



Psoriasis is a chronic, relapsing disease, with variable clinical features and triggers. It is characterized by thick patches of inflamed, scaly skin, created by abnormal, rapid, and excessive proliferation of skin cells. The cause of the disease is not known, but it is believed to be an autoimmune disease (when the body mistakenly detects its own tissue as foreign and attacks itself).

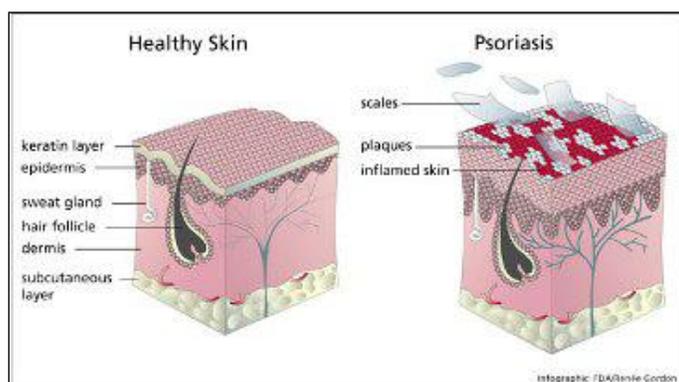


Illustration courtesy of the Food and Drug Administration

Psoriasis is estimated to affect 2-2.6% of the U.S population, with a higher incidence in Caucasians; it affects men and women at about the same rate. Children are also affected. Approximately 15% of psoriasis patients may subsequently develop psoriatic arthritis, a potentially debilitating joint condition.

Yesterday

- Psoriasis was equated with leprosy and was believed to be a contagious disease.
- Although psoriasis was observed in families, it appeared to be sporadic (no discernable pattern in the affected family members); there was no information about a genetic association with the disease.
- Doctors prescribed therapies without understanding the disease mechanism. These treatments included arsenic and ammoniated mercury. Coal tar was a common and effective treatment; however, it was smelly, messy, and made patients feel socially unacceptable.

- Rapid turnover of keratinocytes (cells of the outer layer of skin, or epidermis) was believed to be the cause of psoriasis, and became the target of most treatments.

Today

We have learned that psoriasis is not contagious.

- Genetic research has already identified a few susceptibility genes. Ongoing studies of gene variations associated with the disease's different clinical features are currently underway.
- Additional stimuli, such as environmental triggers or expression of still-unknown genes, are probably required for disease occurrence. Some of these genes are for inflammatory factors that overlap with other autoimmune diseases, such as rheumatoid arthritis, lupus, and type I diabetes.
- Less toxic, easier-to-use topical treatments are available, including corticosteroids.
- Phototherapies, using ultraviolet light, are effective for treating moderate-to-severe psoriasis.
- NIH-supported research has contributed to the development of several biologics—drugs in the form of biological molecules—that are effective in some psoriasis patients. Biologics have fewer side effects than other drugs because they target specific molecules on immune cells, instead of the entire immune system.
- Trials of biologics that target molecules and cells that regulate the immune system have yielded positive results for psoriasis and psoriatic arthritis. These studies reveal important information about the mechanisms of the diseases, and response to treatment, which will aid the development of future therapies.
- More attention is given to the psychological impact of the disease; NIH supports research on mental health issues in psoriasis patients. Patients still cope with itching, pain, and social rejection.

- Cardiovascular disease is increasingly recognized as a common comorbidity with many inflammatory diseases. Preliminary studies suggest that some psoriasis patients may have an increased risk of heart attacks.



There is no cure for psoriasis, but there are many effective treatments--each of which has side effects.

Tomorrow

- Many current therapies could be improved by lower cost and ease of use. Small businesses have received NIH funding recently for developing cheaper, easier-to-use topical therapies, as well as less expensive, less time-consuming phototherapies.
- There are a series of steps, or pathways, in the autoimmune reaction. Many autoimmune diseases

appear to share pathways. NIH is funding research to understand the details of these pathways and to interrupt the steps in the autoimmune reaction. Some of these projects, which are focused on treating diabetes, rheumatoid arthritis, lupus, and other diseases, may also help psoriasis patients.

- The variable clinical features of psoriasis and multi-gene nature of the disease require understanding of the subtypes of the disease and knowledge of the impact of the associated genes on the immune response observed in psoriasis patients. This information will guide the design of new, better, and more personalized therapies.
- Research advances in the environmental factors that trigger psoriasis and the immune system imbalances that contribute to skin inflammation will lead to new psoriasis therapies.
- Participation of patients in clinical research is one of the best ways to advance new knowledge and contribute to the development of new treatments.

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