



INFECTIONS IN ATHLETES

Endurance training can predispose an athlete to several infections because of numerous factors:

- Increased training loads
- Stress – physical & mental
- Travel
- Dry air in the plane
- Other passengers
- Poor sleep
- Increased contact with sick individuals
- Work environment
- Race expo
- Training partners

The immune system is essentially comprised of 2 inter-dependant systems

1. the non-specific **Innate immune system**,
2. the more specific **Acquired immune system**.

Innate “Non-specific” immune system

- Essentially the body’s first line of defense which includes the skin and mucus membranes
- Exercise affects this system and can lead to higher risk of infection: such dysfunction occurs at a structural level, as well as at a cellular level. Acute bouts of exercise have been shown to lead to *increased* immune-cellular modulators. However, chronic intense training leads to a decrease = higher risk of infection
- The effects of this include the increased risk of various infections because of possible immune-suppression

Acquired “Specific” immune system

- The body’s Acquired immune system forms a memory and attacks infectious agents which were previously recognized by the body’s immune system
- Cellular component and antibody component – antibodies recognize antigens which then kickstarts the inflammatory process to attack the offending agent
- Changes in the antibody status and the cellular component of this system also result in a diminished immune system

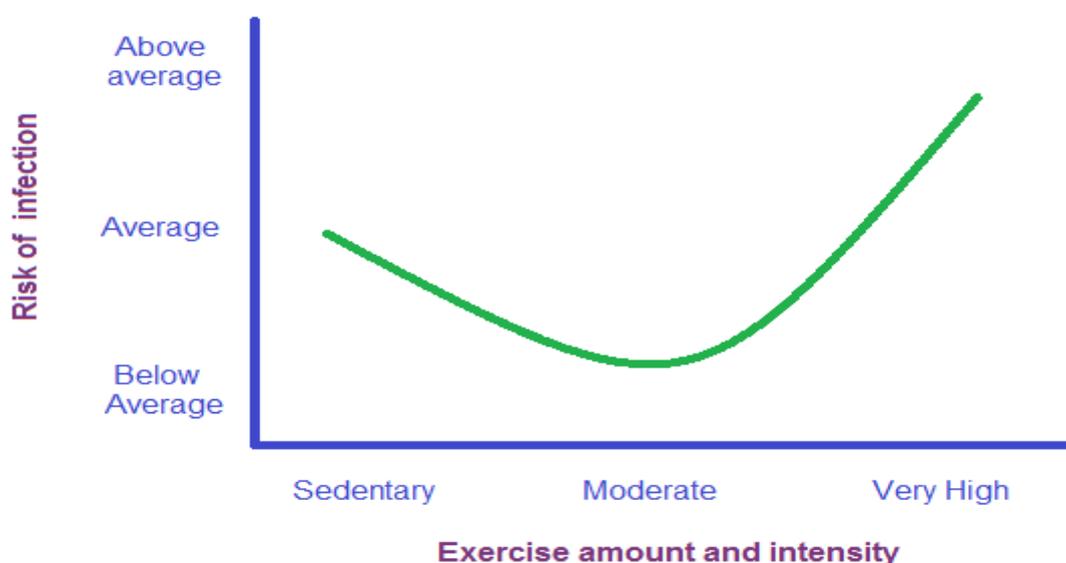
This period of 24-72 hours is known as the “**Open-Window**” Theory. When after an acute bout of exercise, the changes described above result in an elevated risk of infection.

Disclaimer - Information supplied in articles is generalised and does not constitute individualised medical advice. Patients are advised to seek such advice in a consultation with one of our Sports Physicians.

Does exercise always result in an increased risk of infection?

The simple answer is NO, in fact it has been shown that regular, moderate exercise actually **decreases** the risk of infection. However, the risk of infection has been shown to increase in athletes who engage in regular bouts of high intensity exercise, or in athletes who undergo high training loads. This is demonstrated by the J-curve below.

Relationship between exercise and upper respiratory tract infections



TIPS to reduce the risk of infections, focusing on Upper Respiratory Tract Infections (URTI's)

- ✓ Space high intensity sessions and race events far enough apart to allow for adequate recovery
- ✓ Ensure adequate quality sleep
- ✓ Maintain a well-balanced diet
- ✓ Vitamin C (500mg/day) during periods of heavy training
- ✓ Avoid over training and chronic fatigue
- ✓ Thorough hand washing
- ✓ Remain well-hydrated

To exercise or not to exercise, that's the question

- It's very common for athletes to visit a Sports Medicine Practice before major events and during single/multi-stage endurance events (OMTOM, Comrades Marathon, Ironman, Cape Epic, Wines2Whales etc.) or in a team (rugby, soccer, hockey etc.) to ask for advice on whether an illness should stop them from training

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- Training with an illness can have severe side effects - the development of a condition called a *viral myocarditis* can occur. This condition could lead to severe cardiac damage, and even death

WHEN NOT TO EXERCISE – if you have any of the following symptoms:

- Fever
- Muscle pains
- Chest pain
- Tachycardia (elevated resting heart rate)
- Excessive fatigue
- Excessive shortness of breath
- Swollen painful lymph glands

If in ANY doubt, ask your medical practitioner!

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