

Trends in aging and skin care: Ayurvedic concepts

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ABSTRACT

The association between Ayurveda, anti-aging and cosmeceuticals is gaining importance in the beauty, health and wellness sector. Ayurvedic cosmeceuticals date back to the Indus Valley Civilization. Modern research trends mainly revolve around principles of anti-aging activity described in Ayurveda: *Vayasthapana* (age defying), *Varnya* (brighten skin-glow), *Sandhaniya* (cell regeneration), *Vranaropana* (healing), *Tvachya* (nurturing), *Shothahara* (anti-inflammatory), *Tvachagnivardhani* (strengthening skin metabolism) and *Tvagrasyana* (retarding aging). Many *rasayana* plants such as *Embllica officinalis* (Amla) and *Centella asiatica* (Gotukola) are extensively used.

Key words: Ayurveda, anti-aging, cosmeceuticals, beauty, longevity, skin care.

INTRODUCTION

The contemporary concept of wellness includes beauty, health, fitness and anti-aging treatments, and is expected to become a US \$1 trillion business by 2010. According to Euromonitor International's recent Industry report, today's consumers clearly prioritize age-prevention above any other category of cosmeceuticals. Hence the naturals and wellness segment basically targets consumers in the 35–55 age group for anti-aging cosmeceuticals, and even teens who want to postpone the aging process.^[1]

Cosmeceuticals are topical cosmetic—pharmaceutical hybrids intended to enhance health and beauty through ingredients that influence the skin's biological function.^[2] The various topical application products that delay and/or reverse visible signs of aging are termed anti-aging cosmeceuticals. Research trends in anti-aging skin care products are moving towards developing new plant extracts and botanical ingredients based on their traditional medicinal uses.^[3]

Ayurveda is one of the most ancient medical traditions practiced in India, Sri Lanka and other South Asian

countries, and has a sound philosophical and experiential basis.^[4] Atharvaveda, Charak Samhita^[5] and Sushruta Samhita are its main classics, giving detailed descriptions of over 700 herbs. Ayurveda has several formulations for management of aging and related conditions. Its literature describes over 200 herbs, minerals and fats to maintain and enhance the health and beauty of the skin.^[6] Today there is once again a revival of preference for natural products, and in recent years there has been a great upsurge in the study of Indian herbs.^[7]

AYURVEDIC COSMECEUTICALS

The origins of Ayurvedic Cosmeceuticals date back to the Indus Valley Civilization. The use of cosmetics was not only directed towards developing an attractive external appearance, but towards achieving longevity with good health (Sanskrit - *Aayush* and *Aarogyam*). There is evidence of highly advanced concepts of self-beautification, and a large array of cosmetics used by both men and women in ancient India. Many of these practices depended on the season (*Rutus*) and were subtly interwoven with daily routine (*Dinacharya*). The whole range of cosmetic usage and its practice as conceived by the ancient Indians was based on natural resources.^[8] Skin care procedures forming the daily routine described in Ayurvedic literature consist of numerous formulae involving herbs and other natural ingredients. They were used as external applications in the form of packs, oils, herbal waters, powders etc. Applications of these as pastes have been classified into several kinds based on the temperature, duration and thickness of application, effect of the application for healing, beautifying, anti-aging etc.^[9,10]

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Ayurvedic cosmeceuticals are very much prized for their safe, holistic action. Based on the vast and established knowledge of Ayurveda, herbal extracts, fruit extracts and essential oils are now being effectively used in medicines, food supplements and personal care. Ranges of Ayurvedic cosmeceuticals are available for ageless skin, tonifying it, smoothing its imperfections, and increasing its hydration level, thus restoring a radiant and healthy look. Such preparations actively protect the skin and prevent premature aging.^[11]

COSMECEUTICAL TRENDS

Market and regulatory trends

Cosmeceuticals are not regulated as such in the European Union, United States or Japan. In the EU, most are considered cosmetics; in the United States, most are seen as drugs, that have probably not been approved by the U.S. Food and Drug Administration (FDA). In Japan, they are regulated as quasi-drugs.^[12] Today, new challenges are presented to government regulatory agencies as new molecules from natural sources with true biological activity are being discovered and tested. Traditional recipes of historical significance have become important segments of the cosmeceutical market. Whereas there are clear guidelines for manufacturing and advertising drugs as compared to cosmetics, the same is lacking for cosmeceuticals. Being hybrids, cosmeceuticals are difficult to classify. The tightening of government regulations for products claims and safety testing are on the horizon.^[13] Natural and organic cosmeceuticals is one of the fastest growing segments of the health and wellness market place. US Market Research Data shows that sales of natural and organic personal care products totaled \$7.9 billion in 2008, and is expected to exceed \$10 billion by 2010. The US is a less mature market than Europe with lower penetration, and hence is expected to grow at the faster rate of 8.2% as against 4.6% for Europe.

Standards for organics include the USDA National Organic Program (NOP), which enforces the Organic Food Production Act (OFPA). Organic and Sustainable Industry Standards (OASIS) allow both organic and 'made with organic' in the global marketplace. Under OASIS, 'made with organic' starts at 70% minimum organic content, while organic requires 85%, but the requirement will increase to 90% in 2010 and 95% in 2012. Europe has a number of organic standards for harmonization, including French Ecocert, German BDIH (Bundesverband deutscher Industrie-und Handelsunternehmen), U.K. Soil Association and the nonprofit NaTrue. Its major certification bodies have banded together, consolidating their efforts via COSMOS, which includes the UK, Germany, France, Italy and Belgium. For products designated as natural, the

Natural Products Association (NPA) recently brought out its Natural Personal Care Standard to help ease consumer confusion in this market segment. NPA's new standard requires a minimum of 95% of ingredients from natural sources.^[14-16]

Product and ingredient trends

Nutricosmetics - Nutricosmetics is the term often used for nutritional cosmetics and relates to 'eat and drink products in co-ordination with usual skin care routine for better overall results'. Companies like Glowelle, Borba and Perricone have captured this trend with innovative ingestibles promising cosmetic results. In the anti-aging market segment 'Beauty-from-Within' cosmeceuticals are becoming very popular. These orally ingested functional products promote youthfulness by targeting and reversing specific physiological processes normally associated with aging, such as the irreversible breakdown of cells and tissues. Many such nutricosmetics contain vitamins, phytonutrients and other natural ingredients to achieve the desired results. Anti-oxidants used in such nutricosmetics or oral anti-aging products include vitamins A, C and E, fatty acids like alpha-lipoic acid, and botanicals such as green tea. Superior products also include ingredients, which promote skin health, have anti-inflammatory action, and include an anti-stress component. Between 2005 and 2007, the sharpest rise in new cosmeceutical food and drink product launches was in Europe. In 2005, 14% of global cosmeceutical NPD originated in Europe, and this rose to 23% in 2007.^[13] Some common ingredients included in this category are Echinacea, Green Tea, Garlic, Gingko Biloba, Aloe Vera and St. Johns Wort.^[17]

Consumer trends

Changes in the Gender Divide: the market share of men's cosmeceutical products is starting to be significant, but they have a long way to go before they rival those for women. A report published by the Natural Marketing Institute (NMI) in 2007 showed that the fastest growing segment today is the men's cosmeceutical range. The demand for looking good and maintaining youthful healthy skin is no longer just for women. The first major wave of men's skin care products appeared in the mid 1990s and has since grown steadily to a projected \$6 billion in sales for 2008. Men are no longer embarrassed to shop for creams or admit their equal desire to look young. Anti-aging skincare lines for men can be designed using cosmeceutical ingredients such as vitamins, phytochemicals, acids, anti-oxidants and essential oils.^[18] The youngest age group being addressed for skin care are babies, with baby cosmeceutical products including sunscreens and special actives.^[13]

Price trends

Producing efficacious anti-aging cosmeceuticals requires a lot of science and research, which can prove expensive.

Hence many cosmeceuticals, like La Prairie's \$200 anti-aging cream, are situated at the premium end of the market. However, mega companies like P&G with products like Olay Regenerist are now aiming to be more affordable for the everyday consumer in the mass market. Further lower cost alternatives would have a large scope in the marketplace.^[19]

Research trends

Anti-aging cosmeceutical concepts in Ayurveda

According to Ayurveda, a number of factors determine skin health and youthfulness. These include proper moisture balance (*Kapha* in balance), effective functioning of the metabolic mechanisms that coordinate all the various chemical and hormonal reactions of the skin (*Pitta* in balance) and efficient circulation of blood and nutrients to the different layers of the skin (*Vata* in balance). The health of the following three *dhatus* (types of body tissue) are especially reflected in the skin: nutritional fluid (*Rasa*), blood (*Rakta*) and muscle (*Mamsa*). *Rasa* supports all the body tissues, particularly keeping the skin healthy, *Rakta*, in association with liver function, helps detoxify the skin of toxins, while *Mamsa* provides firmness to the skin. An effective Ayurvedic anti-aging cosmeceutical should provide support to all these three areas. Anti-aging treatment includes two types of therapies *Urjaskara* (promotive) and *Vyadhibara* (curative). For *vata* skin to stay youthful, skin care products that can nourish and rehydrate the skin should be used, otherwise it may be susceptible to wrinkles and premature aging. Warm oil self-massage and all natural moisturizers may help. For *pitta* skin, good sunscreens for protection from the sun, and good facial skin oils should be used daily. Tanning treatments and therapies that expose delicate sensitive skin for extended periods of time to steam/heat should be avoided. For *kapha* skin, a daily warm oil massage and cleansing of skin with gentle exfoliant should be performed.^[20]

Anti-aging properties of Ayurvedic cosmeceutical ingredients^[21-24]

1. Age defying activity (*Vayasthapana*) – The ingredient that nourishes the skin and ensures its optimum physiological functions and has an overall anti-aging property is called *vayasthapana*, which literally means 'maintaining youthfulness' or 'arresting age'. *Vayasthapana* herbs give overall support to the skin by keeping all three *doshas* in balance. *Centella asiatica* (Gotu-Kola) is the foremost *vayasthapana* herb with anti-aging effects; one of its many properties is to enhance collagen synthesis.
2. Youthful Radiance (*Varnya*) – An important group of herbs called *Varnya*, has the ability to enhance the radiance or bright complexion of the skin. If the skin does not have a healthy glow, or *varnya* quality, then it is not considered youthful in Ayurveda. *Varnya* herbs

include sandalwood, vetiver, Indian madder and Indian sarsaparilla and so on.

3. Protection from normal wear and tear (*Sandhaniya*) – *Sandhaniya* herbs help coalesce discontinued tissue, and in healing and regenerative functions of the skin, repairing effects of aging. 'Sensitive Plant' enhances healing and regeneration of the nerves by 30 to 40%.
4. Deep healing (*Vranaropana*) – *Vranaropana* herbs enhance deeper healing abilities in the skin. *Vranaropana* herbs include Gotu Kola and sensitive plant, and are known for their ability to heal wounds.
5. Enhancing and nurturing (*Trachya*) – These herbs support moisture balance and provide overall nourishment to the skin. Gotu Kola, Silk Cotton Tree, Costus and Rose Petal are the most widely used. Grapefruit extract and natural sources of Vitamins A, C and E nourish the skin and enhance the value of herbs. Feeding the skin properly is very important to prevent it aging.
6. Anti-inflammatory (*Shothabara*) – By protecting the skin against allergens, inflammatory substances, chemicals and even stress, this group of herbs provide the anti-inflammatory effect, essential to all anti-aging formulations. Many factors in the external environment can cause inflammation or breakouts. Inflammation is considered a prime cause of aging; an inflamed site forms a micro-scar that over time develops into a wrinkle or blemish. Inflammatory mediators such as leukotrienes and prostaglandins, cytokines and growth factors target skin texture, integrity and tone. Containing inflammation at its root is therefore an effective anti-aging strategy.^[25] And while one can protect every other part of the skin by covering it with clothing, facial skin is always exposed. Rose petal, Silk Cotton Tree and Aloe Vera are *Shothabara* herbs with appropriate anti-inflammatory properties.

Gum resin exudates of *Boswellia serrata* have been used in the Ayurvedic system of medicine in the management of several inflammatory conditions.
7. Strengthening the skin's metabolic mechanisms (*Trachagnivardhani*) – This means literally to enhance the luster of the skin by enhancing the skin's metabolism. As one ages, metabolism generally slows down; similarly skin metabolism also weakens. If enzymes become imbalanced, metabolic toxins are created, *ama*. *Ama* in the skin clogs the channels, leading to wrinkles, dryness and other signs of aging. Clogged channels also create dullness and lack of youthful glow. Application of *Centella asiatica* enhances enzyme principles; topically, it improves circulation early. Also, by removing *ama* and

deep impurities, it helps prevent varicose veins, cellulitis, aging skin, and weakened immunity to allergens and skin diseases.

8. Maintaining skin health and retarding aging (*Trvagrasayana*) – In Ayurveda the concept of anti-aging is embodied in *rasayana*. *Trvagrasayana* means literally ‘skin *rasayana*’, which refers to refined and powerful herbal formulae designed to prevent sickness and aging of the skin.

Phyllanthus emblica (amalaki), a potent antioxidant, rich in Vitamin C, tannins and gallic acid, is foremost amongst the anti-aging drugs (*vayasthaprana*) or best amongst the rejuvenating herbs; it has properties like *rasayana* (adaptogenic), *ajara* (usefulness in aging), *ayushprada* (prolongs cell life), *sandhaniya* (improves cell migration and cell binding) and *kantikara* (improves complexion).^[6] In 2008, Mintel picked up 46 haircare, 45 skincare, 8 colour cosmetics and 2 soap/bath launches containing *amalaki*.^[26] Thus we can see that use of amalaki is widespread in the cosmoceutical industry.

CONCLUSIONS

The aging process is a challenging human experience common to everyone, and the desire to look young prevails in the majority of us. The latest trends in beauty, health and wellness sectors are giving rise to a new realm of possibilities by fusing anti-aging cosmeceuticals with traditional Indian medicine – Ayurveda. Ayurveda offers vast amounts of information on principles of anti-aging activity, skin care and anti-aging herbs, helping in the exploration of possibilities of developing new anti-aging cosmeceuticals with natural ingredients for topical applications. A number of cosmetic companies have used Ayurvedic knowledge for developing anti-aging cosmeceuticals. The future for beauty-from-within functional cosmetics that offer multifunctional benefits in the area of anti-oxidant cellular protection and skin health with anti-inflammatory and anti-stress properties is bright. Backed by sound science and substantiated structure and function, they will have a big market in the anti-aging cosmeceutical sector. This review may help cosmetic and personal care industry, marketers and modern scientists understand various different trends of potential use to research on anti-aging cosmeceutical approaches to delaying, defying, and preventing skin aging.

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