

Viruses and the athlete

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The widening spectrum of sporting activities, nationally and internationally, and the increasing number of participants mean that almost every form of human infection may be acquired in association with the pursuit of sport. Sport-associated infections (bacterial, viral, protozoal and fungal) were recently reviewed¹.

Athletes comprise an age group, the members of which may still be forming their own natural immunity to infection, while individual immune systems may be impaired by the psychological and/or physical stresses of training and competition. Viral infections in particular are common, to some of which most athletes will become exposed sooner or later. Respiratory infections such as sore throats or influenza are virtually unavoidable wherever people congregate together, with spread readily occurring in the course of sporting activity, within changing rooms, hotels and/or while living, eating and travelling together. Contact sports in addition, are especially conducive to the spread of herpes.

Infections vary widely in their severity from relatively minor forms of sore throat to the potentially more debilitating influenza, glandular fever and hepatitis, while a newly recognized phenomenon in recent years is the post-viral fatigue syndrome.

Influenza occurs in epidemic form every few winters. The different virus types which cause flu have the unusual ability to change their antigenic characteristics every few years or so, and as a result continue to pose new problems for personal immunity, despite the availability of vaccines. Influenza spreads rapidly and should never be underestimated as potentially it may have serious consequences for the athlete who misguidedly and foolishly tries to run off its effects. Attempting to 'sweat it out' can be extremely dangerous if the individual is at all feverish, and may lead to permanent damage to the myocardium.

Viral sore throats are even more common, and while they are unlikely to be sufficiently incapacitating to prevent the pursuit of normal sporting activity, as with flu the development of other symptoms, such as aching muscles, and feverishness, requires immediate bed rest.

Infectious mononucleosis (glandular fever) may similarly be readily transmitted from person-to-person, although most usually via infected saliva. After an incubation period of between four and six weeks,

symptoms of fever, sore throat and enlarged glands, usually in the neck, follow. The illness usually persists from one to several weeks, but the infectious state may last for up to a year in around 20 per cent of cases, while a more prolonged post-infection fatigue state has become recognized in recent years².

Herpes infection is due to the *Herpes simplex* virus and primarily occurs in childhood, but can become reactivated in adult life, most commonly presenting as cold sores around the lips with the potential to spread quickly on to the face, eyelids etc. While infection is usually superficial only, occasionally it may progress to a serious form of encephalitis. Reactivation of one's own dormant virus can be precipitated by exposure to strong sunlight or wind, during a feverish illness or menstruation.

Herpes is highly infectious, spreading rapidly from person-to-person by droplet spread or where skin surfaces are directly opposed in contact sports such as rugby (scrum-pox) or in wrestling (*herpes gladiatorum*), or indirectly via the sharing of infected towels, clothing and other equipment.

Prevention depends upon high standards of personal hygiene and the judicious use of acyclovir, a specific anti-viral cream, being applied when the first tingling symptoms or signs of rash appear.

Viral hepatitis type B should not be confused with hepatitis type A infection which results from the eating or drinking of contaminated food or water, or from direct person-to-person spread via the faecal-oral route. In contrast hepatitis B is acquired through contact with infected blood or blood products with the virus being inoculated via transfusions, by contaminated tattooing or injecting equipment, or by sexual spread.

The incubation period is between 60 and 90 days before the onset of symptoms of loss of appetite and mild fever, often progressing although not invariably to the development of jaundice. Severity of the illness can vary considerably from the mildly ill to death in less than one per cent of cases. The infectious state begins before falling ill and remains for up to three months or so after recovery from the acute illness. Chronic carriers in contrast, rarely have a recognizable illness, yet remain infectious for many years.

A greater emphasis has been placed in recent years on improving overall hygiene standards rather than by placing undue restrictions on known carriers, who need not categorically be banned from participating in sport, including contact sports. Injuries, cuts or grazes

that bleed must nevertheless be regarded as potential sources of infection if the carrier's blood were to gain access through the broken skin of another person.

Transmission through bleeding into communal bath or bathing waters theoretically may occur. While the considerable dilution and the presence of chlorine will reduce this risk, showering is undoubtedly safer and more hygienic. The risk of spread during sporting activities is small although there have been reports of cases attributed to blood transfer between the feet of barefoot runners or via contaminated thorn-pricks during orienteering events³. Hepatitis B vaccine may be considered for certain types of athletes competing in countries known to have a high carriage rate of virus among the local populations.

Acquired Immune Deficiency Syndrome (AIDS); the routes of transmission of the human immunodeficiency virus (HIV) are virtually identical to those of the hepatitis B virus, but from all the available evidence the more fragile HIV virus survives less well outside the human body and also appears to be considerably less infectious. Under normal (*sic*) conditions of living, the chances of an athlete being infected are rare, and there is no particular hazard within sport that requires any special precaution other than the proper cleansing and dressing of cuts, abrasions or bleeding wounds. Leisure-time activities, peripheral to sport, pose a different problem.

Post-viral fatigue syndrome occurs when recovery from any infection which has been more than superficial in its effects is followed by a period of debility which may vary from a few days only to several weeks or months. Any feverish illness invariably will leave the individual feeling weak and lacking in energy for some days before full physical recovery is achieved.

In recent years increasing attention has been given to the more prolonged debilitating effects of certain viral infections such as influenza, infectious mononucleosis (glandular fever), measles, chickenpox and the Coxsackie group of enteroviruses⁴. Particular attention has been given to the Epstein-Barr virus of infectious mononucleosis² and to the Coxsackie group which are known to have long-term effects on muscle and nerve tissue⁵. In consequence, a non-specific

chronic debilitating condition frequently associated with these viruses has become recognized: the post-viral fatigue syndrome or myalgic encephalomyelitis (ME). Amongst the many people who have been affected are well-known sports personalities whose sporting careers have in consequence been devastated.

Symptoms can be widely varied, but most usually there is marked muscle tiredness and/or aches and pains brought about by physical exertion, often accompanied by sore throats, sleep disturbance, loss of concentration, depression and/or severe anxiety states. Convalescence is usually prolonged and cyclical with frequent relapses and remissions.

The primary contact in the illness may be the family doctor, coach, team manager or physiotherapist, with the diagnosis in some cases being made retrospectively after many months following the elimination of other possible causes. There is no specific treatment and complete rest is essential during the acute phase. Of equal importance is discouraging the affected individual from attempting to return to normal physical activities too enthusiastically between relapses. While the coach or medical attendant must be wary of heightened awareness and the creation of pseudo-epidemics, the genuine sufferer can experience a prolonged illness over several years and requires considerable sympathy and support.

References

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