

## A Comparative Study of Selected Anthropometric Variables and Health Related Fitness Parameters of High and Low Altitude Male Residents of Himachal Pradesh

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### Abstract

Keeping in view the lack of information about health related fitness of the residents of himachal pradesh, the present study was carried out on 400 males of himachal pradesh, out of which 200 were taken from high altitude (>2200 m) and 200 were taken from low altitude (<300 m). The subjects were divided into four groups of 5 years interval. Four components of health related physical fitness namely cardiovascular endurance, muscular endurance/strength, flexibility were assessed using standard techniques. The results clearly indicate excellent level of vo<sub>2</sub> max in male residents residing at high altitude, even the results of muscular strength/endurance were found to be pretty good in the residents of high altitude. In terms of curl ups for muscular strength surprisingly the residents of 30-45 age group inhabiting low altitude were found to have more strength than the residents of same age group inhabiting high altitude. The findings of the variables are discussed at length in the paper.

### Introduction

It has been proven beyond doubt that genetic factors guide the course to maturity and the environmental factors accelerate or retard this course. This explains to larger extent, the differences in body structure among different population groups. About 140 million persons reside at high altitude over 2200 m mainly in North, central and South America: Asia and eastern Africa (Ward et al., 2000; Sherpa et al, 2011). The important factors to affect the human morphology and physiology are extremes of environmental temperature, nutrition and altitude. It is a common observation that striking differences exists between high and low altitude human populations

with respect to various biological traits (Baker, 1969). Several morpho-physiological and demographic studies have been carried out in different high altitude populations worldwide to study the pattern of growth and body composition, sexual maturation, structural, compositional and physiological variations (Kapoor, 2000). But as such no studies have been carried out on Himachal Pradesh. Physical fitness of an individual depends on body composition, age, sex, training, nutritional status and environmental factors (Weltman et al 1994; Monyeki, and Kemper, 1997; Hasalkar et al 2005, Dutt, 2005,