

Food intake assessment and anthropometric characterisation of teenage gymnasts

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Results: The caldo-verde soup led to the greatest reduction in total vitamin C content (−77%), followed by boiling (−63%), sautéing (−48%) and braising (−29%). AA content decreased by 65%, 38% and 22% for caldo-verde, boiling and sautéing, respectively, whereas, braising increased AA by 16%. Sautéing and braising showed comparable effects on DHA content (−71% and −72%, respectively), while caldo-verde and boiling had a greater impact (−88% and −85%, respectively).

Discussion and conclusions: Results of this study show that cooking techniques can negatively affect the vitamin C content of galega kale. The extent of this reduction was dependent on the cooking technique, temperature and duration used. The greatest reductions in total vitamin C, AA and DHA were seen when water was used as a source of heat (i.e. boiling and caldo-verde). The longer boiling period (~75 min) used for the caldo-verde soup likely led to the greater reduction in vitamin C when compared to boiling (10 min). These effects are consistent with observations done by others [2,4]. Our findings suggest that sautéing and braising are the two cooking techniques that have the least detrimental effect on vitamin C content in galega kale.

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Food intake assessment and anthropometric characterisation of teenage gymnasts

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ABSTRACT

Introduction: Food and nutrition have a critical role in health, sports performance but also in a proper growth a development when we consider young athletes [1,2]. In addition to the increased energy needs, there is a special concern in ensuring adequate intakes of specific micronutrients such as calcium and iron [3]. The aim of the present study was to evaluate the food intake of a group of teenager gymnasts and to compare energy, macronutrient and micronutrient intake with recommendations for this age group.

Methods: In this observational study, the teenager gymnasts had answered two 24 h dietary recall applied three days apart. The sample included 66 participants 11–17 (14.74±1.79) years old and 26 (39%) were male. Participants were weighted in a 100 g digital scale (Beurer GS-10) and had their height measured in a stadiometer (SECA213). Body fat had been assessed through skinfold measurement using a INNOVACARE Cescorf through Durnin & Womersley formula which included 5-site measures (bicep, tricep, subscapula, suprailiac and abdominal).

Results: Results had shown that 15% were overweight and only 3% were obese, 39% of the sample had normal values of body fat. The average energy intake was 1660±621 kcal while the calcium average intake was 652±307 mg, significantly lower than the recommended value ($p=.02$). The average Iron intake in female athletes was 7.68±2.81 mg, also significantly lower than the recommended ($p=.03$). In this sample 23 participants (35%) of the young athletes did not had any dairy portion and 47 (72%) did not had any portion of vegetables daily.

Conclusions: Data of this sample had shown a very low calcium intake in the participants and also a low iron intake in female individuals. Considering the age group, these results reinforce the importance of the nutritionist role in sports specially in young athletes in order to improve not only individual choices but also nutritional knowledge.

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Influence of temperature and light on total phenolic compounds during natural orange juice storage

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ABSTRACT

Introduction: Natural orange juice is a phenolic compounds rich beverage, whose disposal on market and food catering has increased with the expansion of the concept of healthy food, raising concerns about the effect of storage on total antioxidant capacity (TAC), and scientific evidence on this is scarce. Regarding TAC, is well established that phenolic compounds account more to it than ascorbic acid [1]. Our aim was to evaluate the concentration of total phenolic compounds (CTPC) in fresh squeezed orange juice and analyse the influence of storage conditions (temperature and light) during 48 h on CTPC.

Materials and methods: Fresh oranges (*Citrus sinensis*, variety “Valencia Late”, Portugal) of the same calibre and producer were squeezed aliquoted into 3 glasses stored in different conditions: (1) Room temperature (20 °C) and exposed to sunlight; (2) Room temperature (20 °C) fully wrapped in aluminium; and (3) Refrigerated (1 °C). The procedure was performed according to the methodology described by Keskin-Şasić et al. [2]. CTPC was quantified by Folin-Ciocalteu spectrophotometric method, using gallic acid as standard, at 0, 2.5, 4, 8 and 48 h.

(a) Samples preparation: 1 mL of orange juice was diluted from each vial in water, to a volume of 25 mL. Part of solution was centrifuged at 5300 rpm for 20'. The supernatant solution was used to analyse.

(b) Determination of CTPC: approximately 0.2 mL of each sample was transferred to test tubes containing 1.0 mL of a dilution of Folin-Ciocalteu reagent in water (1:10). After 10', 0.8 mL of a sodium carbonate solution (7.5% m/v) was added to the sample. The test tubes were allowed to stand at room temperature for 30', and then absorbance was measure at 743 nm. CTPC was expressed as equivalents of gallic acid (EGA) in mg/100 ml of squeezed orange juice. Samples' CTPC was determined from a standard curve of gallic acid varying between 0.2 and 4 mg/L.

Results: CTPC of recently squeezed fresh oranges was 30.1 mg EGA/100 mL (basal). After 48 h, CTPC decreased in all samples: 38.5% in sample 1 (18.5 mg EGA/100 mL), 28.6% in sample 2 (21.8 mg EGA/100 mL), and 27.6% in sample 3 (21.5 mg EGA/100 mL). The higher variation in CTPC occurred for sample 1, stored at room temperature and exposed to sunlight.

Discussion and conclusions: Our results suggest that exposure to sunlight is the variable that most influences the decrease CTPC of the fresh orange juice after 48 h. More studies on the influence of these variables are needed to confirm these results and to increase knowledge about storage of fruit fresh juices, to ensure the nutritional quality of this product. Squeezed orange juice is widely present on markets and coffee shops, usually refrigerated but not protected from sunlight, which means that the storage conditions would need to be reconsidered.

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