

Your quick guide to: New treatments for Moderate to Severe Atopic Eczema: Biologic therapies

Atopic eczema is a very itchy, dry inflammatory skin condition. In healthy skin the skin barrier (top layer of the skin) is protected and lubricated by natural oils and fluid and this prevents bacteria and irritants entering the skin. In atopic eczema there is a genetic tendency to develop dry skin, the skin barrier is dry and there is less natural oil in the skin. As a result, the skin barrier is less effective at preventing bacteria, irritants and allergens from entering the skin and triggering an inflammatory reaction. If you have atopic eczema the immune system tends to react to things that usually would not be harmful, so that when the skin is exposed to an allergen or irritant trigger it reacts, causing the skin to become itchy red and inflamed.

Moderate to severe atopic eczema is usually assessed as being eczema that is very widespread, affecting a large area of the body or a specific area such as the head or hands and having a huge impact on either your physical, psychological or social wellbeing and day to day activities.

Moderate to severe eczema is often described as being persistently itchy, with redness, bleeding, oozing, cracking of the skin, skin thickening (lichenification) and darkening or lightening of the skin (changes to skin pigment), with an impact on or limiting everyday activities and daily functioning, including sleep deprivation.

Treatments for atopic eczema

In order to work out the most suitable treatment options for you, your healthcare professional will often assess your eczema during your appointment by carrying out a physical examination of your skin and discussing your symptoms and how you are coping. They may also ask you to complete questionnaires/assessment tools to assess the impact that your eczema is having on your life. All this information will help inform decisions about which treatment options will be suitable for you.

Standard treatment options for eczema often include the use of emollients, topical steroids and other topical treatments including calcineurin inhibitors such as Protopic or Elidel, phototherapy treatment and systemic immunosuppressant

medications such as ciclosporine, methotrexate, mycophenolate mofetil, and azathioprin. Before being offered a biologic you will usually have tried a few other treatment options, unless your healthcare professional has advised against this, including at least one tablet medication, and are still experiencing symptoms of eczema.

What is a biologic therapy?

A biologic is a relatively new form of medication therapy that has been developed to treat and manage symptoms of allergic conditions such as moderate to severe eczema (atopic dermatitis).

Biologics work in a different way to the conventional treatments that you may be used to using and are designed to target a specific area of the immune system and block or inhibit the inflammatory effects that cause symptoms of atopic eczema.

Biologics are licensed to be used for different diseases including rheumatoid arthritis, Crohn's disease and diabetes and there are various biologic therapies available to target different parts of the immune system. Biologic therapies include monoclonal antibodies (Mabs) and Disease modifying anti rheumatic drugs (DMARDs).

Biologics can be taken in a number of different ways, including injection (subcutaneously), by infusion (into the vein), orally (by mouth) and topically (ointment or cream on the skin).

How does a biologic work?

In allergic disease involving eczema the body overreacts to allergens and irritants and this triggers the immune system to react and produce chemical messengers such as histamine and eosinophils. These are released into the blood stream, creating an inflammatory response with symptoms of itch, dryness and redness of the skin that you recognise as eczema.

Biologics work by blocking or preventing (inhibiting) the chemical mediators in the immune system from being able to produce an allergic response and cause inflammation. It does this by targeting specific chemical mediators (messengers) called cytokines. Cytokines help to regulate

Key facts:

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Biologic therapies are **only prescribed** and therapy started **by specialist clinicians** in the hospital setting

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the immune system. Cytokines produce a group of chemical messengers called interleukins (IL). Interleukins are useful in helping the body fight bacteria and viruses, but in allergic disease they can overproduce and cause the inflammation that leads to chronic eczema. Biologics work by inhibiting or blocking these interleukins, this stops them from reproducing and sending signals to the rest of the body, this reduces the inflammatory response which in turn reduces the symptoms of eczema, such as itch and redness.

Biologic therapy - Monoclonal antibodies (Mabs)

Monoclonal antibodies work by targeting a specific chemical messengers or interleukin (IL) in the immune system. The treatment works by blocking the effects of this interleukin so that it cannot release any chemicals into the blood that may set off the symptoms that will worsen atopic eczema. This helps reduce the symptoms of inflammation, such as redness and itch in the skin, because this treatment targets a specific part of the immune system. This also reduces the risk of serious side effects.

There is currently one monoclonal antibody treatment licensed and approved for use in the UK. This is given by injection every two weeks. There are various other treatments targeting different chemical messengers in the immune system that are currently being developed with some going through clinical trials at the moment.

Biologic therapy - Disease modifying anti rheumatic drugs (DMARDs).

JAK inhibitors (Janus kinase inhibitor) work by inhibiting or closing off the inflammatory messengers that activate the symptoms of eczema. They do this by targeting the key messengers called cytokines in the immune system. Cytokines work to regulate the immune system and reduce inflammation. However in atopic eczema, some of these cytokines overproduce and this causes an increase in inflammation and itch. JAK inhibitors work by blocking these cytokines from sending the signal to the cells in the

immune system to help reduce itch and inflammation.

A range of these medications for oral (tablet) and topical (cream) based formulations are currently being investigated and going through rigorous clinical testing for use for eczema (atopic dermatitis) patients to see if they can improve or control symptoms.

One product, a JAK 1 inhibitor, has recently been licensed and approved for use in adults within the UK for severe atopic dermatitis. This has been produced in tablet form so it is taken by mouth. There are other JAK inhibitors in the development phase but not yet licensed for patients, including topical (cream) and tablet (oral) therapies.

Will taking a biologic mean I can stop taking my usual medication?

Biologic therapies have been designed so that you take them alongside your usual medications. Research has shown that up to 76% of individuals on biologic therapy have seen a reduction in the severity of their symptoms and have been able to reduce the frequency of their regular medication.

How can I be sure a biologic medicine is safe for me to use?

All medicines including biologic therapies have to go through a rigorous testing process before they are allowed to be registered with the medicines consortium for public use. Medical professionals use strict treatment pathways and guidelines to ensure patient safety.

Although most medicines may have side effects it important to talk to your medical professional if you feel you are experiencing a side effect from your medication, or you are concerned.

Are there any side effects?

As with all medication there can be side effects and some side effects are specific to the individual medication.

The most common side effects include mild reaction around the injection site, including swelling, redness, itching and

bruising, red eyes, conjunctivitis, headache, sore throat and cold sores around the mouth.

Severe allergic reactions are rare but are possible with biologic therapies. If you are concerned that you could be allergic to any of the ingredients in the treatment it is a good idea to discuss this with your specialist healthcare professional. If you experience any of the following symptoms while taking biologic therapies - swollen face/ tongue, difficulty breathing, lightheaded, itching all over, widespread rash, fever and joint pain you should dial 999 and seek urgent medical advice.

There have also been positive side effects reported from taking biologics. Some individuals have reported a reduction in symptoms of other atopic conditions such as asthma and allergic rhinitis while taking biologic therapies for their eczema.

Is there an increased risk of infection with taking biologics?

Due to the action of the biologic medication to suppress the immune system, there is a slightly increased risk of infection whilst taking the medication. Therefore it is wise to take precautions against infection. It is a good idea to speak to your GP Practice and arrange to keep up to date with your flu and covid vaccines while taking biologic therapies.

Can I request a biologic therapy?

Biologic therapies are only prescribed and therapy started by specialist clinicians in the hospital setting. These means that you can be monitored closely for any side effects and to make sure the treatment is effective at improving your symptoms. If you feel this type of treatment would work for you, it would be best to discuss this with your healthcare professional. In order to be considered you will need to be under the care of a specialist clinician in the hospital because biologic therapies need to be prescribed by a hospital specialist.

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