

Drug eruptions & reactions

What are drug eruptions?

Drug reactions are unwanted and unexpected reactions occurring in the skin (and sometimes other organ systems) that may result from taking a medication for the prevention, diagnosis or treatment of a medical problem. They may appear after the correct use of the medication or drug. It may also appear due to overdose (wrong dose is taken), following accumulation of drugs in the body over time, or by interactions with other medications being taken or used by the person.

Drug eruptions could be caused by an allergy or hypersensitivity to the drug, by a direct toxic effect of the drug or medication on the skin, or by other mechanisms.

Drug eruptions vary in severity – from a minor nuisance to a more severe problem – and may even cause death. Drug eruptions occur in up to 15% of courses of drug prescribed by medical or natural therapy practitioners.

What causes drug eruptions?

Drug eruptions are caused by medications which are prescribed by your doctor, purchased over-the-counter or purchased as compounded herbal/naturopathic medicines.

Drugs taken orally, injected, delivered by patch application, rubbed onto the skin (e.g. creams, ointments and lotions) can all cause reactions.

The potential to develop an adverse reaction to a drug is influenced by the age, gender and genetic makeup of the person; the nature of the condition being treated; and the possible interactions with other medications being taken. Some classes of drugs are known to cause drug eruptions more commonly than others.

What do drug eruptions look like in the skin?

The appearance of drug eruptions varies depending on the mechanism of the drug reaction.

In cases of allergy or hypersensitivity, the rash may be exanthematous (widespread small red spots resembling measles or just a widespread reddening of the skin), urticarial (hives), pustular (bumps filled with pus) or bullous (blistering) in appearance. The lesions can be itchy, painful or cause an abnormal sensation on the skin.

- **Exanthematous/morbilliform drug eruptions** are the most common kind of drug reaction. They usually appear on the trunk and spread to other parts of the body as multiple red spots which are sometimes raised (macules and papules). Sometimes the skin is just red. Mild cases are limited to the skin whilst severe cases may cause the person to develop a fever and feel unwell. An example of a severe reaction is drug reaction with eosinophilia and systemic symptoms (DRESS).
- **Urticarial drug eruptions** are similar to urticaria (hives). There are itchy raised lumps on the skin. They can be associated with difficulty breathing and swelling of areas such as the eyes, lips and hands.
- **Pustular drug eruptions** can resemble an infection as there are many pimples with pus overlying a red base. There is no growth on bacterial culture. A condition called acute generalized exanthematous pustulosis (AGEP) is an example of a pustular drug eruption.
- **Bullous drug eruptions** refer to drug-induced blister formation. Examples of bullous drug eruptions include pseudoporphyria, drug-induced bullous pemphigoid, Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN)

Some adverse drug eruptions may mimic other skin conditions such as acne (pimples), porphyria (a genetic disorder which is triggered by light), lichen planus (itchy purple bumps with possible mucosal, hair and nail involvement), vasculitis (inflamed blood vessels), lymphoma (cancer of blood cells) or lupus (an autoimmune condition worsened by sun).

Sometimes the drug may exacerbate a pre-existing skin condition (eg acne, psoriasis, eczema).

Not all skin drug eruptions look the same. The same drug may cause a different reaction in different individuals.

How are drug eruptions diagnosed?

Taking a detailed drug/medication history is essential in diagnosing a drug eruption. Information on drugs that have been taken long-term is as important as the drugs that have been commenced recently or used intermittently. All prescribed medications including all topical medications, over-the-counter drugs, recreational drugs, natural remedies such as herbal medicine, vitamins and supplements need to be reported to the doctor.

A careful examination of skin lesions by the doctor is necessary.

Other tests which may be needed include:

- Blood tests to identify changes in the white cell count and platelets

- Urine sample or chest X-ray

- Skin biopsy

Sometimes multiple drugs may be involved in causing the reaction. This makes identification of the causative drug more difficult and requires careful evaluation under close medical supervision. Each person must be individually assessed. Serious reactions are seen more commonly in elderly people taking multiple drugs; the psychiatric population; and where individuals consult multiple different doctors.

Doctors should refer to the most up-to-date online information to check for potential side effect profiles and interactions when a drug reaction is suspected.

What other problems can occur with drug eruptions?

Drug eruptions can be fatal. Individuals with a serious drug eruption are usually unwell, often with a high fever and difficulty breathing, with painful and widespread changes in the skin. This could be a medical emergency and patients should seek urgent care.

How are drug eruptions treated?

If a drug reaction is suspected, the suspected drug or drugs should be discontinued.

Treatment options depend on the nature and severity of the reaction. In an uncomplicated case, once the offending drug is withdrawn the condition is expected to improve.

Depending on the severity of skin lesions, the doctor may suggest using emollients under wet dressings, topical or oral steroids, oral antihistamines, other medications or immunosuppressants, or hospitalisation.

What is the likely outcome of drug eruptions?

Many drug eruptions will resolve within 7 to 14 days but some can persist for longer. The likely outcome will depend on the severity of the reaction and whether internal organs are involved.

Individuals who have developed a drug eruption will require follow-up and education with their treating doctor.