



the prevention plan

At-home steps to address
breakouts through environment,
habits, & lifestyle

by Janine Ellenberger, M.D.





Aestheticians, educators, and primary care providers spend much time explaining what acne is to clients and how it can be managed and treated. Currently in the throes of a pandemic, the world is acutely aware of the sheer havoc a microscopic virus can wreak. The COVID-19 pandemic highlights that skin care professionals should really be speaking more about primary prevention, including the steps to build a healthy immune system and avoiding unnecessary exposure to aggravating and causative pathogens. Modern life has led to the introduction of an immune-compromising diet, a sedentary lifestyle, overcrowding, exposure to toxins and pollution, and the new development or overproduction of pathogens. It is within the professional's grasp to shift this paradigm to one where clients are able to take ownership of their personal health and the choices, they make surrounding it. Knowledge is empowering and sharing this knowledge with clients can be even more beneficial than the treatment itself.

Let us look at how to establish dialogue and advise an acne client on best homecare practices. Evaluating stress, diet, water intake, skin care routine, and their work, play, and home lifestyles are fundamental to understanding all the components that could affect their skin.

EVALUATE STRESS

This time in quarantine serves to highlight the fast pace at which most humans live, as well as the multitude of stressors they think they can cope with. Physical, emotional, work, and financial stresses all contribute to the daily onslaught of increased stress hormones on the body. The root cause of hormonal imbalance is too much cortisol (the stress hormone). When a client experiences stress, the adrenal glands go into overdrive in response to higher cortisol levels and produce more androgens (sex hormones). This is especially true in women, who produce a greater percentage of androgens in the adrenal glands than men. Acne is a hormonally mediated process.

This may explain why stress seems to affect acne slightly more in women more than in men. Cortisol levels have a natural daily rhythm; learning to balance this stress response allows for cortisol levels to normalize, as opposed to staying chronically elevated with all the nasty side-effects that may come with it. Chronically elevated cortisol levels also lead to chronic silent inflammation and can also cause the walls of clogged sebaceous glands to rupture. When this happens, the body responds with redness around the broken pore and an influx of pus. An internet search on the cause of acne reveals a repetitive list: age, excess sebum or oil production, bacterial infection of the follicle, puberty or pregnancy, diet, stress, family history, oily products, among others. While this list highlights some contributing factors to acne, the actual physiology of acne is triggered by hormonal changes. Starting with puberty and ending with menopause, sex hormones are active, fluctuate naturally and individually, and are exacerbated by the multitude of triggers mentioned, especially by stress.

Prevention of Acne Tip #1

Advising clients on the impact of stress on their skin and the importance of mastering techniques to manage stress is a vital factor in preventing and treating acne and for general good health. In order to balance daily cortisol, it is pertinent to develop good habits in the daily practice of exercise, meditation, laughter, sharing and caring, and sufficient sleep.

Adding fish oil and ashwagandha supplements when needed may reduce the stress response and chronic inflammation according to anecdotal studies.

EVALUTE DIET

Part of monitoring a dog's health is the condition of their coat, and most of the time, coat issues reflect a problem in their diet. Similarly, the skin reflects a human's health and an increasing body of research links diet and certain skin conditions. The gut is a part of the immune system; in fact, 70% of immune cells are in the gut. Both the skin and gut perform barrier functions. Many aspects of the Gut-Brain-Skin Axis theory have been validated. "The lines of communication, as mediated by gut microbes, may be direct and indirect – ultimately influencing the degree of acne by a systemic effect on inflammation, oxidative stress, glycemic control, tissue lipid levels, pathogenic bacteria, as well as levels of neuropeptides and mood-regulating neurotransmitters.

There appears to be more than enough supportive evidence to suggest that gut microbes, and the integrity of



the gastrointestinal tract itself, are contributing factors in the acne process.”¹

Certain nutrients, foods, or dietary patterns may act as disease triggers, while others may prove beneficial.

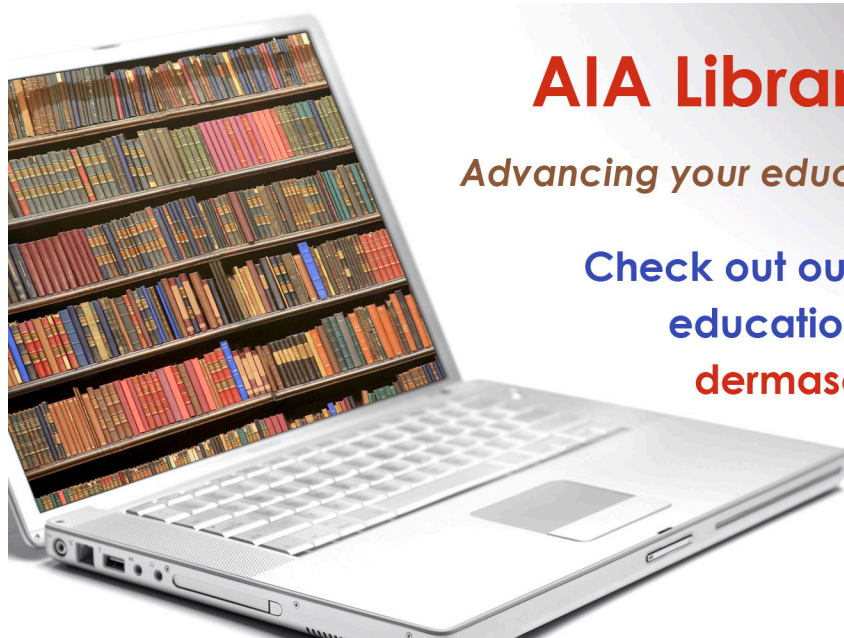
Prebiotics & Probiotics

Probiotics reduce systemic markers of inflammation, as well as levels of insulin-like growth factor 1 (IGF-1), a hormone-like substance that drives acne. Probiotics help absorb skin-essential nutrients, vitamins, and minerals, while also increasing water absorption. Reduce chronic psychological stress and help regulate glycemic levels.

Whole foods and a plant-rich diet contributes to a balanced fibre, pre- and probiotic intake, helping the gut to be their individual best. Foods rich in probiotics are kale, spinach, cauliflower, broccoli, mushrooms, sweet potatoes, and garlic. Prebiotic foods include fermented veggies, kimchee, and some raw, fermented, whole milk products like kefir and yogurt.

This brings up the subject of the next food group – dairy. According to current epidemiological evidence, the great concern about dairy foods is the steroid hormone content, especially estrogens. The most possible effects of them are in the initiating and provocation of breast and prostate cancers.^{2,3} There is a counter argument that milk can be protective against breast cancer as it elevates the levels of vitamin D, which are considered protective. The takeaway message here is that there is a lot of talk linking high dairy intake to hormone-related cancer and also some against. None is quite conclusive yet, so it is something to watch and stay educated. There are many anecdotal cases of people who stop drinking

dairy and their acne reduces significantly. It may be worth a trial period of no dairy to see what the effect is. It is known that steroid hormones occur naturally in animals such as cows, and sometimes even in higher concentrations because of the misuse of anabolic agents. (Almost all foodstuffs of animal origin contain 17 β -estradiol, progesterone, and their metabolites, although the levels vary with the kind of food,



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gender, animal species, age, and physiological condition of the animals. Thus, sex and steroid hormones are unavoidable hormones in a non-vegan diet.)

Sugar

The strongest evidence to date on dietary triggers for acne is for high-glycemic-load diets. In a randomized controlled trial (RCT), acne patients demonstrated significant improvement after 12 weeks of a low-glycemic-load diet. Later studies documented that this dietary pattern resulted in lower androgen bioavailability and altered skin sebum production.⁴ In another randomized controlled trial, a 10-week low-glycemic-load diet improved acne and histopathological exam revealed decreased skin inflammation and reduced sebaceous gland size.⁵

Food with high sugar content and highly processed food also affects the hormonal system through the cortisol-insulin feedback system. Production of insulin to transport glucose into the cells is a normal process. However, when it happens repeatedly with a high sugar diet, the cells develop a resistance to insulin, thus the name insulin resistance. In women and men, insulin surges from high-sugar diets increase a hormone-converting enzyme, which increases testosterone production. In men, insulin resistance promotes excess estrogen, which causes them to develop female-pattern fat deposits, among other health issues. It is estimated more than one-third of the United States population has insulin resistance, which is a steppingstone to diabetes. High blood sugar is tied to polycystic ovarian syndrome (PCOS) in women, resulting in acne, excess facial hair growth, and even infertility.

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Water

Water regulates almost every enzyme reaction in the body. Enzymes manage most cellular functions. Consequently, if there is a lack of free water in skin, there will be an impairment of the enzyme activity required for skin health. Desmosomes are the glue which bind the skin cells to one another. If this dissolution of desmosomes does not occur, the keratinocyte will not naturally flake off and will build up on the skin surface, blocking the pilosebaceous duct and causing comedones. Sufficient free water helps maintain all the systems that are directly involved with retaining hydration and moisture within the skin (acid mantle, sebaceous secretions, natural moisturizing factor and transepidermal water loss, epidermic lipids, and lymphatic system.)

Antioxidants and omega 3 fatty acids fight inflammation and free radicals. Acne is an inflammatory process, so a diet high in these food groups can help to reduce this.

Prevention of Acne Tip #2

Cut out sugar, processed food, and all things that trigger inflammation. Replace enzymes that properly facilitate digestion and absorption (prebiotics). Reintroduce the body with good bacteria and probiotics to reintroduce to the gut. The gut then gets repaired by a diet high in vitamins, minerals, prebiotics, probiotics, and key nutrients. Reduce caffeine, alcohol, and energy drinks and increase water intake. Increase foods that fight inflammation and evaluate the client's skin care routine. A simple, healthy skin care routine for acneic skin includes calibrated cleansing, essential exfoliation, vital vitamins, and proper protection.

A SKIN CARE ROUTINE FOR ALL CLIENT TYPES

Calibrated Cleansing

Now more than ever, calibrated cleanliness should be front and center in a professional's mind. Making sure acneic skin is cleansed twice daily and after exercise is paramount. It is also time to have an honest conversation about the right cleanser for acne. Careless cleansing with harsh, drying, and irritating products can aggravate acne and render the skin sensitive and inflamed. A calibrated cleanser will closely match the pH of the skin, between pH of 4.5 to 5. This is slightly acidic, which protects the skin and balances the skin's microbiome. Many cleansers and soaps have a pH of nine to 12, which is alkaline and upsets the balance of good and bacteria on the skin – not

to mention disrupting the acid mantle, which is the skin's primary defense mechanism. Cleansers should also include gentle, fruit acids to help with exfoliation without drying the skin.

Essential Exfoliation

Chemical exfoliation, which is best achieved with the use of products that are rich in ingredients like vitamin A and fruit acids. Mechanical exfoliation can be achieved with a gentle, non-abrasive substance like clay.

Vital Vitamins

Vital vitamins A, B, C, E, and antioxidants play a key role in the management of acne. Vitamins A and C in their various forms not only reduce the frequency of outbreaks, but also help manage the complications (post-inflammatory hyperpigmentation and scarring) of acne.

Proper Protection

Proper protection includes finding a sunscreen that does not cause breakouts and is chemical-free, which is still quite the challenge. Many sunscreens aggravate breakouts (especially in the summer months) and people with acne tend to forgo wearing sunscreen for this reason. It is important to educate the acne client of regular use of a good sunscreen because they prevent solar comedones and are the first line of treatment in post-inflammatory hyperpigmentation.

Prevention of Acne Tip #3

Following a diligent skin care routine with the use of products recommended by an expert with the correct ingredients will help reduce breakouts and prevent the complications of acne scarring, hyperpigmentation, and emotional distress. There are many ingredients that aggravate acne not only in skin care, but in makeup and haircare as well. Discussing these with the client, so they are aware of what to look for, will further educate and empower the client to own their skin health.

LIFESTYLE

What if the client is living their best life, managing stress, exercising, eating correctly, and following a good skin care routine, yet they are still breaking out? Assessing the environment and certain habits will need to be explored.

Humidity levels, air-conditioning, and heating systems: These can impact the barrier function of the skin, natural moisturizing factor, and transepidermal water loss. This can



influence sebum production and reduced dissolution of the keratinocytes, aggravating breakouts. Heat and humidity also make it more favorable for p.acnes to colonize the ductal hyperplasia.

Cellphones and screen time: Blue light causes low-level inflammation in the skin. There is increasing evidence pointing to increased post-inflammatory hyperpigmentation around acne where the cellphone is held against the face. Cellphones also harbor many different types of bacteria, all contributing to worsening acne. The face should always be cleansed after working out. Dried sweat will block pores even further and dirty gym equipment is a breeding ground for bacteria. Be sure to also ask about exposure to smoke. Both first- and second-hand smoke are sources of free radicals and not only aggravate acne, but also contribute to premature aging.

Cleanliness comes back into play at home. Towels, makeup brushes, facecloths, sponges, pillow slips, and clothing that touches the face and body are all harbingers of bacteria. Cross-contamination and reinfection of the skin by these and other items are common sources of aggravating acne.

Prevention of Acne Tip #4

Look at the client's environment and advise accordingly.

Make sure the skin is cleansed and moisturized appropriately for the environment and humidity levels. Clean cellphones and use earphones or speakerphone. Wear products that block ultraviolet rays and fight free radicals.

When exercising outdoors always wear sunscreen. Clean sporting equipment (helmets, protective gear, and even handles of racquets, clubs, and bats) after use with a suitable disinfectant (alcohol swabs work well). Clothing fabrics like polyester and lycra can trap dead skin cells and sweat against the body and aggravate body acne. Opt for natural fibers instead.

Advise the clients to wash their towels, pillowcases, makeup brushes, and sponges at least twice a week. Do not let clients share these items either. Use laundry detergent that is hypoallergenic and non-comedogenic to clean.

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THE TAKE HOME MESSAGE

Acne needs more than just medication to be treated. It is a condition that requires stress management, dietary changes, lifestyle adjustments, strict skin care regimens, and good habits to reduce the frequency and severity of breakouts. Using the tools above, clients will be able to make changes in their daily lifestyles to decrease the breakouts and complications associated with acne. These changes will also contribute to their overall health and well-being, resulting in healthier and

balanced immune systems with the capacity to manage the unforeseen major stressors that can happen in this world. 45

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Dr. Janine Ellenberger is a medical doctor with an entrepreneurial spirit skilled in integrating medical acumen into multiple health and wellness industries. Driven by a strong sense of mission and purpose to help improve wellness, the power of knowledge in overcoming health obstacles is key to her focus. She is currently the CEO of GR8 Skincare – a physician formulated skin care line integrating the best of science and nature. gr8skn.com

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