

When are antibiotics appropriate?

Learn how to treat your rosacea and acne without increasing antibiotic resistance

By Katherine McDonald & Dr. Jennifer Beecker

Antibiotics should be reserved to manage skin conditions that do not have an alternative treatment option. This class of medication remains a powerful treatment when used appropriately. Unfortunately, antibiotics are often inappropriately prescribed for viral and mild bacterial infections or for inflammatory conditions. And why is this an issue? Because of antibiotic resistance.

Antibiotic resistance is a consequence of global antibiotic overuse and misuse for the last half-century. Antibiotic resistance is a dangerous phenomenon since the troublesome bacteria that we typically kill with antibiotics are now surviving treatment and becoming more threatening organisms (“superbugs”). These mutated bacteria reproduce and infect more people.

Do dermatologists need to regulate antibiotic prescriptions?

Absolutely. Prescription monitoring is necessary because using antibiotics without an additional agent (e.g. benzoyl peroxide gel or wash) for skin conditions such as acne and rosacea can:

- contribute to antibiotic resistance by allowing dermatology patients to grow “superbugs”
- disrupt and damage healthy and protective skin bacteria, thus weakening the skin barrier (oral antibiotics disrupt the entire body’s flora, whereas topical antibiotics impact the treated area)

What treatment options are recommended for common skin conditions such as acne and rosacea?

Acne. Ideally, mild to moderate acne should be treated with topical retinoids. Antibiotics may be used topically when paired with benzoyl peroxide to limit the development of resistance. More severe acne can be treated with oral isotretinoin. Antibiotics alone are not ideal from an antibiotic-resistance standpoint. Rarely, however, antibiotics must be used due to a lack of alternative treatments.

Over the last 40 years, antibiotic-resistant strains of *Propionibacterium acnes* (the bacteria that contributes to acne) have increased by more than 42 per cent because of inappropriate antibiotic use. When oral antibiotics are used, bacteria elsewhere in the body—not just those in the skin—can develop resistance to the antibiotic. Antibiotics can also cause the previously mentioned collateral skin flora damage, reducing the body’s natural defenses against acne- and infection-provoking bacteria.

Rosacea. Although antibiotics (i.e., tetracycline) effectively treat rosacea, they are primarily being prescribed for their anti-inflammatory effect. Therefore, it is preferable that rosacea is treated with non-antibiotic options where possible, using agents such as azelaic acid, brimonidine and topical ivermectin. If topical therapy fails or the rosacea is severe then low-dose doxycycline (40 mg) can be used with

minimal risk of antibiotic resistance. At very low doses, it acts only as an anti-inflammatory.

The exception. Rarely, antibiotics are the sole method of treatment. It is important to understand that there will be times when your dermatologist feels antibiotic therapy is the best or only treatment available.

Your responsibility as a patient

Antibiotic resistance is a threat both to your personal health and to global public health. Patients are encouraged to read antibiotic-resistance reports (e.g., from the World Health Organization) and to choose an alternative to antibiotic therapy when that is an option.

The responsibility to fight the rise in bacterial antibiotic resistance ultimately falls on each individual. Collectively, society must work to preserve the effectiveness of the remaining antibiotics in our treatment arsenal. 

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