

## Racing for the cure. Does exercise improve your immune response?

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### Abstract

**Statement of the Problem:** The consensus regarding exercise is that it is beneficial to health. However, the extent to which exercise has a positive impact on the body, in particular the immune system is limited. Therefore, targeting the correct level of exercise to induce optimal outcomes has been debated. **Aims:** This report intends on highlighting the effects exercise has on the innate and adaptive immune response and explore the medical considerations in educating the public and future cases. **Methods:** A literature search of peer reviewed articles using the terms, "exercise", "immune system" and "inflammation" was carried out using Medline and EMBASE databases. **Results:** Exercise demonstrated to enhance the hosts immunity by increasing the levels of dendritic cells. Although, some studies highlighted the negative impact of exercise on the numbers of neutrophils and type 1 T-cells. Moreover, exercise provided some level of resistance against chronic inflammatory diseases, via an increase in interleukin-6 levels. The effects of physical activity on athletes and non-athletes was also reviewed and it was demonstrated that the intensity of exercise relates to the effect it has on the individual. In addition to this, exercise helps improve the psychological state, by reducing stress and anxiety, thus improving the immune response. **Discussion:** The impact exercise has on the immune system is dependent on the unique factors of the individual carrying out the activity. Therefore, the level of intensity of exercise, BMI of the individual and gender are important considerations to be taken into account, to understand the effect exercise will have on the immune response. Understanding the positive impacts of exercise on immunity can be useful in educating the public to live a healthier lifestyle and recommended in advising patients in a primary care setting.

### Biography

Luqman Ali has completed his BSc in Biomedical Sciences at the age of 22 years from the University of Manchester and has begun studying for his MBChB at Anglia Ruskin University in 2019. He undertook his dissertation on the impact of exercise on the body and focused with great attention on immunology. He completed his final year project as part of his BSc, focusing on pedagogical

approaches and epigenetics on Type 2 Diabetes Mellitus. Apart from his academic studies, he has worked as PASS mentor, BLS instructor, captained his University football team at a national medic's football tournament and has been nominated by his peers as a Student Representative of the year.