

TICK REMOVAL IN THE EMERGENCY DEPARTMENT

PRACTICE GUIDELINE[®]

DOCUMENT SUMMARY/KEY POINTS

- If you find a tick, do NOT forcibly remove the tick, but rather kill the tick first by using a product to rapidly freeze the tick to prevent it from injecting more allergen-containing saliva.
- Use “Kriogese”, an ethyl chloride fine spray unless near a sensitive area
- Procedure only to be performed by doctors and nurse practitioners
- Practise the use of Kriogese on a swab or tissue prior to use on the patient

CHANGE SUMMARY

- Due for review

READ ACKNOWLEDGEMENT

- Emergency Department clinical staff should read and acknowledge this document

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

Approved by:	SCHN Policy, Procedure and Guideline Committee	
Date Effective:	1 st June 2019	Review Period: 3 years
Team Leader:	Department Head	Area/Dept: Emergency Department

TABLE OF CONTENTS

Purpose	2
Background	2
Tick removal	3
Using Kriogese	4

Purpose

This guideline is designed to describe the approach to removing an adult tick from an infant or child presenting to the emergency department

The content in this guideline is based on the recommendations of the Australasian Society of Clinical Immunology and Allergy (ASCIA) <http://www.allergy.org.au/patients/insect-allergy-bites-and-stings/tick-allergy>

Background

Ticks pass through a number of life stages from egg to larva to nymph and then finally, the adult.

Health problems associated with tick bites include:

- Allergic reactions to tick bites;
- Allergic reactions to red meat and gelatin;
- Transmission of infections (less common than allergic reactions); and
- Tick paralysis (rare in adults, more likely to occur in children)

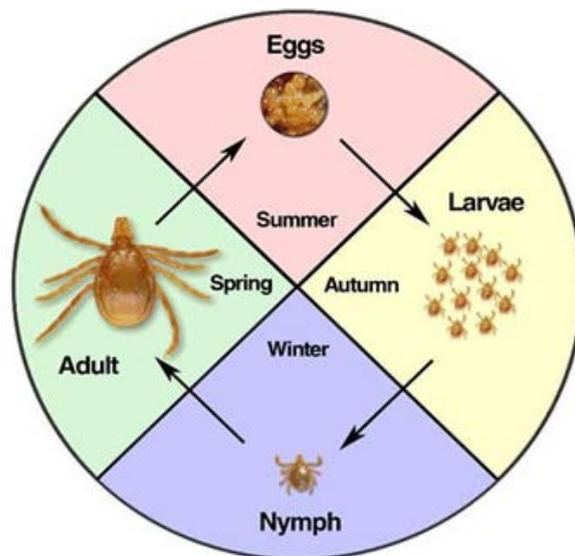


Illustration courtesy of Stephen Doggett,
Dept of Medical Entomology,
University of Sydney, Westmead

Ticks are present mainly on the east coast of Australia. Adult ticks cause the majority of the health problems in humans. All stages of ticks, however, are capable of provoking allergic reactions. Larvae are very small, approximately 1mm in size and can be difficult to see, nymphs are slightly larger at approximately 2mm diameter with adult ticks (before a blood feed) being approximately 4mm in size.

Adult ticks attach to the tips of grass blades and vegetation, and from there transfer themselves to passing animals or humans. The tick usually crawls up inside clothing and attaches strongly to their host by biting through the skin, generally lodging in the skin of the head or neck or scalp of their host. The most common reaction is local irritation and swelling.

While the “tick season” is often considered to range from around February to August, ticks may be present at any time, therefore the risk of exposure remains throughout the entire year.

Allergic reactions to ticks

Minor local itching and swelling is common at the site of a tick bite and is not due to allergy.

Sometimes large local swelling and inflammation can arise at the site of a tick bite and last several days. Such reactions are usually due to mild allergy to the tick.

Severe allergic reactions (anaphylaxis) have also been described to the Australian paralysis tick, *Ixodes holocyclus*.

Severe allergic reactions (anaphylaxis) occur when the tick is disturbed, for example, after inadvertently disturbing the tick by scratching something which can't be seen, by deliberate attempts at tick removal or by application of irritant chemicals such as methylated spirits or kerosene to the tick.

Disturbing the tick may cause the tick to inject more allergen-containing saliva.

Tick paralysis

Tick paralysis is a rare disease thought to be caused by a toxin in tick saliva. The symptoms include acute, ascending, flaccid paralysis that is often confused with other neurologic disorders or diseases (e.g., Guillain-Barré syndrome or botulism). Within 24 hours of removing the tick, the paralysis typically subsides. (<http://www.cdc.gov/ticks/symptoms.html>)

Tick removal

If you find a tick, do NOT forcibly remove the tick, but rather kill the tick first by using a product to rapidly freeze the tick to prevent it from injecting more allergen-containing saliva.

Ether-containing aerosol sprays are currently recommended for killing the tick.

Use “Kriogese”, an ethyl chloride fine spray.

Do not use Kriogese on sensitive areas such as the genitalia or skin with sensitive structures underneath, such as the eye lids.

In these cases where it is not possible to use Kriogese the tick should be removed mechanically with small forceps, taking care to ensure you remove the whole tick.

You should keep the manipulation of the tick and the surrounding skin to a minimum. Avoid squeezing the body as compression may cause injection of more salivary toxin and allergic substances.

The tick should be carefully removed with every attempt made to remove all of the tick mouth parts attached to the skin. The tick should be grasped as close to the skin as possible using fine forceps, veterinary tick removers or a loop of suture material. Once grasped the tick is then removed by applying gentle outward traction. (ref: Toxicology Handbook. 2nd Edit. 2011. Lindsay Murray et al)

Using Kriogese

The procedure should only be performed by doctors or nurse practitioners

- Ensure you are familiar with the Kriogese spray system
- Explain the procedure to the child and parents and obtain verbal consent to proceed
- Before use on the patient practise delivering a small local amount of cold spray to a localised part of a gauze swab
- You will have to spray the target area from a close distance to ensure the spray is localised to the tick
- You will practise depressing the nozzle just enough to allow a small amount of ethyl chloride to disperse onto the tick
- Once you are comfortable delivering a small amount of spray to a localised target area then you should freeze the tick
- After about 10 minutes you should be able to remove the tick by gently flicking it off the skin
- Provide standard discharge instructions to the child and family

Copyright notice and disclaimer:

The use of this document outside Sydney Children's Hospitals Network (SCHN), or its reproduction in whole or in part, is subject to acknowledgement that it is the property of SCHN. SCHN has done everything practicable to make this document accurate, up-to-date and in accordance with accepted legislation and standards at the date of publication. SCHN is not responsible for consequences arising from the use of this document outside SCHN. A current version of this document is only available electronically from the Hospitals. If this document is printed, it is only valid to the date of printing.