CONDITION

Wells' syndrome

Wells' syndrome is a rare inflammatory condition that causes swollen, itchy or burning patches of skin.

WHAT IT IS
Rare inflammatory skin condition causing recurrent swollen rashes

BODY SYSTEM
Skin and immune system

MAIN SYMPTOMS
Itchy or burning plaques, swelling, blisters, skin discoloration

WHAT CAUSES IT
Immune inflammation, often without a clear trigger

HOW IT IS DIAGNOSED
Clinical assessment, skin biopsy, and exclusion of similar conditions

MAIN TREATMENT
Anti-inflammatory medicines, often corticosteroids

CAN IT BE CURED?
Sometimes - episodes may cease, though recurrence is common

IS IT AN EMERGENCY?
Sometimes - breathing trouble or severe facial swelling

LONG-TERM OUTLOOK
Usually clears without scarring, although relapses may continue

Overview

Wells' syndrome is a rare condition in which areas of skin become inflamed and swollen. It is sometimes called eosinophilic cellulitis because immune cells called eosinophils are often found in affected skin.

Eosinophils normally help the body respond to parasites and take part in allergic reactions. In Wells' syndrome, they collect in the skin as part of an abnormal inflammatory response. This does not mean that you have a parasite or a typical allergy.

The rash may look like bacterial cellulitis, an infection of the deeper layers of skin. However, Wells' syndrome is not itself an infection and does not spread from person to person. Antibiotics like amoxicillin or doxycycline will not treat it unless a separate bacterial infection is also present.

Individual patches usually settle, but the condition can return. Recognising it matters because repeated episodes may otherwise lead to unnecessary antibiotic treatment or repeated testing for infection.

Symptoms

Wells' syndrome does not look the same in everyone. A new episode may begin with itching, burning, tingling or tenderness. The skin then becomes red or darker than the surrounding skin, raised and swollen.

Possible skin changes include:

The arms and legs are commonly affected, but patches can develop elsewhere. In children, the face may be involved. The rash can sometimes resemble cellulitis, insect bites, hives, eczema or a blistering skin condition.

A patch often changes over several days. It may become firmer before gradually flattening and fading over several weeks. Temporary skin discoloration can remain afterward. Permanent scarring is unusual.

Some people feel unwell, tired or feverish during an episode, but many have only skin symptoms. Episodes may occur once or may return at irregular intervals.

- One or more firm, swollen patches or plaques
- Itching, burning or mild pain
- Blisters, including large fluid-filled blisters
- Raised bumps, rings or hive-like areas
- Swelling around the affected skin
- Brown, grey or purple discoloration as the rash fades

Causes and risk factors

The exact cause is not known. Wells' syndrome appears to result from an immune reaction that brings eosinophils and other inflammatory cells into the skin.

In many cases, no trigger is found. Reported possible triggers include:

These associations do not prove that a particular event caused the rash. For example, a medicine should not be stopped simply because it was taken before an episode. A healthcare professional can help assess the timing, risks and possible alternatives.

Wells' syndrome can affect children and adults. It is not contagious. It is not generally considered an inherited condition, although immune and genetic factors may influence how inflammation develops.

Rarely, repeated or unusual episodes occur alongside another medical condition, including a blood disorder. Most people with Wells' syndrome do not have such a disorder, but persistent symptoms or abnormal blood tests may need further investigation.

- Insect bites or stings
- Viral, bacterial or fungal infections
- Certain medicines
- Vaccinations
- Skin injury
- An underlying inflammatory or blood condition

Diagnosis

There is no single blood test that proves you have Wells' syndrome. Diagnosis usually combines the appearance and course of the rash with a skin biopsy and tests that rule out other causes.

During a skin biopsy , a clinician numbs the area and removes a small sample for examination under a microscope. The sample may show many eosinophils and areas called flame figures , where inflammatory material collects around collagen, a supporting protein in the skin.

Flame figures support the diagnosis but are not unique to Wells' syndrome. They can appear in other inflammatory skin conditions. Biopsy findings also change according to how long the patch has been present.

Blood tests may show a raised eosinophil count, but the count can also be normal. Other tests may be used to look for infection, medicine reactions, parasites or an associated illness when your symptoms or medical history suggest one.

Conditions that may need to be excluded include:

A dermatologist, a doctor specialising in skin conditions, may be involved when the diagnosis is uncertain or the rash keeps returning.

- Bacterial cellulitis
- Allergic reactions and hives

- Contact dermatitis or eczema
- Reactions to insect bites
- Autoimmune blistering conditions
- Inflammation of blood vessels, called vasculitis
- Other conditions that raise eosinophil levels

Treatment and management

Some episodes settle without treatment. Treatment is considered when the rash is extensive, uncomfortable, blistering or slow to improve.

Corticosteroids like prednisone or hydrocortisone reduce inflammation. A corticosteroid cream or ointment may be used for a limited area. Tablets may be considered for more widespread or severe inflammation. Symptoms can improve quickly, but the rash may return when treatment ends.

Repeated or prolonged corticosteroid treatment can cause unwanted effects. The choice, strength and length of treatment should therefore be based on the extent of the rash, previous episodes and your other health needs.

Antihistamines like cetirizine or loratadine may reduce itching, although they do not always control the underlying inflammation. Cool compresses, gentle moisturisers and avoiding scratching can also make the skin more comfortable.

For frequent recurrences, a dermatologist may consider a medicine that changes the immune response, such as dapsone or another steroid-sparing treatment. These medicines are not suitable for everyone and can require blood tests or other monitoring.

If a likely trigger is identified, management may include treating an infection or reviewing a suspected medicine. Do not stop a prescribed medicine without medical advice unless you are having signs of a severe immediate reaction.

Antibiotics do not treat Wells' syndrome itself. They may still be needed if there is good evidence of a separate bacterial infection.

Complications

Wells' syndrome usually affects the skin rather than causing lasting damage to internal organs. The main difficulty is that episodes can recur and may be mistaken for infection or another skin

condition.

Possible complications include:

Large blisters can break and leave tender areas that need gentle wound care. Increasing pain, warmth, pus or spreading redness may indicate a secondary infection rather than the usual course of Wells' syndrome.

- Sleep disturbance or reduced quality of life from itching
- Temporary changes in skin colour
- Skin infection caused by scratching or broken blisters
- Side effects from repeated corticosteroids or other medicines
- Delayed diagnosis when the rash resembles bacterial cellulitis

Prevention

There is no reliable way to prevent Wells' syndrome because its underlying cause is often unknown.

If episodes consistently follow an identifiable trigger, avoiding that trigger may reduce recurrences. This could include protection from insect bites or a carefully supervised change to a suspected medicine. A trigger should be assessed rather than assumed, especially when changing an important treatment.

Routine skin care cannot prevent the immune reaction, but moisturising dry skin and limiting scratching may reduce irritation and infection when a rash develops. Keeping dated photographs and notes about new medicines, illnesses, bites or other exposures can help identify a pattern.

Living with it and what to expect

A single patch often develops over days and fades over weeks. It may leave temporary darker or lighter skin. The affected area generally heals without a scar unless there has been significant scratching, infection or skin injury.

Some people experience only one episode. Others have relapses separated by weeks, months or longer. A later episode may appear in a different place or look different from the first. It is not possible to predict the pattern from one attack.

Wells' syndrome does not usually become steadily worse or damage the skin between

episodes. However, recurring disease can be disruptive, especially if it causes widespread itching, blisters or repeated courses of treatment.

A practical long-term plan may include photographing new patches, recording how quickly they change and arranging early review when the appearance differs from previous episodes. If you use treatment for recurrent attacks, routine follow-up may include checks for medicine side effects.

Seek a fresh assessment rather than assuming every red or swollen patch is Wells' syndrome. People who have this condition can still develop cellulitis, allergic reactions and other unrelated skin problems.

When to get medical help

Arrange a routine medical appointment if you develop an unexplained swollen, itchy or burning rash, especially if it returns or does not improve. A new rash that resembles cellulitis should be assessed because infection and inflammatory skin conditions can look alike.

Contact your healthcare team promptly if:

Call emergency services if you have trouble breathing, faintness, confusion, swelling of the tongue or throat, or rapidly increasing facial swelling. These can be signs of a severe allergic reaction or another emergency rather than a routine Wells' syndrome episode.

- The rash is spreading quickly or becoming more painful
- You develop fever or feel generally unwell
- Blisters are large, widespread or affecting the eyes, mouth or genitals
- There is pus, increasing warmth or red streaking from the area
- Episodes are becoming more frequent
- A rash began soon after starting a medicine

Common questions

Is Wells' syndrome a type of cellulitis?

No. Its older name, eosinophilic cellulitis, describes how it can look, not its cause. Bacterial cellulitis is an infection. Wells' syndrome is inflammation involving immune cells, including eosinophils.

Is Wells' syndrome contagious?

No. You cannot catch it from skin contact, shared objects or being near someone who has it. If an infection triggered an episode, that infection may have its own rules about transmission, but the skin condition itself is not contagious.

Does Wells' syndrome go away?

An individual episode usually clears, sometimes without treatment. The condition can return, and there is no test that predicts whether another episode will occur. Some people eventually stop having attacks.

Why did antibiotics not clear my rash?

Antibiotics act against bacteria. They do not reduce the immune inflammation responsible for Wells' syndrome. However, a rash that is painful, hot, rapidly spreading or accompanied by fever still needs assessment for bacterial cellulitis.

Does Wells' syndrome mean I have cancer?

Usually not. Wells' syndrome has occasionally been reported alongside blood disorders and other illnesses, but most people do not have an underlying cancer. Further testing is guided by your symptoms, examination and blood results rather than the skin diagnosis alone.

Can food or allergies cause Wells' syndrome?

A specific food or allergy is not found in most cases. Allergic-type immune pathways may be involved, but this is not the same as having a proven food allergy. Broad elimination diets are unlikely to help without a clear, repeatable link.

Sources

- DermNet New Zealand. Wells syndrome . Clinical overview of features, diagnosis and management.
- Räßler F, Lukács J, Elsner P. "Treatment of eosinophilic cellulitis (Wells syndrome): a systematic review." Journal of the European Academy of Dermatology and Venereology . 2016;30(9):1465-1479.
- Sinno H, Lacroix JP, Lee J, et al. "Diagnosis and management of eosinophilic cellulitis (Wells' syndrome): A case series and literature review." Canadian Journal of Plastic Surgery . 2012;20(2):91-97.
- StatPearls Publishing. Wells Syndrome . In: StatPearls . Updated clinical review.
- National Organization for Rare Disorders. Wells Syndrome . Patient-focused overview of symptoms, causes and treatment.