

SCIENTIFIC OPINION

Scientific Opinion on the substantiation of health claims related to pantothenic acid and energy-yielding metabolism (ID 56, 59, 60, 64, 171, 172, 208), mental performance (ID 57), maintenance of bone (ID 61), maintenance of teeth (ID 61), maintenance of hair (ID 61), maintenance of skin (ID 61), maintenance of nails (ID 61) and synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters (ID 181) pursuant to Article 13(1) of Regulation (EC) No 1924/2006¹

EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA)²

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 pantothenic acid and the following claimed effects: energy-yielding metabolism, mental performance, maintenance of bone, maintenance of teeth, maintenance of hair, maintenance of skin, maintenance of nails and synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters. 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 constituent that is the subject of the health claims is pantothenic acid, which is a well recognised nutrient and is measurable in foods by established methods. The Panel considers that pantothenic acid is sufficiently characterised.

The Panel concludes that a cause and effect relationship has been established between the dietary intake of pantothenic acid and normal energy-yielding metabolism, normal mental performance and normal synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters.

1 On request from the European Commission, Question No EFSA-Q-2008-843, EFSA-Q-2008-846, EFSA-Q-2008-847, EFSA-Q-2008-851, EFSA-Q-2008-958, EFSA-Q-2008-959, EFSA-Q-2008-995, EFSA-Q-2008-844, EFSA-Q-2008-848, EFSA-Q-2008-968 adopted on 02 July 2009.

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However, the evidence provided does not establish that inadequate intake of pantothenic acid leading to impaired function of the above mentioned health relationships occurs in the general EU population.

The Panel considers that, in order to bear the claims, a food should be at least a source of pantothenic acid as per Annex to Regulation (EC) No 1924/2006. Such amounts can be easily consumed as part of a balanced diet. The target population is the general population.

The Panel concludes that a cause and effect relationship has not been established between the dietary intake of pantothenic acid and maintenance of normal bone, maintenance of normal teeth, maintenance of normal hair, maintenance of normal skin or maintenance of normal nails.

KEY WORDS

Pantothenic acid, energy-yielding metabolism, mental, bone, teeth, hair, skin, nails, steroid hormones, vitamin D, neurotransmitters, health claims.

TABLE OF CONTENTS

Summary	1
Table of contents	3
Background as provided by the European Commission	4
Terms of Reference as provided by the European Commission	4
EFSA Disclaimer.....	4
Acknowledgements	4
Information as provided in the consolidated list.....	5
Assessment	5
1. Characterisation of the food/constituent	5
2. Relevance of the claimed effect to human health.....	5
2.1. Energy-yielding metabolism (ID 56, 59, 60, 64, 171, 172, 208)	5
2.2. Mental performance (ID 57)	5
2.3. Maintenance of bone (ID 61).....	5
2.4. Maintenance of teeth (ID 61).....	6
2.5. Maintenance of hair (ID 61)	6
2.6. Maintenance of skin (ID 61).....	6
2.7. Maintenance of nails (ID 61).....	6
2.8. Synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters (ID 181).....	6
3. Scientific substantiation of the claimed effect	6
3.1. Energy-yielding metabolism (ID 56, 59, 60, 64, 171, 172, 208)	7
3.2. Mental performance (ID 57)	7
3.3. Maintenance of bone (ID 61).....	7
3.4. Maintenance of teeth (ID 61).....	7
3.5. Maintenance of hair (ID 61)	7
3.6. Maintenance of skin (ID 61).....	8
3.7. Maintenance of nails (ID 61).....	8
3.8. Synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters (ID 181).....	8
4. Panel’s comments on the proposed wordings	8
4.1. Energy-yielding metabolism (ID 56, 59, 60, 64, 171, 172, 208)	8
4.2. Mental performance (ID 57).....	8
4.3. Synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters (ID 181).....	8
5. Conditions and possible restrictions of use.....	8
Conclusions	9
Documentation provided to EFSA	10
References	11
Appendices	12
Glossary and Abbreviations	19

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

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INFORMATION AS PROVIDED IN THE CONSOLIDATED LIST

The consolidated list of health claims pursuant to Article 13 of Regulation (EC) No 1924/2006 submitted by Member States contains main entry claims with corresponding conditions of use and literature from similar health claims. The information provided in the consolidated list for the health claims subject to this opinion is tabulated in Appendix C.

ASSESSMENT

1. Characterisation of the food/constituent

The food constituent that is the subject of the health claim is pantothenic acid (vitamin B5) which is a well recognised nutrient and is measurable in foods by established methods.

Pantothenic acid occurs naturally in foods and is authorised for addition to foods (Annex I of Regulation (EC) No 1925/2006³ and Annex I of Directive 2002/46/EC⁴). This evaluation applies to pantothenic acid naturally present in foods and to those forms authorised for addition to foods (Annex II of Regulation (EC) No 1925/2006 and Annex II of Directive 2002/46/EC).

The Panel considers that the food constituent, pantothenic acid, which is the subject of the health claim, is sufficiently characterised.

2. Relevance of the claimed effect to human health

2.1. Energy-yielding metabolism (ID 56, 59, 60, 64, 171, 172, 208)

The claimed effects are “fat and carbohydrate metabolism”, “macronutrient metabolism”, “energy metabolism”, “metabolism of fat” and “carbohydrate and amino-acid metabolism”. The Panel assumes that the target population is the general population.

The Panel notes that, in the context of the proposed wordings, “energy metabolism” and “macronutrient metabolism” relate to energy-yielding metabolism of macronutrients.

The Panel considers that normal energy-yielding metabolism is beneficial to human health.

2.2. Mental performance (ID 57)

The claimed effect is “mental performance (where mental performance stands for those aspects of brain and nerve functions which determine aspects like concentration, learning, memory and reasoning, as well as resistance to stress)”. The Panel assumes that the target population is the general population.

The Panel considers that normal mental performance is beneficial to human health.

2.3. Maintenance of bone (ID 61)

The claimed effect is “bone/teeth/hair/skin and nails health”. The Panel assumes that the target population is the general population.

³ Regulation (EC) No 1925/2006 of the European Parliament and of the Council of 20 December 2006 on the addition of vitamins and minerals and of certain other substances to foods. OJ L 404, 30.12.2006, p. 26–38.

⁴ Directive 2002/46/EC of the European Parliament and of the Council of 10 June 2002 on the approximation of the laws of the Member States relating to food supplements. OJ L 183, 12.7.2002, p. 51–57.

The Panel considers that maintenance of normal bone is beneficial to human health.

2.4. Maintenance of teeth (ID 61)

The claimed effect is “bone/teeth/hair/skin and nails health”. The Panel assumes that the target population is the general population.

The Panel considers that maintenance of normal teeth is beneficial to human health.

2.5. Maintenance of hair (ID 61)

The claimed effect is “bone/teeth/hair/skin and nails health”. The Panel assumes that the target population is the general population.

The Panel considers that maintenance of normal hair is beneficial to human health.

2.6. Maintenance of skin (ID 61)

The claimed effect is “bone/teeth/hair/skin and nails health”. The Panel assumes that the target population is the general population.

The Panel considers that maintenance of normal skin is beneficial to human health.

2.7. Maintenance of nails (ID 61)

The claimed effect is “bone/teeth/hair/skin and nails health”. The Panel assumes that the target population is the general population.

The Panel considers that maintenance of normal nails is beneficial to human health.

2.8. Synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters (ID 181)

The claimed effect is “synthesis and metabolism of steroid hormones, vitamins A, D, B12 and neurotransmitters”. The Panel assumes that the target population is the general population.

The Panel considers that normal synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters are beneficial to human health.

3. Scientific substantiation of the claimed effect

Pantothenic acid is required for the synthesis of coenzyme A (CoA), a cofactor and acyl group carrier for many enzymatic processes and for the synthesis of the prosthetic group of the acyl carrier protein (ACP), a component of the fatty acid synthesis complex. Most tissues transport pantothenic acid into cells for the synthesis of CoA (IoM, 1998). The evidence for essentiality of pantothenic acid consists of its well known role in cellular biochemistry.

Deficiency symptoms have only been observed in experimental settings such as giving a pantothenic acid metabolic antagonist and not in dietary studies. Deficiency symptoms included irritability, restlessness, fatigue, apathy, malaise, sleep disturbances, numbness and muscle cramps (IoM, 1998).

3.1. Energy-yielding metabolism (ID 56, 59, 60, 64, 171, 172, 208)

Pantothenic acid as a component of CoA and ACP has central roles in energy, carbohydrate, protein and lipid metabolism (IoM, 1998; SCF, 2002; EVM, 2002; Sadler et al., 1999).

The Panel concludes that a cause and effect relationship has been established between the dietary intake of pantothenic acid and normal energy-yielding metabolism. However, the evidence provided does not establish that inadequate intake of pantothenic acid leading to impaired energy-yielding metabolism occurs in the general EU population.

3.2. Mental performance (ID 57)

The references provided included two articles and two textbooks (Haller, 1995; IoM, 1998). The articles were two narrative reviews, one on the influence of micronutrients on cognitive function and performance (Huskisson et al., 2007a) and the other on the role of vitamins and minerals in energy metabolism and well-being (Huskisson et al., 2007b). Both reviews describe the well established roles for pantothenic acid in biochemical processes.

Pantothenic acid has a role in the metabolism and functioning of all cells including brain and nerve cells. Although no references have been provided to support a specific role of pantothenic acid in concentration, learning, memory and reasoning, as well as resistance to stress, deficiency symptoms of pantothenic acid in experimental settings indicate a role for pantothenic acid in mental performance.

The Panel concludes that a cause and effect relationship has been established between the dietary intake of pantothenic acid and normal mental performance. However, the evidence provided does not establish that inadequate intake of pantothenic acid leading to impaired mental performance occurs in the general EU population.

3.3. Maintenance of bone (ID 61)

The Panel notes that no evidence has been provided to support the role of pantothenic acid in maintenance of normal bone.

The Panel concludes that a cause and effect relationship has not been established between the dietary intake of pantothenic acid and maintenance of normal bone.

3.4. Maintenance of teeth (ID 61)

The Panel notes that no evidence has been provided to support the role of pantothenic acid in maintenance of normal teeth.

The Panel concludes that a cause and effect relationship has not been established between the dietary intake of pantothenic acid and maintenance of normal teeth.

3.5. Maintenance of hair (ID 61)

The Panel notes that no evidence has been provided to support the role of pantothenic acid in maintenance of normal hair.

The Panel concludes that a cause and effect relationship has not been established between the dietary intake of pantothenic acid and maintenance of normal hair.

3.6. Maintenance of skin (ID 61)

The Panel notes that no evidence has been provided to support the role of pantothenic acid in maintenance of normal skin.

The Panel concludes that a cause and effect relationship has not been established between the dietary intake of pantothenic acid and maintenance of normal skin.

3.7. Maintenance of nails (ID 61)

The Panel notes that no evidence has been provided to support the role of pantothenic acid in maintenance of normal nails.

The Panel concludes that a cause and effect relationship has not been established between the dietary intake of pantothenic acid and maintenance of normal nails.

3.8. Synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters (ID 181)

Pantothenic acid, in the form of CoA, is required for the synthesis of isoprenoid derivatives, such as cholesterol, steroid hormones, vitamin D. Acetyl-CoA provides the essential acetyl group to the neurotransmitter, acetylcholine.

The Panel concludes that a cause and effect relationship has been established between the dietary intake of pantothenic acid and normal synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters. However, the evidence provided does not establish that inadequate intake of pantothenic acid leading to impaired synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters occurs in the general EU population.

4. Panel's comments on the proposed wordings

4.1. Energy-yielding metabolism (ID 56, 59, 60, 64, 171, 172, 208)

The Panel considers that the following wording reflects the scientific evidence: "Pantothenic acid contributes to normal energy-yielding metabolism".

4.2. Mental performance (ID 57)

The Panel considers that the following wording reflects the scientific evidence: "Pantothenic acid contributes to normal mental performance".

4.3. Synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters (ID 181)

The Panel considers that the following wording reflects the scientific evidence: "Pantothenic acid contributes to normal synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters".

5. Conditions and possible restrictions of use

The Panel considers that in order to bear the claim a food should be at least a source of pantothenic acid as per Annex to Regulation (EC) No 1924/2006. Such amounts can be easily consumed as part of

a balanced diet. Tolerable Upper Intake Levels have not been established for pantothenic acid in children, adolescents and adults.

CONCLUSIONS

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

- The food constituent, pantothenic acid, which is the subject of the health claim is sufficiently characterised.

Energy-yielding metabolism (ID 56, 59, 60, 64, 171, 172, 208)

- The claimed effects are “fat and carbohydrate metabolism”, “macronutrient metabolism”, “energy metabolism”, “metabolism of fat” and “carbohydrate and amino-acid metabolism”. The target population is assumed to be the general population. Normal energy-yielding metabolism is beneficial to human health.
- A cause and effect relationship has been established between the dietary intake of pantothenic acid and normal energy-yielding metabolism.
- The evidence provided does not establish that inadequate intake of pantothenic acid leading to impaired energy-yielding metabolism occurs in the general EU population.
- The following wording reflects the scientific evidence: “Pantothenic acid contributes to normal energy-yielding metabolism”.

Mental performance (ID 57)

- The claimed effect is “mental performance (where mental performance stands for those aspects of brain and nerve functions which determine aspects like concentration, learning, memory and reasoning, as well as resistance to stress)”. The target population is assumed to be the general population. Normal mental performance is beneficial to human health.
- A cause and effect relationship has been established between the dietary intake of pantothenic acid and normal mental performance.
- The evidence provided does not establish that inadequate intake of pantothenic acid leading to impaired mental performance occurs in the general EU population.
- The following wording reflects the scientific evidence: “Pantothenic acid contributes to normal mental performance”.

Maintenance of bone (ID 61)

- The claimed effect is “bone/teeth/hair/skin and nails health”. The target population is assumed to be the general population. Maintenance of normal bone is beneficial to human health.
- A cause and effect relationship has not been established between the dietary intake of pantothenic acid and maintenance of normal bone.

Maintenance of teeth (ID 61)

- The claimed effect is “bone/teeth/hair/skin and nails health”. The target population is assumed to be the general population. Maintenance of normal teeth is beneficial to human health.
- A cause and effect relationship has not been established between dietary intake of pantothenic acid and maintenance of normal teeth.

Maintenance of hair (ID 61)

- The claimed effect is “bone/teeth/hair/skin and nails health”. The target population is assumed to be the general population. Maintenance of normal hair is beneficial to human health.
- A cause and effect relationship has not been established between dietary intake of pantothenic acid and maintenance of normal hair.

Maintenance of skin (ID 61)

The claimed effect is “bone/teeth/hair/skin and nails health”. The target population is assumed to be the general population. Maintenance of normal skin is beneficial to human health.

- A cause and effect relationship has not been established between dietary intake of pantothenic acid and maintenance of normal skin.

Maintenance of nails (ID 61)

- The claimed effect is “bone/teeth/hair/skin and nails health”. The target population is assumed to be the general population. Maintenance of normal nails is beneficial to human health.
- A cause and effect relationship has not been established between dietary intake of pantothenic acid and maintenance of normal nails.

Synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters (ID 181)

- The claimed effects are related to “synthesis and metabolism of steroid hormones, vitamins A, D, B12 and neurotransmitters”. The target population is assumed to be the general population. Normal synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters are beneficial to human health.
- A cause and effect relationship has been established between dietary intake of pantothenic acid and normal synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters.
- The evidence provided does not establish that inadequate intake of pantothenic acid leading to impaired synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters occurs in the general EU population.
- The following wording reflects the scientific evidence: “Pantothenic acid contributes to normal synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters”.

Conditions and possible restrictions of use

- In order to bear the claims a food should be at least a source of pantothenic acid as per Annex to Regulation (EC) No 1924/2006. Such amounts can be easily consumed as part of a balanced diet. The target population is the general population.

DOCUMENTATION PROVIDED TO EFSA

Health claims pursuant to Article 13 of Regulation (EC) No 1924/2006 (No: EFSA-Q-2008-843, EFSA-Q-2008-846, EFSA-Q-2008-847, EFSA-Q-2008-851, EFSA-Q-2008-958, EFSA-Q-2008-959, EFSA-Q-2008-995, EFSA-Q-2008-844, EFSA-Q-2008-848, EFSA-Q-2008-968). 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

- Haller J, 1995. The actions of vitamins and other nutrients on psychological parameters. In: Human Psychopharmacology. Hindmarch I, Stonier PD, Wiley (Eds), London, 229–261.
- Huskisson E, Maggini S, Ruf M, 2007a. The influence of micronutrients on cognitive function and performance. *J. Int. Med. Res.* 35, 1-19.
- Huskisson E, Maggini S, Ruf M, 2007b. The role of vitamins and minerals in energy metabolism and well-being. *J. Internat. Med. Res.* 35, 277-289.
- IoM (Institute of Medicine), 1998. Institute of Medicine Dietary reference intakes for thiamin, riboflavin, niacin, vitamin B6, folate, vitamin B12, pantothenic acid, biotin and choline. Washington DC. National Academy Press.
- EVM (Expert Group on Vitamins and Minerals), 2002. Review of Pantothenic Acid. <www.food.gov.uk/multimedia/pdfs/panto.pdf>.
- Sadler MJ, Strain JJ, Caballero B, 1999. Encyclopedia of Human Nutrition. San Diego. Academic Press.
- SCF (Scientific Committee on Food), 2002. Opinion of the Scientific Committee on Food on the Tolerable Upper Intake Level of Pantothenic Acid. <http://www.europa.eu.int/comm/food/fs/sc/scf/out80k_en.pdf>.

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 foods⁵ (hereinafter "the Regulation") entered into force on 19th 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 FOOD⁶

Foods are commonly involved in many different functions⁷ 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.

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:

⁵ OJ L12, 18/01/2007

⁶ The term 'food' when used in this Terms of Reference refers to a food constituent, the food or the food category.

⁷ The term 'function' when used in this Terms of Reference refers to health claims in Article 13(1)(a), (b) and (c).

- (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 pantothenic acid, including conditions of use from similar claims, as proposed in the Consolidated List.

ID	Food or Food component	Health Relationship	Proposed wording
56	Pantothenic Acid (Vitamin B5)	Fat and carbohydrate metabolism	<ul style="list-style-type: none"> - Pantothenic acid is needed for the body to use fats properly. - Pantothenic acid is needed for the body to release energy from foods.
	<p>Conditions of use</p> <ul style="list-style-type: none"> • MINDESTENS 15 % RDA JE 100 G ODER 100 ML ODER JE PORTION GEMÄß 90/496/EWG • 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. • Tagesbedarf gemäß NwKVO –6 mg pro Tag • It must at least be a source of vitamin/s as per annex to regulation 1924/2006. Applicable to both children and adults. At least a significant amount as defined in the Annex to Directive 90/496/EEC for Pantothenic acid (being Dexpanthenol the alcoholic analogue of D-pantothenic acid). • Names of nutrient/other substances and quantity in average daily serving: 0.90 milligrams Pantothenic Acid (Vitamin B5). Daily amount to be consumed to produce claimed effect: 0.90 milligram(s). Length of time after consumption for claimed effect to become apparent: regular consumption. • Mind. 15% der RDA, gem. NWK-RL 90/496/EWG 		
57	Food or Food component	Health Relationship	Proposed wording
	Pantothenic acid	Mental performance (where mental performance stands for those aspects of brain and nerve functions which determine aspects like concentration, learning, memory and reasoning, as well as resistance to stress)	<ul style="list-style-type: none"> - Pantothenic acid is needed/important for mental function and performance.
<p>Conditions of use:</p> <ul style="list-style-type: none"> • Minimum 15% RDA (0,9 mg) dziennie 			
59	Food or Food component	Health Relationship	Proposed wording
	Pantothenic acid	Macronutrient metabolism	<ul style="list-style-type: none"> - Pantothenic acid helps release nutrients from food.
<p>Conditions of use</p> <ul style="list-style-type: none"> • Source of 15% of RDA per 100g 			
60	Food or Food component	Health Relationship	Proposed wording
	Vitamin B5 (Pantothenic acid)	Energy metabolism	<ul style="list-style-type: none"> - Pantothenic acid is needed to help release energy from food. Pantothenic acid helps the body to release energy from fats, carbohydrates and proteins. Pantothenic acid is

			needed for the body to release energy from foods. Necessary for metabolic processes in the body. Have a significant role in metabolic processes. Participates in metabolic processes and ensure energy production in cells.
	<p>Conditions of use</p> <ul style="list-style-type: none"> It must at least be a source of vitamin/s as per annex to regulation 1924/2006. Applicable to both children and adults. At least a significant amount as defined in the Annex to Directive 90/496/EEC for Pantothenic acid. 		
61	Food or Food component	Health Relationship	Proposed wording
	Vitamin B5	Bone/Teeth/Hair/Skin and Nail health	- Necessary for healthy teeth, bones, hair, skin and nails.
	<p>Conditions of use</p> <ul style="list-style-type: none"> 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. 		
64	Food or Food component	Health Relationship	Proposed wording
	Pantothenic acid	Metabolism of fat	- Pantothenic acid/vitamin B5 supports the metabolism of fat.
	<p>Conditions of use</p> <ul style="list-style-type: none"> At least a significant amount as defined in the Annex to Directive 90/496/EEC for Pantothenic acid (being Dexpanthenol the alcoholic analogue of D-pantothenic acid). The product must contain at least 15% of the RDA. 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. 		
171	Food or Food component	Health Relationship	Proposed wording
	Dexpanthenol	Energy metabolism	- Pantothenic acid is needed to help release energy from food. Pantothenic acid helps the body to release energy from fats, carbohydrates and proteins. It promotes the formation of nerve-regulating substances and hormones, Helps in normal growth and development.
	<p>Conditions of use</p> <ul style="list-style-type: none"> At least a significant amount as defined in the Annex to Directive 90/496/EEC for Pantothenic acid (being Dexpanthenol the alcoholic analogue of D-pantothenic acid). 		
172	Food or Food component	Health Relationship	Proposed wording
	Dexpanthenol	Fat metabolism	- Pantothenic acid is necessary for the normal metabolism of fat.

	<p>Conditions of use</p> <ul style="list-style-type: none"> At least a significant amount as defined in the Annex to Directive 90/496/EEC for Pantothenic acid (being Dexpanthenol the alcoholic analogue of D-pantothenic acid). 		
181	<p>Food or Food component</p> <p>Vitamin B5 (Pantothenic acid)</p>	<p>Health Relationship</p> <p>Synthesis and metabolism of steroid hormones, A, D, B12 vitamins, neurotransmitters</p>	<p>Proposed wording</p> <p>- Vitamin B5 contributes to the synthesis and metabolism number of essential substances (e.g. steroid hormones, neurotransmitters, etc.), which are necessary to the proper functioning of the body.</p>
	<p>Conditions of use</p> <ul style="list-style-type: none"> Names of nutrient/other substances and quantity in average daily serving: 1.08 mg Vitamin B5. Daily amount to be consumed to produce claimed effect: 500g. Length of time after consumption for claimed effect to become apparent: it depends on the individual's nutritional status. 		
208	<p>Food or Food component</p> <p>Pantothenic acid</p>	<p>Health Relationship</p> <p>Carbohydrate and amino-acid metabolism</p>	<p>Proposed wording</p> <p>- Pantothenic acid helps the body utilize carbohydrates and amino-acids.</p>
	<p>Conditions of use</p> <ul style="list-style-type: none"> 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. 		

GLOSSARY AND ABBREVIATIONS

CoA

Coenzyme A

ACP

Acyl carrier protein