

## Psoriasis

### What is Psoriasis?

Psoriasis is a long standing inflammatory non-contagious skin disease which waxes and wanes with triggering factors. There is a genetic predisposition in psoriasis. Internationally, psoriasis affect about 2-3% of the population. The median age of onset is about 28 years old. Women are slightly more prevalent to have psoriasis.

The salmon colored scaly plaques tend to occur on the elbows, knees, scalp, glans penis, buttock and lower back areas. They can also cause bone changes often termed psoriatic arthritis and nail changes.

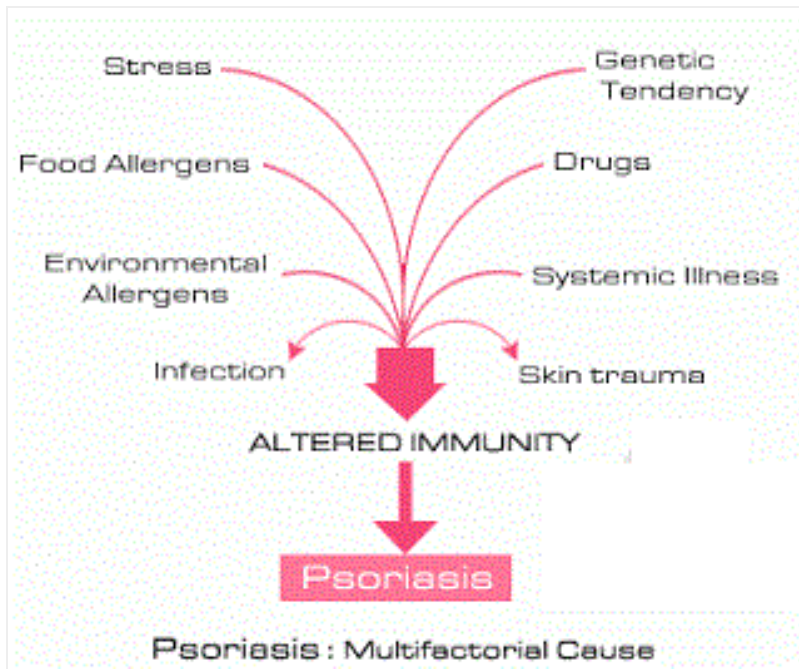


### What causes psoriasis?

Psoriasis is a complex skin disease affected by multiple factors like genetic, environmental and immune-mediated changes. The immune system over-reacts resulting in increased production of inflammatory markers like TNF-alpha and TH1 cytokines which trigger off inflammation cascade. This will cause increase proliferation of keratinocytes skin cells resulting in thickening and scaly skin. The inflammatory markers also result in the growth of skin blood vessels resulting in the change in color to salmon pink-red.

Psoriasis may also be triggered by other factors below:

1. **Genetic:** about 50% of affected individuals have an affected family member.
2. **Koebner phenomenon:** after the skin is scratched or undergone mechanical/chemical injury, psoriasis rash will occur around that area.
3. **Stress:** will also induce psoriasis rash
4. **Environmental factors:** changes in temperature and humidity may trigger psoriasis. However, sunlight is beneficial for psoriasis.
5. **Infections:** Fungal infection with *Malassezia* may trigger seborrheic dermatitis. Candida infection may trigger flexural psoriasis. Streptococcal upper respiratory tract infection may trigger guttate form of psoriasis.
6. **Alcohol and smoking:** have also been associated with increase flares of psoriasis.
7. **Hormonal changes:** Pregnancy and post puberty are times when psoriasis may occur hence there may be some relationship between them.
8. **Medications:** Beta-blockers (heart disease and hypertension medication), Lithium (psychiatric medication), sudden stopping of steroids, anti-malaria drug like hydroxychloroquine and Non-Steroidal Anti-Inflammatory Drugs (NSAIDS) may trigger psoriasis.
9. **Metabolic syndrome:** Patients who are obese, insulin resistance, hypertension and hyperlipidemia have metabolic syndrome which has been associated with psoriasis.



## Types of psoriasis

Depending on the site of presentation and clinical features there are several forms of psoriasis as described below:

1. **Erythrodermic psoriasis:** this is severe psoriasis which involves the whole body.



- 2. Flexural psoriasis:** well defined skin patches on skin folds like armpit areas, groin area, infra-mammary areas, cubital fossa of elbows and back of knee.



- 3. Guttate Psoriasis:** widespread multiple small patches over the body



- 4. Intra-oral psoriasis:** there will be blistering and ulcers in the mouth.
- 5. Koebnerised Psoriasis:** Psoriasis that occur over healing wounds/scars.
- 6. Nail Psoriasis:** characterized by nail changes like yellowing, ridging, pitting and onycholysis.



7. **Plaque Psoriasis:** large flat plaques mainly over elbows, knees and lower back.



8. **Palmoplantar psoriasis:** skin lesions mainly occur on palms and soles.

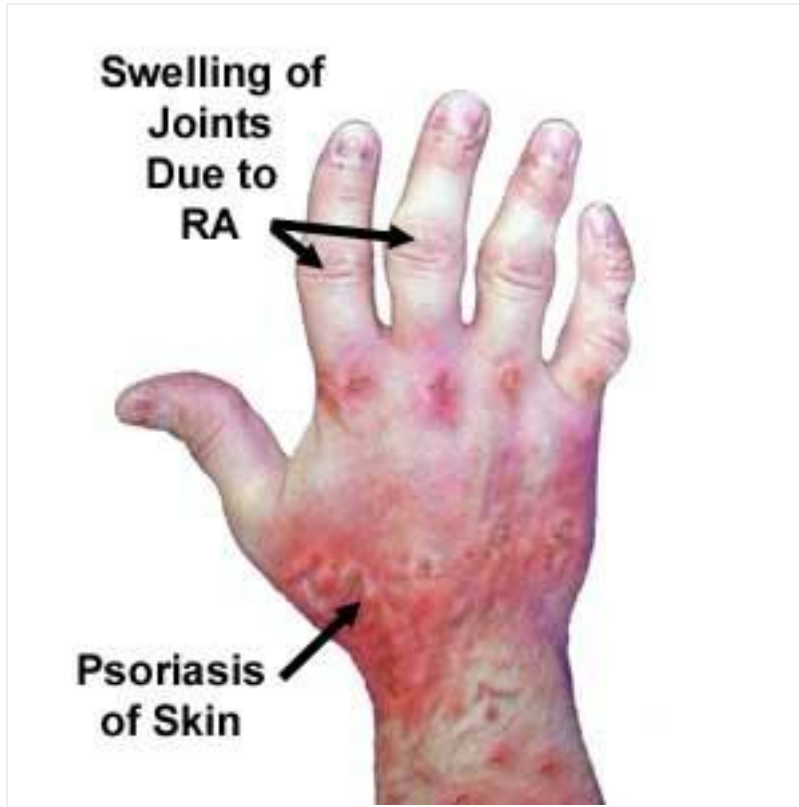


9. **Pustular psoriasis:** Pustules (lesions filled with pus) that can be found throughout the body or just involving the palms and soles.





**10. Psoriatic arthritis:** arthritis joint disease caused by psoriasis.



**11. Scalp psoriasis:** psoriasis that forms scaly plaques on the scalp.



**12. Sebopsoriasis:** resembling seborrhoeic dermatitis the lesions are localized at the scalp, face, ears and chest areas.



### Clinical features of Psoriasis

Psoriasis is characterized by pink/red scaly patches (plaques) with well-defined edges symmetrically on the body. The scaly patches are often described as silvery-white. In pustular psoriasis the lesions are all pustules (bumps filled with pus). Common sites where these lesions occur are the elbows, knees, buttocks, lower back, scalp and glans penis area.





The skin lesions are often itchy and disfiguring if involves the whole body. They often cause psychological stress to patients as it is a chronic disease with no specific cure. Psoriasis can also affect the mouth cavity causing white lesions or ulceration.

Psoriasis also can cause nail changes like pitting, ridging, onycholysis and yellowing of nail. It can also affect the bone causing arthritis associated with joint pain and swelling.



In some patients, psoriasis may also affect the eyes causing blepharitis (inflammation of eyelid), conjunctivitis, ectropion (lower eyelid turns outwards), dry eyes and keratitis (cornea infection).

### **Diagnosis of psoriasis**

Diagnosis is made by its typical clinical presentation. To differentiate psoriatic cause of arthritis from gout and rheumatoid arthritis blood tests to test for rheumatoid factor and uric acid can be done. Other than that investigations are usually not necessary for diagnostic purposes.

### **Treatment of psoriasis**

To date, there is no definitive cure for psoriasis. Treatment modalities are to control the flares and symptoms. Reducing predisposing factors mentioned earlier may reduce frequency of flares. Therapy is aimed at reducing the rate of skin cell production. Moisturizers act as adjunct to improve the skin barrier. The different treatments available are:

### 1. Coal Tar

It is an inexpensive ingredient often found in lotion, creams, shampoo and foam that can be used on all parts of body. Sometimes it is mixed with corticosteroids.

It acts by reducing the itch, anti-bacteria and inhibiting cell proliferation. The only disadvantage is its smell, skin irritation and it stains clothes.



### 2. Topical corticosteroids

Topical steroids have anti-inflammatory effects that not only reduce inflammation it also reduces formation of plaques. However, if it is stopped abruptly it can cause a rebound flare of psoriasis. Long term usage may also result in skin atrophy (thinning).



### 3. Ophthalmic Corticosteroids

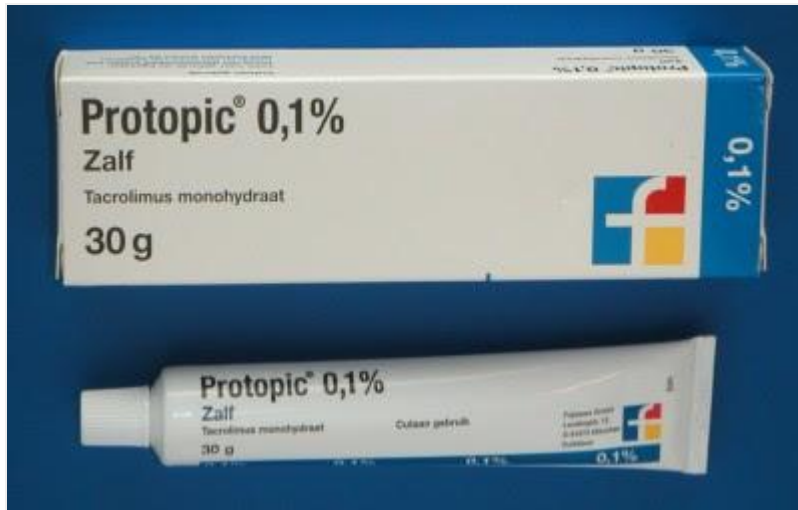
Eye drops containing steroid are used to treat psoriasis eye conditions like corneal, conjunctiva and anterior chamber inflammation. It reduces the inflammation process, reduces the migration of white blood cells and controls the formation of new vessels.

Artificial tears may also be helpful to treat dry eye conditions in psoriasis.

### 4. Anthralin

Anthralin is a topical keratolytic agent which helps to remove skin scaling, smooth the skin and reduces cell proliferation. The side effects include staining of skin and skin irritation.





### 7. Topical retinoids

Topical retinoids like Tazarotene modulates the proliferation of skin cell, reduces inflammatory process and is an immunomodulators. It can cause skin irritation and is not recommended in pregnant women.



### 8. Phototherapy

Phototherapy with PUVA and NBUBV may be recommended for patients with more extensive psoriasis patients involving >10-15% of body surface area. PUVA is used less frequently as it may increase skin cancer after prolonged and multiple phototherapy sessions.





### 9. Oral immunosuppressants

-Methotrexate: useful in patients with guttate psoriasis, psoriatic arthritis and patients who do not respond to topical creams and phototherapy. It inhibits cell growth and proliferation. Doses can range from 2.5-30 mg per week. It is contraindicated in patients who are pregnant, having active liver disease, active infections and alcoholism. Side effects include nausea, bone marrow suppression, liver toxicity, mouth ulcers, temporarily affect fertility and causes fetal deformity in pregnant women. Full blood count, renal function test and liver function test will be done regularly for monitoring. Sometimes, liver biopsy may also be necessary after 3.5-4 gm of medications or in those with increased risk of liver cancer.



-Cyclosporin is very effective in all kinds of psoriasis but it is more costly. It cannot be used beyond one year as it causes kidney damage. It is contraindicated in patients with active infections and cancers. It modulates the T cell function and in turn reduces the inflammation cascade. The dose is 2-5 mg per day. Side effects include raising blood pressure, kidney damage, high cholesterol, and high potassium level, induce gout, reduces magnesium level, liver enzymes derangement, abdomen pain, nausea and increased risk of cancers e.g. skin and lymphoproliferative cancers. Frequent blood test to test for lipids, uric acid, full blood count, liver function test and kidney function tests are required for monitoring. Blood pressure should also be monitored.



-Other drugs like azathioprine, mycophenolic mofetil, hydroxyurea and sulfasalazine can also be used depending on the patient's condition. All these drugs have different side effects so close monitoring by dermatologists is necessary.

### **10. Biologics**

Biologics are Biological Therapy agents are specially designed to block specific molecular steps in the formation of psoriasis lesions. It is useful for patients with extensive psoriasis involving > 10% of body surface area for at least 6 months, unresponsive to topical creams and those who cannot tolerate the side effects of phototherapy and immunosuppressants.

The available biologics include Alefacept, Efalizumab, Etanercept, Infliximab and Adalimumab. They are usually given in injectable forms and dosage is dependent on each drug. Each has its own side effects hence it can only be given and monitored by certified dermatologists.

