



EFSA NDA Panel (EFSA Panel on Dietetic Products, Nutrition and Allergies), 2014. Scientific Opinion on the substantiation of a health claim related to iodine and contribution to normal thyroid function pursuant to Article 14 of Regulation (EC) No 1924/2006

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SCIENTIFIC OPINION

Scientific Opinion on the substantiation of a health claim related to iodine and contribution to normal thyroid function pursuant to Article 14 of Regulation (EC) No 1924/2006¹

EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA)^{2,3}

European Food Safety Authority (EFSA), Parma, Italy

ABSTRACT

Following an application from Specialised Nutrition Europe (formerly IDACE), submitted pursuant to Article 14 of Regulation (EC) No 1924/2006 via the Competent Authority of France, the EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA) was asked to deliver an opinion on the scientific substantiation of a health claim related to iodine and contribution to normal thyroid function. The food constituent, iodine, which is the subject of the health claim, is sufficiently characterised. Contribution to normal thyroid function is a beneficial physiological effect for infants and young children. A claim on iodine and normal thyroid function in the general population has already been assessed with a favourable outcome. The Panel considers that the role of iodine on normal thyroid function applies to all ages, including infants and young children (from birth to three years). The Panel concludes that a cause and effect relationship has been established between the dietary intake of iodine and contribution to normal thyroid function.

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KEY WORDS

iodine, infants, children, thyroid function, health claims

¹ On request from the Competent Authority of France following an application by Specialised Nutrition Europe (formerly IDACE), Question No EFSA-Q-2008-144, adopted on 11 December 2013.

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SUMMARY

Following an application from Specialised Nutrition Europe (formerly IDACE), submitted for authorisation of a health claim pursuant to Article 14 of Regulation (EC) No 1924/2006 via the Competent Authority of France, the EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA) was asked to deliver an opinion on the scientific substantiation of a health claim related to iodine and contribution to normal thyroid function.

The scope of the application was proposed to fall under a health claim referring to children's development and health.

The food constituent that is the subject of the health claim is iodine, which is an essential nutrient and is measurable in foods by established methods. The Panel considers that iodine is sufficiently characterised.

The claimed effect proposed by the applicant refers to the importance of iodine for normal thyroid function. The target population proposed by the applicant is infants and young children from birth to three years of age. The Panel considers that contribution to normal thyroid function is a beneficial physiological effect for infants and young children.

A claim on iodine and normal thyroid function in the general population has already been assessed with a favourable outcome. The conclusion of the Panel was based on the well-established role of iodine in the synthesis of thyroid hormones.

The Panel considers that the role of iodine in normal thyroid function applies to all ages, including infants and young children (from birth to three years).

The Panel concludes that a cause and effect relationship has been established between the dietary intake of iodine and contribution to normal thyroid function.

The following wording reflects the scientific evidence: "Iodine contributes to normal thyroid function".

The Panel considers that in order to bear the claim, follow-on formulae should comply with the criteria of composition of follow-on formulae as laid down in Directive 2006/141/EC; nutritionally complete foods for special medical purposes intended for use by infants and nutritionally complete foods for special medical purposes other than those intended for use by infants should comply with the criteria of composition of these foods as laid down in Directive 1999/21/EC; processed cereal-based foods for infants and young children should comply with the criteria of composition of these foods as laid down in Directive 2006/125/EC; other foodstuffs intended for infants and young children should provide at least 15 % of the reference values for nutrition labelling for foods intended for infants and young children as laid down in Directive 2006/141/EC. Such amounts can be easily consumed as part of a balanced diet. The target population is infants and children up to three years. A Tolerable Upper Intake Level for iodine has been established for children, and has been set at 200 µg/day for children of 1-3 years of age.

TABLE OF CONTENTS

Abstract	1
Summary	2
Table of contents	3
Background	4
Terms of reference	4
EFSA Disclaimer.....	4
Information provided by the applicant	5
Assessment	6
1. Characterisation of the food/constituent	6
2. Relevance of the claimed effect to human health.....	6
3. Scientific substantiation of the claimed effect	6
4. Panel’s comments on the proposed wording	7
5. Conditions and restrictions of use	7
Conclusions	8
Documentation provided to EFSA	8
References	8

BACKGROUND

Regulation (EC) No 1924/2006⁴ harmonises the provisions that relate to nutrition and health claims, and establishes rules governing the Community authorisation of health claims made on foods. As a rule, health claims are prohibited unless they comply with the general and specific requirements of this Regulation, are authorised in accordance with this Regulation, and are included in the lists of authorised claims provided for in Articles 13 and 14 thereof. In particular, Articles 14 to 17 of this Regulation lay down provisions for the authorisation and subsequent inclusion of reduction of disease risk claims and claims referring to children's development and health in a Community list of permitted claims.

According to Article 15 of this Regulation, an application for authorisation shall be submitted by the applicant to the national competent authority of a Member State, which will make the application and any supplementary information supplied by the applicant available to the European Food Safety Authority (EFSA).

STEPS TAKEN BY EFSA

- The application was received on 14/02/2008.
- The scope of the application was proposed to fall under a health claim referring to children's development and health.
- On 26/03/2008, during the validation process of the application, EFSA sent a request to the applicant asking it to provide missing information.
- On 27/08/2013, EFSA received the missing information as submitted by the applicant.
- The scientific evaluation procedure started on 17/10/2013.
- During its meeting on 11/12/2013, the NDA Panel, having evaluated the data submitted, adopted an opinion on the scientific substantiation of a health claim related to iodine and contribution to normal thyroid function.

TERMS OF REFERENCE

EFSA is requested to evaluate the scientific data submitted by the applicant in accordance with Article 16 of Regulation (EC) No 1924/2006. On the basis of that evaluation, EFSA will issue an opinion on the scientific substantiation of a health claim related to: iodine and contribution to normal thyroid function.

EFSA DISCLAIMER

The present opinion does not constitute, and cannot be construed as, an authorisation for the marketing of iodine, a positive assessment of its safety, nor a decision on whether iodine is, or is not, classified as a foodstuff. 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 wording of the claim, and the conditions of use as proposed by the applicant may be subject to changes, pending the outcome of the authorisation procedure foreseen in Article 17 of Regulation (EC) No 1924/2006.

⁴ 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.

INFORMATION PROVIDED BY THE APPLICANT

Applicant's name and address: Specialised Nutrition Europe (formerly IDACE), 9-31 Avenue des Nerviens, 1040 Brussels, Belgium.

Food/constituent as stated by the applicant

According to the applicant, the food constituent for which the claim is made is iodine.

Health relationship as claimed by the applicant

According to the applicant, iodine is an integral constituent of the thyroid hormones and has an important role in the development of the nervous system of the fetus and the infant.

Wording of the health claim as proposed by the applicant

The applicant has proposed the following wording for the health claim: "iodine is important for thyroid function".

As equivalent alternative wordings, the applicant has also proposed: "iodine contributes to/is involved in/is important for/plays an important role for/is necessary for/participates to/is needed for/supports the (normal) function of the thyroid (gland)".

Specific conditions of use as proposed by the applicant

According to the applicant, the target population is infants and young children from birth to three years of age.

According to the applicant, the quantity needed to achieve the claimed effect is:

- For follow-on formulae, the content in iodine should be within the range set in Directive 2006/141/EC.
- For dietary foods for special medical purposes, the content in iodine should be within the range set in Directive 1999/21/EC.
- For processed cereal-based foods and baby foods, the content in iodine should be within the range set in Directive 2006/125/EC.
- For processed cereal-based foods and baby foods, the content in iodine should reach at least 15 % of the Nutrient Reference Values set in Directive 2006/125/EC, i.e. 15 % of 70 µg per 100 g or 100 ml or per serving, as reconstituted.
- For foods intended for infants and young children other than follow-on formulae, processed cereal-based foods and baby foods, the content in iodine should reach at least 15 % of the Nutrient Reference Values set in Directive 2006/141/EC, i.e. 15 % of 80 µg per 100 ml product ready for use.

ASSESSMENT

1. Characterisation of the food/constituent

The food constituent that is the subject of the health claim is iodine, which is an essential nutrient and is measurable in foods by established methods.

Iodine occurs naturally in foods and is authorised for addition to foods (Annex I of Regulation (EC) No 1925/2006⁵, Annex I of Directive 2002/46/EC⁶, Annex III of Directive 2006/141/EC⁷, Annex IV of Directive 2006/125/EC⁸, Directive 2001/15/EC⁹). This evaluation applies to iodine naturally present in foods and those forms authorised for addition to foods (Annex II of Regulation (EC) No 1925/2006, Annex II of Directive 2002/46/EC, Annex III of Directive 2006/141/EC, Annex IV of Directive 2006/125/EC, Directive 2001/15/EC).

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

2. Relevance of the claimed effect to human health

The claimed effect proposed by the applicant refers to the importance of iodine for normal thyroid function. The target population proposed by the applicant is infants and young children from birth to three years of age.

The Panel considers that contribution to normal thyroid function is a beneficial physiological effect for infants and young children.

3. Scientific substantiation of the claimed effect

The applicant performed a literature search in PubMed, using the search terms “infant”, “neonate(s)”, “child”, “toddler”, “school child”, “iodine”, “thyroid”, “thyroid function”, “baby formula”, “breastfeeding” and “mother’s milk”, limiting the search to publications in English. The search was conducted in July 2013 and focussed on identifying recent (within the last five years) intervention studies in the target population. Studies were excluded if they were concerned with autoimmune related thyroiditis, congenital hypothyroidism, thyroid cancer or iodine supplementation treatments of goitre. Studies were also excluded if they were investigating effects of vitamins, minerals and/or other molecules on iodine uptake or bioavailability, or if they focussed on brain development and cognitive function.

The applicant identified one observational study (Andersson et al., 2010) and two reviews (Semba and Delange, 2001; Speeckaert et al., 2011) as being pertinent to the health claim. In addition, the applicant also indicated two consensus opinions/guidelines (SCF, 2002; Koletzko et al., 2005) as relevant for the claim.

⁵ 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.

⁶ 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.

⁷ Commission Directive 2006/141/EC of 22 December 2006 on infant formulae and follow-on formulae and amending Directive 1999/21/EC Text with EEA relevance. OJ L 401, 30.12.2006, p. 1–33.

⁸ Commission Directive 2006/125/EC of 5 December 2006 on processed cereal-based foods and baby foods for infants and young children. OJ L 339, 6.12.2006, p. 16–35.

⁹ Commission Directive 2001/15/EC of 15 February 2001 on substances that may be added for specific nutritional purposes in foods for particular nutritional uses. OJ L 52, 22.2.2001, p. 19–25.

Iodine is required for the synthesis of the thyroid hormones thyroxine (T4, 3,5,3',5'-tetraiodothyronine), containing 65 % by weight of iodine, and its active form T3 (3,5,3'-triiodothyronine), containing 59 % by weight of iodine, as well as the precursor iodotyrosines (SCF, 2002). Thyroid hormones have important modifying or permissive roles in growth and development (Sadler et al., 1999; Garrow et al., 2000; IoM, 2002; Strain and Cashman, 2009).

The Panel has already assessed a claim on iodine and normal thyroid function (and normal production of thyroid hormones) with a favourable outcome (EFSA NDA Panel, 2009). The target population was the general population.

The conclusion of the Panel was based on the well-established role of iodine in the synthesis of thyroid hormones (SCF, 2002).

The Panel considers that the role of iodine in normal thyroid function applies to all ages, including infants and young children (from birth to three years).

The Panel concludes that a cause and effect relationship has been established between the dietary intake of iodine and contribution to normal thyroid function.

4. Panel's comments on the proposed wording

The Panel considers that the following wording reflects the scientific evidence: "Iodine contributes to normal thyroid function".

5. Conditions and restrictions of use

The Panel considers that in order to bear the claim:

- follow-on formulae should comply with the criteria of composition of follow-on formulae as laid down in Directive 2006/141/EC;
- nutritionally complete foods for special medical purposes intended for use by infants and nutritionally complete foods for special medical purposes other than those intended for use by infants should comply with the criteria of composition of these foods as laid down in Directive 1999/21/EC¹⁰;
- processed cereal-based foods for infants and young children should comply with the criteria of composition of these foods as laid down in Directive 2006/125/EC;
- other foodstuffs intended for infants and young children should provide at least 15 % of the reference values for nutrition labelling for foods intended for infants and young children as laid down in Directive 2006/141/EC.

Such amounts can be easily consumed as part of a balanced diet. The target population is infants and children up to three years. A Tolerable Upper Intake Level (UL) for iodine has been established for children, and has been set at 200 µg/day for children of 1-3 years of age (SCF, 2002).

¹⁰ Commission Directive 1999/21/EC of 25 March 1999 on dietary foods for special medical purposes. OJ L 91, 7.4.1999, p. 29–36.

CONCLUSIONS

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

- The food constituent, iodine, which is the subject of the health claim, is sufficiently characterised.
- The claimed effect proposed by the applicant refers to the importance of iodine for normal thyroid function. The target population proposed by the applicant is infants and young children from birth to three years of age. Contribution to normal thyroid function is a beneficial physiological effect for infants and young children.
- A cause and effect relationship has been established between the dietary intake of iodine and contribution to normal thyroid function.
- The following wording reflects the scientific evidence: “Iodine contributes to normal thyroid function”.
- In order to bear the claim, follow-on formulae should comply with the criteria of composition of follow-on formulae as laid down in Directive 2006/141/EC; nutritionally complete foods for special medical purposes intended for use by infants and nutritionally complete foods for special medical purposes other than those intended for use by infants should comply with the criteria of composition of these foods as laid down in Directive 1999/21/EC; processed cereal-based foods for infants and young children should comply with the criteria of composition of these foods as laid down in Directive 2006/125/EC; other foodstuffs intended for infants and young children should provide at least 15 % of the reference values for nutrition labelling for foods intended for infants and young children as laid down in Directive 2006/141/EC. Such amounts can be easily consumed as part of a balanced diet. The target population is infants and children up to three years. The Tolerable Upper Intake Level has been set at 200 µg/day for children of 1-3 years of age.

DOCUMENTATION PROVIDED TO EFSA

Health claim application on iodine and contribution to normal thyroid function pursuant to Article 14 of Regulation (EC) No 1924/2006 (Claim serial No: 0064_FR). February 2008. Submitted by Specialised Nutrition Europe (formerly IDACE).

REFERENCES

- Andersson M, Aeberli I, Wust N, Piacenza AM, Bucher T, Henschen I, Haldimann M and Zimmermann MB, 2010. The Swiss iodized salt program provides adequate iodine for school children and pregnant women, but weaning infants not receiving iodine-containing complementary foods as well as their mothers are iodine deficient. *The Journal of Clinical Endocrinology and Metabolism*, 95, 5217-5224.
- EFSA NDA Panel (EFSA Panel on Dietetic Products, Nutrition and Allergies), 2009. Scientific Opinion on the substantiation of health claims related to iodine and thyroid function and production of thyroid hormones (ID 274), energy-yielding metabolism (ID 274), maintenance of vision (ID 356), maintenance of hair (ID 370), maintenance of nails (ID 370), and maintenance of skin (ID 370) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. *EFSA Journal* 2009;7(9):1214, 17 pp. doi:10.2903/j.efsa.2009.1214
- Garrow JS, James WPT and Ralph A, 2000. *Human Nutrition and Dietetics*. Tenth Edition, Churchill Livingstone, London, Edinburgh, UK.

- IoM (Institute of Medicine), 2002. Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc. National Academies Press, Washington D.C., USA.
- Koletzko B, Baker S, Cleghorn G, Neto UF, Gopalan S, Hernell O, Hock QS, Jirapinyo P, Lonnerdal B, Pencharz P, Pzyrembel H, Ramirez-Mayans J, Shamir R, Turck D, Yamashiro Y and Zong-Yi D, 2005. Global standard for the composition of infant formula: recommendations of an ESPGHAN coordinated international expert group. *Journal of pediatric gastroenterology and nutrition*, 41, 584-599.
- Sadler MJ, Strain JJ and Caballero B, 1999. *Encyclopedia of Human Nutrition*. San Diego. Academic Press.
- Semba RD and Delange F, 2001. Iodine in human milk: perspectives for infant health. *Nutrition reviews*, 59, 269-278.
- Speeckaert MM, Speeckaert R, Wierckx K, Delanghe JR and Kaufman JM, 2011. Value and pitfalls in iodine fortification and supplementation in the 21st Century. *The British journal of nutrition*, 106, 964-973.
- Strain JJ and Cashman KD, 2009. Minerals and trace elements. In: *Introduction to Human Nutrition*. Eds Gibney MJ, Lanham-New SA, Cassidy A, Vorster HH. Blackwell Publishing, Oxford, UK.
- SCF (Scientific Committee on Food), 2002. Opinion of the Scientific Committee on Food on the Tolerable Upper Intake Level of Iodine.