



## Exercising in the cold: should we?



So how many times have you looked outside on a cold and rainy winter's day and said to yourself "if I go out training in this will I get sick?"

To answer this question we need to look at how exercise affects immunity. Exercise represents a physical stress which the body responds to with a certain hormonal and immunological response pattern. The volume and intensity of the exercise will determine the exact pattern of the response and whether stimulation or suppression occurs. It also

should not be forgotten that other factors such as nutrition, psychological stress and training status will also influence the immune response to a specific training session.

So what happens in a strenuous training session compared to a more moderate training bout? After strenuous exercise there is an "open window" where the body is vulnerable to infection (Pedersen et al., 1999). Though the exact mechanism behind this window is yet to be fully described it is a commonly accepted hypothesis. It has however been more recently suggested that there may actually be an "S" curve affect occurring in "elite" athletes where the immune system is less susceptible to infection than sub-elite athletes (Malm, 2006).

Ok so we have figured out that a long hard ride may increase our susceptibility to infection after training but will training in the cold and wet increase our vulnerability further? The answer is quite possibly, yes. Upper Respiratory Tract Infections (URTIs) such as colds and flu's show definite seasonal variability. One theory to explain this seasonal fluctuation is that the inhalation of cold air reduces the temperature of the nasal passages which is enough to inhibit nasal respiratory defences. Therefore exercise in cold weather may very well increase the chances of catching a cold if you are exposed to the virus post-exercise. You need to be exposed to a virus to catch it so if you avoid other people with the cold or flu after training you will be taking a very sensible precaution. Don't forget that other factors such as stress and nutrition will also influence your immune system's ability to fight infection and with prudent precautions training outdoors in the winter will not necessary make you ill. So put a few extra layers of clothing on and get out there, you won't melt!

### References

Pedersen, BK, Bruunsgaard, H, Jensen, M, Krzywkowski, K, Ostrowski, K. (1999). Exercise and immune function: effect of ageing and nutrition. *Proc Nutr Soc*, 58(3),733-42.

Malm, C. (2006). Susceptibility to infection in elite athletes: the S-curve. *Scand J Med Sci Sports*, 16, 4-6.