fair trading act. Fair Trading. Wellington: Commerce Commission New Zealand. Last update date: July 2014. Available from: <http://www.comcom.govt.nz/fair-trading/enforcement-of-the-fair-trading-act/>. [Date accessed: 24/04/16].
23. Anonymous. ACCC Compliance and Enforcement Policy. Canberra, ACT: Australian Competition & Consumer Commission. February 2016:1-8. Available from: [https://www.accc.gov.au/system/files/2016%20ACCC%20Compliance%20and%20Enforcement%20Policy\\_0.pdf](https://www.accc.gov.au/system/files/2016%20ACCC%20Compliance%20and%20Enforcement%20Policy_0.pdf).
24. Johnson and Johnson Pacific. Grocery and pharmacy sales of baby toiletries for New Zealand and Australia [Data on file]. 2015.
25. Anonymous. Organic claims. Consumers: Grocery. Canberra, ACT: Australian Competition and Consumer Commission. Available from: <http://www.accc.gov.au/consumers/groceries/organic-claims>. [Date accessed: 24/04/16].
26. Anonymous. ACCC analytical survey of microbiological contamination of cosmetics for use around the eyes. Final report Canberra, ACT: Australian Competition and Consumer Commission; July 2015. Available from: [https://www.productsafety.gov.au/content/item.phtml?itemId=1015918&nodeId=f94f7dc0a470e4169015495bc60fa619&fn=Survey%20report%20-%20cosmetics%20designed%20to%20be%20applied%20to%20the%20eyes%20survey%20\(micro\).pdf](https://www.productsafety.gov.au/content/item.phtml?itemId=1015918&nodeId=f94f7dc0a470e4169015495bc60fa619&fn=Survey%20report%20-%20cosmetics%20designed%20to%20be%20applied%20to%20the%20eyes%20survey%20(micro).pdf)
27. Bray K. Natural and organic cosmetics. Are you getting what you pay for? Marrickville, NSW: Choice. Last update date: 05/08/15. Available from: <https://www.choice.com.au/health-and-body/beauty-and-personal-care/skin-care-and-cosmetics/articles/natural-and-organic-cosmetics> [Date accessed: 08/07/16].