

## ATOPIC DERMATITIS

To have more information: [www.eczemahelp.ca](http://www.eczemahelp.ca)  
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### WHAT IS ATOPIC DERMATITIS?

Atopic dermatitis —also commonly referred to as eczema or atopic eczema—is a chronic **itchy** skin condition associated with asthma and different types of allergies and sensitivities. Family history is often present.

People with atopic dermatitis often have unpredictable skin flares, and there are many different types of triggers that can contribute.

Some environmental triggers can be avoided, but many other triggers, including heat, sweating, and the change of seasons, are harder to avoid.

We do **not** have evidence that avoiding certain foods will help atopic dermatitis in adults unless specific allergies have been present since childhood.

Atopic dermatitis usually starts in childhood, and some people get better with time. Most people with atopic dermatitis will always have sensitive skin. In some cases, atopic dermatitis persists into adulthood and may continue to worsen with time.

Adult atopic dermatitis can cause chronic skin problems with lasting changes, including color changes, thicker and even scarred skin, as well as a wide range of broader problems associated with unpredictable disease flares, open wounds and secondary infections, and the chronic itch. This also impacts sleep, work and social life, and can trigger anxiety and depression.

### WHY DO I HAVE ATOPIC DERMATITIS?

Genetic factors exist and play a role in atopic dermatitis; in other words, one may inherit a risk of eczema, asthma, hay fever and/or allergies. Active disease and skin lesions usually involve the skin barrier itself as well as a change to the immune system. **A small branch of the immune system that usually protects the skin is known to be overactive in atopic dermatitis.** This can be compared to an army that is missing its normal checks and balances and that causes collateral damage. **An overactive skin immune response causes inflammation and can be damaging in the skin.** This may set off a positive feedback loop, a vicious cycle that gets worse and worse when the normal balance of oils and ecology of healthy bacteria on our skin is altered, or when other insults are encountered.

### WHAT CAN I DO ABOUT IT?

1. Pro-actively maintain a healthy skin barrier

2. Calm overactive skin inflammation locally
3. Prevent skin immune overactivity long term

## 1. HOW TO PRO-ACTIVELY MAINTAIN A HEALTHY SKIN BARRIER

The surface of normal skin acts as a tight seal, similar to a waterproof layer. People with atopic dermatitis can be missing key elements of this skin seal, including proteins and oils that help keep the skin healthy. A 'leaky' skin barrier allows damage to deeper layers of the skin and also allows moisture to escape, contributing to dryness. People with atopic dermatitis have skin that is more sensitive to their environment.

Maintaining a healthy skin barrier is key to prevention; this means ALWAYS keeping the skin 'sealed' with moisturizing creams and ointments, especially after bathing or exposure of skin to irritants, including harsh or changing weather and sweat or exercising.

### MOISTURIZERS

For mild atopic dermatitis, frequent and consistent use of moisturizers may be enough to prevent flares. In moderate to severe disease, other medications are added to this foundation.

### WHICH MOISTURIZER?

Think of choosing your moisturizers like choosing shoes; you will need different ones for different occasions. Currently, there is no evidence that one brand is better than another: there are many good moisturizers to choose from, and your preference is important.

### USING MOISTURIZERS:

1. Choose moisturizers that are soothing and that do not irritate the skin.
2. Avoid products that contain fragrances
3. Choose ointments or creams instead of lotions: thicker or oil-based products last longer
4. Use lots! Generous, daily use is more important than the specific product used
5. Use a full shot-glass, or 2 full tablespoons (30g), of cream for one application to the body
6. Apply immediately after bathing or water exposure while you are still damp
7. Vaseline is safe to use around the eyes and genitals and is a good, inexpensive ointment

### SKIN HYGIENE

**The skin has evolved to protect us with a whole ecosystem of normal and healthy bacteria that contribute to a healthy barrier.** The skin renews itself constantly and does not need soap in most body sites to stay healthy.

### WHICH CLEANSERS?

**Many soaps can worsen skin health and imbalance skin ecosystems.** This is because normal soaps and liquid soaps can change skin pH, and our skin needs pH 5.5 to be healthy. Water itself

can be irritating, removing protective layers of oils from the skin barrier. Rubbing, scrubbing, and toweling can be very irritating, especially to sensitive skin.

WHAT TO DO IN THE SHOWER or BATH:

1. Bathe or shower once a day, or every other day, as needed
2. Don't soap! The majority of your body surfaces only need rinsing with water
3. *Only* use soaps to areas that have *odors*, such as the armpits
4. **No liquid soaps**, unless they are a special *synthetic detergent* 'syndet' with balanced pH

## 2. HOW TO CALM OVERACTIVE SKIN INFLAMMATION LOCALLY

Applying treatments to calm **skin inflammation** locally is also known as a topical treatment. **Topical medications should be applied directly to red, rough, itchy skin on a regular basis.**

There are a wide range of treatments, and you may need different ones at different times and/or for different areas of the body. There are two broad classes of topical medications; 1. 'traditional,' and 2. 'targeted,' and these may be formulated as a lotion, cream, or ointment.

Traditional medications work broadly, and sometimes have a wider range of side effects. Newer 'targeted' medications are designed to act more specifically, and often have a more limited set of side effects. Targeted treatments may be more expensive. **The choice of active treatment depends on the severity of skin inflammation and the body site.**

### 1. Traditional topical medications

Corticosteroids (these come in wide range strengths and formulations)

- a. very mild, e.g. hydrocortisone
- b. middle strength, e.g. Aristocort-R, triamcinolone or Betaderm, betamethasone
- c. very strong, e.g. Dermovate, Clobetasol propionate

### 2. Targeted topical medications

Calcineurin inhibitors

- d. Tacrolimus (Protopic), Pimecrolimus (Elidel)

Phosphodiesterase-4 inhibitor

- e. Crisaborole (Eucrisa)

## HOW TO USE LOCAL 'TOPICAL' treatments to CALM OVERACTIVE SKIN INFLAMMATION

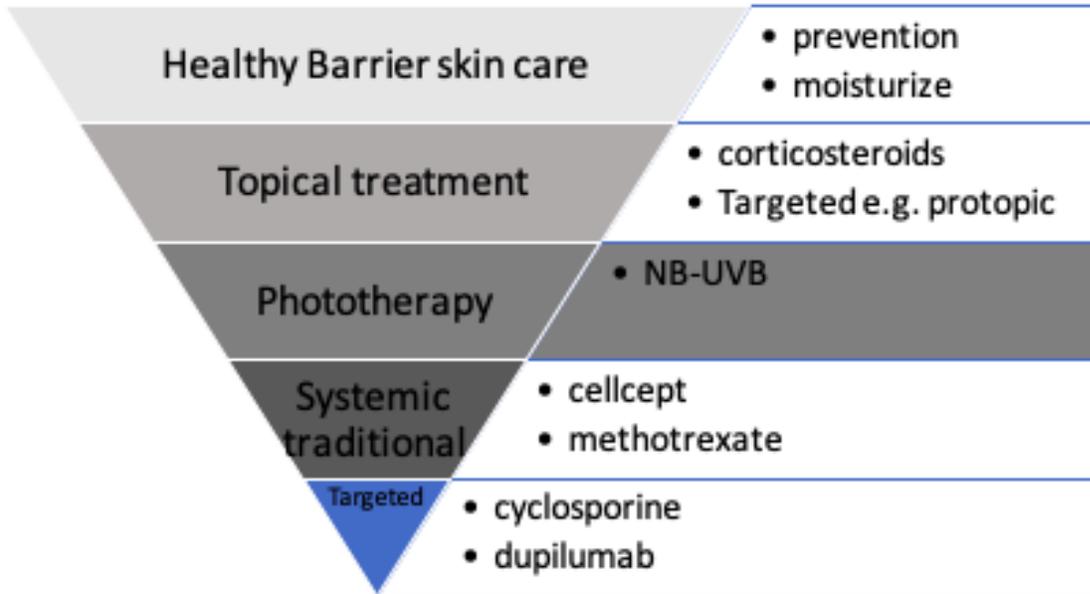
1. Use enough treatment to cover the entire rough itchy areas affected
2. Use treatment regularly until the rough itchy skin feels smooth again for a few days
3. Keep treating areas that always recur, at least twice a week, as a preventative treatment

Tips for topical treatments:

Numbers, e.g. 0.01%, 0.1%, are not used to compare between different medications.

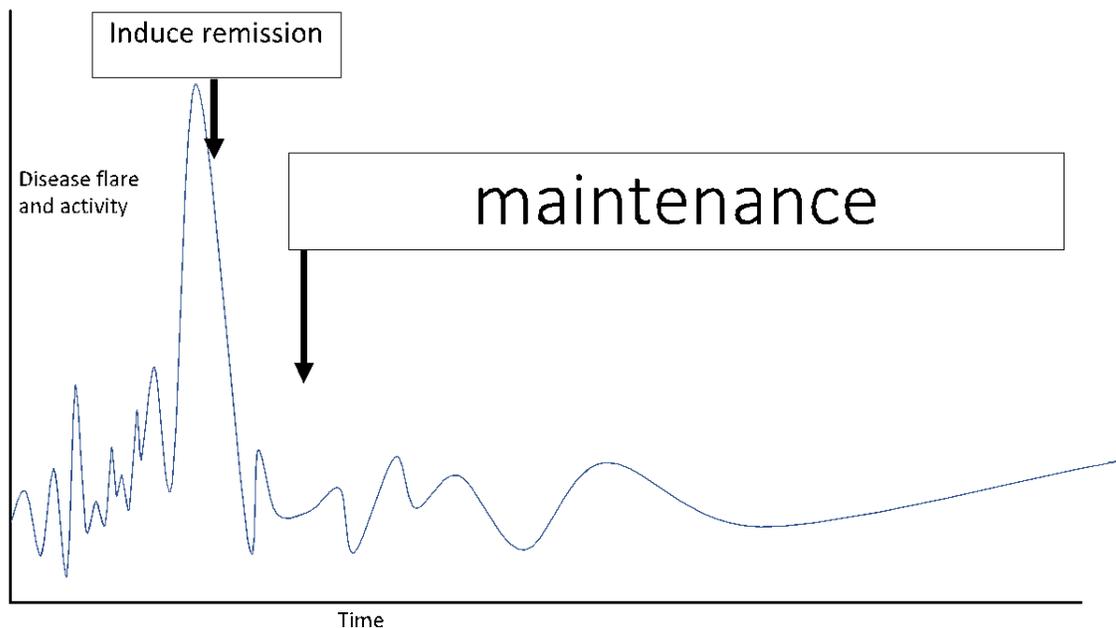
The word TARO- on your medication is only used to indicate a generic (non-brand) name. In general, the skin of the hands and feet is much thicker and needs much stronger treatments. Thin skin on the face, neck, and genitals needs much more gentle treatments.

#### 4. PREVENT SKIN IMMUNE OVERACTIVITY LONG TERM



When topical treatment is not enough, phototherapy (light or NB-UVB) or systemic therapy (tablet/pill or injection) may be used to put atopic eczema into remission (to put the disease to sleep). **These treatments prevent overactive immune responses that cause flares of itchy skin and inflammation in atopic dermatitis.** Phototherapy only penetrates the skin, while systemic tablets/pills or injections treat more globally and have different considerations and side effects.

If you need systemic medication to manage your atopic eczema, you will likely experience different treatments over time. This treatment journey will reflect many variables, including your personal choices, your disease, and its activities, your daily activities, as well as cost and accessibility of treatments. **You may receive one or two types of medication to put atopic eczema into remission (to put the disease to sleep) and then switch to another medication for maintenance, long-term.** At this time, we do not have any medications that give a lasting cure. Ongoing research and more information are needed.



### Phototherapy with narrow-band-ultraviolet B (NB-UVB) light

Exposing skin surfaces to a narrow, specific band of UVB rays can help manage atopic eczema and itch. It usually **requires three visits a week to a center with phototherapy machines** ([www.dermatoqc.org](http://www.dermatoqc.org), and search phototherapy, using your postal code). The number of treatments varies from one person to achieve remission and maintenance. The risks are similar to those related to sun exposure, though to a lesser degree.

### SYSTEMIC THERAPY (tablets/pills by mouth or injections)

There are two broad classes; 1. 'traditional,' and 2. 'targeted.'

Traditional medications work broadly, and sometimes have a wider range of side effects. Newer 'targeted' medications are designed to act more specifically, and the newer targeted treatments may have a more limited set of side effects. Targeted treatments may also be more expensive.

**Newer targeted treatments are used for atopic eczema that fails other treatments, due to cost.**

## Traditional systemic medications

1. *Prednisone (not recommended for remission, only given as a rescue)*
2. Methotrexate (also available by injection)
3. Mycophenylate Mofetil
4. Azathioprine

## Targeted systemic medications

1. Cyclosporine (Neoral), oral tablets/pills
2. Dupilumab (Dupixent), injection

### Methotrexate

An anti-inflammatory medication used for decades, methotrexate in tablets or injections are **taken once per week**. Results are apparent after about 8 weeks of treatment.

Side effects vary from person to person, but it is usually well-tolerated. The risk of side effects is higher in obese and/or diabetic people and especially among those who regularly consume alcohol (beer, wine, liquor). Short-term side effects include changes in blood counts, or gastrointestinal symptoms (nausea, upset stomach). Side effects from prolonged use include possible liver damage but this occurs almost only in people regularly consuming alcohol. A supplement of folic acid (vitamin B9) is given to reduce side effects. Blood tests at regular intervals are essential for monitoring. This drug is also contraindicated when pregnancy is being actively considered.

### Azathioprine (Imuran)

An immunosuppressive medication used since the 1950s available in 50 mg tablets. Doses of 100 mg to 200 mg are taken orally once daily. It can take up to 12 weeks to see the results of treatment. Common side-effects include nausea, vomiting, and diarrhea. Consuming alcohol while taking azathioprine can cause liver damage and alcohol consumption should be limited or stopped. Blood counts can also be impacted by azathioprine and in particular, there can be decreases in red blood cells, white blood cells, and platelets. There is an increased infection. Regular blood tests are required for monitoring. There is also a higher risk of certain types of cancer with long term use. Rarely, there have been reports of hair thinning.

### Mycophenylate mofetil (Cellcept)

An immunosuppressive medication that is available in tablets of 250 mg and 500 mg and is given in doses of 500 mg to 1500 mg orally twice daily. Side-effects include nausea, diarrhea, headaches, and sores in the mouth. These common side-effects are increased with higher doses. Rare side-effects include infections and cancers. Regular blood work is required to monitor blood counts. This drug should be avoided if pregnancy is possible and appropriate measures should be taken to avoid pregnancy while taking this medication.

## Targeted Treatments

Targeted treatments are designed to control a branch of the immune system.

### Cyclosporine (Neoral)

Cyclosporine is highly effective for the treatment of atopic eczema and for putting disease into quick remission: the disease is usually controlled in less than 1 month. The short-term side effects include tingling in the fingers, stomach upset, and increases in blood pressure: this must be closely monitored every week. An elevation of lipids (fats in the blood) is also monitored by regular blood tests.

If used long term (over 2 years of continuous use), this drug can cause more side effects due to effects on the kidney and an overall decrease in the immune system. For this reason, cyclosporine is usually prescribed only short-term, or as a bridge to other maintenance treatments. Regular blood work is essential to check kidney function. Side effects vary depending on the required dose and duration of treatment: the higher the dose and longer the period of use, the greater the risk to the kidneys.

### Dupilumab (Dupixent)

Dupilumab is a biologic that targets the specific branch of the immune system involved in the pathogenesis of atopic dermatitis. Biologics have been used to treat other skin diseases, like psoriasis, for many years. Dupilumab is administered by injection subcutaneously or below the skin. Two injections are initially given followed by one injection every 2 weeks. Common side effects include eye inflammation (especially conjunctivitis), headaches and cold sores. If you have asthma as well as eczema, you could experience a sudden worsening of your asthma if Dupilumab is stopped. Overall, Dupilumab is a safe drug that is generally safer than any of the immunosuppressive or anti-inflammatory medications. While taking Dupilumab it will still be important to use emollients on a regular basis. If there are small flares of the eczema, topical steroids or calcineurin inhibitors can be used. Ongoing bloodwork is not required while taking Dupilumab.