

***The Effect of Red Dragon Fruit and Lemon Juice Consumption on LDL Levels
Among Obese Health Department Students at the State Polytechnic of Jember***

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ABSTRACT

Obesity is a nutritional issue that can increase the risk of lipid profile abnormalities, particularly elevated Low-Density Lipoprotein (LDL) levels. This condition is associated with an increased risk of cardiovascular disease through the process of atherosclerosis. One non-pharmacological approach involves increasing the consumption of foods containing bioactive compounds with antioxidant activity specifically flavonoids which have the potential to improve lipid metabolism and inhibit LDL oxidation in the body. This study aimed to determine the effect of consuming red dragon fruit and lemon juice on LDL levels among obese students at the State Polytechnic of Jember. A quasi-experimental method was employed, utilizing a pretest-posttest design with a control group. Non-random sampling (specifically accidental sampling) was used to select 26 obese students, who were divided into two groups treatment and control with 13 respondents in each. The treatment group received 130 ml of red dragon fruit and lemon juice daily for 21 days, while the control group received mineral water. Data analysis was conducted using the Independent t-test, Paired t-test, and Mann-Whitney U test. The results showed no significant difference in LDL levels between the control and treatment groups prior to the intervention ($p = 0.472$). Similarly, no significant difference in LDL levels was observed between the groups after the intervention ($p = 0.632$). Within the control group, a significant difference in LDL levels was found between the pre- and post-study measurements ($p = 0.002$), whereas no such difference was observed in the treatment group ($p = 0.324$). Furthermore, there was no significant difference in the change in LDL levels between the control and treatment groups ($p = 0.182$). In conclusion, the administration of red dragon fruit and lemon juice did not yield a significant effect on LDL levels among obese students at the State Polytechnic of Jember.

Keywords: Red dragon fruit and lemon juice, obese students, LDL, flavonoids