

Biological Hazards on the golf course

Biological hazards include **vector-borne diseases, venomous wildlife and insects, and poisonous plants**. The information below covers some of the main hazards:

Vector-borne diseases

Vector-borne diseases may be spread to golfers by insects such as ticks. The most prevalent tick-borne disease in the UK is Lyme Disease (Lyme's). Lyme's is carried by the sheep, hedgehog and fox tick but also deer and other small mammals such as mice and on birds. Ticks can therefore be deposited by any of these animals but they tend to inhabit long grass, woodland and heath. They are most active between spring and autumn.



Tick feeding

Symptoms of Lyme's may not show for up to 4 months. Lyme's can affect any part of the body and symptoms are varied so difficult to diagnose. The most common symptoms include fatigue, flu-like symptoms, muscle and joint pain, digestive problems, headaches and disturbance to the central nervous system. In some cases a rash forms around the bite itself. Treatment of Lyme's is with antibiotics. The sooner they are prescribed the lesser the long-term risk to health.

Prevention relies on people being aware of the risk that ticks present and using sensible measures to avoid being bitten. Measures include;

- Wearing suitable clothing– pale clothing makes ticks easily visible, long trousers and sleeves reduce the risk of bites and tuck trousers into socks.
- Use insect repellent – although not particularly effective on ticks
- Check skin for ticks – paying special attention to warm moist areas on the body.

- It is also essential to know how to remove a tick from the skin correctly – leaving the head in can increase the risk of infection. Tick hooks are the best method. Do not use flames or tweezers. (Save the tick in an air sealed jar for possible future reference).

The Lyme Disease Action (LDA) publishes a leaflet about tick removal as well as Tick hazard posters.

For further information and free downloadable posters please go to:

Clubs should also make golfers and staff aware of the risks of other zoonoses (diseases spread by animals to humans). These include:

Cryptosporidiosis

Human infection occurs when *Cryptosporidium* oocysts (the hardy cyst stage of the parasite's lifecycle) are taken in by mouth. The oocysts can survive in the environment and in water for long periods of time. The main symptom is severe diarrhoea and the best preventative measure is to ensure good personal hygiene and to wash hands prior to touching your mouth.

Leptospirosis or Weil's Disease

It is possible to become infected with the leptospira bacteria if contaminated water or soil comes into contact with your eyes, mouth, nose or any open cuts in the skin. The bacteria can also be spread through rodent bites or by drinking contaminated water. Prevention is again through good personal hygiene. People most at risk are those working with animals, farmers, fishermen, butchers and abattoir workers. Although, there is a very minimal risk to golfers, always wash your hands after retrieving golf balls from water bodies.

Venomous wildlife and insects

These include adders and stinging insects and may also prove hazardous on the golf course.

The adder (*Vipera berus*)

This is Scotland's only venomous snake. Though painful, adder bites are rarely fatal. Although 100 adder bites are reported every year none have proved fatal since 1975. Without treatment their venom can kill or result in the victim requiring limb amputation. Their secretive nature and camouflaged markings mean they often go unnoticed. Most bites occur when the snake has been disturbed or deliberately antagonised. Adders feed largely on small mammals, birds, lizards, amphibians, worms and insects, and as a result their venom is not particularly potent.

Adders are protected by law in Scotland. It is illegal to deliberately kill, injure or sell wild adders and has been since 1981. The adder is the most northerly member of the viper family and is found throughout Britain right up to the north of Scotland. Adders like open habitats such as heathland, moorland, open woodland and sea cliffs, and rarely stray into gardens. The most likely time of year to see them is early spring. This is also when venom is strongest! Mating takes place in April/May and female adders incubate their eggs internally then give birth to live young in August/September. The adder is easily recognised by a dark 'zigzag' stripe along its back. There is also a row of dark spots along each side and a 'V' or 'X' shape on the head. Background colours vary from grey-white in the male to shades of brown or copper in the female. On occasion, completely black specimens are described. They can grow to around 60cm in length and have rather a stocky appearance. The image below shows both the black male and brown female adder. They are extremely camouflage in bracken.



Male (black) and Female (brown) adders

Stinging insects

Anaphylactic shock is the body's severe allergic reaction to a bite or sting and requires immediate emergency treatment. Thousands of people are stung in the UK every year but only a small few suffer such a reaction. For further information please refer to:

<http://www.nhs.uk/Livewell/bites-and-stings/Pages/insects-bugs-that-bite-sting.aspx>

Poisonous plants

Poisonous plants found in Scotland include Giant Hogweed, nettles and poison ivy. For detailed information please refer to:

<http://www.nhs.uk/Livewell/bites-and-stings/Pages/Plant-dangers-garden-countryside.aspx>

Further information on removal of Giant Hogweed can be viewed at:

<http://www.invasivespeciesscotland.org.uk/>