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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-Šašić 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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Milk related excipients in medications: concerns with cow's milk protein allergy

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ABSTRACT

Introduction: Food allergy is an increasing health care concern, being cow's milk protein allergy (CMPA) the most prevalent food allergy in infants and young children (2–7.5%) [1,2]. CMPA symptoms involve mostly skin, gastrointestinal and respiratory reactions. Some exclusively breast-fed infants may also develop CMPA *via* dairy protein transfer through human breast milk [2]. These patients need to strictly avoid all dairy products as well as all traces of milk in all products, including medicines [3]. Milk proteins include serum or whey proteins (α and β-lactoglobulin, albumin serum and immunoglobulins) and caseins. Although not being a protein, lactose (milk sugar) can contaminated with milk proteins residues and it may trigger allergic reactions. This survey aims to examine the composition of some medications commonly consumed by children or during breastfeeding, identifying the drugs with milk related excipients.

Materials and methods: Selection criteria included medicines commercialised in Portugal, containing milk or related compounds, or any of the following constituents: lactose, casein, lactoglobulin, lactalbumin, immunoglobulins, serum albumin, lactoferrin. The full list of excipients has been consulted in the Summary of Drug Characteristics (available in Infarmed site – Portuguese Authority of Medicines and Health Products) [4]. A total of 98 drugs containing the following PI: ibuprofen, paracetamol, iron compounds, bacteria/yeast to replace intestinal flora, desogestrel or amoxicillin, were identified.

Results: 24 medicinal products presented lactose as an excipient. In two drugs the excipient found was "cream flavor". It is noteworthy that all the examined drugs to replace intestinal flora and desogestrel-only pills contain milk related compounds in its composition. Detailed results may be found in Table 1.

Discussion and conclusions: Several medicines contain lactose, but this excipient can be contaminated with milk proteins [3] and may trigger allergic reactions in CMPA patients, as well as in lactose intolerant individuals. This survey emphasises that health professionals must be aware of which products and ingredients to avoid in these patients.

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Table 1. Milk related excipients in drug products.

	Analyzed medicines	With milk related excipients
Ibuprofen (oral suspensions, paediatric suppositories and 400 mg tablets)	38	12
Paracetamol (syrups, paediatric suppositories and 1 g tablets)	27	1
Iron compounds (non-injectable formulations)	12	3
Bacteria/yeast to replace intestinal flora	6	6
Desogestrel-only pills	4	4
Amoxicillin (powder for oral suspensions)	11	0
Total	98	26