

**THE EFFECT OF GIVING RED DRAGON FRUIT JUICE ON THE
MUSCLE MASS OF THE FUTSAL TEAM
JEMBER STATE POLYTECHNIC**

Noka Trimah Ismaya

Clinical Nutrition Study Program

Department of Health

ABSTRACT

Low muscle mass affects speed and agility, thereby limiting the performance of fast and complex movements in futsal. Red dragon fruit juice contains high levels of flavonoid antioxidants which can prevent the bad effects of free radicals. These flavonoids reduce the production of reactive oxygen species (ROS) and reactive nitrogen species (RNS), inhibit pro-inflammatory enzymes such as iNOS and COX-2 and reduce the expression of NF-kB thereby inhibiting the release of pro-inflammatory cytokines, increasing recovery from exercise-induced muscle damage and has a positive effect on the recovery of muscle soreness and maintenance of muscle mass. The purpose of this study was to determine the effect of giving red dragon fruit juice on the muscle mass of the Jember State Polytechnic futsal team. The method used in this research is Quasi-Experimental with Pretest-Posttest with Control Group design. The sampling technique used total sampling, as many as 16 members of the Jember State Polytechnic futsal team who were divided into 2 groups, namely treatment and control, each group consisting of 8 respondents. The treatment group was given 400ml red dragon fruit juice per day and the control group was given 400ml mineral water per day for 14 days. Muscle mass before and after the intervention had no difference in the control ($p = 0.222$) and treatment ($p = 0.170$) groups. There was a difference in the difference in muscle mass values between the control group and the treatment group ($p = 0.047$). The conclusion of this study is that there is an effect of giving red dragon fruit juice to the muscle mass of the Jember State Polytechnic futsal team.

Keywords: *red dragon juice, antioxidants, flavonoids, muscle mass, futsal*