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Toxic epidermal necrolysis

What is toxic epidermal necrolysis?

Toxic epidermal necrolysis (TEN) is luckily very rare as it is often fatal. It is characterised by blistering and peeling of the top layer of skin. The lesion resembles that of a severe burn and needs to be distinguished from [staphylococcal scalded skin syndrome](#), which has a similar appearance but the blister arises nearer to the skin surface. A [skin biopsy](#) is often necessary to distinguish these two diseases.

It is thought to be related to a severe form of [erythema multiforme](#), [Stevens-Johnson syndrome](#).

What causes toxic epidermal necrolysis?

TEN is most often caused by an adverse reaction to a drug, but it sometimes arises in patients who are not taking any medications. Non-drug causes include bacterial or viral infection, malignant tumours, vaccinations or no apparent cause (idiopathic). Drugs that are known to cause TEN include:

- Antibiotics
 - Sulphonamides
 - Penicillins
 - Macrolides
 - Quinolones
- Allopurinol
- Nonsteroidal anti-inflammatory drugs (NSAIDs)
- Anticonvulsants (antiepileptic medicines)

Who is at risk of toxic epidermal necrolysis?

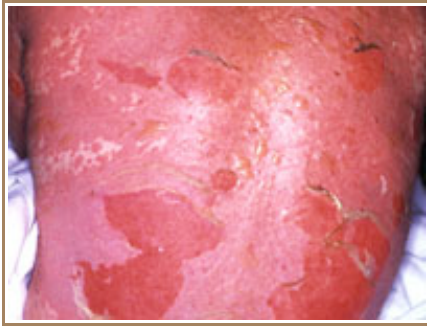
TEN may occur in people of any age, race or sex. For unknown reasons, it appears to be more common in females than males. Elderly people are possibly at greater risk because they tend to be taking more medications.

What are the features of toxic epidermal necrolysis?

TEN usually starts with 2–3 days of flu-like symptoms including fever, cough, sore throat, runny nose, and general aches and pains. This is followed by the critical phase that generally lasts 8–12 days. Signs and symptoms of this phase include:

- Persistent fever
- Conjunctivitis (sore eyes) that usually occurs 1–3 days before skin lesions appear
- Early measles-like rash (small red spots) developing into painful, rapidly extending areas of red skin
- Generalised sloughing of the skin and mucous membranes without forming fluid-filled blisters
- Exposed moist, red and tender areas left as top layer of skin peels off in sheets
- Cracked, bleeding lips that form crusts
- Extreme pain

Toxic epidermal necrolysis



Toxic epidermal necrolysis



Close-up of peeling



Oral involvement

What are the complications from toxic epidermal necrolysis?

Complications may develop, which have been associated with a 30–40% death rate. They include:

- Sloughing of the mucous membranes in the mouth, throat, and digestive tract: this creates difficulty in eating and drinking and leads to dehydration and malnutrition
- Bacterial skin infections
- Conjunctival sloughing and other eye problems that may lead to blindness
- Pneumonia
- Genital tract involvement that may lead to renal failure
- Systemic infection and septicaemia (blood poisoning)
- Shock and multiple organ failure.

What is the treatment of toxic epidermal necrolysis?

TEN is a potentially life-threatening medical emergency that requires prompt diagnosis and treatment. If drug-induced the offending drug must be stopped immediately. Other medications that are unnecessary should be stopped as well.

Patients should be hospitalised and highly specialised nursing care given, often in an intensive care unit. In some situations patients may be treated in a burns unit. Essential aspects of care include:

- Fluid and electrolyte resuscitation
- Intravenous antibiotics for infection
- Pain management
- Nutritional support
- Wound care
- Surgical debridement (removal) of dead tissue
- Possibly intravenous immunoglobulins, [ciclosporin](#), plasmapheresis or hyperbaric oxygen

[Systemic steroids](#) are no longer recommended.

Related information

On DermNet NZ:

- [Staphylococcal skin infections](#)
- [Erythema multiforme](#)
- [Stevens Johnson syndrome](#)

Other websites:

- [Toxic epidermal necrolysis](#) – emedicine, the online textbook

Books:

See the [DermNet NZ bookstore](#)

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DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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