

## **Effects of short moderate exercise on hematological parameters and stem cells in healthy humans**

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**A**- Conception and study design ; **B** - Collection of data; **C** - Data analysis; **D** - Writing the paper;  
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### **ABSTRACT**

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**Introduction:** Exercise at various durations and intensities impact on blood and stem cells. This pilot study examined the effects of 30 minutes of treadmill walking on hematological indices and progenitor stem cells CD34+ in healthy subjects.

**Materials and methods:** A total of 17 non-smoking, healthy students, aged 20 to 22 years participated. Hemoglobin, hematocrit, white blood cells, platelets, and stem cell CD34+ numbers were assessed before and after moderate exercise. Statistical analyses examined the relationships between CD34+ cells versus hematological indices, age, and body mass index.

**Results:** Following exercise, significant increases were observed in leukocytes, neutrophils, eosinophils, and CD34+ cells numbers. For CD34+ cells, a fourfold increase was seen. Significant correlations between CD34+ cells, white blood cells, and neutrophils were found.

**Conclusion:** Our results suggest that moderate exercise has a physiological impact on hematologic parameters and stem cells CD34+ in healthy subjects. Furthermore, our findings suggest that brief treadmill exercise may enhance tissue repair mechanisms so important in physiotherapy.

**Key words:** Exercise, healthy subjects, stem cells

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