

## SCIENTIFIC OPINION

### **Scientific Opinion on the substantiation of health claims related to carbohydrate-electrolyte solutions and reduction in rated perceived exertion/effort during exercise (ID 460, 466, 467, 468), enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309), and maintenance of endurance performance (ID 466, 469) pursuant to Article 13(1) of Regulation (EC) No 1924/2006<sup>1</sup>**

**EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA)<sup>2,3</sup>**

European Food Safety Authority (EFSA), Parma, Italy

#### SUMMARY

Following a request from the European Commission, the Panel on Dietetic Products, Nutrition and Allergies was asked to provide a scientific opinion on a list of health claims pursuant to Article 13 of Regulation (EC) No 1924/2006. This opinion addresses the scientific substantiation of health claims in relation to carbohydrate-electrolyte solutions and reduction in rated perceived exertion/effort during exercise, enhancement of water absorption during exercise, and maintenance of endurance performance. The scientific substantiation is based on the information provided by the Member States in the consolidated list of Article 13 health claims and references that EFSA has received from Member States or directly from stakeholders.

The food which is the subject of the health claims is carbohydrate-electrolyte solutions. The Panel considers that carbohydrate-electrolyte solutions are sufficiently characterised in relation to the claimed effects.

<sup>1</sup> On request from the European Commission, Question No EFSA-Q-2008-1101, EFSA-Q-2008-1102, EFSA-Q-2008-1103, EFSA-Q-2008-1104, EFSA-Q-2008-1106, EFSA-Q-2008-1109, EFSA-Q-2008-1112, EFSA-Q-2008-1119, EFSA-Q-2008-1195, EFSA-Q-2008-1247, EFSA-Q-2008-1252, EFSA-Q-2008-1253, EFSA-Q-2008-1254, EFSA-Q-2008-1255, EFSA-Q-2008-1256, EFSA-Q-2008-1260, EFSA-Q-2008-1907, EFSA-Q-2008-2311, EFSA-Q-2008-2329, EFSA-Q-2008-2354, EFSA-Q-2010-00255, EFSA-Q-2010-00262, adopted on 08 April 2011.

<sup>2</sup> Panel members: Carlo Agostoni, Jean-Louis Bresson, Susan Fairweather-Tait, Albert Flynn, Ines Golly, Hannu Korhonen, Pagona Lagiou, Martinus Løvik, Rosangela Marchelli, Ambroise Martin, Bevan Moseley, Monika Neuhäuser-Berthold, Hildegard Przyrembel, Seppo Salminen, Yolanda Sanz, Sean (J.J.) Strain, Stephan Strobel, Inge Tetens, Daniel Tomé, Hendrik van Loveren and Hans Verhagen. Correspondence: [nda@efsa.europa.eu](mailto:nda@efsa.europa.eu)

<sup>3</sup> Acknowledgement: The Panel wishes to thank for the preparatory work on this scientific opinion. The members of the Working Group on Claims: Carlo Agostoni, Jean-Louis Bresson, Susan Fairweather-Tait, Albert Flynn, Ines Golly, Marina Heinonen, Hannu Korhonen, Martinus Løvik, Ambroise Martin, Hildegard Przyrembel, Seppo Salminen, Yolanda Sanz, Sean (J.J.) Strain, Inge Tetens, Hendrik van Loveren and Hans Verhagen. The members of the Claims Sub-Working Group on Weight Management/Satiety/Glucose and Insulin Control/Physical Performance: Kees de Graaf, Joanne Harrold, Mette Hansen, Mette Kristensen, Anders Sjødin and Inge Tetens.

Suggested citation: EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA); Scientific Opinion on the substantiation of health claims related to carbohydrate-electrolyte solutions and reduction in rated perceived exertion/effort during exercise (ID 460, 466, 467, 468), enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309), and maintenance of endurance performance (ID 466, 469) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. EFSA Journal 2011;9(6):2211. [29 pp.]. doi:10.2903/j.efsa.2011.2211. Available online: [www.efsa.europa.eu/efsajournal](http://www.efsa.europa.eu/efsajournal)

### **Reduction in rated perceived exertion/effort during exercise**

The claimed effect is “attenuation of the perception of effort and reduction in pleasure”, “recovery; enhanced subsequent endurance capacity; delayed fatigue” and “endurance; increased endurance capacity; increased endurance performance; delayed fatigue”. The target population is assumed to be active individuals performing exercise. The Panel considers that reduction in rated perceived exertion/effort during exercise is a beneficial physiological effect.

No references have been provided from which conclusions could be drawn for the scientific substantiation of the claim.

On the basis of the data presented, the Panel concludes that a cause and effect relationship has not been established between the consumption of carbohydrate-electrolyte solutions and reduction in rated perceived exertion/effort during exercise.

### **Enhancement of water absorption during exercise**

The claimed effects are “water and electrolyte balance”, “rehydration”, “nutrient absorption”, “hydration”, “better/faster fluid delivery with a combination of carbohydrates than with glucose alone”, “electrolyte balance/rehydration”, “potassium/water/electrolyte-balance;diuretic”, “ergogenic role in sports and exercise”, and “contains essential electrolytes for better recovery”. The target population is assumed to be active individuals performing endurance exercise. The Panel considers that an enhancement of water absorption during exercise may be a beneficial physiological effect.

The evidence provided by consensus opinions/reports from authoritative bodies shows that glucose-electrolyte solutions with an osmolality which is isotonic or slightly hypotonic with respect to plasma (i.e. 200-330 mOsm/kg water) maximise the rate of water uptake.

The Panel concludes that a cause and effect relationship has been established between the consumption of carbohydrate-electrolyte solutions and an enhancement of water absorption during exercise.

The Panel considers that in order to bear the claim a carbohydrate-electrolyte solution 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. The target population is active individuals performing endurance exercise.

### **Maintenance of endurance performance**

The claimed effects are “endurance; increased endurance capacity; increased endurance performance; delayed fatigue” and “endurance in heat”. The target population is assumed to be active individuals performing endurance exercise. The Panel considers that maintenance of endurance performance is a beneficial physiological effect.

The evidence provided by consensus opinions/reports from authoritative bodies shows that there is good consensus on the role of beverages containing carbohydrates and electrolytes (in particular sodium) in maintaining performance during prolonged endurance exercise, relative to plain water.

The Panel concludes that a cause and effect relationship has been established between the consumption of carbohydrate-electrolyte solutions and maintenance of endurance performance.

The Panel considers that in order to bear the claim a carbohydrate-electrolyte solution 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. The target population is active individuals performing endurance exercise.

**KEY WORDS**

Carbohydrate-electrolyte solutions, rated perceived exertion/effort, water absorption, exercise, endurance performance, health claims.

**TABLE OF CONTENTS**

Summary .....	1
Background as provided by the European Commission .....	5
Terms of reference as provided by the European Commission .....	5
EFSA Disclaimer.....	5
Information as provided in the consolidated list .....	6
Assessment .....	6
1. Characterisation of the food/constituent .....	6
2. Relevance of the claimed effect to human health.....	7
2.1. Reduction in rated perceived exertion/effort during exercise (ID 460, 466, 467, 468).....	7
2.2. Enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309) .....	7
2.3. Maintenance of endurance performance (ID 466, 469).....	7
3. Scientific substantiation of the claimed effects.....	7
3.1. Reduction in rated perceived exertion/effort during exercise (ID 460, 466, 467, 468).....	7
3.2. Enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309) .....	8
3.3. Maintenance of endurance performance (ID 466, 469).....	8
4. Panel’s comments on the proposed wording .....	8
4.1. Enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309) .....	8
4.2. Maintenance of endurance performance (ID 466, 469).....	9
5. Conditions and possible restrictions of use .....	9
5.1. Enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309) .....	9
5.2. Maintenance of endurance performance (ID 466, 469).....	9
Conclusions .....	9
Documentation provided to EFSA .....	10
References .....	11
Appendices .....	12
Glossary and Abbreviations .....	29

**BACKGROUND AS PROVIDED BY THE EUROPEAN COMMISSION**

See Appendix A

**TERMS OF REFERENCE AS PROVIDED BY THE EUROPEAN COMMISSION**

See Appendix A

**EFSA DISCLAIMER**

See Appendix B

## INFORMATION AS PROVIDED IN THE CONSOLIDATED LIST

The consolidated list of health claims pursuant to Article 13 of Regulation (EC) No 1924/2006<sup>4</sup> submitted by Member States contains main entry claims with corresponding conditions of use and literature for similar health claims. EFSA has screened all health claims contained in the original consolidated list of Article 13 health claims which was received by EFSA in 2008 using six criteria established by the NDA Panel to identify claims for which EFSA considered sufficient information had been provided for evaluation and those for which more information or clarification was needed before evaluation could be carried out<sup>5</sup>. The clarifications which were received by EFSA through the screening process have been included in the consolidated list. This additional information will serve as clarification to the originally provided information. The information provided in the consolidated list for the health claims which are the subject of this opinion is tabulated in Appendix C.

## ASSESSMENT

### 1. Characterisation of the food/constituent

The foods that are the subject of the health claims are “sodium”, “potassium”, “chloride as Na-, K-, Ca- Mg-salts”, “sodium, potassium and chloride”, “carbohydrate foods and beverages”, “carbohydrate electrolyte drinks”, “carbohydrate electrolyte drinks with elevated sodium”, “glucose and fructose”, “low energy carbohydrate electrolyte drinks”, “hypotonic”, “isotonic”, and “moderated sodium carbohydrate-electrolyte drinks”.

For ID 408, the Panel assumes, from the claimed effect and the references provided, that the food constituent that is the subject of the claim is potassium.

Within the European Union, there is no specific legal definition including compositional requirements for carbohydrate-electrolyte solutions. In its report on the composition and specifications of foods intended to meet the expenditure of intense muscular effort, especially for sportsmen, the Scientific Committee on Food (SCF) also covered carbohydrate-electrolyte solutions. The SCF stated that these solutions should supply carbohydrates as the major energy source, and should be effective in maintaining or restoring hydration status. It was recommended that carbohydrate-electrolyte solutions should provide between 80-350 kcal/L from carbohydrates, and that 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) to 50 mmol/L (1,150 mg/L) of sodium. The beverages may be formulated to cover a range of osmolalities between 200-330 mOsm/kg water, and beverages with an osmolality between 270-330 mOsm/kg water may be designated as isotonic. No specification as to the inclusion of potassium or chloride in carbohydrate-electrolyte solutions was given by the SCF (SCF, 2001).

The Panel considers that the food, carbohydrate-electrolyte solutions, which is the subject of the health claims, is sufficiently characterised in relation to the claimed effects.

<sup>4</sup> Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods. OJ L 404, 30.12.2006, p. 9–25.

<sup>5</sup> EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA), 2011. General guidance for stakeholders on the evaluation of Article 13.1, 13.5 and 14 health claims. EFSA Journal, 9(4):2135, 24 pp.

## **2. Relevance of the claimed effect to human health**

### **2.1. Reduction in rated perceived exertion/effort during exercise (ID 460, 466, 467, 468)**

The claimed effects are “attenuation of the perception of effort and reduction in pleasure”, “recovery; enhanced subsequent endurance capacity; delayed fatigue” and “endurance; increased endurance capacity; increased endurance performance; delayed fatigue”. The Panel assumes that the target population is active individuals performing exercise.

In the context of the proposed wordings and the references provided, the Panel assumes that the claimed effects refer to reduction in rated perceived exertion/effort during exercise.

The Panel considers that a reduction in rated perceived exertion/effort during exercise is a beneficial physiological effect.

### **2.2. Enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309)**

The claimed effects are “water and electrolyte balance”, “rehydration”, “nutrient absorption”, “hydration”, “better/faster fluid delivery with a combination of carbohydrates than with glucose alone”, “electrolyte balance/rehydration”, “potassium/water/electrolyte-balance;diuretic”, “ergogenic role in sports and exercise”, and “contains essential electrolytes for better recovery”. The Panel assumes that the target population is active individuals performing endurance exercise.

In the context of the proposed wordings and the references provided, the Panel assumes that the claimed effects refer to an enhanced absorption of water during exercise.

The Panel considers that an enhancement of water absorption during exercise may be a beneficial physiological effect.

### **2.3. Maintenance of endurance performance (ID 466, 469)**

The claimed effects are “endurance; increased endurance capacity; increased endurance performance; delayed fatigue” and “endurance in heat”. The Panel assumes that the target population is active individuals performing endurance exercise.

Endurance performance relates to the ability of completing certain tasks with higher intensity, faster, or with a higher power output when performing long-term exercise.

The Panel considers that maintenance of endurance performance is a beneficial physiological effect.

## **3. Scientific substantiation of the claimed effects**

### **3.1. Reduction in rated perceived exertion/effort during exercise (ID 460, 466, 467, 468)**

Several of the references provided for the scientific substantiation of this claim addressed the effects of carbohydrate-electrolyte solutions differing in composition from those defined by the SCF (2001) and/or addressed health outcomes (e.g. carbohydrate oxidation rates during exercise) unrelated to the claimed effect. In some studies, details regarding the composition of the carbohydrate-electrolyte solutions used were not reported, so that it was not possible to judge whether the test solution was comparable to the food which is the subject of this opinion. Some of the human intervention studies provided did not include a carbohydrate- and electrolyte-free water placebo as a comparator. The remaining references were narrative reviews which did not provide original data for the substantiation of the claim, or consensus opinions in which the claimed effect was not evaluated. The Panel

considers that no conclusions can be drawn from these references for the scientific substantiation of the claim.

The Panel concludes that a cause and effect relationship has not been established between the consumption of carbohydrate-electrolyte solutions and reduction in rated perceived exertion/effort during exercise.

### **3.2. Enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309)**

Water losses incurred under physical exercise have to be replaced with appropriate amounts of water (EFSA Panel on Dietetic Products Nutrition and Allergies (NDA), 2010). The goal of fluid intake during exercise is to prevent excessive dehydration (>2% body weight loss from water deficit) to avert compromised exercise performance.

The evidence provided by consensus opinions/reports from authoritative bodies shows that glucose-electrolyte solutions with an osmolality which is isotonic or slightly hypotonic with respect to plasma (i.e. 200-330 mOsm/kg water) maximise the rate of water uptake, and that the addition of carbohydrates to electrolyte solutions promotes water absorption in the small intestine. Sodium in a concentration between 20-50 mmol/L stimulates carbohydrate and water uptake in the small intestine, and helps to maintain extracellular fluid volume (SCF, 2001).

The Panel concludes that a cause and effect relationship has been established between the consumption of carbohydrate-electrolyte solutions and enhancement of water absorption during exercise.

### **3.3. Maintenance of endurance performance (ID 466, 469)**

Dehydration decreases physical exercise performance. Athletes who incur substantial fluid deficits during endurance exercise may experience a decrease in performance, especially in events of long duration that take place in the heat and/or at high altitudes.

The evidence provided by consensus opinions/reports from authoritative bodies such as the SCF or the American College of Sports Medicine shows that there is good consensus on the role of beverages containing carbohydrates and electrolytes (in particular sodium) in maintaining performance during prolonged endurance exercise, relative to plain water, and that the consumption of beverages containing electrolytes and carbohydrates during exercise can help maintain fluid and electrolyte balance, as well as endurance exercise performance (Rodriguez et al., 2009; Sawka et al., 2007; SCF, 2001).

The Panel concludes that a cause and effect relationship has been established between the consumption of carbohydrate-electrolyte solutions and maintenance of endurance performance.

## **4. Panel's comments on the proposed wording**

### **4.1. Enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309)**

The following wording reflects the scientific evidence: "Carbohydrate-electrolyte solutions enhance the absorption of water during physical exercise".



#### **4.2. Maintenance of endurance performance (ID 466, 469)**

The following wording reflects the scientific evidence: “Carbohydrate-electrolyte solutions can contribute to the maintenance of endurance performance during prolonged endurance exercise”.

### **5. Conditions and possible restrictions of use**

#### **5.1. Enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309)**

The Panel considers that 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. The target population is active individuals performing endurance exercise.

#### **5.2. Maintenance of endurance performance (ID 466, 469)**

The Panel considers that 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. The target population is active individuals performing endurance exercise.

### **CONCLUSIONS**

On the basis of the data presented, the Panel concludes that:

- The food, carbohydrate-electrolyte solutions, which is the subject of the health claims, is sufficiently characterised in relation to the claimed effects.

#### **Reduction in rated perceived exertion/effort during exercise (ID 460, 466, 467, 468)**

- The claimed effect is “attenuation of the perception of effort and reduction in pleasure”, “recovery; enhanced subsequent endurance capacity; delayed fatigue” and “endurance; increased endurance capacity; increased endurance performance; delayed fatigue”. The target population is assumed to be active individuals performing exercise. In the context of the proposed wordings and the references provided, it is assumed that the claimed effects refer to reduction in rated perceived exertion/effort during exercise. Reduction in rated perceived exertion/effort during exercise is a beneficial physiological effect.
- A cause and effect relationship has not been established between the consumption of carbohydrate-electrolyte solutions and reduction in rated perceived exertion/effort during exercise.

#### **Enhancement of water absorption during exercise (ID 314, 315, 316, 317, 319, 322, 325, 332, 408, 465, 473, 1168, 1574, 1593, 1618, 4302, 4309)**

- The claimed effects are “water and electrolyte balance”, “rehydration”, “nutrient absorption”, “hydration”, “better/faster fluid delivery with a combination of carbohydrates than with glucose alone”, “electrolyte balance/rehydration”, “potassium/water/electrolyte-balance; diuretic”, “ergogenic role in sports and exercise”, and “contains essential electrolytes for

better recovery”. The target population is assumed to be active individuals performing endurance exercise. Enhancement of water absorption during exercise may be a beneficial physiological effect.

- A cause and effect relationship has been established between the consumption of carbohydrate-electrolyte solutions and enhancement of water absorption during exercise.
- The following wording reflects the scientific evidence: “Carbohydrate-electrolyte solutions enhance the absorption of water during physical exercise”.
- 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. The target population is active individuals performing endurance exercise.

#### **Maintenance of endurance performance (ID 466, 469)**

- The claimed effects are “endurance; increased endurance capacity; increased endurance performance; delayed fatigue” and “endurance in heat”. The target population is assumed to be active individuals performing endurance exercise. Maintenance of endurance performance is a beneficial physiological effect.
- A cause and effect relationship has been established between the consumption of carbohydrate-electrolyte solutions and maintenance of endurance performance.
- The following wording reflects the scientific evidence: “Carbohydrate-electrolyte solutions can contribute to the maintenance of endurance performance during prolonged endurance exercise”.
- 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. The target population is active individuals performing endurance exercise.

#### **DOCUMENTATION PROVIDED TO EFSA**

Health claims pursuant to Article 13 of Regulation (EC) No 1924/2006 (No: EFSA-Q-2008-1101, EFSA-Q-2008-1102, EFSA-Q-2008-1103, EFSA-Q-2008-1104, EFSA-Q-2008-1106, EFSA-Q-2008-1109, EFSA-Q-2008-1112, EFSA-Q-2008-1119, EFSA-Q-2008-1195, EFSA-Q-2008-1247, EFSA-Q-1252, EFSA-Q-2008-1253, EFSA-Q-2008-1254, EFSA-Q-2008-1255, EFSA-Q-2008-1256, EFSA-Q-2008-1260, EFSA-Q-2008-1907, EFSA-Q-2008-2311, EFSA-Q-2008-2329, EFSA-Q-2008-2354, EFSA-Q-2010-00255, EFSA-Q-2010-00262). The scientific substantiation is based on the information provided by the Member States in the consolidated list of Article 13 health claims and references that EFSA has received from Member States or directly from stakeholders.

The full list of supporting references as provided to EFSA is available on: <http://www.efsa.europa.eu/panels/nda/claims/article13.htm>.

## REFERENCES

- EFSA Panel on Dietetic Products Nutrition and Allergies (NDA), 2010. Scientific Opinion on Dietary Reference Values for water. EFSA Journal, 8(3):1459, 48 pp.
- Rodriguez NR, Di Marco NM and Langley S, 2009. American College of Sports Medicine position stand. Nutrition and athletic performance. Medicine and Science in Sports and Exercise, 41, 709-731.
- Sawka MN, Burke LM, Eichner ER, Maughan RJ, Montain SJ and Stachenfeld NS, 2007. American College of Sports Medicine position stand. Exercise and fluid replacement. Medicine and Science in Sports and Exercise, 39, 377-390.
- SCF (Scientific Committee on Food), 2001. Report on composition and specification of food intended to meet the expenditure of intense muscular effort, especially for sportsmen. SCF/CS/NUT/SPORT/5.

## APPENDICES

### APPENDIX A

#### BACKGROUND AND TERMS OF REFERENCE AS PROVIDED BY THE EUROPEAN COMMISSION

The Regulation 1924/2006 on nutrition and health claims made on foods<sup>6</sup> (hereinafter "the Regulation") entered into force on 19<sup>th</sup> January 2007.

Article 13 of the Regulation foresees that the Commission shall adopt a Community list of permitted health claims other than those referring to the reduction of disease risk and to children's development and health. This Community list shall be adopted through the Regulatory Committee procedure and following consultation of the European Food Safety Authority (EFSA).

Health claims are defined as "any claim that states, suggests or implies that a relationship exists between a food category, a food or one of its constituents and health".

In accordance with Article 13 (1) health claims other than those referring to the reduction of disease risk and to children's development and health are health claims describing or referring to:

- a) the role of a nutrient or other substance in growth, development and the functions of the body; or
- b) psychological and behavioural functions; or
- c) without prejudice to Directive 96/8/EC, slimming or weight-control or a reduction in the sense of hunger or an increase in the sense of satiety or to the reduction of the available energy from the diet.

To be included in the Community list of permitted health claims, the claims shall be:

- (i) based on generally accepted scientific evidence; and
- (ii) well understood by the average consumer.

Member States provided the Commission with lists of claims as referred to in Article 13 (1) by 31 January 2008 accompanied by the conditions applying to them and by references to the relevant scientific justification. These lists have been consolidated into the list which forms the basis for the EFSA consultation in accordance with Article 13 (3).

#### ISSUES THAT NEED TO BE CONSIDERED

##### IMPORTANCE AND PERTINENCE OF THE FOOD<sup>7</sup>

Foods are commonly involved in many different functions<sup>8</sup> of the body, and for one single food many health claims may therefore be scientifically true. Therefore, the relative importance of food e.g. nutrients in relation to other nutrients for the expressed beneficial effect should be considered: for functions affected by a large number of dietary factors it should be considered whether a reference to a single food is scientifically pertinent.

It should also be considered if the information on the characteristics of the food contains aspects pertinent to the beneficial effect.

---

<sup>6</sup> OJ L12, 18/01/2007

<sup>7</sup> The term 'food' when used in this Terms of Reference refers to a food constituent, the food or the food category.

<sup>8</sup> The term 'function' when used in this Terms of Reference refers to health claims in Article 13(1)(a), (b) and (c).

## **SUBSTANTIATION OF CLAIMS BY GENERALLY ACCEPTABLE SCIENTIFIC EVIDENCE**

Scientific substantiation is the main aspect to be taken into account to authorise health claims. Claims should be scientifically substantiated by taking into account the totality of the available scientific data, and by weighing the evidence, and shall demonstrate the extent to which:

- (a) the claimed effect of the food is beneficial for human health,
- (b) a cause and effect relationship is established between consumption of the food and the claimed effect in humans (such as: the strength, consistency, specificity, dose-response, and biological plausibility of the relationship),
- (c) the quantity of the food and pattern of consumption required to obtain the claimed effect could reasonably be achieved as part of a balanced diet,
- (d) the specific study group(s) in which the evidence was obtained is representative of the target population for which the claim is intended.

EFSA has mentioned in its scientific and technical guidance for the preparation and presentation of the application for authorisation of health claims consistent criteria for the potential sources of scientific data. Such sources may not be available for all health claims. Nevertheless it will be relevant and important that EFSA comments on the availability and quality of such data in order to allow the regulator to judge and make a risk management decision about the acceptability of health claims included in the submitted list.

The scientific evidence about the role of a food on a nutritional or physiological function is not enough to justify the claim. The beneficial effect of the dietary intake has also to be demonstrated. Moreover, the beneficial effect should be significant i.e. satisfactorily demonstrate to beneficially affect identified functions in the body in a way which is relevant to health. Although an appreciation of the beneficial effect in relation to the nutritional status of the European population may be of interest, the presence or absence of the actual need for a nutrient or other substance with nutritional or physiological effect for that population should not, however, condition such considerations.

Different types of effects can be claimed. Claims referring to the maintenance of a function may be distinct from claims referring to the improvement of a function. EFSA may wish to comment whether such different claims comply with the criteria laid down in the Regulation.

## **WORDING OF HEALTH CLAIMS**

Scientific substantiation of health claims is the main aspect on which EFSA's opinion is requested. However, the wording of health claims should also be commented by EFSA in its opinion.

There is potentially a plethora of expressions that may be used to convey the relationship between the food and the function. This may be due to commercial practices, consumer perception and linguistic or cultural differences across the EU. Nevertheless, the wording used to make health claims should be truthful, clear, reliable and useful to the consumer in choosing a healthy diet.

In addition to fulfilling the general principles and conditions of the Regulation laid down in Article 3 and 5, Article 13(1)(a) stipulates that health claims shall describe or refer to "the role of a nutrient or other substance in growth, development and the functions of the body". Therefore, the requirement to describe or refer to the 'role' of a nutrient or substance in growth, development and the functions of the body should be carefully considered.

The specificity of the wording is very important. Health claims such as "Substance X supports the function of the joints" may not sufficiently do so, whereas a claim such as "Substance X helps

maintain the flexibility of the joints" would. In the first example of a claim it is unclear which of the various functions of the joints is described or referred to contrary to the latter example which specifies this by using the word "flexibility".

The clarity of the wording is very important. The guiding principle should be that the description or reference to the role of the nutrient or other substance shall be clear and unambiguous and therefore be specified to the extent possible i.e. descriptive words/ terms which can have multiple meanings should be avoided. To this end, wordings like "strengthens your natural defences" or "contain antioxidants" should be considered as well as "may" or "might" as opposed to words like "contributes", "aids" or "helps".

In addition, for functions affected by a large number of dietary factors it should be considered whether wordings such as "indispensable", "necessary", "essential" and "important" reflects the strength of the scientific evidence.

Similar alternative wordings as mentioned above are used for claims relating to different relationships between the various foods and health. It is not the intention of the regulator to adopt a detailed and rigid list of claims where all possible wordings for the different claims are approved. Therefore, it is not required that EFSA comments on each individual wording for each claim unless the wording is strictly pertinent to a specific claim. It would be appreciated though that EFSA may consider and comment generally on such elements relating to wording to ensure the compliance with the criteria laid down in the Regulation.

In doing so the explanation provided for in recital 16 of the Regulation on the notion of the average consumer should be recalled. In addition, such assessment should take into account the particular perspective and/or knowledge in the target group of the claim, if such is indicated or implied.

## **TERMS OF REFERENCE**

### **HEALTH CLAIMS OTHER THAN THOSE REFERRING TO THE REDUCTION OF DISEASE RISK AND TO CHILDREN'S DEVELOPMENT AND HEALTH**

EFSA should in particular consider, and provide advice on the following aspects:

- Whether adequate information is provided on the characteristics of the food pertinent to the beneficial effect.
- Whether the beneficial effect of the food on the function is substantiated by generally accepted scientific evidence by taking into account the totality of the available scientific data, and by weighing the evidence. In this context EFSA is invited to comment on the nature and quality of the totality of the evidence provided according to consistent criteria.
- The specific importance of the food for the claimed effect. For functions affected by a large number of dietary factors whether a reference to a single food is scientifically pertinent.

In addition, EFSA should consider the claimed effect on the function, and provide advice on the extent to which:

- the claimed effect of the food in the identified function is beneficial.
- a cause and effect relationship has been established between consumption of the food and the claimed effect in humans and whether the magnitude of the effect is related to the quantity consumed.
- where appropriate, the effect on the function is significant in relation to the quantity of the food proposed to be consumed and if this quantity could reasonably be consumed as part of a balanced diet.
- the specific study group(s) in which the evidence was obtained is representative of the target population for which the claim is intended.

- the wordings used to express the claimed effect reflect the scientific evidence and complies with the criteria laid down in the Regulation.

When considering these elements EFSA should also provide advice, when appropriate:

- on the appropriate application of Article 10 (2) (c) and (d) in the Regulation, which provides for additional labelling requirements addressed to persons who should avoid using the food; and/or warnings for products that are likely to present a health risk if consumed to excess.

## **APPENDIX B**

### **EFSA DISCLAIMER**

The present opinion does not constitute, and cannot be construed as, an authorisation to the marketing of the food/food constituent, a positive assessment of its safety, nor a decision on whether the food/food constituent is, or is not, classified as foodstuffs. It should be noted that such an assessment is not foreseen in the framework of Regulation (EC) No 1924/2006.

It should also be highlighted that the scope, the proposed wordings of the claims and the conditions of use as proposed in the Consolidated List may be subject to changes, pending the outcome of the authorisation procedure foreseen in Article 13(3) of Regulation (EC) No 1924/2006.



APPENDIX C

Table 1. Main entry health claims related to carbohydrate-electrolyte solutions, including conditions of use from similar claims, as proposed in the Consolidated List.

ID	Food or Food constituent	Health Relationship	Proposed wording
314	Sodium	Water and electrolyte balance	Sodium is necessary for water and electrolyte balance throughout the body
	<b>Conditions of use</b> - ab 200 mg/l Natrium und 200 mg/l Chlorid (siehe EG- Mineralwasser-Richtlinie) - MUST AT LEAST BE A SOURCE OF MINERAL/S AS PER ANNEX TO REGULATION 1924/2006. Applicable to both children and adults		
ID	Food or Food constituent	Health Relationship	Proposed wording
315	Sodium	Rehydration	For the replenishment of lost salts due to sweating and dehydration
	<b>Conditions of use</b> - MUST AT LEAST BE A SOURCE OF MINERAL/S AS PER ANNEX TO REGULATION 1924/2006. - 20 - 50 mmol/L Na <sup>+</sup> and 200-330 mOsm/kg		
ID	Food or Food constituent	Health Relationship	Proposed wording
316	Sodium	Nutrient absorption	Sodium aids the absorption of nutrients during digestion (such as the active transport of nutrients and water from the gut).
	<b>Conditions of use</b> - MUST AT LEAST BE A SOURCE OF MINERAL/S AS PER ANNEX TO REGULATION 1924/2006.		
	<b>No clarification provided by Member States</b>		
ID	Food or Food constituent	Health Relationship	Proposed wording
317	Sodium	Hydration	Replaces electrolytes lost through sweat. Maintains hydration. Maintains fluid and electrolyte balance
	<b>Conditions of use</b> - Claim to be only used for Foods for sport people under the Dir. 89/398/EEC. 15 mmol/l (345 mg/l) = Sodium (Na <sup>+</sup> ) = 50 mmol/l (1150 mg/l). - ab 200 mg/l Natrium und 200 mg/l Chlorid (siehe EG-Mineralwasser-Richtlinie)		
ID	Food or Food constituent	Health Relationship	Proposed wording
319	Potassium	Water and electrolyte	-Potassium is necessary for water and electrolyte balance

		balance	throughout the body
<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- Erwachsene 30 Milliliter (ml) 4 bis 6 Wochen.</li> <li>- Es werden nur die Nährstoffe beworben, die lt. Nährwertkennzeichnungs-verordnung (Anlage 1) mindestens 15 Prozent der empfohlenen Tagesdosis in 100 g oder 100 ml enthalten.</li> <li>- keine Einschränkung. 300 Milligramm (mg). 45 mg Mg / 120 mg Ca/ 300 mg K Nahrungsergänzungsmittel, täglicher Verzehr. 2000 Milligramm (mg).</li> <li>- MUST AT LEAST BE A SOURCE OF MINERAL/S AS PER ANNEX TO REGULATION 1924/2006. Applicable to both children and adults.</li> <li>- The product must contain at least 15% of the RDA.</li> <li>- Cereal-based beverages with potassium content of 50-200mg/100g, 120-500mg/serving 250-1000mg/serving.</li> <li>- Food supplement with 600mg of potassium in the daily dose.</li> <li>- 800 mg pro Tag.</li> <li>- Erwachsene 100-200 Milligramm (mg). 1000 Milligramm (mg).</li> <li>- MINDESTENS 15 % RDA JE 100 G ODER 100 ML ODER JE PORTION GEMÄß 90/496/EWG.</li> <li>- Es werden nur die Nährstoffe beworben, die lt. Nährwertkennzeichnungs-verordnung (Anlage 1) mindestens 15 Prozent der empfohlenen Tagesdosis in 100 g oder 100 ml enthalten.</li> <li>- Erwachsene 30 Milliliter (ml) 4-6 Wochen.</li> </ul>			
ID	Food or Food constituent	Health Relationship	Proposed wording
322	Potassium	Rehydration	Rehydrates during and post exercise bouts
	<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- To be consumed in conjunction with carbohydrates. Must meet minimum requirements for use of the claim "source of [name of vitamin/s] and/or [name of mineral/s], as per Annex to Regulation 1924/2006. Added to conditions of use.</li> </ul>		
ID	Food or Food constituent	Health Relationship	Proposed wording
325	Chloride as Na-, K-, Ca-, Mg-salts	Water and electrolyte balance	Chloride is necessary for water and electrolyte balance throughout the body
	<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- MUST AT LEAST BE A SOURCE OF MINERAL/S AS PER ANNEX TO REGULATION 1924/2006. Agency guidance for supplements is that Products containing &gt;1500mg Calcium should carry the label statement '[This amount of Calcium] may cause mild stomach upset in sensitive individuals.' Products containing &gt;400mg Magnesium should carry the label statement '[This amount of Magnesium] may cause mild stomach upset in sensitive individuals.' Applicable to both children and adults.</li> <li>- MINDESTENS 15 % RDA JE 100 G ODER 100 ML ODER JE PORTION GEMÄß 90/496/EWG</li> </ul>		

ID	Food or Food constituent	Health Relationship	Proposed wording
332	Sodium, potassium and Chloride	Electrolyte balance/rehydration	For a quick replenishment of lost salts due to sweating and dehydration
	<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- Must meet minimum requirements for use of the claim "source of [name of vitamin/s] and/or [name of mineral/s]" as per Annex to Regulation 1924/2006.</li> </ul>		
ID	Food or Food constituent	Health Relationship	Proposed wording
408	Sellerieknolle mit Kraut (Apium graveolens)	Kalium - Wasser- und Elektrolytbalance; harntreibend	[In german : ] wichtig für die Regulation des Flüssigkeits- und Elektrolythaushalt des Körpers
	<p><u>Clarification provided</u></p> <p>celeriac tuber with cabbage (Apium graveolens)</p>	<p><u>Clarification provided</u></p> <p>potassium-/water-/electrolyte-balance; diuretic</p>	<p><u>Clarification provided</u></p> <p>supports the water and electrolyte balance</p>
<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- Erwachsene Milliliter (ml) 30-40 4 bis 6 Wochen</li> <li>- Erwachsene 100 Milliliter (ml) 4 bis 6 Wochen</li> </ul>			
ID	Food or Food constituent	Health Relationship	Proposed wording
460	Carbohydrate foods and beverages	Attenuation of the perception of effort and reduction in pleasure	Consumption before and during exercise enhances feelings of energetic arousal which may impact on task persistence and performance
	<p><u>Clarification provided</u></p> <p>Carbohydrate electrolyte drinks as defined in SCF/CS/NUT/SPORT/5 Final</p> <p>Claim to be only used for Foods for sports people under the Dir. 89/398/EEC</p> <p>Composition &amp; specification of carbohydrate electrolyte solutions must meet guidance as outlined in Scientific Committee for Food report on food intended to meet expenditure of intense muscular effort:</p> <p>Energy levels ranging between 340-1488kJ/L (80-350kcal/L)</p> <p>At least 75% of total energy should be derived from metabolisable carbohydrate characterized by a high glycaemic index (examples include glucose, glucose polymers, sucrose)</p> <p>Must also contain 20-50 mmol/l</p>		<p>Reduces the perception of athletic fatigue</p> <p>Helps maintain alertness / mood</p> <p>Helps reduce the perception of effort, making you feel better during exercise</p> <p>A high carbohydrate diet helps to reduce feelings of fatigue / perceived effort during prolonged exercise</p>

	(460-1150 mg/l) Sodium (as Na+).  Indicative consumption pattern is 200-500ml before exercise, 125-150ml every 15-20 minutes during exercise and 500ml after exercise.		
<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- Claim to be only used for Foods for sportpeople under the Dir. 89/398/EEC.</li> <li>- Metabolisable carbohydrates: = 65% of total energy (for foods).</li> <li>- Metabolisable carbohydrates: = 75% of total energy (for beverages).</li> </ul>			
ID	Food or Food constituent	Health Relationship	Proposed wording
465	<p>Carbohydrate electrolyte drinks</p> <p><u>Clarification provided</u></p> <p>Carbohydrate electrolyte drinks as defined in SCF/CS/NUT/SPORT/5 Final</p> <p>Claim to be only used for Foods for sports people under the Dir. 89/398/EEC</p> <p>Composition &amp; specification of carbohydrate electrolyte solutions must meet guidance as outlined in Scientific Committee for Food report on food intended to meet expenditure of intense muscular effort:</p> <p>Energy levels ranging between 340-1488kJ/L (80-350kcal/L)</p> <p>At least 75% of total energy should be derived from metabolisable carbohydrate characterized by a high glycaemic index (examples include glucose, glucose polymers, sucrose)</p> <p>Must also contain 20-50 mmol/l (460-1150 mg/l) Sodium (as Na+).</p> <p>Indicative consumption pattern is 200-500ml before exercise, 125-150ml every 15-20 minutes during exercise and 500ml after exercise.</p>	Hydration	<p>Maintains hydration more effectively than plain water.</p> <p>Optimised fluid delivery whilst providing carbohydrate.</p> <p>Maintain thirst (drive to drink) / increase rate of fluid uptake.</p> <p>Restores plasma volume more effectively than plain water. Stimulates thirst and enhances fluid retention.</p> <p>Maintains fluid and electrolyte balance.</p> <p>More likely to prevent voluntary dehydration than plain water.</p> <p>Encourages voluntary fluid consumption which helps maintain hydration, matching fluid losses. Effective rehydration / maintain hydration.</p> <p>Replaces fluid and salts lost in sweat fast.</p> <p>Dehydration should not exceed 2% of body mass.</p>
<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- Claim to be only used for Foods for sportpeople under the Dir. 89/398/EEC. Metabolisable</li> </ul>			

	<p>carbohydrates: = 75% of total energy. 340kJ/l (80kcal/l) = Energy = 1488kJ/l (350kcal/l).          20 mmol/l (460 mg/l) = Sodium (Na+) = 50 mmol/l (1150 mg/l).</p>		
ID	Food or Food constituent	Health Relationship	Proposed wording
466	<p>Carbohydrate electrolyte drinks</p> <p><u>Clarification provided</u></p> <p>Carbohydrate electrolyte drinks as defined in SCF/CS/NUT/SPORT/5 Final</p> <p>Claim to be only used for Foods for sports people under the Dir. 89/398/EEC</p> <p>Composition &amp; specification of carbohydrate electrolyte solutions must meet guidance as outlined in Scientific Committee for Food report on food intended to meet expenditure of intense muscular effort:</p> <p>Energy levels ranging between 340-1488kJ/L (80-350kcal/L)</p> <p>At least 75% of total energy should be derived from metabolisable carbohydrate characterized by a high glycaemic index (examples include glucose, glucose polymers, sucrose)</p> <p>Must also contain 20-50 mmol/l (460-1150 mg/l) Sodium (as Na+).</p> <p>Indicative consumption pattern is 200-500ml before exercise, 125-150ml every 15-20 minutes during exercise and 500ml after exercise.</p>	<p>Endurance</p> <p>Increased endurance capacity;</p> <p>Increased endurance performance;</p> <p>Delayed Fatigue</p>	<p>Before and during exercise increase endurance capacity / time to exhaustion / delays fatigue.</p> <p>Provide carbohydrate to muscles to supplement glycogen stores.</p> <p>Ingestion before and during exercise maintains blood glucose.</p> <p>Maintain skills during prolonged exercise</p> <p>Can help improve sprint / jump performance</p> <p>Gives athletes a performance edge</p> <p>During exercise maintains endurance performance / perform for longer.</p> <p>Provides carbohydrate, fluid and electrolytes to maintain hydration and enhances performance during prolonged intermittent exercise.</p> <p>Helps improve performance / a sprint finish at the towards the end of endurance events.</p> <p>Can improve performance even in events lasting less than 1 hour.</p> <p>Endurance performance becomes impaired when dehydration exceeds 2% of body mass</p>
	<p><b>Conditions of use</b></p> <p>- Claim to be only used for Foods for sport people under the Dir. 89/398/EEC. Metabolisable carbohydrates: = 75% of total energy. 340kJ/l (80kcal/l) = Energy = 1488kJ/l (350kcal/l).          20 mmol/l (460 mg/l) = Sodium (Na+) = 50 mmol/l (1150 mg/l).</p>		
ID	Food or Food constituent	Health Relationship	Proposed wording
467	<p>Carbohydrate electrolyte drinks</p> <p><u>Clarification provided</u></p> <p>Carbohydrate electrolyte drinks as defined in</p>	<p>Recovery</p> <p>Enhanced subsequent endurance capacity</p> <p>Delayed fatigue</p>	<p>help delay the onset of fatigue during a subsequent bout of exercise</p> <p>helps you to perform for</p>

	<p>SCF/CS/NUT/SPORT/5 Final</p> <p>Claim to be only used for Foods for sports people under the Dir. 89/398/EEC.</p> <p>Composition &amp; specification of carbohydrate electrolyte solutions must meet guidance as outlined in Scientific Committee for Food report on food intended to meet expenditure of intense muscular effort:</p> <p>Energy levels ranging between 340-1488kJ/L (80-350kcal/L)</p> <p>At least 75% of total energy should be derived from metabolisable carbohydrate characterized by a high glycaemic index (examples include glucose, glucose polymers, sucrose)</p> <p>Must also contain 20-50 mmol/l (460-1150 mg/l) Sodium (as Na+).</p> <p>Indicative consumption pattern is a minimum of 500ml immediately after exercise.</p>		<p>longer</p> <p>improves subsequent endurance capacity</p> <p>can help the body recover more effectively from exercise</p> <p>ensures adequate hydration and restores endurance capacity</p> <p>liquid carbohydrate is as effective, if not more effective than a solid form for glycogen resynthesis</p>
<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- Claim to be only used for Foods for sport people under the Dir. 89/398/EEC. Metabolisable carbohydrates: = 75% of total energy. 340kJ/l (80kcal/l) = Energy = 1488kJ/l (350kcal/l). 20 mmol/l (460 mg/l) = Sodium (Na+) = 50 mmol/l (1150 mg/l).</li> <li>- Does claim rely on the presence/absence in a reduced quantity/absence of a nutrient or other substance: Presence of a nutrient or other substance. Number of nutrients/other substances that are essential to claimed effect: 5. Names of nutrient/other substances and Quantity in Average daily serving: 31 grams carbohydrate, 250 milligrams sodium, 50 milligrams calcium, 40 milligrams potassium, 24 milligrams magnesium. Daily amount to be consumed to produce claimed effect: 2.25 litres(s). Are there factors that could interfere with bioavailability: Don't Know. Length of time after consumption for claimed effect to become apparent: over a 77 minute period at a 15 minute interval. Is there a limit to the amount of food which should be consumed in order to avoid adverse health effects: Don't Know. Where applicable outline nutritional composition (g per 100g) of food: Total Fat: .00. Saturated Fat: .00. Trans Fat: .00. Sugar: 6.20. Salt: .00. Sodium: .05. Other conditions for use: Note, the claim is based on a human study conducted by Dr Liam Hennessy et al, Fitness and Sports medicine departments, Irish Rugby Football Union, Landsdowne Road, Dublin</li> </ul>			
ID	Food or Food constituent	Health Relationship	Proposed wording
468	<p>Carbohydrate electrolyte drinks</p> <p><u>Clarification provided</u></p> <p>Carbohydrate electrolyte drinks</p>	<p>Attenuation of the perception of effort and reduction in pleasure</p>	<p>Consumption before and during exercise enhances feelings of energetic arousal which may impact on task</p>

	<p>as defined in SCF/CS/NUT/SPORT/5 Final</p> <p>Claim to be only used for Foods for sports people under the Dir. 89/398/EEC.</p> <p>Composition &amp; specification of carbohydrate electrolyte solutions must meet guidance as outlined in Scientific Committee for Food report on food intended to meet expenditure of intense muscular effort:</p> <p>Energy levels ranging between 340-1488kJ/L (200-350kcal/L)</p> <p>At least 75% of total energy should be derived from metabolisable carbohydrate characterized by a high glycaemic index (examples include glucose, glucose polymers, sucrose)</p> <p>Must also contain 20-50 mmol/l (460-1150 mg/l) Sodium (as Na+).</p> <p>Suggested use: 30-60g carbohydrate per hour of exercise</p>		<p>persistence and performance</p> <p>Helps reduce the perception of effort, making you feel better during exercise</p> <p>Reduces the perception of athletic fatigue. Helps maintain alertness during later stages of exercise</p> <p>Helps improve readiness/ motivation</p> <p>Helps enhance feelings of pleasure</p>
<p><b>Conditions of use</b></p> <p>- Claim to be only used for Foods for sport people under the Dir. 89/398/EEC. Metabolisable carbohydrates: = 75% of total energy. 340kJ/l (80kcal/l) = Energy = 1488kJ/l (350kcal/l). 20 mmol/l (460 mg/l) = Sodium (Na+) = 50 mmol/l (1150 mg/l).</p>			
ID	Food or Food constituent	Health Relationship	Proposed wording
469	<p>Carbohydrate electrolyte drinks with elevated sodium</p> <p><u>Clarification provided</u></p> <p>Carbohydrate electrolyte drinks as defined in SCF/CS/NUT/SPORT/5 Final with increased sodium</p> <p>Claim to be only used for Foods for sports people under the Dir. 89/398/EEC.</p> <p>Must contain at least 30 mmol/l (690 mg/l) sodium (as Na+) and energy levels ranging between 510 - 850kJ/L (120-200kcal/L).</p>	Endurance in heat	<p>promote fast effective hydration in the heat</p> <p>maintain peak performance (endurance capacity / time to exhaustion) in the heat</p> <p>optimize hydration and muscle glycogen stores during exercise in the heat</p> <p>maintain core body temperature thus reduce the risk of heatstroke</p> <p>replaces sodium when losses in sweat are high</p> <p>maintain core body temperature thus reduce the</p>

	<p>At least 75% of total energy should be derived from metabolisable carbohydrate characterized by a high glycaemic index (examples include glucose, glucose polymers, sucrose)</p> <p>Indicative consumption pattern is 200-500ml before exercise, 125-150ml every 15-20 minutes during exercise and 500ml after exercise.</p>		risk of heatstroke
<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- Claim to be only used for Foods for sport people under the Dir. 89/398/EEC. Metabolisable carbohydrates: = 75% of total energy. 510kJ/l (120kcal/l) = Energy = 850kJ/l (200kcal/l). Sodium (Na+) = 32.5 mmol/l (750 mg/l)</li> </ul>			
ID	Food or Food constituent	Health Relationship	Proposed wording
473	<p>Glucose and fructose</p> <p><u>Clarification provided</u></p> <p>Same as above</p>	<p>Better/Faster fluid delivery with a combination of carbohydrates than with glucose alone</p> <p><u>Clarification provided</u></p> <p>Ingested fluid availability during endurance exercise is increased with beverages containing glucose and fructose sources compared to glucose alone</p>	<p>Better/Faster fluid delivery with a combination of carbohydrates than with glucose alone.</p> <p><u>Clarification provided</u></p> <p>Same as above</p>
<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- Claim to be only used for Foods for sportpeople under the Dir. 89/398/EEC. Carbohydrates: = 65% of total energy (for foods). Carbohydrates: = 75% of total energy (for beverages). Carbohydrate ratio of glucose to fructose of 2:1.</li> </ul>			
ID	Food or Food constituent	Health Relationship	Proposed wording
1168	<p>Low energy carbohydrate electrolyte drinks</p>	<p>Hydration</p> <p><u>Clarification provided</u></p> <p>Provide effective rehydration.</p> <p>Maintain hydration / attenuate the normal decline in hydration before, during/after exercise.</p> <p>Replaces fluid and salts lost in sweat fast.</p> <p>Maintains hydration more effectively than plain water.</p> <p>Restores plasma volume more effectively than plain</p>	<p>Replaces fluid and salts lost in sweat fast.</p> <p>Maintains hydration more effectively than plain water.</p> <p>Maintain thirst (drive to drink) / increase rate of fluid uptake.</p> <p>Restores plasma volume more effectively than plain water.</p> <p>Encourages voluntary fluid consumption which helps maintain hydration, matching fluid losses.</p>



		<p>water.</p> <p>Maintains fluid and electrolyte balance.</p> <p>Maintains thirst / the drive to drink) and increases the voluntary rate of fluid uptake compared to plain water</p> <p>Stimulates thirst and enhances fluid retention.</p> <p>Encourages voluntary fluid consumption which helps maintain hydration by matching fluid losses.</p>	<p>Maintain hydration.</p> <p>Better hydration, better exercise</p> <p>Stimulates thirst and enhances fluid retention.</p> <p>Maintains fluid and electrolyte balance.</p> <p>More likely to prevent voluntary dehydration than plain water.</p>
<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- Claim to be only used for Foods for sportpeople under the Dir. 89/398/EEC. Metabolisable carbohydrates: = 75% of total energy. 250kJ/l (60kcal/l) = Energy = 835kJ/l (200kcal/l). 15 mmol/l (345 mg/l) = Sodium (Na+) = 50 mmol/l (1150 mg/l).</li> <li>- 1 g/L</li> </ul>			
ID	Food or Food constituent	Health Relationship	Proposed wording
1574	<p>Hypotonic</p> <p><u>Clarification provided</u></p> <p>Hypotonic sports beverages with an osmolality from 50 - 270 mOsm/kg water</p> <p>Claim to be only used for Foods for sportpeople under the Dir. 89/398/EEC</p> <p>Murray and Stofan (2001) suggest beverages should have an osmolality not less than 50 mOsm/kg water and not greater than 270 mOsm/kg water to be designated 'hypotonic' ('Hypotonic' relative to the osmolality of bodily fluids, defined in SCF review as 297 mOsm/kg water).</p> <p>Indicative consumption pattern is 200-500ml before exercise, 125-150ml every 15-20 minutes during exercise and 500ml after exercise.</p>	<p>Ergogenic role in sports and exercise</p> <p><u>Clarification provided</u></p> <p>Same as above.</p>	<p>Hypotonic</p> <p>Hypotonic drinks rapidly empty from the gut and promote water absorption</p> <p>Hypotonic drinks help maintain hydration</p> <p>Hypotonic drinks promote fast effective hydration in the heat</p> <p><u>Clarification provided</u></p> <p>Same as above.</p>
<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- 50 - 270 mOsm/kg</li> <li>- Does claim rely on the presence/absence in a reduced quantity/absence of a nutrient or other substance: Presence of a nutrient or other substance. Number of nutrients/other substances that are essential to claimed effect: 3. Names of nutrient/other substances and</li> </ul>			

	<p>Quantity in Average daily serving: 5 ml carbohydrate, 250 mg sodium, 40 mg potassium. Daily amount to be consumed to produce claimed effect: 500 millilitre(s). Are there factors that could interfere with bioavailability: Don't Know. Length of time after consumption for claimed effect to become apparent: It is apparent immediately. Is there a limit to the amount of food which should be consumed in order to avoid adverse health effects: Don't Know. Where applicable outline nutritional composition (g per 100g) of food: Total Fat: .00. Saturated Fat: .00. Trans Fat: .00. Sugar: 1.00. Salt: .00. Sodium: .05</p>		
ID	Food or Food constituent	Health Relationship	Proposed wording
1593	<p>Isotonic</p> <p><u>Clarification provided</u></p> <p>Isotonic sports drinks with an osmolality from 270 - 330 mOsm/kg water</p> <p>Claim to be only used for foods for sportpeople under the Dir. 89/398/EEC</p> <p>Beverages must have an osmolality not less than 270 mOsm/kg water and not greater than 330 mOsm/kg water to be designated 'isotonic' ('isotonic' refers to osmolality of bodily fluids, defined in SCF review.</p> <p>Indicative consumption pattern is 200-500ml before exercise, 125-150ml every 15-20 minutes during exercise and 500ml after exercise.</p>	<p>Ergogenic role in sports and exercise</p>	<p>Isotonic</p> <p>In balance with the body's own fluid</p> <p>Isotonic drinks rapidly empty from the gut and promote water absorption</p> <p>Isotonic drinks help maintain hydration</p>
	<p><b>Conditions of use</b></p> <ul style="list-style-type: none"> <li>- 270-330 mOsm/kg</li> <li>- Does claim rely on the presence/absence in a reduced quantity/absence of a nutrient or other substance: Presence of a nutrient or other substance. Number of nutrients/other substances that are essential to claimed effect: 5. Names of nutrient/other substances and Quantity in Average daily serving: 31 grams carbohydrate, 250 milligrams sodium, 50 milligrams calcium, 40 milligrams potassium, 24 milligrams magnesium. Daily amount to be consumed to produce claimed effect: 500 millilitre(s). Are there factors that could interfere with bioavailability: Don't Know. Length of time after consumption for claimed effect to become apparent: It is apparent immediately. Is there a limit to the amount of food which should be consumed in order to avoid adverse health effects: Don't Know. Where applicable outline nutritional composition (g per 100g) of food: Total Fat: .00. Saturated Fat: .00. Trans Fat: .00. Sugar: 6.20. Salt: .00. Sodium: .05.</li> </ul>		
ID	Food or Food constituent	Health Relationship	Proposed wording
1618	<p>Moderated sodium carbohydrate-electrolyte drinks</p>	<p>Hydration</p>	<p>Maintain hydration.</p> <p>Replaces fluid and salts lost in sweat.</p> <p>Maintains hydration more effectively than plain water.</p> <p>Maintains fluid and</p>

			<p>electrolyte balance</p> <p>encourages voluntary fluid consumption which helps maintain hydration.</p>
<p><b>Conditions of use</b></p> <p>- Claim to be only used for Foods for sportpeople under the Dir. 89/398/EEC. Metabolisable carbohydrates: = 75% of total energy. 250kJ/l (60kcal/l) = Energy = 1488kJ/l (350kcal/l). 15 mmol/l (345 mg/l) = Sodium (Na+) = 20 mmol/l (460 mg/l).</p>			
ID	Food or Food constituent	Health Relationship	Proposed wording
4302	<p>Name of Food product: Club Energise Sport / Energise Sport (orange, blackcurrant, lemon)</p> <p>Description of food in terms of food legislation categories: Food intended to meet the expenditure of intense muscular effort, especially for sports people</p>	<p>Health benefits of food: Contains essential electrolytes for better recovery</p> <p>Do benefits relate to a disease risk factor: No</p> <p>Target group: All adults aged 18 years and over</p>	<p>Exact wording of claim as it appears on product: Contains essential electrolytes for better recovery</p> <p>Is claim a picture: No</p>
	<p><b>Conditions of use</b></p> <p>- Does claim rely on the presence/presence in a reduced quantity/absence of a nutrient or other substance: Presence of a nutrient or other substance. Number of nutrients/other substances that are essential to claimed effect: 5. Names of nutrient/other substances and Quantity in Average daily serving: 31g Carbohydrate, 250mg Sodium, 50mg Calcium, 40mg Potassium, 25mg Magnesium. Daily amount to be consumed to produce claimed effect: 2.25 litres(s). Are there factors that could interfere with bioavailability: Don't Know. Length of time after consumption for claimed effect to become apparent: over a 77 minute period at a 15 minute interval. Is there a limit to the amount of food which should be consumed in order to avoid adverse health effects: Don't Know. Where applicable outline nutritional composition (g per 100g) of food: Total Fat: .00. Saturated Fat: .00 Trans Fat: .00. Sugar: 6.20. Salt: .00. Sodium: .05</p>		
ID	Food or Food constituent	Health Relationship	Proposed wording
4309	<p>Name of Food product: Club Energise Sport / Energise Sport (orange, blackcurrant, lemon)</p>	<p>Health benefits of food: Contains essential electrolytes for better recovery</p> <p>Do benefits relate to a disease risk factor: No</p> <p>Target group: All adults aged 18 years and over</p>	<p>Exact wording of claim as it appears on product: Contains essential electrolytes for better recovery</p> <p>Is claim a picture: No</p>
	<p><b>Conditions of use</b></p> <p>- Does claim rely on the presence/presence in a reduced quantity/absence of a nutrient or other substance: Presence of a nutrient or other substance. Number of nutrients/other substances that are essential to claimed effect: 5. Names of nutrient/other substances and Quantity in Average daily serving: 31g Carbohydrate, 250mg Sodium, 50mg Calcium, 40mg Potassium, 25mg Magnesium. Daily amount to be consumed to produce claimed effect: 2.25 litres(s). Are there factors that could interfere with bioavailability: Don't Know. Length of time after consumption for claimed effect to become apparent: over a 77 minute period at a 15 minute interval. Is there a limit to the amount of food which should be consumed in order to avoid adverse health effects: Don't Know. Where applicable outline nutritional</p>		

	composition (g per 100g) of food: Total Fat: .00. Saturated Fat: .00. Trans Fat: .00. Sugar: 6.20. Salt: .00. Sodium: .05
--	---

## GLOSSARY AND ABBREVIATIONS

SCF Scientific Committee on Food