



JUST THE FACTS

MORE THAN

100 MILLION

AMERICANS ARE AFFECTED
BY SKIN DISORDERS¹

EACH YEAR, MORE THAN

THREE MILLION

PEOPLE ARE DIAGNOSED WITH SKIN
CANCER IN THE UNITED STATES²

MORE THAN

EIGHT MILLION

AMERICANS HAVE PSORIASIS³

ROSACEA AFFECTS

16 MILLION

AMERICANS⁴

MEDICINES IN DEVELOPMENT | 2018 UPDATE

SKIN DISEASES

More Than **300 Medicines**
to Treat Skin Diseases
are in Development
by Biopharmaceutical
Research Companies

The largest organ of the human body, skin protects humans from invasive germs, viruses and environmental factors, such as cold and sunlight. It plays a role in regulating body temperature, can trigger reflexes and is responsible for the sense of touch. There are many types of skin conditions that have a tremendous impact on human health and quality of life, including acne, psoriasis, cancer and infections.

Today, **328** medicines are in development by biopharmaceutical research companies to help the more than 100 million Americans – one third of the U.S. population – affected by a broad range of skin conditions.⁵ Skin conditions symptoms can vary significantly and may be temporary, recurrent or permanent. Many conditions have a tremendous impact on patients' day-to-day functioning, while others can be life-threatening.

The **328** medicines in development today offer hope to those affected by these diseases. The medicines in clinical trials or awaiting review by the U.S. Food and Drug Administration (FDA) include:

- **69** for skin cancer, including **48** for melanoma, the deadliest form of skin cancer that affects more than 90,000 Americans each year.⁶
- **67** for psoriasis, the most prevalent autoimmune skin disease in the United States.⁴

- **41** for dermatitis (eczema), a disease in which 90 percent of sufferers get the disorder before the age of five.⁴
- **32** for skin and soft tissue infections, which affect about 3.3 million people annually in the United States.⁷
- **25** for acne, the most common skin condition in the United States that affects up to 50 million Americans each year.⁴
- **18** for wounds, including nine for diabetic foot ulcers.⁴
- Other medicines in development target alopecia, cutaneous lupus, pruritus, rosacea and scleroderma, among others.

Innovative Medicines in the Pipeline

Medicines in the development pipeline today aim to build on the progress made by existing treatments, and many use novel approaches to treat skin conditions. Among the **328** medicines in development are potential treatments for:

- An immune checkpoint modulator targeting the PD-1 checkpoint protein is in development for the most common type of skin cancer, **basal cell carcinoma**. The body's immune system includes many checks and balances to protect the body from invading pathogens while preventing itself from inadvertently attacking normal cells, using "checkpoint" proteins to activate and prevent immune responses. Years of research show that some tumors have high levels of proteins that put the brakes on the immune system, preventing it from attacking cancer cells.
- A monoclonal antibody targeting interleukin-17 (IL-17A) is in testing to treat **severe inflammatory acne**. The activity of IL-17A plays a role in the development of inflammation and the body's immune response. The antibody selectively targets and binds to IL-17A, preventing it from binding to its receptor and thus inhibiting immune-mediated inflammation that causes inflammatory acne. This pathway is also involved in moderate to severe chronic hidradenitis suppurativa, a rare, painful inflammation of the skin.
- A first-in-class antibacterial is in development for the treatment of serious and **drug-resistant acute bacterial skin and skin structure infections (ABSSSI)** in both the hospital and community settings. It has demonstrated broad-spectrum antibacterial activity and is particularly potent activity against Gram-positive bacteria that are resistant to conventional antibiotics in preclinical testing, such as methicillin-resistant *Staphylococcus aureus* (MRSA).

Advances in molecular and genomic research have changed our understanding of underlying causes of many diseases, including those that involve the skin. This new knowledge allows biopharmaceutical research companies to conduct the cutting-edge research needed to reduce the destructive toll of skin diseases.

Sources:

1. American Skin Association
2. American Cancer Society
3. National Psoriasis Foundation
4. American Academy of Dermatology
5. Number of medicines obtained through public government, and industry sources, and the Adis "R&D Insight" database; current as of September 14, 2018.
6. American Cancer Society
7. Incidence and cost of skin and soft tissue infections in the United States, Value in Health 18, A245, 2015