



BEAUTY MYTHS **BUSTED**

What Really Works for
Clear, Younger-Looking Skin

Paula Begoun and Bryan Barron
with the Paula's Choice Skincare Research Team

PAULA'S CHOICE
SKINCARE

40

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What Really Works for
Clear, Younger-Looking Skin

Paula Begoun

AND BRYAN BARRON

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A MESSAGE FROM PAULA BEGOUN

“We share the facts about what works for skin and what doesn’t”

For more than 35 years, my heartfelt goal has been to help women around the world and to join them on the journey of finding the best products possible for their skin so they can experience the confidence that comes from looking and feeling beautiful. I have unwavering respect for the universal desire women have to love how they look, and I want that for myself, too!

Because of this mission, Paula’s Choice Skincare has always been the radically truthful skincare company that follows the research and cuts out the gimmicks. We share the facts about what works for skin and what doesn’t—even when it goes against popular trends and misleading information—so women can feel confident in their decisions and in themselves. Paula’s Choice celebrates the joy of discovering what it means to define beauty on your own terms, and to embrace it with assurance and pride.

What we do is always respectful, compassionate, and without compromise. We are always:

- Straightforward
- Knowledgeable
- Globally-minded
- Non-judgmental about beauty, but very judgmental when it comes to the facts and research about skincare
- Honest, even when the truth is shocking or disappointing.

To those who’ve been with us for years, thank you for your trust. If you’re just discovering Paula’s Choice Skincare and share our passion for busting myths, welcome to truth in beauty. You’re going to love what you learn and how you look!

Paula Begoun

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MYTH #1

I should buy products based on my age.

You have probably seen products claiming to be designed for a specific age group (especially for women over the age of 49, who now suddenly have “mature” skin). But, age is NOT a skin type, and basing your skincare routine on this myth will not help your skin.

The truth? Someone who is 50 years old can have the same skin type and skin concerns as someone in their 20s or 30s. Oily skin, clogged pores, and breakouts don’t automatically go away when you turn 50; likewise, dry, dull-looking, uneven skin tone, signs of aging (think sun damage), and skin discolorations can be a problem in your 20s and 30s. Regardless of your age, you should always choose your skincare products based on your skin type and skin concerns.

References for this information: Advances in Nutrition, January 2017, pages 17–26 and pages 27–39; Food and Nutrition Board; Health and Medicine Division; National Academies of Sciences, Engineering, and Medicine, July 2016, ISBN-13: 978-0-309-44227-5; Cochrane Database Systematic Review, June 2014, Issue 6; Advances in Nutrition, November 2012, pages 822–824.

MYTH #2

Anti-aging products are only for when I’m older.

It’s never too early to fight visible signs of aging—the ingredients are the same for everyone, regardless of their age. It’s like your diet: What’s healthy for someone in their 30s is healthy for someone in their 60s.

If you’re worried that your skin will “adapt” to anti-aging ingredients—that is, that they’ll stop working when you really need them—don’t be. Skin needs these vital substances at any age, and there’s no research to the contrary.

Some people are concerned that the ingredients in anti-aging products might be too strong for younger skin—that is not the case.

The ingredients needed to fight signs of aging may be potent, but they are suitable for nurturing skin of any age and there is no research anywhere in the world suggesting otherwise.

You should always choose skincare products based on your skin type and skin concerns. Determine what your skin needs based on how much sun damage, signs of aging, dryness, or other skin concerns you have, not based on a fear that the ingredients you use now won't work as you get older because it “adapts” to them or that they are too strong because of your age.

References for this information: British Journal of Community Nursing, May 2007, pages 203–204; Journal of Investigative Dermatology, December 2005, pages 364–368; Journal of Vascular Surgery, October 1999, pages 734–743; International Journal of Cosmetic Science, October 2007, pages 409–410; and Cutaneous and Ocular Toxicology, April 2007, pages 343–357.

MYTH #3

Skin color matters when shopping for skincare products.

When it comes to skincare needs, skin is skin—no matter the color. Think of it like your diet: Regardless of your ethnic background, to be healthy we all need the same types of nutritious foods to supply antioxidants, vitamins, proteins, complex carbohydrates, and omega fatty acids.

There are some differences in skin of different ethnic backgrounds, such as skin thickness and the amount of melanin (brown pigment color), but that does not affect the skincare products you need. When it comes to issues such as dry skin, clogged pores, acne, signs of aging, sun damage, uneven skin tone, oily skin, sensitive skin, rosacea, and so on, the same types of ingredients are needed. Skin color matters only when it comes to specific cosmetic corrective procedures performed by doctors. When it comes to skincare, the same ingredients work for the same skin concerns for everyone.

Also, don't think that just because you have naturally darker skin color you are protected from what the sun does to your skin. Unprotected sun exposure causes skin aging and skin cancer, regardless of skin color. These serious skin concerns may take longer to show up if you have darker skin, but the damage is still happening every minute of the day. Sunscreen is vital 365 days a year regardless of your skin color.

References for this information: Clinical Investigative Dermatology, August 2015, pages 423–429; American Journal of Clinical Dermatology, February 2014, pages 7–16; Journal of Drugs in Dermatology, April 2013, pages 434–437; International Journal of Cosmetic Science, December 2011, pages 553–559; Skin Research and Technology, May 2010, pages 168–178; Journal of Dermatological Science, August 2010, issue 2, pages 123–128.

MYTH #4

I have sensitive skin so I need to use products that are “safe for sensitive skin.”

Labels on cosmetics such as “safe for sensitive skin” are meant to imply that those products are less likely to cause sensitizing skin reactions, however those products could still contain problematic sensitizing ingredients and sadly many do, even when the product label says they are good for sensitive skin. Shocking, but true!

Sensitizing (irritating) ingredients are a problem for everyone and many products labeled as being good for sensitive skin often contain ingredients that can inflame skin, such as essential oils, plant extracts, and synthetic fragrance, which are known to cause irritation.

Using products whose labels say they are good for sensitive skin won't help you choose the best products for your skin. Whether you have sensitive skin or not, it's important to look for products that don't contain irritating ingredients (especially fragrance-free because for certain whether it is synthetic, essential oils, or natural fragrance they are a problem for skin) and to use only products that are packed with soothing, skin-replenishing ingredients and antioxidants to protect from environmental damage.

References for this information: *The Journal of Allergy and Clinical Immunology*, April 2017, Supplemental, pages S47–S48; *Expert Review of Clinical Immunology*, March 2016, pages 289–300; *International Journal of Cosmetic Science*, February 2015, pages 455–464; *Journal of Drugs in Dermatology*, January 2015, pages 43–48; *Current Pharmaceutical Biotechnology*, volume 15, 2014, pages 173–181; *Fitoterapia*, October 2013, pages 160–184; *Advances in Dermatology and Allergology*, June 2013, pages 170–177; *Ostomy and Wound Management*, March 2003, pages 20–21.

MYTH #5

Acne goes away after the teen years.

Acne knows no age boundaries. Adults in their 20s, 30s, 40s, 50s, and even 60s (just ask Paula) can have acne breakouts. Also, having clear skin as a teenager doesn't guarantee you won't get breakouts as an adult.

As odd as it might sound, the truth is for adults with acne prone skin to keep it under control requires the exact same types of products and ingredients as teens with acne-prone skin. Research shows that the gold standard cosmetic ingredients salicylic acid (BHA) and azelaic acid can be amazingly effective to diminish and even potentially banish mild to moderate breakouts regardless of your age! You can also contact your doctor to discuss whether prescription-only products with benzoyl peroxide would also be beneficial for your adult acne prone skin.

Many people believe that skincare products formulated for teens with acne-prone skin are too drying and irritating for older skin and though that is often the case, those types of products are a problem for teenagers, too! Research shows that ingredients that cause dryness or irritation or that inflame skin make breakouts worse, regardless of your age. Trying to “dry” up acne is the wrong approach at any age (and using toothpaste on a pimple is just bad skincare).

References for this information: *Dermatologic Therapy*, February 2017, pages 926–935; *International Journal of Molecular Science*, January 2017, page 18; *Journal of the European Academy of Dermatology and Venereology*, October 2016, pages 1790–1793; *Journal of Evolution of Medical and Dental Sciences*, August 2016, page 4552; *Journal of the American Academy of Dermatology*, May 2016, pages 945–973; *Current Opinion in Pediatrics*, August 2008, pages 436–440; *Journal of Cosmetic Science*, January/February 2004, pages 65–80

MYTH #6

You can scrub away acne, blackheads, and keratosis pilaris.

If scrubbing was all it took to get rid of acne, blackheads, or keratosis pilaris (stubborn red bumps on the arms and legs, sometimes referred to as “chicken skin”), then no one would ever have any of those concerns, and we know that isn’t remotely the case. More to the point, using harsh scrubs actually makes all of these skin conditions worse.

When it comes to blackheads, harsh scrubs remove only the uppermost visible portion of a blackhead—they don’t address what’s going on deeper in the pore lining where the blackheads and clogged pores are formed. That’s why, when you scrub blackheads, the dark dots show up again shortly afterward. Plus, the irritation abrasive scrubs cause can make oily skin worse by stimulating nerve endings at the base of the pores, which leads to more oil production.

The majority of acne scrubs are terrible because they are so abrasive and harsh which will only increase inflammation making acne worse. Acne is an inflammatory skin condition, and anything you do that increases the inflammation will cause more acne and prolong healing post-acne marks!

Keratosis pilaris (KP) is a unique skin disorder where areas of tiny, red, often inflamed, hard, clogged pores show up on large areas of your upper arms, backside, or thighs. Once again, scrubs deal only with the outer layer of the skin, and KP continues to form out of reach of where the scrubs, loofahs, or scratching (a bad habit of many people with KP) can go. Making matters worse, KP is an inflammatory disorder, so all harsh or rough scrubbing increases the unsightly bumps and the itchy discomfort they cause.

Some thoughtfully formulated scrubs contain gentle particles, such as oatmeal or rounded jojoba beads, which can be kinder to skin and, if formulated correctly, can leave skin a bit more polished and clean, which can be helpful for many skin types. On the other hand, we cannot stress enough how destructive harsh, gritty scrubs are on skin.

If you have a keratosis pilaris-prone or acne-prone skin we recommend you to add a leave-on AHA and/or BHA to your skincare routine. This is a gentle way of exfoliating, smoothing, and hydrating the surface of your skin as both AHAs and BHAs offer multiple benefits for skin, especially BHA (salicylic acid) to reduce stubborn blackheads, clogged pores, red bumps and breakouts. That's because BHA can absorb into the pore and improve its shape, shrinking them to a more normal size. It also has the ability to soothe redness and sensitivity from breakouts. Many people experience quick results after they've started using a leave-on exfoliant.

References for this information: Cochrane Database of Systematic Reviews, November 2014, ePublication; The Journal of Clinical and Aesthetic Dermatology, May 2012, pages 32–40; Clinics in Dermatology, May-June 2012, pages 335–344 and September-October 2004, pages 367–374; Bulletin of National Institute of Health Sciences, volume 129, 2011, pages 93–99; Yonsei Medical Journal, June 2006, pages 293–306.

MYTH #7

Expensive cosmetics are better than inexpensive cosmetics.

This is probably the most enduring beauty myth we've addressed over the years because people readily assume that expensive products contain better ingredients than inexpensive ones. Here's the truth: Without question, "expensive" doesn't mean better in the world of skincare or makeup, and "inexpensive" doesn't mean bad. After our 35+ years of researching thousands of beauty products from hundreds of brands, it's undeniable that there are good and bad products in all price categories.

In short, spending less doesn't hurt your skin, and spending more doesn't necessarily help it. Wasting money isn't pretty, whether it's \$10 or \$100. The truth in beauty? Having great skin doesn't have to be a luxury! Check our Beautypedia.com website for objective research-backed reviews to find out which products really work and which products don't—you'll see that money doesn't make a difference when it comes to quality.

Products with natural or organic ingredients are better for skin than those that contain chemicals.

The idea that natural and/or organic ingredients are better or safer for skin than synthetic ingredients has no factual basis or scientific evidence to back it up. None! It's an emotional rather than a logical belief. In truth, there are many natural, organic ingredients that are bad for skin and many synthetic ingredients that are brilliant for skin.

It's not that there aren't incredibly effective and beneficial natural ingredients for skin, and of course there are problematic synthetic ingredients (such as ones with fragrant components, menthoxypropyl-menthylchlorothizolinone, menthylchlorothizolinone, and quaternium-15). However, a fear of synthetic ingredients rather than natural ingredients is misplaced. Products claiming to be 100% natural can't address all or even most of your skincare needs—this is especially true for sunscreens (nothing is more important for skin than sunscreen), the most potent forms of antioxidants, cell-communicating ingredients such as retinol, ceramides, and peptides, and others. In summary, the best ingredients for skin can be either natural or synthetic; each one must be evaluated on its own merits.

References for this information: Regulatory Toxicology and Pharmacology, October 2016, volume 80, pages 226–32; Contact Dermatitis, September 2016, pages 129–143, October 2013, pages 196–230, and February 2014, pages 90–97; Acta-Dermato Venerology, June 2016, pages 679–683; Annals of Emergency Medicine, April 2016, pages 554–556; Cutis, October 2015, pages 269–274; Photochemical & Photobiological Sciences, December 11, pages 199–206; Food Chemistry and Toxicology, February 2011, pages 324–341.

MYTH #9

If a product doesn't show visible signs of irritating my skin, it's definitely safe to use.

It's easy to be confused when we say a product you're using contains irritating ingredients so you shouldn't be using it, yet you don't see or feel what you think of as irritation on the surface of your skin. You think if you don't have redness, dryness, flaking, or itching then it should be okay. The problem is irritating ingredients can cause these kinds of visible reactions, but most cause no visible reactions at all. Regardless of what you see, the concern is the damage the irritation is causing beneath the surface of skin, in the deeper layers, where it's not visible.

Think of it this way: We know from extensive research that the sun damages all structures of the skin, and is capable of causing skin cancer even if you don't get a burn. The inflammation caused by sun damage happens every day, and it starts within the first minute skin you expose your skin to daylight without protection. Yet unless you get a sunburn, you don't see or even feel any of this dangerous damage happening. It's the same with skincare products that contain irritating ingredients: Just because you don't see or feel the damage doesn't mean it isn't happening.

This secret damage irritating ingredients cause is why everyone should avoid skincare products that contain known irritants such as fragrance, denatured or SD alcohol, and essential oils, and many more we warn about. Even if you can't see or feel their effects, they are damaging skin, and while the effects may not be noticeable in the short term, they certainly will be in the long term.

References for this information: Journal of Dermatological Sciences, January 2015, pages 28–36; International Journal of Cosmetic Science, August 2014, pages 379–385; Pharmacology Review, July 2013, pages 97–106; Dermatologic Therapy, May–June 2012, pages 252–259; Current Drug Delivery, November 2011, pages 640–660; Journal of Agricultural Food Chemistry, May 2011, pages 4676–4683; Journal of Biophotonics, January 2010, pages 82–88; Guidelines on Stability Testing of Cosmetic Products, Colipa-CTFA, March 2004, pages 1–10.

MYTH #10

That cool, tingling sensation you get from a skincare product means it's working.

A cooling or tingling sensation is your skin telling you it's being sensitized and irritated, not helped! In addition to the irritation you actually feel on the surface, there is also damage occurring below the surface, destroying support structures.

The most common ingredients that cause a cool or tingling sensation on skin include denatured or SD alcohol, menthol, menthyl lactate, peppermint oil, camphor, and eucalyptus. Avoiding products that contain these ingredients is doing your skin a huge favor—and it will pay you back by looking better and better.

References for this information: Asian Pacific Journal of Tropical Biomedicine, August 2015, pages 601–611; Journal of Lifestyle Medicine, September 2013, pages 91–97; Contact Dermatitis, April 2008, pages 143–150 and January 2008, pages 9–14; Seminars in Cutaneous Medicine and Surgery, volume 32, 2013, page 143; Basic and Clinical Pharmacology and Toxicology, June 2006, pages 575–581; Archives of Dermatological Research, 1996, pages 245–248; Somatosensory & Motor Research, 1992, issue 3, pages 235–244.

MYTH #11

Drinking more water can get rid of dry skin.

Although drinking eight glasses of water a day is good for your body, it won't get rid of dry skin. If that's all it took, hardly anyone would have dry skin. The causes and solutions of dry skin are far more complex than just drinking water.

However, one small study, published in the journal of Clinical Cosmetic Investigative Dermatology, did show that drinking water could nominally help dry skin, but it took 16 glasses of water (just less than 1 gallon [3.79 liters]), to see an improvement, but the improvement was only statistical, which means that most people would not notice a difference in real life. Please note we are not recommending you do this because drinking this amount of water can be dangerous.

No amount of water can provide the same benefits as using products that contain replenishing ingredients like ceramides, hyaluronic acid, omega fatty acids, lecithin, and glycerin. These ingredients work with the water in your skin and in the environment to keep hydration levels balanced and to prevent moisture loss, which improves skin in multiple ways. If you want to try drinking more water in conjunction with great skincare, there's nothing wrong with that—especially if you're choosing water over sugar-laden beverages.

References for this information: Clinical Cosmetic Investigative Dermatology, August 2015, pages 413–421; British Journal of Dermatology, July 2008, pages 23–34; Dermatologic Therapy, March 2004, Supplement 1, pages 43–48; Journal of Cosmetic Dermatology, June 2007, pages 75–82; International Journal of Cosmetic Science, April 2003, pages 63–95, and October 2000, pages 371–383.

MYTH #12

Packaging doesn't matter, and jars are helpful because I can get out every last bit of product.

Jars may seem more economical (and they are usually more beautiful than tubes and pump containers), however, the truly beneficial, bio-active ingredients that have the most impact on skin don't remain stable in the presence of light and air. Once you take the top off the jar and let the air in, those remarkable ingredients begin to deteriorate, becoming less and less effective.

This is especially true for plant extracts, almost all vitamins, antioxidants, and other state-of-the-art ingredients like peptides, retinol, probiotics, and many more. Routine exposure to daylight also is problematic for these ingredients, so avoid clear glass packaging (jars or bottles).

Another concern with jar packaging is hygiene: Dipping your fingers into the jar with each use contaminates the product; yes, even if you wash your hands first because it's impossible to remove all traces of bacteria and germs. This contamination stresses the preservative system, leading to further deterioration of the beneficial ingredients. Some brands provide a spatula with their jar, but there is no way to keep the spatula sterile, so using a spatula doesn't improve the stability of the product.

The ingredients that provide the most benefit in skincare products (especially anti-aging ingredients) must be in airtight or air-restrictive packaging to remain effective throughout the life of the product.

References for this information: AAPS PharmSciTech, September 2017, ePublication; Pharmacology Review, July 2013, pages 97–106; Dermatologic Therapy, May-June 2012, pages 252–259; Current Drug Delivery, November 2011, pages 640–660; Journal of Agricultural Food Chemistry, May 2011, pages 4676–4683; Journal of Biophotonics, January 2010, pages 82–88; Guidelines on Stability Testing of Cosmetic Products, Colipa-CTFA, March 2004, pages 1–10.

MYTH #13

Don't use ingredients like vitamin C and niacinamide together, or AHA/BHA exfoliants with retinol products, because they counteract each other.

There are many skincare enthusiasts who love the technical aspects of skincare formulations. One frequent question we often get is whether or not you can use products containing vitamin C and niacinamide at the same time.

The confusion about vitamin C and niacinamide started from a single 1960 study, which showed that the two ingredients, when used together in pure concentrations, didn't remain stable. However, the forms of vitamin C and niacinamide that were used in this study are not the same as the forms used today. The new stability protocols used today for both ingredients make that research moot. The forms of niacinamide and vitamin C you find in skincare products today are exceedingly stable and the two ingredients work wonderfully together which is what most people experience when combining the two ingredients.

Another question we often get is if it's OK to use an AHA or BHA at the same time as retinol. Long story short: The answer is yes. There is research showing that using both together can benefit skin, whether used separately or at the same time. One does not counteract the other; in fact, you'll be more likely to see enhanced benefits.

References for this information: Journal of Cosmetic Dermatology, March 2016, pages 36–42; December 2012, pages 310–317, and 2004, pages 88–93; Clinical, Cosmetic, and Investigational Dermatology, September 2015, pages 463–470; Dermatology, July 2014, pages 314–325; Indian Dermatology Online Journal, April-June 2013, pages 143–146; Journal of the American Academy of Dermatology, March 2009, page AB78; Journal of Drugs and Dermatology, July 2008, pages S2–S6; International Journal of Cosmetic Science, June 2008, pages 175–182; Skin Pharmacology and Physiology, March/April 2005, pages 81–87.

MYTH #14

Chocolate and greasy food cause acne.

This is more of a half myth, because although chocolate and greasy food are unlikely to cause acne, some types of food can trigger it.

Contrary to the decades-old belief that eating greasy food influences how skin produces oil, the truth is that the excess oil or fat you eat doesn't flow from your digestive system to your pores. Rather, it's hormones that affect how much oil is produced at the base of pores, not oily food.

Chocolate itself is unlikely to cause acne (pure chocolate is actually a very good antioxidant), but the butter, sugar, dairy, and flour in the chocolate could trigger acne.

Some research has shown that dairy, gluten, shellfish, and nuts could trigger breakouts, but that's not true for everyone—it's completely an individual reaction. To find out if those food groups cause a problem for you, eliminate them one at a time for a few weeks, and see how your skin responds. (Wait a few weeks to see a difference.)

The research on which foods can trigger acne isn't conclusive, but it's still worth experimenting to see if eliminating these food groups from your diet could help clear up your skin; just don't be disappointed if changing your diet doesn't result in less breakouts.

References for this information: Iranian Journal of Public Health, March 2017, pages 428–430; Journal of the European Academy of Dermatology and Venereology, July 2016, pages 530–535; Advances in Dermatology and Allergology, December 2016, pages 416–420, and April 2016, pages 81–86; Acta Dermato-Venereologica, February 2016, pages 283–284; Journal of Investigative Dermatology, January 2002, pages 164–171.

MYTH #15

Getting a base tan from a solarium or tanning bed before a vacation or before summer prevents sunburn and sun damage.

This myth is almost like suggesting you should smoke a cigarette to calm your nerves because that will reduce your stress (which is actually how cigarettes used to be advertised!). The research is clear: Cigarettes kill, no matter how temporarily unstressed you feel and UV rays from the sun or tanning beds and solariums are the same. It may feel or look good to get a tan but it's damaging your skin nonetheless.

The research for solariums and tanning beds is 100% clear: They are toxic for skin. Many physicians describe solariums and tanning beds as “skin cancer beds”; in fact, the World Health Organization has labeled indoor tanning as “carcinogenic” and many countries have banned them altogether or significantly restricted their use.

You may have heard that solariums and tanning beds are not as bad for your skin as the sun, but the truth is that solariums and tanning beds are considered worse because they emit concentrated radiation only inches from your skin. More important, indoor tanning bulbs emit mostly UVA rays, which reach deeper into skin and cause greater cellular damage than UVB or visible rays.

In short, tanning indoors might not seem as bad as being out in the sun, but just like sun exposure, the damage from tanning indoors is cumulative and it is killing your skin.

References for this information: <https://www.skincancer.org/skin-cancer-information/skin-cancer-facts>; Preventive Medicine Reports, June 2016, pages 139–144; Clinics in Dermatology, May–June 2015, pages 387–392; International Journal of Molecular Sciences, June 2013, pages 12222–12248; Photochemical and Photobiological Sciences, July 2011, pages 1129–1136; Clinical and Experimental Dermatology, July 2011, pages 453–458; Journal of Investigative Dermatology, July 2011, pages 1539–1546; Dermatologic Clinics, April 2009, pages 149–154.

MYTH #16

Using sunscreen causes vitamin D deficiency.

This is a tricky myth because there is research showing that daily sunscreen application can reduce skin's ability to make vitamin D, but there's more to that story, as not using sunscreen doesn't help your skin maintain healthy vitamin D levels.

First the basics: Vitamin D is an essential nutrient for the body, and sun exposure to UV rays triggers the production of hormones in the body that lead in turn to the production of vitamin D, and there is a known pandemic problem of people being deficient in vitamin D.

The catch? We know, without question, that exposing skin to sunlight without sun protection not only means your skin will age faster, but also increases your risk of skin cancer. Why would you trade one serious problem for another when there are other options? You can protect your skin from aging and skin cancer and still get more than enough vitamin D by simply taking a vitamin D supplement.

Less than 30% of people worldwide wear sunscreen on a regular basis so it isn't wearing sunscreen that's causing the global vitamin D deficiency. And it isn't about living in parts of the world where there is less sun. There is still a problem with vitamin D deficiency in parts of the world where the sun's intensity is strong year-round.

Ironically, while we know that many light-skinned northern Europeans, Canadians, and Americans are vitamin D deficient, so are dark-skinned people all over the world. It turns out that melanin (the brown pigment in skin) also blocks vitamin D production – this includes getting a tan, because a tan also blocks vitamin D production.

You may have heard that by exposing your body to sunlight for 15 or 20 minutes a day will produce sufficient amounts of vitamin D, but there is no research showing that to be true. Even if this were true, it would completely depend on how much sun was present (cloudy versus sunny), what time of day you did it (how strong the sun's rays changes throughout the day), the color of your skin, and how much of your skin you expose (if it's only your arms, hands, and face, it's unlikely to be enough).

The bottom line: Always be sun smart. It doesn't make sense to expose your skin to sunlight or skip sunscreen in an effort to get more vitamin D when there's no proof that it will fix the problem, but there is a ton of proof that it will negatively affect the health and appearance of your skin. You can get all the vitamin D you need with supplements, which are easier and safer, and you can control how much you really need. At your next medical exam, get your vitamin D level tested, then talk to your doctor to see if you need vitamin D supplements.

References for this information: Journal of the American Geriatrics Society, January 2016, pages 65–72; Journal of Steroid Biochemistry and Molecular Biology, October 2014, pages 138–145; Advances in Experimental Medicine and Biology, volume 810, 2014, pages 1–16 and 464–484; Annals of Dermatology and Venereology, March 2013, pages 176–182; Dermatologic Therapy, January–February 2010, pages 48–60; Journal of the American Academy of Dermatology, January 2010, pages E1–E9; British Journal of Dermatology, October 2009, pages 732–736; The American Journal of Clinical Nutrition, April 2008, pages 1080S–1086S.

MYTH #17

You must reapply sunscreen every two hours, no matter what.

On the back of almost every sunscreen container in the world it says to reapply sunscreen every two hours, and that direction is not only about reapplying water-resistant sunscreens (which you do have to reapply between 40 and 80 minutes after swimming or sweating). But, in the real world, is there anyone who wears makeup that can interrupt their day every two hours to wash their face, reapply sunscreen, and then reapply their makeup? It's senseless, especially considering it isn't supported by research.

So, where did this advice of reapplying normal sunscreen every two hours come from? We suspect the "reapply every two hours" recommendation is based primarily on the issue that most people don't apply sunscreen liberally enough and, therefore, don't get the protection indicated on the label. So, the logic is that reapplying sunscreen every two hours leads to a liberal application, resulting in better and longer sun protection.

Here's the truth: The SPF number on the label is a regulated, legal description that indicates how long you can stay in the sun without getting a sunburn. If you apply the sunscreen liberally enough and if it has a high enough SPF number (SPF 30 or greater), it will protect your skin for far longer than two hours on most days except long days of daylight.

Layering SPF products is even better, such as a daytime moisturizer with SPF, primer with SPF, and foundation with SPF. Of course, depending on the situation, if you've been sweating, lightly perspiring or you're some place sunny where there are several hours of daylight, then you do need to reapply based on the timing of the SPF rating.

What does "liberal application" really mean? The best way to be sure you're applying enough sunscreen is to spread a relatively thick layer that you can see over the areas of skin that will be exposed to daylight, and massage this layer into the skin. If you're planning a long day outside, apply another slightly thinner layer or layer with another SPF-enhanced product, such as a primer with sunscreen or a foundation with sunscreen.

If you want to touch up your sunscreen, but you're already wearing makeup, a loose or pressed powder with SPF 30 or higher is a great way to get additional coverage. And don't forget other sun-protective measures like hats, sunglasses, and UV-protective clothing.

References for this information: Journal of Primary Health Care, March 2016, pages 30–34; International Journal of Cosmetic Science, August 2016, page 431; Journal of Cosmetic Science, March–April 2015, pages 87–93; Photodermatology, Photoimmunology, and Photomedicine, August 2008, pages 218–220; Journal of the American Academy of Dermatology, December 2000, pages 1024–1035; <https://www.skincancer.org/prevention/seal-of-recommendation/testing>.

MYTH #18

Everyone needs a moisturizing cream.

Everyone searches for the best moisturizer and almost every cosmetic salesperson encourages the same, but, in truth, not everyone needs a moisturizer, at least not in the traditional sense of the word. What we think of when we hear the word moisturizer is some kind of

lotion or cream. While lotions and creams can be moisturizing, not everyone needs to be using a lotion or a cream. For example, if you have oily, combination, or acne-prone skin, using creams and lotions can spell disaster.

What all skin types need are bio-active ingredients such as antioxidants to protect skin from environmental damage, skin-replenishing ingredients to hydrate, improve, and repair the layers of skin, cell-communicating ingredients to help skin make younger skin cells, and, of course, sunscreen. Those types of ingredients are present in the best moisturizers (i.e., lotions and creams), but they are also found in lighter weight fluids, serums, gels, and treatment products. What matters are the product's ingredients, not its texture.

References for this information: Photodermatology, Photoimmunology, and Photomedicine, March 2018, pages 117–121, April-June 2014, pages 96–101; Science, February 2015, pages 842–847; Annals of Internal Medicine, June 2013, pages 781–790; Cutis, December 2012, pages 321–326; Clinical Experimental Dermatology, December 2012, pages 904–908; Journal of the American Academy of Dermatology, February 2010, pages 218–222; British Journal of Dermatology, February 2010, pages 415–419.

MYTH #19

You can become addicted to lip balm.

You may have heard that lips can adapt or become addicted to lip balm. It's even quite likely you have experienced this yourself, endlessly reapplying your lip balm with no results or your lips just getting worse. The truth is that it's not possible for lips to adapt or become addicted to lip balm.

This myth exists because most lip balms are either poorly formulated (nothing more than thick, uncomfortable waxes that coat your lips and wear off easily) or contain irritating ingredients (like mint, menthol, and eucalyptus) that make dryness and cracking worse.

If the product is well formulated, then it will do its job day in and day out, without endlessly having to reapply it. A good lip balm contains skin-loving, silky emollients, beneficial oils, and thick, tenacious balm ingredients so it stays on your lips for long periods of time, while adding hydrating skin-soothing ingredients. Also, keep the lip balm

next to your bedside, do not go to bed with naked lips (this makes a huge difference), and, of course, during daylight hours, your lip balm should provide sun protection (cumulative sun damage contributes to lip lines, thinning lips, and dry chapped lips).

References for this information: Journal of Cosmetic Dermatology, February 2018, pages 84–89; Journal of Cutaneous Medicine and Surgery, January 2018, ePublication; Dermatitis, March-April 2010, pages 111–115.

MYTH #20

You should never pop a pimple.

We're sure you've heard that you should never pop a pimple, and while the concerns about popping a pimple are valid (overdoing it can cause a scab or otherwise damage skin), no one wants to walk around with an obvious, white-topped, swollen pimple on their face. Plus, any of us who suffer with frequent breakouts know that when you pop a pimple the correct way (there is a wrong way and we'll explain that) the pimple actually heals faster. The advice not to pop a pimple is unreasonable (especially considering we're all going to do it anyway), so the real consideration is to know how to pop a pimple the right way!

If you don't pop a pimple the correct way or try to pop the wrong kind of pimple, you can hurt skin, making the pimple look worse and making it take longer to heal. Over-squeezing and aggressive pushing, picking, or puncturing can cause serious damage that can last far longer than your zit would have—possibly causing a permanent scar.

The basic starting point is all in the timing: You need to know when the offending blemish is ready for its contents to be released. How can you tell? You'll know it's ready when you see a noticeable "whitehead" showing up on the surface, and the zit begins to look and feel slightly swollen.

If you don't see a whitehead, the general rule is to wait. Trying to pop a pimple that isn't ready will do more harm than good; this is

especially true for deep, large bumps, such as cystic acne. When the time is right, you have to be as gentle as possible.

For specific details on how to exactly and correctly pop a pimple, check out our expert advice article on PaulasChoice.com (which also includes info on how to care for the lesion afterward).

References for this information: Cochrane Database of Systematic Skin Reviews, November 2014, issue 11; Journal of Dermatology, October 2012, issue 5, pages 433–438; Clinical Cosmetic and Investigational Dermatology, November 2010, issue 3, pages 135–142; Expert Opinion of Pharmacotherapy, October 2009, issue 15, pages 2555–2562; American Journal of Clinical Dermatology, December 2012, issue 6, pages 357–364

MYTH #21

Essential oils are great for treating many skin concerns.

Some components of essential oils are indeed beneficial for skin; for example, many of them are rich sources of potent antioxidants like caffeic acid and rosmarinic acid. Others contain antibacterial ingredients that protect against visible skin problems related to fungi, yeast, and other microbes.

Sounds good, right? But, ultimately, essential oils are not good for skin because most of them contain compounds that also cause significant irritation. Examples include fragrance ingredients like limonene, citronellol, eugenol, and linalool, all present in many fragrant plant oils, and other irritating components. The positives just don't outweigh the negatives.

Many essential oils recommended for acne-prone skin, such as rosemary, lemongrass, thyme, cinnamon, citronella, and tea tree oils, do have a small amount of research showing them to be helpful, but they also can cause significant irritation. More important, they haven't been shown to be as effective as the gold standard active ingredients for acne-prone skin: benzoyl peroxide, salicylic acid (BHA), and azelaic acid.

Although essential oils have some beneficial properties, their negative impact on skin from the irritation they cause isn't worth it. Plus,

there are dozens of other beneficial plant oils and extracts with wonderful benefits and none of the negatives of essentials oils; those are what to look for in skincare products.

References for this information: Asian Pacific Journal of Tropical Biomedicine, August 2015, pages 601–611; International Journal of Antimicrobial Agents, February 2015, pages 106–110; Essential Oil Safety, Second Edition, Tisserand, Young, R., Elsevier Ltd., 2014, pages 69–98; Comprehensive Reviews in Food Science and Food Safety, January 2013, pages 40–53; Food and Chemical Toxicology, February 2008, pages 446–475; Planta Medica, October 2007, pages 1275–1280; and March 2006, pages 311–316; Journal of Agricultural and Food Chemistry, March 2007, pages 1737–1742.

MYTH #22

Peptides and other skincare ingredients work like Botox.

There is no research showing that any skincare ingredient in the world can work even remotely like Botox or any other cosmetic corrective procedures a physician performs. Even Botox won't work like Botox if applied topically rather than being injecting into facial muscles.

If skincare products could work like Botox they'd be exceedingly dangerous. Just think, if a product "relaxed" or paralyzed your facial muscles like Botox does, you wouldn't want to apply it all over your face because it could lead to drooping and sagging. And, how would you be able to control application? Thankfully, that cannot happen!

That's not to say that peptides aren't remarkable ingredients as they have amazing benefits for skin, such as firming and evening out skin tone. Just don't expect Botox-like results.

References for this information: American Family Physician, August 2014, pages 168–175; Dermatologic Surgery, June 2008, Supplemental, pages S92–S99, and December 2007, Supplemental, pages S168–S175; Journal of Neural Transmission, April 2008, pages 617–623; Laryngoscope, May 2008, pages 790–796; Plastic and Reconstructive Surgery, November 2007, pages 335–40S; and November 2007, Supplemental, pages S17–S26; Journal of Headache and Pain, October 2007, pages 294–300; Pediatrics, July 2007, pages 49–58; Expert Opinion on Pharmacotherapy, June 2007, pages 1059–1072; Dermatologic Therapy, May 2006, pages 141–150; ; Journal of Cosmetic Laser Therapy, De-

MYTH #23

Retinol is an extremely sensitizing ingredient so it isn't safe to use.

Retinol has a well-deserved reputation as a superhero skincare ingredient. Over 40 years of extensive research has shown that a wide range of strengths, can diminish blemishes and wrinkles, brighten skin, unclog pores, and strengthen skin's support structures so it looks and feels firmer. Despite this impressive array of benefits, many people worry about adding a retinol product to their skincare routine because they've heard that it's too irritating.

The truth: Retinol can be sensitizing for some people, but certainly not for everyone. A skin reaction to retinol depends on the individual and such a reaction shouldn't be generalized to include everyone. Even if your skin does react to retinol, chances are if you reduce the frequency of use or build up slowly from a lower strength to a higher strength, you should get positive results.

Another myth about retinol is that you need to avoid sun exposure, either because the sun reduces retinol's effectiveness or because it causes the skin to be sensitive to the sun. Neither is true, and there is no research showing that to be the case. The sun deactivates a lot of ingredients in the skincare products you apply to your skin as well as ingredients that already exist naturally in your skin. The sun eventually "deactivates" the sunscreen you apply, but that doesn't mean you shouldn't apply it. This is why you need to reapply sunscreen as well as beneficial ingredients every day, not avoid using them.

The myth of retinol causing sun sensitivity is based on misleading information that retinol thins skin making it more susceptible to sun damage. In fact, however, there is research showing that retinol does just the opposite, actually strengthening and supporting skin. The confusion may be due to the fact that retinol helps skin be like younger skin, which means the thickened, damaged top layers of skin

become more normalized, like it was when we were kids. That isn't "thinner" skin, it's just that the damaged skin is removed and renewed, which is a very good thing!

There are two more retinol myths to put to rest: (1) the notion that retinol works by exfoliating skin and (2) you can tell a retinol product is working because your skin is flaking or peeling. Neither is true. Retinol works by regulating how skin cells form in the lower layers, below skin's surface. This process helps skin behave in a younger manner, but it's not the same as what an AHA or BHA exfoliant does.

When it comes to flaking, this is not what retinol is supposed to do to your skin. For some people, flaking occurs when they initially start using retinol, but that should be a temporary response. It shouldn't be mistaken for how a topical leave-on AHA or BHA exfoliant works. Even an AHA or BHA exfoliant should not result in flaking skin. Both retinol and AHAs or BHAs are about making skin behave and look like normal, healthy skin, and flaking is certainly not a desired result.

References for this information: Journal of Cutaneous Medicine and Surgery, June 2015, ePublication; Journal of Drugs in Dermatology, March 2015, pages 271–280; and January 2015, pages 24–30; Dermatology, May 2014, pages 314–325; Dermatoendocrinology, July 2012, pages 308–319; Toxicological Research, March 2010, pages 61–66; Archives of Dermatology, May 2007, pages 606–612; The Journal of Pathology, January 2007, pages 241–251; Clinical Interventions in Aging, December 2006, pages 327–348.

MYTH #24

Blue light machines work great for acne.

Evolving research has shown that blue light can be bad for skin, but there's also research showing it can be good for skin, which makes this a somewhat complicated myth to explain.

Blue light emanates from the sun and from digital devices, such as computers, flat screen TVs, uncoated fluorescent light bulbs, smartphones, and some facial devices. Research has shown that long-term exposure to concentrated blue light energy can cause skin damage, including color changes, inflammation, and weakening of the skin's surface (and given how much we use our cell phones and computers, we are getting a lot of blue light exposure).

Simply put, blue light may promote stressors in skin that cause photo-aging; that is, aging from exposure to light. When it comes to the eyes, there is significant research indicating how damaging unprotected exposure to blue light from our digital devices can be.

On the other hand, there is research showing that, in small bursts, blue light is an effective therapy for certain skin disorders such as breakouts. But, even then, there's very little research comparing the effects of these devices with the effects of the gold standard ingredients for acne-prone skin: salicylic acid (BHA), benzoyl peroxide, and azelaic acid. And it's hard to ignore the potential for blue light damage.

We recommend covering your phone and computer screens with a blue light screen shield, which are readily available online. It's a cheap fix and eliminates the need to worry about skincare or sunglasses when using your phone or tablet (if only it were that easy for your skin and the sun). Some smartphones have a setting that disables blue light in favor of yellow light (often called night mode or nightshift), which makes it easier on your eyes and on your skin. If your phone has this feature, use it all the time as a great anti-aging and eye-saving method.

References for this information: International Journal of Ophthalmology, February 2017, pages 191–202; Dermatologic Surgery, June 2016, pages 727–732; and September 2014, pages 979–987; Molecular Vision, January 2016, pages 61–72; Journal of the American Academy of Dermatology, September 2015, pages 526–528; Journal of Occupational and Environmental Hygiene, January 2015, pages 603–610; Free Radical Biology and Medicine, July 2015, pages 373–384; Journal of Biomedical Optics, May 2015, #58001; Environmental Health Perspective, March 2014, pages 269–276; Photodermatology, Photoimmunology, and Photomedicine, February 2010, pages 16–21.

MYTH #25

Anti-pollution skincare products can stop environmental skin damage.

Although skincare products formulated with the right ingredients (especially potent antioxidants) can do a lot to diminish and protect against environmental damage, they cannot stop the damage altogether.

Here's why: Environmental damage is pervasive and insidious; even the very oxygen we breathe causes free-radical damage in skin. What skincare products can do quite wonderfully, when they are loaded with antioxidants, is interrupt some of the damage the environment is causing, and that's a big deal. It isn't a cure, but it is definitely better than nothing!

The take-home message: You can't stop environmental damage from attacking your skin, but you can diminish its impact, and the visible results will be significant over the long haul.

References for this information: Mechanisms of Ageing and Development, December 2017, ePublication; Journal of the European Academy of Dermatology and Venerology, September 2017, pages 18–21 and December 2015, pages 2326–2332; Journal of Investigative Dermatology, May 2016, pages 1053–1056; Life Sciences, May 2016, pages 126–134; Journal of Dermatological Science, December 2014, pages 163–168; Frontiers in Environmental Science, May 2014, ePublication; Dermatology Research and Practice, February 2012, ePublication; Journal of Drugs in Dermatology, January 2010, pages 11–15.

MYTH #26

Skincare products such as masks and spa treatments detox skin.

No matter how earnestly a skincare product or treatment promises to purge toxins from your skin, it just isn't possible. Toxins cannot leave your body through your skin or pores—it's physiologically impossible. Instead, this job falls mainly to your kidneys and liver, the body's detoxifying organs.

Toxins are produced by just about everything: plants, animals, insects, industrial waste, people, smoking, garbage, heavy metals, cars, and on and on and on. Interestingly, the types of toxins these toxin-purging products claim to eliminate from your skin are never specified. They are supposed to be pouring out of your skin and pores.

To be balanced, there are a handful of studies indicating that sweat (not skin or pores) acts as a carrier in “detoxifying” by removing trace heavy metals from the body. However, before you jump into the

sauna, the methodology of those studies is considered questionable at best when reviewed by third-party experts. Even if it were possible to eliminate traces of toxins through sweat, “trace” is just that, negligible and pretty much meaningless for the health of your body.

As we always say: Stick to what the research says really works, and ignore the fantasy claims because they aren’t going to help your skin or your budget!

References for this information: Journal of Human Nutrition and Dietetics, December 2015, pages 675–686; Journal of Environmental and Public Health, February 2012, pages 1–10; <http://www.health.harvard.edu/staying-healthy/the-dubious-practice-of-detox>; <http://www.berkeleywellness.com/healthy-eating/diet-weight-loss/nutrition/article/truth-about-detox-diets>.

MYTH #27

Professional facial treatments are an important part of skincare.

Professional facial treatments are absolutely not essential for great skin, and, more importantly, depending on the type of facial or the skill level of the aesthetician, some can actually cause skin problems.

What you do to take care of your skin on a daily basis is far more important and vital to having younger, healthier, or spot-free skin than relying on an occasional facial. Think of it like exercise: Working out once a month won’t maintain your fitness, but a consistently healthy lifestyle of diet and exercise will — and the same goes for your skin. Putting together a great daily skincare routine (that includes sunscreen) far outweighs the benefits of an occasional facial.

Be extra cautious about getting a special facial treatment the day before a big event such as a wedding or school reunion—depending on the types of products used, the result can be unwanted redness or a breakout the day of your special occasion.

Another myth surrounding facial treatments is that they can help lymph drainage, which is claimed to have some kind of curative restoring impact on skin. There is no research showing any facial can

achieve this or that any benefit comes from having your facial lymph nodes drained.

Reasons to consider a facial are to extract pimples or blackheads or to have a deeper exfoliant treatment. If you're squeamish about removing blackheads or blemishes yourself, then a facialist can do it for you, if they know what they're doing. A deeper exfoliant treatment, such as a high-strength AHA or BHA peel, can have impressive results, but the aesthetician really needs to know what they are doing so they don't damage your skin. Also, keep in mind that getting these done too frequently can cause skin damage because it doesn't give skin enough time to heal between treatments.

In short, facials aren't an integral part of a great skincare routine. In some situations, they are helpful, but most of us are better off putting our time and money toward a good daily skincare routine that can be done at home.

References for this information: Skin Research and Technology, January 2017, ePublication; Clinical, Cosmetic, and Investigational Dermatology, August 2015, pages 455–461; Biochimica et Biophysica Acta, May 2012, pages 1410–1419; Journal of Natural Pharmaceutical Products, January 2012, pages 9–10; Evidence Based Complementary and Alternative Medicine, June 2011, ePublication; British Journal of Dermatology, November 2000, pages 923–929.

MYTH #28

Skin needs different ingredients at night.

We often see claims that skin needs different ingredients at night than it does during the day, but we haven't seen one study supporting what those ingredients are or why they are needed. The only exception is skin's need for sunscreen during the day.

You may have heard that your skin cell renewal rate is slightly higher at night than during the day (though that isn't true for everyone), and this somehow means you need different products at night. Again, no reason is given as to why or what those ingredients are or how they benefit skin because of this increased cell renewal at night (and remember we're talking about only slightly more cell renewal than during the day, barely statistically significant).

One of the more illogical reasons given for needing different ingredients at night is because skin is supposed to be more receptive to active ingredients at night than during the day. This certainly isn't true about BHA or AHAs (which work the same way during the day as they do at night), hydrating ingredients (which moisturize skin the same way regardless of the time), and other bio-active ingredients, from peptides to retinol, which do their jobs no matter what the clock says. The truth? Cosmetic ingredients interacting with your skin can't tell time!

How skin heals is also used as a reason for claiming that skin needs different products and ingredients at night than it does during the day. This is based on the belief that skin heals better at night, but recent research proves that is a myth and it turns out that skin heals faster during the day. That still doesn't mean you need different ingredients during the day, it's just an interesting myth to bust.

In short, other than sunscreen, skin can have the same beneficial ingredients applied during the day as it does at night, including antioxidants, skin-replenishing ingredients, cell-communicating ingredients, exfoliating ingredients, and hydrating ingredients.

References for this information: Science Translational Medicine, November, 8 2017, volume 9, issue 415; Future Science OA, June 2016, ePublication; International Journal of Molecular Sciences, June 2016, ePublication.

MYTH #29

Applying creams in an upward massaging motion helps “lift” skin.

You may have seen videos of people applying their skincare products in massaging upward motions, starting from the neck up. Many do it for several minutes and some also incorporate slapping motions at the same time. This is all done with the belief that if you massage skin upward instead of downward or perhaps even sideways, you can help lift and firm your skin. This myth falls apart at the seams with very little effort.

It would be wonderful if massaging your skin upwards could help lift your skin, but it can't. When you see skin move, up or down or sideways, you are stretching the skin's elastin and collagen fibers, and with enough repeated pulling and stretching, they begin to tear and break down eventually. Essentially, you're helping gravity do what it is already doing to your skin. Despite this, if we saw one shred of evidence this could work, we'd start trying it on our breasts immediately.

Please know that massaging your skin in any direction only helps gravity do its job of sagging your skin. When your skin doesn't move, that's a good thing, and you're helping to prevent the formation of wrinkles and loss of firmness.

References for this information: Journal of the American Academy of Dermatology, March 2018, pages 365–366; Aesthetic Surgery, January 2014, pages 22–27; Aesthetic Surgery Journal, January 2006, Supplement, pages S4–S9.

MYTH #30

Oily skin doesn't age as fast as dry skin.

Your skin type is irrelevant when it comes to how fast your skin ages and there's no research to the contrary. We've even seen assertions that sebum (the oil produced in the oil gland) offers protection from free-radical damage—that's a stretch of the imagination, as sebum is mostly fatty acids, which are great for keeping skin hydrated, but not for fighting free-radical damage from the sun and pollution.

What matters most, whether you have dry skin or oily skin, is how much unprotected sun exposure you get, how wide or thin your face is (bone structure is what holds up skin; the more bone you have the longer your skin will hold its shape), your health, and your genetics.

References for this information: Experimental Dermatology, September 2015, pages 651–654; Journal of Zhejiang University Science, January 2009, pages 57–66; Skin Pharmacology and Physiology, volume 25, June 2012, pages 227–235.

MYTH #31

You can't rely on your foundation with sunscreen for sufficient sun protection.

This myth is often asserted by physicians, which is shocking given that it doesn't have a shred of research, scientific evidence, or even scientific theory behind it. Some say you can't rely on your foundation with SPF for sun protection because it's unreliable in terms of the level of protection it provides.

The truth? If a product has an SPF rating on the label then it has been rigorously tested to establish that number and it can protect skin accordingly. SPF 30 is SPF 30, no matter what type of product it is.

The notion that you may not be applying foundation with SPF evenly or liberally enough could be a valid point, but that would be true for any product with sunscreen you apply. In fact, some people might be more likely to apply their foundation with SPF evenly and more liberally than an overly-expensive moisturizing lotion with SPF.

Summing it up: Foundation is a great way to get sun protection, as long as it's rated SPF 30 or greater and you apply it liberally, evenly, and avoid touching your face during the day. We also encourage women to layer products with sunscreen (primer with SPF, moisturizer with SPF, foundation with SPF) to ensure you get complete coverage on all levels.

References for this information: Science, February 2015, pages 842–847; Photodermatology, Photoimmunology, and Photomedicine, April-June 2014, pages 96–101; Annals of Internal Medicine, June 2013, pages 781–790; Cutis, December 2012, pages 321–326; Clinical Experimental Dermatology, December 2012, pages 904–908; Journal of the American Academy of Dermatology, March 2012, pages 1220–1227 and February 2010, pages 218–222.

MYTH #32

Skincare can't help rosacea.

Skincare can't cure but it can do a lot for rosacea-prone skin! Among all of the myths in this book, this ranks among the most inaccurate because skincare absolutely CAN help rosacea-prone skin. Following a gentle, fragrance-free skincare routine really can help minimize the redness and ease the discomfort associated with rosacea-prone skin. However, you still must work with your dermatologist on a regimen of topical prescription products and, possibly, in-office treatments to keep your rosacea in check.

Before we address skincare for rosacea-prone skin, it's important to know there are plenty of factors that can make redness and rosacea-prone skin worse. Unprotected sun exposure, wind, and heat (especially from saunas and Jacuzzis), spicy foods, alcohol, and caffeine are all well-known triggers. And then there are irritating skincare ingredients, including lots of seemingly calming natural ingredients, such as rose and lavender oils.

Here are the basics for rosacea-prone skin (and they ideally apply to all skin concerns): All skincare products should be fragrance-free and dye-free. "Fragrance-free" means avoiding fragrant plant oils, too, which, surprisingly, and disturbingly, often show up in products targeted for those with redness-prone, sensitive skin.

You also must avoid abrasive scrubs, harsh cleansing brushes, and aggravating ingredients, including alcohol (SD or denatured), menthol, mint, citrus, and all types of floral plants.

Not all plants or natural ingredients are bad for sensitive, redness-prone skin; the trick is to know which ones are worth using. Some of our favorite soothing plant ingredients are borage, calendula, chamomile, curcumin, evening primrose, ginger root, licorice, sea whip, and willow herb, all of which have documented research on their skin-calming effects. And of course you MUST wear sunscreen with SPF 30 or greater. Mineral-based sunscreens can be the gentlest option for rosacea-prone skin.

References for this information: Journal of Drugs in Dermatology, December 2014, pages 101–107; Experimental Dermatology, November 2013, pages 752–753; Future Microbio-

logy, February 2013, pages 209–222; *Skin Therapy Letter*, December 2012, pages 1–4; *Annals of Dermatology*, May 2012, pages 126–135; *Journal of Investigative Dermatology*, Symposium Proceedings, December 2011, pages 16–23.

MYTH #33

Collagen applied to skin can add to skin's own collagen so you look younger.

Collagen is a natural substance found in abundance in skin and is responsible for how firm and young it looks. But due to sun damage and age, over time collagen deteriorates and breaks down causing skin to wrinkle and sag. Regrettably, collagen in skincare products does nothing to change that. It can't add to the collagen in your skin (though we wish it could).

There was a period of time many years ago when many companies claimed that collagen in their skincare products would absorb into skin and help attach to and rebuild collagen the way collagen fillers do, but that has never been shown to be true. At best, collagen, whether plant-derived, animal-derived, or synthetic, helps hydrate skin, but there are better and more sophisticated ingredients to consider, such as ceramides, hyaluronic acid, and glycerin to name a few.

On the other hand, collagen-stimulating peptides are a fascinating group of synthetically derived cell-communicating ingredients that have unique benefits, including the ability to precisely orchestrate how much collagen skin builds. But, these collagen peptides (sometimes called collagen amino acids) are not the same as the plain old collagen found in skincare products.

There is some interesting research showing that drinking collagen peptides for a month can lead to an increase in the collagen in skin, resulting in a clinical improvement in signs of aging that seems to last even after you stop consuming the beverage. We'll be keeping our eye out to see how continued research develops in this area.

References for this information: Journal of Cosmetic Dermatology, December 2015, pages 291–301; International Journal of Cosmetic Science, October 2009, pages 327–345; International Journal of Tissue Reactions, Volume 26, 2004, pages 105–111; <http://lpi.oregonstate.edu/mic/health-disease/skin-health/peptides>.

MYTH #34

Do-it-yourself (DIY) skincare is a great way to take care of skin.

It's easy to be lured by natural, farm-fresh ingredients and the fun of making your own skincare products at home, but there is no way the skincare products you make at home can be as effective, stable, or beneficial for skin as the well-formulated products that are already available. The DIY trend is best left to arts and crafts, not cosmetics.

It's true that there are lots of beneficial natural ingredients for skin in your kitchen (like grapeseed oil, yogurt, green tea, and many plants and vitamins), but knowing how to combine these ingredients in the right amounts to create effective, elegant skincare products and how to keep them stable is the realm of cosmetic chemists not “at-home chefs.” You can forget about creating stable products with effective forms of retinol, peptides, niacinamide, ceramides, stable potent antioxidants, sunscreen, or dozens of other beneficial skincare ingredients unless you have your own lab, stability instruments, knowledge of emulsifiers, preservative systems and on and on.

While it is possible and relatively easy to create your own soap at home, soap is actually a bad product for skin. The ingredients that keep bar soap in its bar form can clog pores, and worse, the cleansing ingredients soap contains cause dryness and irritation. None of that is good for skin.

Last, but not least, most of the DIY “recipes” we've seen include harmful ingredients for skin. Many include alcohol, which causes free-radical damage and dryness, and citrus, which cause irritation and can be phototoxic when you go out in the sun. Witch hazel, vinegar, and essential oils all cause skin sensitizing or irritation reactions and that's bad for skin.

References for this information: Biomedicine and Pharmacotherapy, August 2017, pages 849–855; Journal of Alternative and Complementary Medicine, July 2015, pages 380–385; Critical Reviews in Food Science and Nutrition, 2013, pages 728–750; PLOS ONE, January 2013, ePublication; Indian Journal of Pharmacology, November-December 2012, pages 784–787.

MYTH #35

Mineral oil and petrolatum are bad for skin.

Despite this oft-repeated fear about mineral oil and petrolatum (also known as Vaseline), mineral oil is a completely harmless skincare ingredient, and actually has remarkable benefits for skin, especially when it comes to wound healing and moisturizing and hydration.

Mineral oil's bad rap is primarily because of its association with petroleum (i.e., gasoline or petrol). While we certainly don't suggest putting gasoline on your skin, the way mineral oil is purified and filtered for cosmetic and pharmaceutical use makes it a beautiful, exceptionally safe skincare ingredient. Websites that say unrefined mineral oil is a problem are right, but that is not what is used in your skincare products or in topical prescription medications.

You may have also heard that mineral oil is absorbed into skin, but a review of the scientific literature shows no evidence that mineral oil can be percutaneously absorbed and become systemically available.

Some people argue against using mineral oil because it is a non-renewable resource and damaging to the environment. First, mineral oil is not a "resource," it's a by-product of the petroleum industry, and no one is producing petroleum for skincare products.

What you really need to know about mineral oil is that there is a huge amount of research demonstrating how it helps skin in many ways. Those in the industry who malign this ingredient have scared cosmetics companies into not using it, and that's bad news for your skin. Misleading information always makes for bad skincare.

References for this information: Toxicology Letters, October 2017, pages 70–78; International Journal of Cosmetic Science, December 2012, pages 511–518; Medycyna Pracy, volume 62, 2011, pages 435–443; Journal of Dermatologic Science, May 2008, pages 135–142; International Journal of Cosmetic Science, October 2007, pages 385–390; European Journal of Ophthalmology, March–April 2007, pages 151–159; International Wound Journal, September 2006, pages 181–187; Ostomy Wound Management, December 2005, pages 30–42; Dermatitis, September 2004, pages 109–116; Cosmetics & Toiletries, February 1998, pages 33–40; and Food and Chemical Toxicology, February 1996, pages 213–225.

MYTH #36

Parabens are bad for skin.

Parabens are a group of preservatives and like most preservatives used in cosmetics, parabens help prevent the development of harmful organisms that would otherwise thrive in makeup and skincare products. For years, parabens used in cosmetics have been the target of misleading information, with detractors asserting that parabens cause certain health issues, including breast cancer.

This conclusion is usually based on the fact that parabens could alter or disrupt how our endocrine system (hormones) works. There are also claims that parabens can cause skin to break down. The problem with all of this negative information is that the studies used to make these alarming claims didn't take into consideration how parabens are used in cosmetics products, the fact that parabens are food-grade preservatives, or, and even more significant, that parabens are found in plants.

Interesting fact: Parabens are found in most plants in the form of p-hydroxybenzoic acid (PHBA), a chemical that breaks down to become parabens for a plant's own protection. When was the last time you saw information about the cancer risk from cucumbers, beans, onions, green tea, or berries, which all contain parabens?

The study that really started all this, which was conducted in the early 2000s, found a type of paraben in 20 breast cancer samples (ironically not the parabens used in cosmetics). However, this study never said where the parabens came from, and further evaluation of the study concluded there was no evidence parabens could physiologically cause breast cancer.

You may be surprised to know that almost everyone is exposed to parabens. Studies have discovered that some form of parabens is present in urine samples for about 99% of people in the United States. Clearly, not all of those people are using products containing parabens, so the parabens are coming from somewhere else, which goes back to plants that naturally contain parabens.

In terms of the estrogenic hormonal activity of parabens, there are many compounds in the environment that mimic naturally produced estrogen, and parabens are 10,000 times weaker than the estrogen

your body makes, so the suspicions about their activity isn't warranted.

Finally, regarding skincare products that contain tiny amounts of parabens; when absorbed into skin, they break down into the form of parabens your body naturally makes (para-hydroxybenzoic acid), and are easily eliminated.

You will still see concerns of how parabens may affect us, but in general that is not related to their use in cosmetics. Safety panels across the globe have clearly stated that parabens used in cosmetics are safe for use in cosmetics. It turns out that parabens are considered the least-sensitizing preservatives available, even more so than several of the preservatives used in products labeled "paraben-free."

*References for this information: http://ec.europa.eu/health/scientific_committees/consumer_safety/docs/sccs_o_041.pdf; <https://www.cancer.org/cancer/cancer-causes/antiperspirants-and-breast-cancer-risk.html>; *Journal of Exposure Science and Environmental Epidemiology*, May 2017, pages 320–325; *Annual Review of Food Science Technology*, February 2017, pages 371–390; *Skin Therapy Letter*, July–August 2013, pages 5–7; and February 2013, pages 5–7; *Journal of Agricultural Food Chemistry*, June 2008, pages 4631–4636; *International Journal of Toxicology*, July 2008, pages 1–82; *Journal of Applied Toxicology*, July–August 2004, pages 303–304; *Toxicology and Applied Pharmacology*, November 1998, pages 12–19.*

MYTH #37

Avoid beauty products that contain sulfates.

Many consumers are concerned about sulfates in their cosmetics products because of widespread misinformation propagated by the companies that sell "sulfate-free" products. In the real world of science, there's no research showing that sulfates are unsafe in skincare or hair-care products.

It's true that certain sulfates (such as high concentrations of sodium lauryl sulfate) can be sensitizing, but that can also be true of sulfate-free cleansing agents that cosmetics companies advertise and sell. Most all cleansing agents can be irritating to one degree or another; it depends on how much is in the product. That doesn't make sulfates "dangerous" as a whole. For instance, sodium laureth

sulfate has been well studied and has been shown to be an extremely gentle and effective cleansing agent used in many popular products.

People are also concerned about a by-product of sulfate production called 1,4-dioxane which is a potential carcinogen. As frightening as that sounds, just because something is a potential carcinogen, based on a study where pure amounts are fed to mice, doesn't make it a carcinogen in the real world. For example charcoal can be a carcinogen, but we still charcoal-grill steaks and end up consuming charcoal ash that might be on the steaks.

The facts about sulfates: According to Health Canada Magazine, for every 22,000 pounds (9,979 kilograms) of sulfate produced, less than 0.35 ounces (10 grams) of 1,4 dioxane is produced as a by-product. When it is mixed into a product, it is diluted even further, meaning it is negligibly present.

For hair-care in particular, the claims about sulfates often focus on the fact that they are supposedly terribly drying and damaging to hair. In truth, they function no differently from the cleansing agents in sulfate-free shampoos.

Strange as it may seem, many companies, especially hair-care companies, that advertise how their products are "sulfate-free" and so they don't strip hair color, sell other products that contain sulfates, which they also claim won't strip hair color. The fact is: Shampoo ingredients of any kind don't strip hair color; rather, it's high-heat styling tools, the sun, and just plain soaking hair with water that causes hair color to fade. The bottom line: You don't need to look for "sulfate-free" on your beauty products because it won't help your skin or your hair.

References for this information: Journal of Clinical & Experimental Dermatology Research, November 2014, ePublication; British Journal of Dermatology, July 2014, pages 115–123; International Journal of Toxicology, July 2010, pages 151S–161S; Contact Dermatitis, January 2003, pages 26–32; Food and Chemical Toxicology, March 2001, pages 279–286.

MYTH #38

Silicones are bad for skin.

This is a frustrating myth because there is not one element of truth to it. Claims that silicones in any form cause or worsen skin concerns have not been substantiated in any published research, nor are there any reports that silicones are sensitizing or somehow “suffocate” skin. In fact, just the opposite is true; silicones are brilliant ingredients for skin, especially damaged skin.

Because of silicones’ unique molecular properties, they are at the same time porous and resistant, though not impermeable, to air (meaning silicones maintain a perfect environmental balance on skin). Think of silicones in a skincare formula like the covering of a tea bag. When you steep the tea bag in water, the tea and all of its antioxidant properties are released into the water, but the tea bag doesn’t block anything except the pieces of tea leaves from getting into your cup.

Silicones remain on the surface of your skin where they are needed; the other ingredients mixed with it get through to the skin. All ingredients must be suspended in some base formula; some of the ingredients remain on the surface, some are absorbed. The intent is for the “bio-active ingredients” to get through.

The special molecular structure of silicones (large molecules with wide spaces between each molecule) allows them to form a permeable barrier, but also allows for the other ingredients to absorb. This also explains why silicones rarely feel heavy or occlusive, but still offer amazing protection against moisture loss. In fact, they’re so gentle and allow for such perfect breathable hydration that they are used in their pure form in burn units around the world.

So, being afraid of silicones makes no sense—it’s strictly a myth. The types of silicones used in cosmetics products are supported by scientific research and are completely safe and effective to apply to skin (and hair).

References for this information: International Journal of Pharmaceuticals, March 2017, pages 158–162; Molecular Therapy, June 2017, pages 1342–1352; Burns, November 2017, pages 1379–1389; Journal of Burn Care, May-June 2017, pages 146–147; Plastic Reconstructive Surgery Global, December 2016, e1183; Journal of Clinical and Aesthe-

tic Dermatology, December 2016, pages 13–20; *Frontiers in Pharmacology*, May 2015, ePublication; *International Journal of Pharmaceutical Compounding*, May–June 2015, pages 223–230; *International Journal of Toxicology*, May–June 2013, pages 5S–24S; *Dermatology Research and Practice*, October 2010, ePublication *Cutis*, October 2008, pages 218–284; <http://www.cosmeticsandtoiletries.com/formulating/category/anti-aging/34408409.html>

MYTH #39

Brown spots are simply a sign of aging.

Not true in the least! Brown spots on skin—often referred to incorrectly as age spots or liver spots—come from years of unprotected sun exposure that triggers excess, abnormal melanin (the brown pigment in skin) production. When you get a tan, that is your skin's overall damage response from the sun (we know it looks and feels better than a sun burn, but it is just as damaging). Over time this same damage response eventually causes permanent abnormal spotted melanin production, even when you're not in the sun. This is why you see brown spots only on the parts of your body that were regularly exposed to the sun, and not on the parts that never see the sun.

Brown spots can show up at any age because it's not about the number of candles on your birthday cake, it's about how much time you've spent in the sun without sunscreen. The more sun damage at a younger age, the younger you'll be when brown spots start showing up.

As with almost every issue concerning skin's health and appearance, it comes down to daily sun protection. For brown spot prevention and successful fading, applying a broad-spectrum sunscreen rated SPF 30 or greater is vital! Skipping this step and then using ingredients like vitamin C, arbutin or niacinamide to get rid of discolorations simply won't work; it's kind of like thinking that a vigorous workout at the gym or eating healthy food negates the damage from smoking. There are many great skin-lightening and skin-brightening products, but if you are not obsessive about sun protection and about not getting a tan, don't bother, as they won't be much help. You could also consider discussing with your doctor if using a prescription-only product containing hydroquinone can be beneficial for your brown

spots. Hydroquinone has an immense amount of research showing how effective it is for improving skin color.

If you have brown spots now and notice any change in size, color, or texture—and especially if they itch or bleed—see your dermatologist for a skin exam right away. Some types of brown spots can become skin cancers, which is why being sun smart every day is such an important part of a healthy lifestyle.

References for this information: Experimental Dermatology, March 2017, pages 242–248; Indian Journal of Dermatology, September–October 2016, pages 487–495; Cold Spring Harbor Perspectives in Medicine, January 2015, ePublication; Molecules, February 2014, pages 6202–6219; Clinical, Cosmetic, and Investigational Dermatology, September 2013, pages 221–232.

MYTH #40

You can get rid of cellulite with a cream.

We would love it if rubbing a cream on your thighs was all it took to eliminate cellulite; alas, that's just not possible. The main cause of cellulite stems from connective tissue layers becoming too weak or thin to maintain a smooth appearance—allowing pockets of fat to show through. Research has indicated that 80% of all women have some amount of cellulite, so it isn't just about being overweight (although weight loss does improve the appearance of cellulite, but it doesn't go away). Unfortunately, the treatment of cellulite falls outside of the purview of skincare.

Despite the litany of alleged “anti-cellulite” ingredients (including plant extracts, caffeine, and aminophylline), they cannot physiologically deflate or break down fat and/or restructure skin to provide long-term benefits. Really—if any of those worked, who would have cellulite?!

As far as medical procedures go, there is some potential for improvement using treatments such as lasers, mesotherapy (though this is controversial and not supported by objective published research), liposuction, or incision techniques, but they're not cheap—and in many cases, the results often aren't dramatic enough to make a significant difference. Nevertheless, this is a growing area of research

that we continue to keep our eye on. We recommend consulting your physician about the possible side effects of any of these types of treatments, as they all have associated risks.

References for this information: Journal of Cosmetic Dermatology, March 2018, ePublication; Aesthetic Surgery Journal, February 2018, ePublication; Journal of Cosmetic and Laser Therapy, October 2017, pages 320–324; Journal of Pharmacology and Pharmacotherapeutics, January 2010, pages 4–8; Plastic and Reconstructive Surgery, 1999, pages 1110–1114.

“Healthy skin starts with a mild cleanser that does not dry out or irritate.”

“A toner is not just some ‘water’ after your cleanser; toners with repairing and replenishing ingredients calm and renew your skin immediately after cleansing.”

“A gentle leave-on BHA or AHA exfoliant is the quickest way to radiant skin. Don’t hide your beautiful skin under built up layers of dead skin cells.

“Repairing your skin’s barrier is essential. Your skin is hungry for the natural substances it needs but loses because of sun damage and age.”

“There isn’t a single product or single ingredient that can do it all. The best skin care involves using multiple products with great ingredients aimed at your skin concerns and needs.”

“Skin care doesn’t stop at your neck. The same ingredients that work for your face work for your skin from the neck down!”

“Don’t forget the back of your hands which desperately need sunscreen and skin replenishing ingredients.”

“Only use products with the texture that’s best for your skin type. If you have oily skin gels, liquids, and lightweight fluids are best. If you have dry skin richer lotions and creams are best.”

“Looking in the mirror and loving what you see can build your self-esteem and confidence. How you take care of your skin matters.”

“Unprotected sun exposure and allergies are primary causes of dark circles and puffiness under the eyes.”

“Antioxidants help protect skin from future damage and help reduce the signs of aging you see now.”

“Skincare products can’t replace what cosmetic corrective procedures can do, but the right mix of skincare products can do amazing things to visibly firm skin, smooth wrinkles, and resurface skin texture!”

“Skin care is complicated because skin is complicated. However, once you know what to look for and what to avoid, putting together your ideal routine becomes much easier and Paula’s Choice Skincare can help you every step of the way :)!”

“Women often say they just want to use skincare products they like, but because we often like what isn’t good for us that can be a very bad idea. We often like products packaged in jars, products containing fragrance, harsh scrubs, using expensive or natural products that are poorly formulated and so on. Using brilliantly formulated products that you love is the goal for great skincare.”

“Layering targeted treatment products for your specific skincare concerns can give your skin the right amount of specialized ingredients and improve skin in amazing ways.”



Paula Begoun is the creator and innovative force behind Paula's Choice Skincare. She is the author of 20 beauty books including *Don't Go to the Cosmetics Counter Without Me*, *Blue Eyeshadow Should Be Illegal*, *The Original Beauty Bible*, and *Don't Go Shopping for Hair-Care Products Without Me*. Paula's books have sold more than 2.7 million copies worldwide.

Her work as a internationally-recognized consumer expert for the cosmetics industry has led to repeat appearances on CNN, as well as programs such as Oprah, The Today Show, 20/20, Dateline NBC, The View and Dr. Oz.

PAULA'S CHOICE SKINCARE



Bryan Barron has worked closely with Paula Begoun for 18 years, researching and writing several editions of their international best-selling books, including *Don't Go to the Cosmetics Counter Without Me* and *The Best Skin of Your Life Starts Here*. Bryan also researches, writes, and edits articles for our websites and shares his expertise with various print and online media outlets around the world.

He has appeared on numerous television shows, including *The Doctors*, *Home & Family*, and *The Meredith Vieira Show*.