

**CORRELATION OF LUNG FUNCTION TESTS WITH BMI,
WAIST HIP RATIO AND BODY FAT PERCENTAGE IN
COLLEGE STUDENTS OF DHARWAD CITY.**

By

Dr. KHALEEL AHMED. MANIK



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Under the guidance of

DR. S. L. KARNE. M.Sc.,Ph.D.

Professor



Department of Physiology

**Sri Dharmasthala Manjunatheshwara College of Medical Sciences &
Hospital**

Dharwad - 580009, Karnataka

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ABSTRACT

Background and objective: In the era of fastest growing urbanization and adoption of people to sedentary life style, obesity is on rise. Some of the complications of obesity include coronary artery disease, hypertension, diabetes mellitus, dislipidemias hypoventilation syndrome and dramatic reduction in various lung volumes have been studied. There is very less data on correlation of obesity with PFT, using the new WHO classification of BMI proposed in 2000, specific for Asians. We have tried to look for this relation according to the new BMI classification for Asians.

Methods: Cross-sectional study was done with 150 Normal obese students in the age group of 15-25yrs from SDM College of Medical sciences, Dharwad.They are divided into three groups as shown below. Anthropometric measurements recorded with digital weighing machine and stadiometer. Lung Function Tests were recorded using Spirovit SP-1 made by Schillers. Skinfold thickness is measured at chest, abdomen, thigh regions using skin fold calipers. Body fat percentage is calculated using Jackson & pollock's formula. Waist Hip circumferences are recorded with measuring tape. BP recording is done by using mercury sphygmomanometer.

Gp -I (Controls) : 50 controls BMI 18.5-22.9(age and sex matched)

Gp -II (Overweight) : 50 students with BMI 23-24.9

Gp -III (Obese) : 50 students with BMI 25-29.9⁷

Results: ERV is significantly lower in overweight and obese groups compared to controls. IRV is significantly higher in obese group compared to controls. FVC was significantly less in overweight and obese groups compared to controls. FEV₁ was significantly less in overweight and obese groups compared to controls. FEF 75-85% was significantly less in overweight and obese groups compared to controls. FEF 75%

is significantly less in overweight group compared to control group. Correlation of BMI with PFT shows a significant negative correlation of BMI with all the parameters of PFT except IRV, which has a significant negative correlation. Correlation of WHR with PFT shows a significant negative correlation of WHR with SVC, ERV, FVC, FEV1, FEV1/FVC, FEF25-75%, FEF-75-85%, FEF-50%, FEF-75%. Correlation of BFP with PFT shows a significant negative correlation of BFP with ERV, IRV, FVC, FEV1, FEV1/SVC, FEV1/FVC, FEF 25-75%, FEF 75-85%, FEF 50%, FEF 75%, MVV.

Conclusion: The results suggested that lung function changes due to obesity start at a BMI of 23 itself producing a restrictive pattern in overweight and obese group of people. People with BMI below 23 should maintain it and those above 23 should be motivated to reduce it.

Key words: pulmonary function tests, obesity, restrictive pattern.