

# ROSACEA

## BACKGROUND

Rosacea is a common chronic condition that may affect up to 10% of people with fair skin. It is generally more common in women over the age of 30. There are four clinical subtypes: (1) erythematotelangiectatic rosacea is characterized by flushing and redness of the central face; (2) papulopustular rosacea is characterized by acnelike papules and pustules of the central face; (3) ocular rosacea is characterized by redness, itching, and irritation of the eyes; (4) phymatous rosacea is characterized by thickening of the facial skin—especially of the nose, chin, and cheeks—and is the least common. A person may have only one subtype or may present with a combination of subtypes. Erythematotelangiectatic and papulopustular are the most common forms seen in the general population. Many people with rosacea also have sensitive skin and may experience stinging and burning with many personal care products.

The causes of rosacea are not well understood but appear to include the following:

1. Immune system regulation of responses to microorganisms and trauma—including ultraviolet (UV) radiation.
2. Higher levels of immune system proteins known to promote inflammation and blood vessel proliferation.[1]
3. Heightened inflammatory reaction to *Demodex folliculorum* (a mite found in most people, but present in higher numbers on the skin of people who have rosacea) and a bacterium that is found in the GI tract of this mite.[2]
4. Dysfunction of cutaneous blood vessels—likely related to immune and inflammatory reactivity.[3]
5. Possibly small bowel overgrowth. One group of researchers found higher rates of small bowel overgrowth in patients with rosacea, and treatment with antibiotics resulted in significant improvement or clearance of the rosacea symptoms.[4]

There are many potential triggers for rosacea flares including sun exposure, extreme temperature exposure, rapid changes in temperature, exercise, spicy foods, hot beverages or foods, alcohol, irritation from topical skin care products, emotional states—especially anger, rage, or embarrassment—and some medications (beta-blockers and niacin).

## TREATMENT

### IDENTIFY AND AVOID TRIGGERS

It is important to minimize flares of rosacea because repeated flares result in more vigorous inflammatory responses with each subsequent flare.[5] Although there is a long list of potential triggers that are common, an individual may react from one to several known triggers or have triggers not on the list. Keeping a symptom journal of when and where rosacea flares occur can help identify which substances or activities result in flares for an individual. Once a flare has been triggered, using a cool mist or compress to the skin

will help limit the extent of the flushing episode. This will limit overall inflammation as well as serve to increase comfort during the flare.

## SKIN CARE

Because people with rosacea tend to have more sensitive skin, it is important to treat the skin gently. The face should be washed with warm water using a gentle circular motion with the fingertips. Only gentle pH-balanced cleansers or soapless cleansers should be used. Once the face is dry, a gentle, non-alkaline moisturizer can be applied to the skin. Ceramide-containing moisturizers may be particularly helpful.[6] Harsh soaps and abrasive cleansing will likely worsen symptoms and should be avoided.

Minimizing exposure to chemicals that can irritate the skin is an important part of managing rosacea. Common potential irritants include acetone, alcohol, propylene glycol, alpha-hydroxy acids, sodium lauryl sulfate, benzalkonium chloride, formaldehyde releasers, menthol, benzyl alcohol, camphor, urea, pyrrolidone carboxylic acid, lanolin, and fragrances.[6]

Since UV exposure can be a trigger for many patients, wearing a daily broad spectrum sunscreen is important. Because skin sensitivity is often a concern for people with rosacea, mineral based sunscreens formulated for people with sensitive skin or for babies are good choices.

## NUTRITION

### ANTI-INFLAMMATORY DIET

Healthy dietary choices are important for overall health. Anti-inflammatory or Mediterranean-style dietary approaches have been found to enhance many aspects of health—especially in the setting of inflammatory diseases. Research supports that eating a plant-based diet low in processed foods, like an anti-inflammatory diet, helps to support healthy gut microflora, which may have beneficial effects on many inflammatory conditions including rosacea.[7] More information about these dietary approaches can be found in "[The Anti-Inflammatory Lifestyle](#)" patient handout, and in the "[Choosing a Diet](#)" Whole Health tool.

**Note:** Please refer to the [Passport to Whole Health](#), Chapter 15 on Dietary Supplements for more information about how to determine whether or not a specific supplement is appropriate for a given individual. Supplements are not regulated with the same degree of oversight as medications, and it is important that clinicians keep this in mind. Products vary greatly in terms of accuracy of labeling, presence of adulterants, and the legitimacy of claims made by the manufacturer.

## **SUPPLEMENTS**

### **OMEGA-3 FATTY ACIDS**

Omega-3 fatty acids have been shown to decrease the production of inflammatory compounds. Ideally, omega-3-fatty acids would come from foods such as fatty fish (salmon, mackerel, and sardines), flaxseeds, and walnuts. When that is not possible, supplements can be helpful. The omega-3s found in flax are not as potent in terms of anti-inflammatory effects as those in fish oil. For more information, refer to the section on fats in the Whole Health [“Food and Drink”](#) overview.

#### **Dose[8]:**

- 1 tbsp of flax oil for every 100 lb daily
- 1-2 tbsp ground flaxseeds daily
- 1-2 gm fish oil capsules twice daily

### **PROBIOTICS**

While probiotics have not specifically been looked at as treatment for rosacea, the correlation of small intestinal bacterial overgrowth with symptoms of rosacea certainly suggest that supporting a healthier gut microflora may impact the severity of rosacea symptoms.

Hopefully, more research will be done to help clarify the specific doses and strains that are most likely to be helpful in specific skin conditions like rosacea. Interestingly, dietary practices do appear to influence the effectiveness of supplemental probiotics. (Refer to the section above on nutrition.)

For more information, refer to [“Promoting a Healthy Microbiome with Food and Probiotics”](#) Whole Health tool.

## **TOPICAL OVER-THE-COUNTER MEDICATIONS**

### **DO NOT USE TOPICAL STEROIDS!**

While topical steroids may help temporarily with symptoms of rosacea, they can worsen symptoms in the long run, and a rebound with worsening of symptoms can occur after the topical steroid is stopped.[9,10] Additionally, over time, topical steroids can cause thinning of the skin. There are some situations when a doctor may recommend topical steroids for short periods of time, but steroid use should be closely monitored.

## GREEN TEA

Green tea is an antioxidant and anti-inflammatory, and it appears to have UV-protective effects as well, making it a good and safe choice for topical treatment of rosacea.[11] Either 2% green tea extract or 2% EGCG can be added to a topical base by a compounding pharmacy. Increasingly, there are over-the-counter products available with the appropriate concentration of green tea extract.

## NICOTINAMIDE/NIACINAMIDE

Nicotinamide is a form of vitamin B3 and has been found to have anti-inflammatory and anti-sebum properties. It also stabilizes the epidermal barrier and helps increase moisture content of the epidermis.[12] Preparations of 4%-5% are helpful in treating blemishes and are often particularly helpful in treating papulopustular rosacea.

## OTHER THERAPIES TO CONSIDER

### MIND-BODY

While there aren't many studies looking at the effect mind-body approaches (such as meditation, clinical hypnosis, and biofeedback) have on rosacea, they do have clear benefits for regulating emotional states. These types of approaches may be particularly helpful for patients who have clear emotional triggers for their symptoms.[13] For more information, refer to the Whole Health overview "[Power of the Mind.](#)"

Additionally, information and support can be found online at [National Rosacea Society](#) and [Rosacea Support Group](#)

## PREVENTION SUMMARY: ROSACEA

- Identify and avoid triggers.
- Take gentle care of your skin, and minimize potential irritants (e.g., fragrance).
- Take an anti-inflammatory dietary approach: Reduce intake of refined carbohydrates.
- Consider taking an omega-3 supplement.
- Consider looking into the possibility that small intestinal bacterial overgrowth may contribute to symptoms and seek evaluation and treatment for this condition.
- Learn about different approaches for stress management.
- Consider topical green tea or nicotinamide.

## RESOURCE LINKS

- [“The Anti-Inflammatory Lifestyle”](https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/handout_ai_diet_patient.pdf): [https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/handout\\_ai\\_diet\\_patient.pdf](https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/handout_ai_diet_patient.pdf)
- [“Choosing a Diet”](https://www.va.gov/WHOLEHEALTHLIBRARY/tools/choosing-a-diet.asp): <https://www.va.gov/WHOLEHEALTHLIBRARY/tools/choosing-a-diet.asp>
- [Passport to Whole Health](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Passport_to_WholeHealth_FY2020_508.pdf): [https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Passport\\_to\\_WholeHealth\\_FY2020\\_508.pdf](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Passport_to_WholeHealth_FY2020_508.pdf)
- [“Food and Drink”](https://www.va.gov/WHOLEHEALTHLIBRARY/self-care/food-and-drink.asp): <https://www.va.gov/WHOLEHEALTHLIBRARY/self-care/food-and-drink.asp>
- [“Promoting a Healthy Microbiome with Food and Probiotics”](https://www.va.gov/WHOLEHEALTHLIBRARY/tools/promoting-healthy-microbiome-with-food-probiotics.asp): <https://www.va.gov/WHOLEHEALTHLIBRARY/tools/promoting-healthy-microbiome-with-food-probiotics.asp>
- [“Power of the Mind”](https://www.va.gov/WHOLEHEALTHLIBRARY/self-care/power-of-the-mind.asp): <https://www.va.gov/WHOLEHEALTHLIBRARY/self-care/power-of-the-mind.asp>
- [National Rosacea Society](http://www.rosacea.org/): <http://www.rosacea.org/>
- [Rosacea Support Group](http://www.rosacea-support.org/): <http://www.rosacea-support.org/>

## AUTHOR(S)

“Rosacea” was written by [Apple Bodemer](#), MD (2014, updated 2020).

*This Whole Health tool was made possible through a collaborative effort between the University of Wisconsin Integrative Health Program, VA Office of Patient Centered Care and Cultural Transformation, and Pacific Institute for Research and Evaluation.*

## REFERENCES

- 1 Two AM, Del Rosso JQ. Kallikrein 5-mediated inflammation in rosacea: clinically relevant correlations with acute and chronic manifestations in rosacea and how individual treatments may provide therapeutic benefit. *J Clin Aesthet Dermatol.* 2014;7(1):20-25.
- 2 Jarmuda S, O'Reilly N, Zaba R, Jakubowicz O, Szkaradkiewicz A, Kavanagh K. Potential role of Demodex mites and bacteria in the induction of rosacea. *J Med Microbiol.* 2012;61(Pt 11):1504-1510.
- 3 Steinhoff M, Schaubert J, Leyden JJ. New insights into rosacea pathophysiology: a review of recent findings. *J Am Acad Dermatol.* 2013;69(6 Suppl 1):S15-26.
- 4 Parodi A, Paolino S, Greco A, et al. Small intestinal bacterial overgrowth in rosacea: clinical effectiveness of its eradication. *Clin Gastroenterol Hepatol.* 2008;6(7):759-764.
- 5 Wilkin JK. Oral thermal-induced flushing in erythematotelangiectatic rosacea. *J Invest Dermatol.* 1981;76(1):15-18.
- 6 Levin J, Miller R. A guide to the ingredients and potential benefits of over-the-counter cleansers and moisturizers for rosacea patients. *J Clin Aesthet Dermatol.* 2011;4(8):31-49.

- 7 Moschen AR, Wieser V, Tilg H. Dietary factors: major regulators of the gut's  
microbiota. *Gut Liver*. 2012;6(4):411-416.
- 8 *Integrative Medicine*. 2nd ed. Philadelphia, PA: Elsevier Saunders; 2007.
- 9 Bhat YJ, Manzoor S, Qayoom S. Steroid-induced rosacea: a clinical study of 200  
patients. *Indian J Dermatol*. 2011;56(1):30-32.
- 10 Ference JD, Last AR. Choosing topical corticosteroids. *Am Fam Physician*.  
2009;79(2):135-140.
- 11 Pazyar N, Feily A, Kazerouni A. Green tea in dermatology. *Skinmed*. 2012;10(6):352-  
355.
- 12 Emer J, Waldorf H, Berson D. Botanicals and anti-inflammatories: natural  
ingredients for rosacea. *Semin Cutan Med Surg*. 2011;30(3):148-155.
- 13 Shenefelt PD. Biofeedback, cognitive-behavioral methods, and hypnosis in  
dermatology: is it all in your mind? *Dermatol Ther*. 2003;16(2):114-122.