Page 5 16/04/08 01 01hn1604health pcc1 02:27:54 PM 14/04/08

BUSINESS DAY, 16-April-2008 Page 5 CYAN MAGENTA YELLOW BLACK

BIOCHEMISTRY

Pray that your hair dye does you no harm

Can hair dye harm you, even kill you over time? Some experts say no. Others say there's enough reason for women and the growing numbers of men who colour their hair to use natural alternatives to chemical dyes, writes ***MARIKA SBOROS***

IT USED to be the preserve of women. The few men who did it, were usually young or did so discreetly. It is hair colouring, for a new look, or in an increasingly youth-obsessed world to hide the grey associated with old age.

Hair stylists in SA and internationally say more hair-colour clients are male, including executives. They say it's a logical extension of the global male grooming trend, a spin-off of the rise of "metrosexual man" — who happily shows his feminine side, and apes women in their pampering habits with grooming products ranging from skin creams to hair dyes.

The most well-known metrosexual is soccer star David Beckham who regularly sports hair colour changes, as does wife, Victoria.

The trend is pretty good news for the beauty industry: In 2005, the men's grooming product market worldwide was worth more than $20bn, with annual growth at more than 6%. In 2004, the 25-nation European bloc alone, the hair dye market was worth €2.6bn.

The trend is ugly news too, as both sexes ponder a perennial health concern: research linking chemicals in grooming products, including hair dyes, with serious health problems, among them "selected fatal cancers", auto-immune diseases, allergies, and skin and respiratory problems.

Concerns are driving the massive rise in natural, organic grooming products. Like women, men see the need to reduce levels of artificial additives, colourants and preservatives not just in food, but in products applied to the skin. There's even a website devoted to the search (www.safecosmetics.org).

When it comes to hair dyes, the ones causing most concern are permanent dyes that won't fade. They contain p-phenylenediamines (PPDs) and other toxic chemicals. PPDs are the main colour-giving chemical in most (98%) chemical hair dyes including big brands, and in more "natural" alternatives that claim to be safer.

Studies show PPDs to be "potentially carcinogenic", an "immune system dysregulator", and toxic to wildlife and the soil. In 2005, the Washington-based independent Environmental Working Group analysed the ingredients in 7 500 personal care products and found that 71 of 117 hair dyes, including top brands, contained PPDs derived from carcinogenic coal tar.

PPDs are no longer only coal derivatives, but that doesn't mean they are safer. Research also suggests the higher the levels in a product, the greater the health risk.

UK research in the British Medical Journal last year said PPDs were responsible for a rising incidence of allergic reactions to hair dye, that could cause dermatitis on the face and, in severe cases, facial swelling. The report, by medical specialists at St John's Institute of Dermatology, St Thomas' Hospital, London, said more than two thirds of hair dyes currently contained PPDs and other related agents, and noted that during the 20th century, allergic reactions to PPD became "such a serious problem, it was banned from hair dyes in Germany, France, and Sweden".

In its defence, PPD can't act alone. It needs chemical "partners in crime" to change hair colour permanently and wreak maximum damage by seeping into the bloodstream along the way.

The usual suspect is ammonia. It acts as a catalyst, damaging the hair structure by stripping the colour, and opening up the hair cuticle so the PPD can penetrate and deposit colour into the cortex. If it were only your hair condition that ammonia harmed, it wouldn't be that bad. However, ammonia penetrates the epidermis on the scalp, allowing PPDs and any other noxious substances that may be in the dye to enter the bloodstream.

There is currently no alternative to PPD to achieve permanent hair colour and optimum grey coverage, though there are products on the internet (not yet available in SA) that claim "revolutionary patent pending" ingredients and "superior technology" that makes them PPD-free.

Beauty houses know potentially lucrative bandwagons when they see one. Ammonia-free is now the trend in permanent dye products. Among well-known brands offering them are Redken, Schwarzkopf, Revlon and Garnier.

But specialists say ditching ammonia is not enough. PPD levels must be as low as possible.

Giuseppe Barbieri is GM of Antica Erboristeria, the 40-year-old Italian company that makes Herbatint (www.herb.it), a pioneer ammonia-free permanent hair dye product developed in 1970. It is exported to 30 countries, and is available in SA through Nature's Colours (www.herbatint.co.za).

Barbieri claims it is the "safest of all the permanent hair colours" and says he can substantiate claims, as Antica Erboristeria does not outsource manufacturing. "We keep tight control over all the raw material to maintain quality and safety standards ."

Herbatint contains PPDs at the lowest level of any permanent product on the market — between 0,6-0,7% in the darkest colours and only traces in the lightest — "much less than the 6% allowed in top brands, and in EU countries", he says.

It has propylene glycol, an organic compound used as a hydrating and solvent agent, in roughly the same percentages as other dyes, including more natural alternatives. The US regulatory body, the Food and Drug Administration passed the compound as "generally recognised as safe for use in food, cosmetics and medicines".

Herbatint for the South African market is also free of parabens and resorcinol (though neither is on the European Commission's list of banned hair dye substances published in December 2006) and other potentially dangerous chemicals.

Instead of ammonia, Herbatint achieves permanent colour through a "synergy" of compounds, says Baribieri, that is a mix of vegetal extracts (betula alba leaf extract, hamamelis virginiana extract and others), vegetal oils, alkalinising alternatives and low levels of hydrogen peroxide.

Its "highly pure colour pigments" have a small molecular structure, and require low volumes of peroxide for expansion. That allows little or no penetration of the epidermis. Visual proof is "far less staining of the scalp compared to ammonia-based and other conventional dye products".

Hydrogen peroxide-free hair dyes are poised to become another band wagon. However, even at higher levels, hydrogen peroxide does not appear to be a risk. It is widely used in mouthwash and teeth whitening products, and therapeutically to clean wounds and treat acne.

So why would anyone still put ammonia into a hair dye product with PPDs? "Economics ," says Baribierie. "It's more expensive to make a permanent hair dye without ammonia."

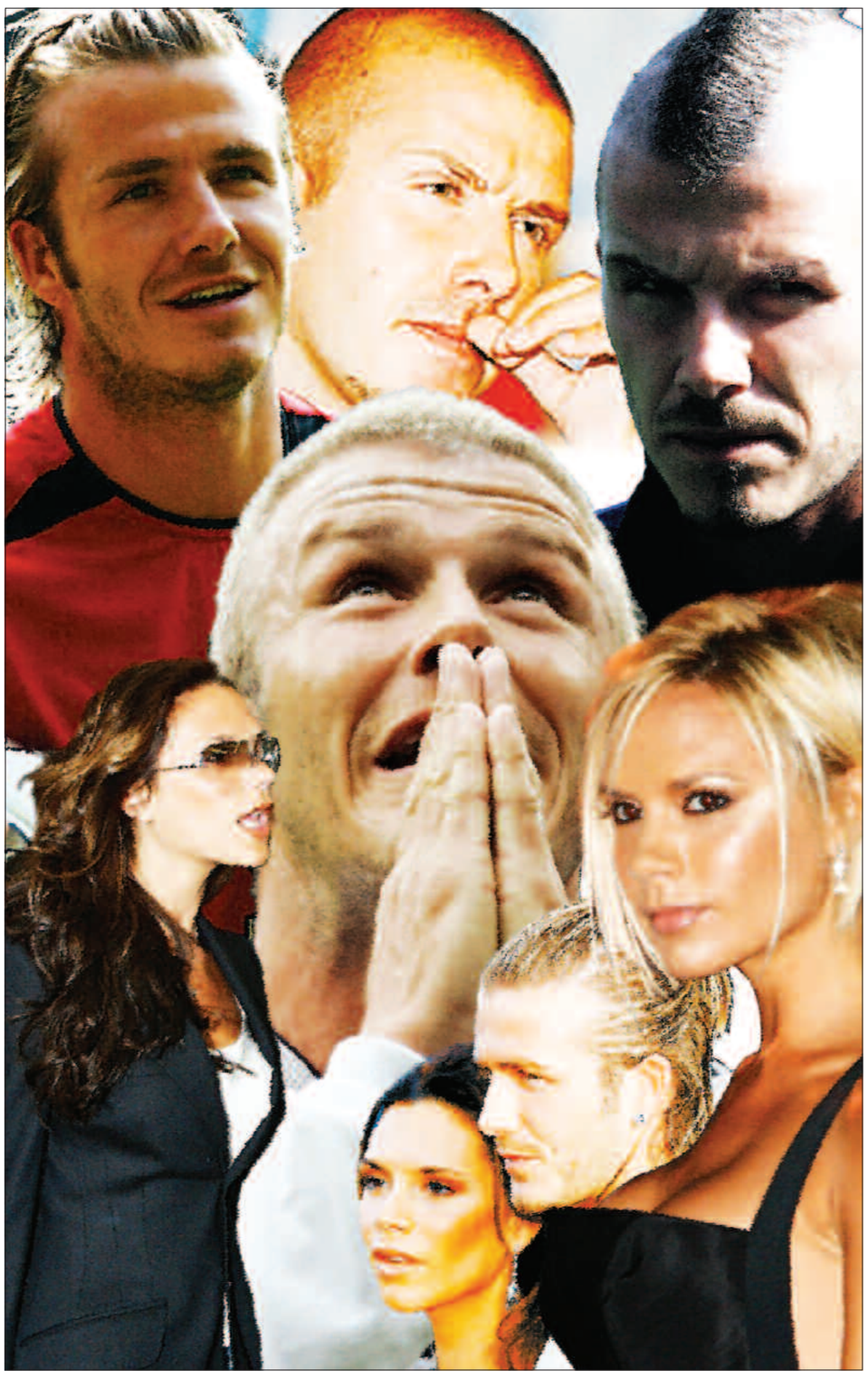
Another alternative now available in SA is a UK product, Daniel Field Natural Colours (www.pureearth.co.za). It is ammonia- and peroxide-free, but does contain PPDs (less than 2%) and lauryl sulphates, but no parabens, formaldehyde, alcohol and resorcinol. It can't lighten hair colour, and " behaves as a level 2 product sometimes known as a demi-permanent or tone-on-tone", says distributor Sarah Edwards.

Concerns about chemical permanent hair dyes continue, though some specialists say risks are exaggerated. US dermatologist Dr Vincent DeLeo, of the Beth Israel Medical Centres in New York is quoted on an internet website as saying the use of permanent hair dye is "not as dangerous as smoking".

Cancer bodies do little more than fence sit. The Cancer Association of SA on its website, www.cansa.org.za, asks: "Can permanent dyes cause bladder cancer?" Its answer: "Maybe." It describes University of Southern California research linking permanent hair dyes with an increased risk of bladder cancer as "one of the largest and most comprehensive studies conducted on the issue" and says "the results should not be ignored". Then it says the study only "creates an association between permanent hair dye exposure and bladder cancer but does not prove a causal link".

Cancer Research UK on its website, www.cancerhelp.org.uk, says using hair dye is "unlikely to be a risk factor for bladder or breast cancer", but may be a "very small risk factor for a few types of cancer that affect the blood cells".

But these days, it isn't only metrosexuals like Beckham who are seeing the benefits of natural approaches, including alternatives to products laden with chemicals.



Soccer star David Beckham is the most well known example of a metrosexual male, who apes women, including wife Victoria, in dyeing his hair.
Pictures: AP, REUTERS. Montage: SHAUN UTHUM

ORGANIC HAIRDRESSING

The global organic trend is not just about food. It now includes safer alternatives to grooming products, including chemical hair dyes.

One of the spinoffs is the rise of "organic hairdressing", the use of natural and organic hair products that either don't have toxic chemicals, or have as few as possible and levels as low as possible to change hair colour and cover grey hair effectively.

Master stylist and colour specialist Giovanni Battista says organic hairdressing is simply "an idea whose time has come".

Battista is the first in SA to include natural alternatives to conventional permanent hair dyes in his Bryanston salon, by offering the Italian Herbatint range of ammonia-free permanent hair dyes.

The product has the lowest levels of the chemical p-phenylenediamine PPD that has been linked in research to a range of serious health problems.

Battista says Herbatint has been particularly successful on clients who suffered allergic reactions — swelling and skin rashes — from conventional permanent hair dyes.

In the past, the only alternative was for them to stick to their own hair colour, and eventually to "go grey", he says. The "braver" ones used colour shampoos (semi-permanent dyes with less chemicals), and had less severe allergic reactions.

Herbatint caused no allergic reactions at all in these clients, and worked as well as conventional products.

Battista offers the range to clients with sensitive skins, other health concerns or those who just prefer to use a product with less chemicals.

Colour specialist and master stylist Giovanni Battista Picture: DESIREE SWART

SUSPECT CHEMICALS

Suspect chemicals in grooming products include:
- Sodium lauryl sulphates — thickening and lathering agents used in toothpastes, shaving foams, shampoos and shower gels, and linked to skin problems;
- Parabens — a class of hormone-disrupting compounds used as preservatives and linked to testicular cancer and lowered sperm production;
- Phthalates — chemicals with softening properties used in moisturisers and other products, also linked to lower testosterone levels;
- Resorcinol — an oxidising agent shown to be a hormone disrupter.
- PPDs — the main colour-giving chemical

Statins are on the comeback trail after drug failure

STATINS have had mixed press in recent years but are back in favour. Cardiologists attending the annual American College of Cardiology conference in Chicago this month reaffirmed statins as the best way to treat cholesterol and heart disease, the biggest cause of death in industrialised countries.

The recent failure of a drug, Vytorin, tipped to be the next big thing, has reaffirmed the star status of the drugs — the standard way to cut cholesterol levels for people with heart worries since they appeared 15 years ago. Cardiologists have now publicly called for the focus to return to statins as the best way to cut cholesterol and reduce deaths from heart disease.

Statins are present in all the top anticholesterol drugs, including Crestor from the UK's AstraZeneca,

Zocor from the US's Merck, and Lipitor from Pfizer. They represent a global market worth $35bn a year. Statins — sometimes referred to as the aspirin of the 21st century — have also shown a role in fighting certain cancers, Alzheimer's and inflammatory rheumatism, with varying results. A recent US study in the European Journal of Respirology found statins cut the number of deaths caused by pulmonary infections by almost half. *Sapa-AP*

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BETA blockers heal the heart via the brain when administered during heart failure, say UK scientists. Till now, it was thought that beta blockers worked directly on the heart. The new study shows the drugs may also act via the brain, suggesting that future therapies to treat cardiovascular disease could target the central nervous system.

Millions of heart-failure patients worldwide routinely receive beta blockers that were pioneered in the '70s for arterial hypertension and are one of the most important advances in heart-failure therapy. However, it has not been clear how long-term treatment with beta blockers slows development of heart failure, improves heart function and exercise capacity, and reduces the risk of sudden cardiac death.

The University College London study, based on the rat model of postmyocardial infarction-induced heart failure and published in the journal Circulation Research, shows the action seems to be localised to a group of brain cells the researchers identified as crucial in the control of blood pressure and heart rate.

Prof Mike Spyer, coauthor of the study, says: "The importance of the brain in regulating the cardiovascular system is often ignored by cardiologists who concentrate on the dynamics of cardiac contraction and receptors on the heart that influence this, rather than how its nervous innervation is regulated." *Science Daily*

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THE new anti-arthritis drug, tocilizumab, appears effective in relieving symptoms of rheumatoid arthritis in adults and children, say Austrian and Japanese researchers.

Tocilizumab works by blocking the receptor for interleukin-6, a molecule involved in promoting the painful inflammation in rheumatoid arthritis. The findings from two studies are published in a recent issue of the Lancet.

One expert isn't convinced, especially for adults, that comparing tocilizumab to a placebo — as was done in these studies — proves it is a better option than existing medications. "It's not good enough to know if the new medication is working better than nothing," says Dr Tim Bongartz, a rheumatologist at the Mayo Clinic College of Medicine and author of an accompanying editorial in the journal. However, he says tocilizumab may be worth a try with paediatric patients because "treatment options are sparse, and children usually don't respond very well to methotrexate or other drugs". *HealthDay News © 2008 New York Times Partner Publications*

Statins help you keep a good grip on the health of your heart, say experts. Picture: STOCKXPERT