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- The Spa Doctor Will See You Now
- Thermal Water: Secret or Fad?
- New Skinny on Cellulite
- Introducing the Airport Spa

## Beauty Q&A

- Applying self-tanner to your face
- Testing department-store makeup
- Hot makeup: Is it safe?
- Exfoliating 101
- Lifespan of a hairbrush
- Sticky Lip Gloss



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## Don't Rub It In

by Leslie Goldman

**Those lotions, creams, and gels you slather on a sore muscle, your legs before hair removal, that vaginal itch? Too much could hurt you. Here's what you need to know.**

Lidocaine, methyl salicylate, hydrocortisone. You probably don't think twice about using

over-the-counter (OTC) creams with these ingredients when you need to soothe a sore muscle or bug bite, prep your legs before hair removal, or combat that vaginal itch. If the product's available without a prescription, it can't hurt you, right? Wrong.

Take Arielle Newman, for instance, a New York City-area high school track star who died last year from a sports-cream overdose. She'd used large amounts of popular OTC pain-relieving ointments like Icy Hot and Ben-Gay on her sore muscles. The key ingredient in such products is methyl salicylate, which built up in Newman's body, may have interacted with other aspirin-based meds she was using, and caused her to go into cardiac arrest.

Another case: In 2005, Shiri Berg, 22, of North Carolina died of a lidocaine overdose. Following the instructions she'd been given by the staff at a local hair-removal clinic, she generously applied a numbing gel to her legs, then covered them in plastic wrap. On her way to the clinic to get hair lasered from her legs, Berg passed out. She went into convulsions, then a coma. Eight days later, she was dead.

Women dying in the name of hair removal? Athletes putting themselves at risk by using mentholated muscle soothers? Extreme situations, to be sure. But with all the stuff each of us slathers on our skin (one study estimates that women apply 175 chemicals a day from cosmetics, creams, and toiletries alone), it's no surprise that potential hazards are lurking.

Your skin is designed to protect you from countless insults: from air pollution to murky lake water, from dirty gasoline-pump handles to staph. Skin cells provide a physical barrier, sort of like bricks and mortar, to keep the bad stuff out—most of the time, says Francesca J. Fusco, MD, assistant clinical professor of dermatology at the Mt. Sinai School of Medicine. "The cells aren't as tightly packed as real bricks, though, which means things can squeeze by and penetrate." That's good news if you want, say, an antiaging wrinkle cream to wage war against your crow's-feet or an anti-itch product to tackle that exercise-induced rash on your inner thighs. Bad news when strong chemicals meet sensitive or thin skin, cause an allergic reaction, or dangerously flood your bloodstream. Here, we investigate 14 ingredients commonly found in products you may be using right now—and we tell you how to stay safe.

### Methyl salicylate

Most OTC muscle creams (including Ben-Gay, Icy Hot, and Tiger Balm) contain one or more of three main ingredients: the cooling agents menthol and camphor, and the pain reliever methyl salicylate. The latter is similar to topical aspirin, says Matt Zirwas, MD, director of The Ohio State University Medical Center Contact Dermatitis Center. And what happened to track-star Newman is essentially the same thing that could happen with an aspirin overdose, he says.

The safe way to use muscle creams? Rub a small amount (about the size of a quarter) into the painful muscle or joint area not more than three or four times a day to prevent accumulation. If you're applying more than a four-ounce tube a week, that's probably too much, Zirwas says. And watch your aspirin intake—too much can increase your risk of overdose (in addition to the creams, Newman may have been using a pain-relieving patch and taking aspirin), as can wrapping or using a heating pad on ointment-covered skin.

Rubs with methyl salicylate may also interact with blood-thinning prescription drugs, such as Plavix or Coumadin, used to prevent blood from clotting, says Brian J. Krabak, MD, sports-medicine physician at the University of Washington's department of rehabilitation medicine. Because of its toxicity, any product containing 5 percent or more of methyl salicylate (also called wintergreen oil) has to carry a warning label stating it must be used as directed and kept out of children's reach.

Lidocaine, benzocaine, tetracaine

If you've ever numbed a mole before the doc removed it or undergone laser hair removal, you've probably used a topical anesthetic that contains one of the -caines—lido-caine, benzocaine, or tetracaine—which are commonly used in various strengths in medical and cosmetic situations. Most OTC types contain small amounts (less than 5 percent) of numbing ingredients and should be safe when used according to package instructions, experts say.

There are dangers, however, if your skin is too numb to detect that it's being harmed. If you have no feeling at all during a bikini wax or hair lasering, for instance, you won't be able to tell if the wax is too hot or the laser is too strong.

An allergy is also possible, particularly when using vaginal-itch treatments with benzocaine, Zirwas says. A benzocaine product may temporarily help the problem, he says, "but a half-hour or an hour later, the itching will return—often worse—so women apply more cream," he says. "Sometimes we see patients who are using these creams 10 times a day." The results can be a severe vaginal rash. Zirwas's advice: "If the itch comes back an hour after you apply the cream or if you develop a rash, suspect that you have a benzocaine allergy and see a doctor."

When topical anesthetics are seriously overused, there can be big trouble. Shiri Berg applied a product called Lasergel Plus 10/10, a powerful anesthetic containing 10 percent lidocaine and 10 percent tetracaine. Experts have said the gel, a prescription-strength compound given to the 22-year-old without a prescription by a hair-removal spa, was too strong and applied over too large of an area for Berg's system to handle. After her death, the Food and Drug Administration (FDA) pointed out that risks rise when a topical anesthetic is left on the skin for extended periods of time or applied to broad portions of the body, especially if a bandage, plastic, or another type of dressing is used as a covering. This is exactly what Berg did, not knowing either the strength of the product she was using or that there was any danger. Even more surprising: Berg was not the first woman to die from the overzealous use of numbing cream. Blanca Bolanos, a 25-year-old from Tucson, Arizona, suffered a similar fate (convulsions, then a two-year coma ending in death) after using a cream of 6 percent each lidocaine and tetracaine prior to laser hair removal.

The safe way to use numbing creams? Apply them sparingly—use as little as possible, most experts say. And always **know the ingredients in and the strength of the product.**

Hydrocortisone

An anti-inflammatory topical steroid that shrinks swollen tissue by constricting blood vessels, hydrocortisone is often used to stop the itching caused by chronic skin conditions like eczema and contact dermatitis, and it's also an ingredient in vaginal and hemorrhoidal creams. OTC topical steroids can contain just 1 percent hydrocortisone, which should be safe, says Dina D. Strachan, MD, a dermatologist in private practice in New York City.

Be careful, though, when applying the creams to sensitive spots such as the eyelids, armpits, and groin (all places where eczema, rashes, and allergic reactions are particularly common). In these locations, skin is thinner and more folds exist, so skin hits skin often, which can cause medications to penetrate more deeply. These areas are also prone to stretch marks, irritation, hypopigmentation (lightening), and "a crinkly, cigarette-paper appearance," Strachan explains—a good reason to avoid

that old beauty-queen trick of using hemorrhoidal cream to de-puff eye bags, experts say. In fact, last year the makers of Preparation H issued a warning cautioning consumers to avoid applying hemorrhoid cream to the face.

Overuse of topical steroids containing hydrocortisone can cause the skin to develop a resistance (called tachyphaxis) to the medication, says Daniel Behroozan, MD, dermatologic surgeon and founder of the Dermatology Institute of Southern California, and clinical instructor at the University of California, Los Angeles, School of Medicine. As a result, "in order to have the desired medical effect, a stronger and more potent steroid may be needed, which may cause more potential side effects."

#### Estrogen

Women experiencing vaginal itching and irritation due to menopausal changes sometimes turn to OTC products that contain estrogen, a practice that worries Wen Shen, MD, assistant professor of gynecologic specialties at the Johns Hopkins University School of Medicine. "Such creams get absorbed through the skin and metabolized into estrogens in the body. That means they can cause the same side effects as estrogen pills, such as elevated blood pressure, breast tenderness, increased risk of breast cancer, abnormal vaginal bleeding, and endometrial hyperplasia, which can lead to uterine cancer," she says. "If a woman is thinking about using anything with estrogen, she really needs to get it through her physician."

The same goes for OTC progesterone creams used to treat PMS and menopause symptoms, says Michael Krychman, MD, medical director of sexual medicine at Hoag Hospital in Newport Beach, California. "You have to be very careful. You don't always know how much you're getting or how much you're absorbing with these products," he says. "That makes it very easy to get too much." A lot of women who are trying these OTC creams on their own may not even have lowered hormone levels, at all, he says. Consult your doctor before using.

#### Hydroquinone

Want to "fade away" those age spots? Be careful if you're thinking of using hydroquinone, a popular ingredient in products claiming to lighten age spots, melasma (excessive pigmentation usually caused by the sun), or postinflammatory hyperpigmentation (a condition that can afflict darker-skinned women). Such products are often available over the counter but should only be used under a doctor's supervision, Francesca J. Fusco, MD, says. Ironically, in certain skin types the opposite—ochronosis, or darkening of the skin—can occur. In many cases, this happens in darker-skinned individuals, she says, adding that hydroquinone has been under FDA investigation for discontinuation in OTC products because of possible cancer-causing activity in rats exposed to large amounts.

#### Dihydroxyacetone (DHA)

Wonder why self-tanners have such a distinctive scent? It's the dihydroxyacetone (DHA), a sugar derived from plants like beets and sugarcane, that combines with your body's chemistry to produce a "tan" and the smell. The odor won't hurt you, but the tan might—if you're thinking of getting hair lasered from your darkened skin.

"Lasers work by detecting pigment," Fusco says. That's why laser hair removal works best on people with a good degree of contrast between their hair and skin, such as fair-skinned women with dark hair. "The stains in self-tanners can throw off the laser, leaving you with first- or second-degree burns or discolored skin," she explains. As a caution, allow self-tanned skin about a week to fade before going in for a laser procedure.

#### Vitamin A, glycolic acid

Retin-A and other vitamin A-based products (such as glycolic acid) are often used to treat acne, as well as to reduce the appearance of wrinkles by boosting collagen production. The downside: They thin the very top layer of skin, which can make you more sensitive to sunlight and to procedures like chemical peels, phototherapy (light treatments), or even a simple eyebrow waxing. If you're scheduled for, say, a waxing or a peel, it's a good idea to stop using any vitamin A-based products one week prior; and don't resume for another week. Also, avoid blackhead-removing strips like Bioré, which can remove a top layer of skin more easily while on such medications. And check in with your doctor to be on the safe side.

#### Neomycin, bacitracin

Strangely, one of the treatments most often recommended to help heal burns, stitches, and other wounds is now thought to cause an allergic reaction in up to 10 percent of users. For those people, neomycin or bacitracin, the active ingredients in products like Neosporin, may cause an inflammatory reaction, angering the wound and making it appear infected.

The result: A minor cut can take even longer to heal and have a potentially adverse cosmetic outcome, Behroozan says. "For that reason, most dermatologists are now avoiding products with neomycin and recommending plain Vaseline or Aquaphor Healing Ointment for superficial wounds," he says. "They promote a moist environment for better wound-healing without potentially causing allergic contact dermatitis."

#### Paraphenylenediamine (PPD)

Ever get a temporary tattoo on a beach vacation? Many of them are made with "black henna," which contains paraphenylenediamine, or PPD, a strong allergen that's also in hair dye. If you've had a product with this chemical applied to your skin directly, as is done with a tattoo, you're at risk of developing a strong allergy later from hair dye. "You can have a horribly intense reaction," Zirwas says. "I've seen people hospitalized for up to a week—eyes swollen shut, lips swollen, too." Zirwas estimates that just 2 percent of women will develop an allergy to hair dye, but everyone should do a patch test when coloring hair at home and look for PPD-free dyes.

#### Betaine

Very gentle shampoos often contain a lathering agent called betaine, and they're fine for about 99 percent of the U.S. population. But for the approximately 1 percent who develop a betaine allergy, even a product created for the most sensitive skins can cause a red rash around the eyes and along the neck, with flaking, peeling, and itching. If you have this kind of contact dermatitis that just won't go away, try betaine-free products such as Free & Clear shampoo, Cetaphil soap, or Head & Shoulders shampoo, Zirwas says.

*Additional reporting by Allison Avery and Brittani Tingle*

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