Nutritional and health claims made on food products for physical activity and sport

Declaraciones nutricionales y propiedades saludables en productos alimenticios para la actividad física y el deporte

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Interest in the benefit of nutrients and other substances with a physiological effect has grown in recent years. At the same time, more and more nutrition and health claims have been approved by the European Food Safety Authority (EFSA) and authorised by the European Commission through Regulation 432/2012. It is, therefore, essential that nutrition, physical activity, sports and general health professionals know which nutrients and substances are legally endorsed and authorised under the approval of the EFSA on the basis of scientific evidence. Clearly, a diet which provides the nutrients and other substances with a physiological effect in amounts suitable for the practice of physical activity and sport, based on the criteria of a varied and balanced diet, may prove sufficient. However, the intake of certain nutrients can be increased through a selection of foods to incorporate particular nutrients or the use of food supplements without these being substitutes for a balanced diet. The main difference is the presentation, food matrix or pharmacological form, because, according to Directive 2002/46/EC of the European Parliament, food supplements are 'foodstuffs the purpose of which is to supplement the normal diet and which are concentrated sources of nutrients or other substances with a nutritional or physiological effect, alone or in combination, marketed in dose form, namely forms such as capsules, pastilles, tablets, pills and other similar forms, sachets of powder, ampoules of liquids, drop dispensing bottles, and other similar forms of liquids and powders designed to be taken in measured small unit quantities'.

It should be noted that when a food product meets the conditions of use established in Regulation (EC) No. 1924/2006 of the European Union, it can voluntarily bear claims on its labelling and/or in its presentation and/or advertising. There are different types of claims: nutrition claims, such as 'low energy', which are explicitly listed in the Regulation, health claims other than those referring to the reduction of disease risk and children's development and health, as established in Article 13 of Regulation 1924/2006, which are approved through the list authorised in Regulation 432/2012, such as 'Vitamin D contributes to the maintenance of normal muscle function', and claims relating to children's development and health, as highlighted in Article 4 paragraph 1 point b of Regulation 1924/2006, which are approved and authorised on a case-by-case basis through specific Regulations.

These claims are voluntary mentions included on the labelling and/or in the presentation and/or advertising of foodstuffs, known legislatively since 2011 as food information provided to consumers, Regulation 1169/2011. Therefore, if such claims are made through any medium, they must comply with the conditions of use established for each. Although some flexibility is allowed in the wording of the claims, these cannot mislead the consumer and must have the same meaning as those authorised by the European Union. Thus, nutrition claims indicate the presence, absence, increase or decrease of the content of nutrients/substances with a physiological effect/energy, while health claims relate a nutrient, substance, food or food category to health. In the case of health claims, these should not be absolute and must always be preceded by terms such as *helps, contributes, facilitates*, and so on.

Some health claims are associated with children's development, others with risk reduction and others with functional health claims. Some health claims are related to sports activity and focus on improving physical performance.

In order to obtain the beneficial effect mentioned in the claim, the nutrient, substance, food or food category must be present in the minimum quantities established in Regulation (EC) No. 1924/2006. These claims are designed to help consumers make well informed decisions, providing a basis for credibility because, as mentioned earlier, before being approved by the European Commission, the European Food Safety

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Authority (EFSA) assesses the scientific evidence backing them up, and must be 'truthful, clear, reliable and useful'.

Almost 300 claims have now been approved by the EFSA, of which some 30 are nutrition claims and 265, health claims. Of these almost 300 health claims, XX are related to sports activity, of which 48 are of interest to us (0 referring to children's development, 1 to risk reduction and 47 to claims regarding functional health properties).

There are claims of health properties related to physical and sports activities for 26 different nutrients, of which 12 concern minerals (calcium, sodium, copper, chromium, phosphorus, iron, magnesium, manganese, molybdenum, potassium, iodine and zinc), 10 concern vitamins (pantothenic acid (vitamin B5), biotin, folate, niacin (vitamin B3), riboflavin (vitamin B2), thiamine (vitamin B1) vitamin B12, vitamin B6, vitamin C and vitamin D), 2 concern carbohydrates, 2 concern water, 1 concerns protein and 1 concerns creatine. Each of these nutrients or substances with a physiological effect can bear several health claims regarding different functions, for example, 'water contributes to the maintenance of normal physical and cognitive functions' and 'water contributes to the maintenance of normal regulation of the body's temperature'.

Using the search engine made available by the Spanish Food Safety and Nutrition Agency (AESAN), we can point to several claims:

Type: absorption of water; nutrient, substance, food or food category: carbohydrate-electrolyte solutions; claim: carbohydrate-electrolyte solutions enhance the absorption of water during physical exercise; conditions of use of the claim: in order to bear the claim carbohydrate-electrolyte solutions should contain 80-350 kcal/L from carbohydrates, and at least 75% of the energy should be derived from carbohydrates which induce a high glycaemic response, such as glucose, glucose polymers and sucrose. In addition, these beverages should contain between 20 mmol/L (460 mg/L) and 50 mmol/L (1,150 mg/L) of sodium, and have an osmolality between 200-330 mOsm/kg water.

Type: tiredness and fatigue; nutrient, substance, food or food category: (1) pantothenic acid, (2) folate, (3) iron, (4) magnesium; (5) niacin, (6) riboflavin, (7) vitamin B12, (8) vitamin B6, (9) vitamin C; claim: (1)(2)(3)(4)(5)(6)(7)(8)(9) contribute to the reduction of tiredness and fatigue; conditions of use of the claim: the claim may be used only for food which is at least a source of folate as referred to in the claim SOURCE OF [NAME OF VITAMIN/S] AND/OR [NAME OF MINERAL/S] as listed in the Annex to Regulation (EC) No 1924/2006.

Type: endurance exercise; nutrient, substance, food or food category: (1) carbohydrate-electrolyte solutions, (2) creatine; claim: (1) carbohydrate-electrolyte solutions contribute to the maintenance of endurance performance during prolonged endurance exercise (2) daily creatine consumption can enhance the effect of resistance training on muscle strength in adults over the age of 55; conditions of use of the claim: (1) in order to bear the claim, carbohydrate-electrolyte solutions should contain 80-350 kcal/L from carbohydrates, and at least 75 % of the energy should be derived from carbohydrates which induce a high glycaemic response, such as glucose, glucose polymers and sucrose. In addition, these beverages should contain between 20 mmol/L (460 mg/L) and 50 mmol/L (1,150 mg/L) of sodium, and have an osmolality between 200-330 mOsm/kg water, (2) Information shall be provided to the consumer that: —the claim is targeting adults over the age of 55, who are engaged in regular resistance training, —the beneficial effect is obtained with a daily intake of 3 g of creatine in conjunction with resistance training, which allows an increase in the workload over time and which should be performed at least three times per week for several weeks, at an intensity of at least 65 %-75 % of one repetition maximum load (*). (*) repetition maximum load is the maximum weight or force an individual can exert in a single lift.

Type: muscle function; nutrient, substance, food or food category: (1) (2) protein, (3) carbohydrates; claim: (1) protein contributes to a growth in muscle mass, (2) protein contributes to the maintenance of muscle mass, (3) carbohydrates contribute to the recovery of normal muscle function (contraction) after highly intensive and/or long-lasting physical exercise leading to muscle fatigue and the depletion of glycogen stores in skeletal muscle; conditions of use of the claim: (1) (2) the claim may be used only for food which is at least a source of protein as referred to in the claim SOURCE OF PROTEIN as listed in the Annex to Regulation (EC) No 1924/2006. (3) The claim may be used only for food which provides carbohydrates which are metabolised by humans (excluding polyols). Information shall be given to the consumer that the beneficial effect is obtained with the consumption of carbohydrates, from all sources, at a total intake of 4 g per kg body weight, at doses, within the first 4 hours and no later than 6 hours, following highly intensive and/or long-lasting physical exercise leading to muscle fatigue and the depletion of glycogen stores in skeletal muscle.

Type: physical and cognitive functions; nutrient, substance, food or food category: water; claim: water contributes to the maintenance of normal physical and cognitive functions; conditions of use of the claim: in order to bear the claim, information shall be given to the consumer that in order to obtain the claimed effect, at least 2,0 L of water, from all sources, should be consumed per day.

Type: energy-yielding metabolism; nutrient, substance, food or food category: (1) pantothenic acid, (2) biotin, (3) calcium, (4) copper, (5) phosphorus, (6) iron, (7) magnesium, (8) manganese, (9) niacin, (10) riboflavin, (11) thiamine, (12) vitamin B12, (13) vitamin B6, (14) vitamin C, (15) iodine; claim: (1)(2)(3)(4)(5)(6)(7)(8)(9)(10)(11)(12)(13)(14)(15) contribute to normal energy-yielding metabolism; conditions of use of the claim: (1)(2)(3)(4)(5)(6)(7)(8)(9)(10)(11)(12)(13)(14)(15) the claim may be used only for food which is at least a source of iodine as referred to in the claim SOURCE OF [NAME OF VITAMIN/S] AND/OR [NAME OF MINERAL/S] as listed in the Annex to Regulation (EC) No 1924/2006

Type: macronutrient metabolism; nutrient, substance, food or food category: (1) biotin, (2) chromium, (3) zinc, (4) Vitamin B6; claim: (1)(2)(3) contribute to normal macronutrient metabolism, (4) contributes to normal protein and glycogen metabolism; conditions of use of the claim: (1)(2)(3)(4) the claim may be used only for food which is at least a source of zinc as referred to in the claim SOURCE OF [NAME OF VITAMIN/S] AND/OR [NAME OF MINERAL/S] as listed in the Annex to Regulation (EC) No 1924/2006.

Type: muscle recovery; nutrient, substance, food or food category: carbohydrates; claim: carbohydrates contribute to the recovery of normal muscle function (contraction) after highly intensive and/or long-lasting physical exercise leading to muscle fatigue and the depletion of glycogen stores in skeletal muscle; conditions of use of the claim: the claim may be used only for food which provides carbohydrates which

are metabolised by humans (excluding polyols). Information shall be given to the consumer that the beneficial effect is obtained with the consumption of carbohydrates, from all sources, at a total intake of 4 g per kg body weight, at doses, within the first 4 hours and no later than 6 hours, following highly intensive and/or long-lasting physical exercise leading to muscle fatigue and the depletion of glycogen stores in skeletal muscle.

Type: physical performance; nutrient, substance, food or food category: creatine; claim: creatine increases physical performance in successive bursts of short-term, high intensity exercise; conditions of use of the claim: the claim may be used only for food which provides a daily intake of 3 g of creatine. In order to bear the claim, information shall be given to the consumer that the beneficial effect is obtained with a daily intake of 3 g of creatine.

Type: immune system; nutrient, substance, food or food category: vitamin C; claim: vitamin C contributes to maintain the normal function of the immune system during and after intense physical exercise; conditions of use of the claim: the claim may be used only for food which provides a daily intake of 200 mg vitamin C. In order to bear the claim, information shall be given to the consumer that the beneficial effect is obtained with a daily intake of 200 mg in addition to the recommended daily intake of vitamin C.

Type: body temperature; nutrient, substance, food or food category: water; claim: water contributes to the maintenance of normal regulation of the body's temperature; conditions of use of the claim: in order to bear the claim, information shall be given to the consumer that in order to obtain the claimed effect, at least 2,0 L of water, from all sources, should be consumed per day.

Type: oxygen transport; nutrient, substance, food or food category: iron; claim: iron contributes to normal oxygen transport in the body; conditions of use of the claim: the claim may be used only for food which is at least a source of iron as referred to in the claim SOURCE OF [NAME OF VITAMIN/S] AND/OR [NAME OF MINERAL/S] as listed in the Annex to Regulation (EC) No 1924/2006.

However, some of the health claims come with complementary conditions, restrictions and warnings, such as:

Claim: daily creatine consumption can enhance the effect of resistance training on muscle strength in adults over the age of 55; conditions and/or restrictions of use of the food and/or additional statement or warning: the claim may be used only for foods targeting adults over the age of 55, who are engaged in regular resistance training.

Claim: creatine increases physical performance in successive bursts of short-term, high intensity exercise; conditions and/or restrictions of use of the food and/or additional statement or warning: the claim may be used only for foods targeting adults performing high intensity exercise.

Claim: carbohydrates contribute to the recovery of normal muscle function (contraction) after highly intensive and/or long-lasting physical exercise leading to muscle fatigue and the depletion of glycogen stores in skeletal muscle; conditions and/or restrictions of use of the food and/or additional statement or warning: the claim may be used only for foods intended for adults who have performed highly intensive and/or long-lasting physical exercise leading to muscle fatigue and the depletion of glycogen stores in skeletal muscle.

Recommended bibliography

- Unión Europea. Reglamento (CE) No 432/2012 de la Comisión del 16 de mayo de 2012 por el que se establece una lista de declaraciones autorizadas de propiedades saludables de los alimentos distintas de las relativas a la reducción del riesgo de enfermedad y al desarrollo y la salud de los niños. Diario Oficial de la Unión Europea, 2012;136:1–40. [Consultado el 09 de abril de 2022]. Disponible en: https://eur-lex.europa.eu/eli/reg/2012/432/oj
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