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Editorial Open Access

# Exercise and Immunity

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## Editorial

Recently research is uncovering a link between moderate, regular exercise and a strong immune system. However, there is also evidence that too much intense exercise can reduce immunity.

The average adult has two to three upper respiratory infections each year. The following factors have all been associated with impaired immune function:

- Stress
- Poor nutrition
- Fatigue and lack of sleep
- Cigarette smoking
- Older age
- Overtraining syndrome

## Regular Moderate Exercise Boosts Immunity

Research continues to support a link between moderate, regular exercise and a healthy immune system.

Moderate exercise has been linked to a positive immune system response and a temporary boost in the production of macrophages, the cells that attack bacteria. It is believed that regular, consistent exercise can lead to substantial benefits in immune system health over the long-term.

More recent studies have shown that there are physiological changes in the immune system as a response to exercise. During moderate exercise immune cells circulate through the body more quickly and are better able to kill bacteria and viruses. After exercise ends, the immune system generally returns to normal within a few hours, but consistent, regular exercise seems to make these changes a bit more long-lasting.

Several authors stated that when moderate exercise is repeated on a near-daily basis there is a cumulative effect that leads to a long-term immune response.

## Too Much Exercise May Decrease Immunity

However, there is also evidence that too much intense exercise can reduce immunity. Research showed that more than 90 minutes of high-intensity endurance exercise can make athletes susceptible to illness for up to 72 hours after the exercise session. Intense exercise seems to cause a temporary decrease in immune system function. Research has found that during intense physical exertion, the body produces certain hormones that temporarily lower immunity.

Cortisol and adrenaline, known as the stress hormones, raise blood pressure and cholesterol levels and suppress the immune system. This effect has been linked to the increased susceptibility to infection in endurance athletes after extreme exercise.

In critical ill patient, you should be careful about exercising too intensely. Because immune system is already taxed by fighting your infection and additional stress could undermine your recovery. So that in critical ill patient, light or moderate exercise may help patient to feel a bit better and actually boost the immune system. On the other hand, intense exercise will only make things worse and likely extend your illness.

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