

# Chapter 8: High Risk Contact and Collision Sports

## Background

Sporting activities can be a risk factor for the spread of infectious diseases. The close contact in some sports can allow infections to spread by direct skin-to-skin contact, inhalation of infected droplets or aerosols, or injuries resulting in breaks to the skin which disrupt the body's natural defence mechanism.

Some sports activities involve closer and more frequent body-to-body contact with other players or contact with equipment and are associated with a higher risk of injury or trauma. These sports are referred to as high risk contact and collision sports. Evidence to date suggests that the highest risk sports are full-contact martial arts, boxing, and wrestling. For many high risk close contact sports, e.g. rugby, the degree of close contact increases as the player becomes more experienced and participates at a higher level of play or competition.

Terminology can vary and the definitions applied in this guidance are as follows:

- High-risk contact / collision sports – e.g. rugby, full-contact martial arts, boxing, wrestling, Gaelic football, hurling.
- Medium to high-risk contact – e.g. soccer, basketball, hockey.
- Limited contact – e.g. squash, volleyball, gymnastics.
- Non-contact – e.g. running, dancing, aerobics, swimming, tennis, weightlifting.

Infections in contact sports can be spread by:

- Person-to-person contact e.g. skin contact.
- A common source e.g. contaminated equipment / facilities, or soil.
- Airborne/droplet spread e.g. mumps, glandular fever, influenza.

Infections of particular relevance to contact sports include skin infections, blood-borne virus infections, glandular fever and tetanus.

Pupils, teachers and coaches are at risk of infection. Therefore all need to be educated about the necessary precautions and hygiene requirements.

## General Precautions for All Sports, Including High Risk Sports

Pupils and teachers should:

- Wash hands regularly with liquid soap. To minimise the risk of infection bars of soap should not be provided in communal shower / wash rooms.
- Shower after activity (if facilities are available).
- Not share mouth guards or water bottles.
- Not share towels or personal hygiene products (e.g. razors) with others.
- Wash all kit after each use.
- Wash personal gear (e.g. pads and shin guards) weekly.
- Refrain from full body (chest, arms, abdomen) cosmetic shaving.
- Apply standard precautions when dealing with any blood or body fluids, or contact with skin lesions.

Pupils should be appropriately immunised with two doses of MMR vaccine, and 4-5 doses of tetanus depending on age (4 doses <11-14 years of age; 5 doses >14 years of age).

## Blood Borne Infections (hepatitis B, hepatitis C and HIV)

The risk of transmission of a blood borne virus from one pupil to another during contact and collision sports is extremely low. Sports such as boxing, wrestling and tae kwon do have the highest, although still extremely low, risk. Hepatitis B is the highest risk virus as it is present in greater concentrations in blood; it is resistant to simple detergents; and it can survive on environmental surfaces for up to 7 days. Research has shown that athletes are more likely to acquire blood borne virus infections in off-the-field settings e.g. through sexual contact.

### Precautions

- Pupils, teachers and coaches involved in contact sports should be educated on the risk of blood borne virus (BBV) transmission (both on and off the pitch), how to deal adequately with bleeding injuries, and how to prevent infection if there are any skin abrasions or lesions (See Chapter 3).
- Any pupil with a bleeding injury should be removed immediately from the field of play.
- Bleeding injuries should be promptly treated and standard precautions applied i.e. hand hygiene, gloves (see Chapter 3).
- Blood-stained clothing should be removed and placed in a plastic bag for appropriate laundering.
- Ideally disposable materials should be used for cleaning blood which are then disposed of correctly.
- Any equipment contaminated with blood should be cleaned thoroughly first, then disinfected with a 1,000ppm bleach preparation (see Chapter 3) and dried appropriately.
- Pupils with cuts, abrasions, or oozing skin lesions should report them before participating in any activity (see below for more specific advice on infectious skin lesions).
- Those administering first aid should be appropriately trained.

### Exclusion

There is no indication to exclude a pupil, teacher or coach who is infected with HIV, HCV or HBV from sporting activities if they are medically fit enough to participate.

Individuals with acute viral infections may not be well enough to participate for a period of time after the initial infection and their treating doctor will advise on when they can return to sporting activities.

In the event of an acute bleeding injury during an activity pupils cannot return to the field of play until the wound has been cleaned and disinfected, bleeding has stopped completely, and the wound is covered with a secure, occlusive dressing. If the wound cannot be securely occluded then the pupil cannot return to the sporting activity.

## Skin Infections

Skin infections that can be transmitted during high risk contact sports include fungal, bacterial and viral infections. A more detailed list of the type of infections is provided in Table 8.1 below. Most skin infections are transmitted via skin-to-skin contact. Bacterial and fungal infections may also be transmitted by contact with equipment such as exercise mats.

**Table 8.1 Germs and the skin infections they cause that are of relevance in high risk contact / collision sports**

<b>Fungal</b>
<ul style="list-style-type: none"> <li>• Tinea capitis / corporis → ringworm</li> <li>• Tinea cruris → jock itch</li> <li>• Tinea pedis → athlete's foot</li> </ul>
<b>Viral</b>
<ul style="list-style-type: none"> <li>• Herpes simplex virus 1 (HSV-1) → herpes labialis / gladiatorum / rugbeiorum (scrum-pox)</li> <li>• Molluscum contagiosum</li> <li>• Varicella-Zoster virus → chicken pox / shingles</li> <li>• Human papillomavirus → warts</li> </ul>
<b>Bacterial</b>
<ul style="list-style-type: none"> <li>• Streptococcus &amp; Staphylococcus (including MRSA) → impetigo, folliculitis, furuncles, carbuncles, cellulitis</li> </ul>
<b>Parasitic</b>
<ul style="list-style-type: none"> <li>• Scabies</li> <li>• Headlice</li> </ul>

### Precautions

Strategies for reducing potential exposure to skin infections during high risk contact and collision sports include:

- Strict hand hygiene.
- Showering after activity.
- Adequate regular cleaning and disinfection of facilities, changing rooms, and sports equipment.
- Athletes notifying a parent/guardian and teacher/coach of any skin lesion prior to participation.
- Correct diagnosis of skin rashes or lesions by a medical doctor.
- Adherence to the recommended periods of exclusion for high-risk contact sports (see section below).

If an outbreak of a skin infection occurs on a team, all team members should be evaluated to help prevent further spread of infection. Recommended periods of exclusion must be adhered to.

Tinea pedis (athlete's foot) is extremely common and exclusion from sporting activities is not recommended. However transmission can be reduced by educating pupils to wash feet regularly, dry between the toes thoroughly, and wear cotton socks. The infection should be treated and infected pupils should wear protective footwear in showers and changing rooms.

Two types of Herpes simplex virus (HSV) – HSV type 1 (HSV-1) and HSV type 2 (HSV-2) – cause skin lesions. HSV-1 is classically associated with lesions around the mouth (lips, tongue, palate, gums) and HSV-2 with genital lesions. However either can cause perioral or genital lesions. HSV infection typically involves a primary infection that becomes dormant and re-activates from time-to-time. Re-activation of HSV-1 infections usually affects the lips (i.e. herpes labialis/cold sores). Transmission of HSV infections occurs through viral shedding and direct contact with skin or bodily fluids during a primary infection or a reactivation. Herpes gladiatorum is a HSV infection of the chest, ear, face, and hands among athletes in contact sports, such as wrestling or rugby. This infection is usually the result of HSV-1 transmission by direct skin-to-skin contact during practice or competition. HSV infections and reactivations are usually self-limiting and treatment is not usually indicated. However, prompt treatment with topical or oral anti-viral medication can reduce the length of symptoms, viral shedding and infectivity. Some children who are involved in contact sports and who experience frequent HSV reactivations may benefit from oral anti-viral medication. Children with active lesions should not share eating utensils, cups, water bottles, or mouth guards.

### Exclusion of Pupils with Skin Infections who are Involved in High Risk Contact / Collision Sports

High risk sports that involve significant skin-to-skin contact with an opponent or equipment require stricter participation restrictions for infected people. For high risk contact and collision sports it is not usually appropriate to permit a player with active skin lesions to return to play with covered skin lesions. Participation with a covered lesion can be considered for lower contact sports if the area of skin can be adequately and securely covered.

Exclusion guidelines are presented for individual conditions in Table 8.2. Players should not be allowed return to high risk sporting activities until these are met. Many of these exclusion criteria require the correct diagnosis and treatment of the skin infection. Many also specify the duration of treatment that must be completed before the pupil can return to play.

Covering of active skin lesions is generally not permitted to allow return to play. For lesions that are permitted to be covered the recommended approach is to cover with a bio-occlusive dressing then pre-wrap and tape.

**Table 8.2 Exclusion Guidelines for Pupils with Skin Infections who are Involved in High Risk Contact/Collision Sports**

Infection	Pupil should be excluded until the criteria listed are met:
Tinea capitis (Scalp ringworm)	- They have completed at least 14 days of the appropriate oral or topical antifungal
Tinea corporis (Body ringworm)	- They have completed at least 72 hours of the appropriate oral or topical antifungal - Lesions are securely covered
Primary herpes simplex virus 1 (HSV-1)	- There are no active lesions - All vesicles are crusted over - They have had no systemic symptoms (e.g. fever or malaise) for 72 hours - There have been no new lesions for 72 hours
Reactivation HSV-1 (e.g. cold sores)	- There are no active lesions - All vesicles are crusted over
Chicken-pox / Shingles	- There are no active lesions - All vesicles are crusted over - They have had no systemic symptoms (e.g. fever or malaise) for 72 hours - There have been no new lesions for 72 hours
Molluscum contagiosum & Warts	Should be covered if prone to bleeding when abraded
Bacterial infections (e.g. staphylococcal or streptococcal)	- There are no oozing, weeping, or discharging lesions - There have been no new skin lesions for at least 48 hours - Some infections may require completion of 48-72 hours of the appropriate oral antibiotic  On return to play non-active healing lesions should be securely covered until fully healed
Pediculosis (headlice)	- They have completed treatment - There is no evidence of live lice
Scabies	- They have completed treatment - There is no evidence of infestation

## Other Infections

### **Infectious Mononucleosis (Glandular Fever)**

Glandular fever is caused by the Epstein Barr virus (EBV) and is generally a mild self-limiting illness. However, in rare case it can be complicated by rupture of the spleen. Therefore, it is recommended that pupils do not participate in body contact / collision sports for 4 weeks after onset of illness. Due to the nature of the illness many pupils may not be ready to return to full team participation within 4 weeks. A gradual return to full physical activity is recommended.

### **Tetanus**

Tetanus is a severe disease but, thanks to vaccination, is now rare in Ireland. However, spores from tetanus bacteria are ubiquitous in soil, particularly ground contaminated by animal faeces, such as sports fields used by farm animals. Therefore the potential for tetanus spores to enter into a wound or break in skin remains.

Precautions for pupils undertaking sporting activity in outdoor settings where contact with soil is likely include:

- Pupils should be appropriately immunised with tetanus containing vaccine (4 doses <11-14 years of age; 5 doses >14 years of age).
- Wounds and broken skin should be covered.
- Injuries that involve damage to skin should be attended to promptly; cleaned and disinfected thoroughly and covered before the player may return to the field of play.