



## Dupilumab factsheet

Dupilumab, also known as Dupixent<sup>®</sup>, is a new treatment for moderate-to-severe atopic eczema. It is a 'biologic' medicine that works in a different way to the other treatments that are currently available for atopic eczema. Biologics are produced by genetically-modified organisms such as bacteria or cells cultured in a laboratory. These types of medicine have been used to treat severe psoriasis, asthma and arthritis for several years. They are taken in different ways – subcutaneously (injection under the skin), intravenously (in the vein) and sometimes orally (by mouth). Dupilumab is the first biologic treatment for atopic eczema and is taken subcutaneously. There are other biologic treatments for atopic eczema that are currently undergoing research.

### How does it work?

The human body uses chemical messengers called interleukins (ILs). ILs allow the different parts of our immune system to communicate and help fight off harmful viruses and bacteria. The immune system of people with inflammatory conditions like atopic eczema overreacts to allergens (e.g. dust, mould, pollen). This triggers the production of certain ILs, which cause greater inflammation. It is this chronic inflammation that leads to the symptoms of eczema such as red, itchy, dry patches on the skin.

Biologics work by blocking ILs from binding to their cell receptors (protein molecules that receive chemical signals from outside a cell); this stops the immune system from overreacting. Dupilumab works on two specific ILs thought to contribute to atopic conditions: IL-4 and IL-13. By blocking IL-4 and IL-13 from binding to their cell receptors, dupilumab limits the overreaction of the immune system, dampening down the chronic inflammatory response and lessening the symptoms of atopic eczema.

If you think of a chemical messenger such as IL-4 as a key, and a cell receptor as a lock, a biologic drug works in a similar way to fixing a coin over the keyhole so that the key (IL-4) is unable to get into the lock (the cell receptor).

Immunosuppressive medicines for eczema (e.g. azathioprine, ciclosporin, methotrexate and mycophenolate mofetil) suppress many different chemical messengers that control inflammation, whereas biologics are targeted treatments that suppress just one or two of these chemical messengers. Drugs that only block one or two chemical messengers have fewer potential side effects than conventional immunosuppressive medicines.

### What has the research shown?

Clinical trials of dupilumab have shown that it produces a meaningful reduction in the severity of eczema, as well as a reduction in the body surface affected by eczema in the majority of patients receiving it. Many patients receiving dupilumab also experienced a reduction in itching and an improvement in sleep and quality of life. The trial data results showed that many patients taking dupilumab no longer needed to apply as much topical steroid while taking the drug.

### Is it available in Ireland?

Dupilumab received regulatory approval in September 2017 from the [European Medicines Agency \(EMA\)](#). It is not currently reimbursed in the Republic of Ireland but is available to people living in Northern Ireland through the NHS. We will update this information if access to dupilumab is approved.