



verbraucherzentrale

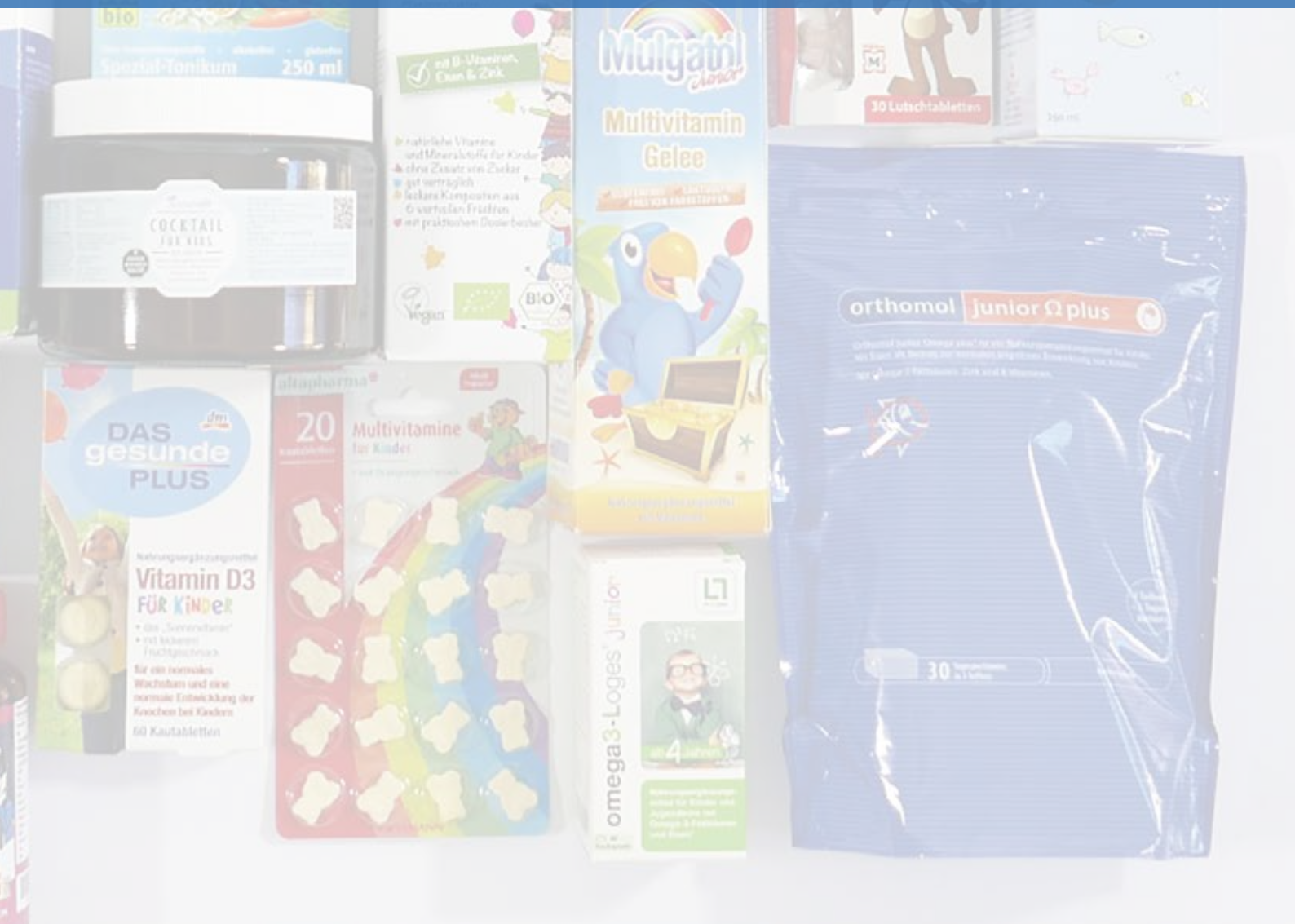
FOOD SUPPLEMENTS FOR CHILDREN

Market check of the consumer centres



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1. PROBLEM

Due to their growth, children have a higher nutrient requirement per kilogram of body weight than adults. If there is a lack of nutrients, it cannot be ruled out that this may lead to developmental disorders in the child. A wholesome diet with plenty of cereal products, potatoes, vegetables, fruit and dairy products should therefore be ensured, especially during the growth and development periods of the child. Meat, (sea) fish and eggs in moderation complete the weekly menu.

In practice, however, children also have a mind of their own when eating and drinking. They sometimes refuse to eat food such as vegetables and have greater recourse to sweets and their favourite foods. Parents then quickly fear an undersupply of vital nutrients and negative effects on the physical and mental development of their child.

Two large German studies – the [DONALD study](#) (Dortmund Nutritional and Anthropometric Longitudinally Designed Study) and the [EsKiMo study](#) (nutritional study as KiGGS module) – have shown that, with a few exceptions, nutrient supply in children is generally good. Only the vitamin folate as well as the minerals [iron](#), [iodine](#)

and [calcium](#) reference values are not reached by all children. The same applies to the estimated¹ value for an adequate intake of [vitamin D](#) [1-3]. However, this does not mean that these children actually have a corresponding deficiency. Regular outdoor activities from spring to autumn can significantly improve the supply of vitamin D under the influence of the sunlight. The intake of vitamins B₁, B₂, B₆, B₁₂, niacin and C, on the other hand, is on average above the reference values of the German Nutrition company (DGE), even without food supplements [2].

Nevertheless, the two studies found that about ten percent of all children (two to 18 years old) in Germany receive daily food supplements from their parents and/or foods enriched with vitamins or minerals [1-3]. Especially among boys, the frequency of use increases with age [2, 4]. Even though the figures are only comparable to a limited extent due to different study designs, current data from other countries show that significantly more children worldwide are given food supplements ([Tab.1](#)) The Robert Koch Institute is currently working on a supplementary module of the EsKiMo study. More recent data on the consumption of food supplements by children in Germany is therefore expected in the course of 2018 [5].

Country	Share of consumption of food supplements	Age of children
Australia [6]	23.5 percent	≤ 9 years
China [7]	33.5 percent	2 to 5 years
Denmark [8]	37.5 percent	7 to 8 years
England [9]	25.5 percent	4 to 10 years
Japan [10]	8.0 percent	3 to 4 years
Canada [11]	28.4 percent	10 to 11 years
Korea [12]	54.2 percent	1 to 6 years
Northern Ireland [13]	26.0 percent	4 to 10 years
Poland [14]	34.0 percent	4 to 6 years
USA [15]	45.0 percent	2 to 5 years
	36.0 percent	6 to 11 years

Table 1: Current data on the proportion of children consuming food supplements in different countries

¹The estimated value applies to children, adolescents and adults with a complete lack of endogenous formation. Therefore, this only applies to a very small part of the population, e.g. bedridden or fully veiled persons.

Regular consumption of food supplements in children may result in a far higher intake than recommended, with the risk of adverse effects. This applies in particular when additionally enriched foodstuffs, such as breakfast cereals or multivitamin juices, are on the menu [16-18].

Food supplements for children and adolescents with a whole range of vitamins, minerals or omega-3 fatty acids are available on the market. To appeal especially to parents and children, they are often offered in forms such as bears or cars, as juices or fruit gums [3, 18]. The products convey the impression, for example with the name or the presentation, that the defensive forces are strengthened. They are also intended to make us believe that children can better meet the challenges of modern children's everyday lives with an extra portion of vitamins, minerals or special fatty acids – in particular if they are supposed to be more efficient than others or if they have learning difficulties or concentration problems.

According to the Health Claims Directive (HCVO), advertising claims that promise health benefits must be scientifically proven. Only statements authorised by the EU may be used by providers. In addition to generally approved health claims, there are also specific health claims relating to the development and health of children ("children claims") for very few ingredients [19, 20].

With the current enrichment of foodstuffs and the use of nutrients in food supplements, a nutritional-physiological concept is rarely discernible [18]. Rather, there is the impression of a watering can principle. If its multiple effects on children's nutrient intake are difficult for professionals to assess [17, 22], then it is likely to be even more difficult for most parents.

What has been proven to be good for the development of children is a varied diet, sufficient drinking, sufficient sleep and regular exercise in the fresh air.

2. TARGET SETTING OF THE MARKET CHECK

The market check of the consumer centres focused on the market segment of food supplements, which are offered to the target group of children by the layout or corresponding age information. The experts evaluated the offer in the stationary trading. The aim was to check whether the products could pose a health risk due to their composition. The market check also focused on labelling, dosage form and advertising messages.

3. PROCEDURES

The market check was conducted between December 2017 and January 2018. Within the scope of a sample that does not claim to be exhaustive, a total of 26 freely available products from the stationary trading (pharmacy, drugstore and health food store) were included and examined more closely with regard to the criteria mentioned under the objective.

The D-A-CH reference values for daily vitamin and mineral intake for children aged four to seven years were used to evaluate micronutrient contents. The German nutrition company (DGE), together with the professional societies in Austria (Austrian nutrition company) and Switzerland (Swiss nutrition company), has published reference values for nutrient intake (D-A-CH reference values) for all age groups, which refer to the entire diet, i.e. including a possible intake of food supplements. They should be the basis and support for a full and varied diet [21].

The consumer centres also compared the dosages of the products with the proposals for maximum amounts of vitamins and minerals in food supplements made by the Federal institute for risk assessment (BfR). However, the limits updated at the beginning of 2018 only apply to adolescents aged 15 and above and adults; according to the BfR, separate considerations and, where appropriate, lower dosages of products are necessary for children under the age of 15. A concrete statement is only made for food supplements containing copper and boron, which are not suitable for children and adolescents [22]. If the purchased food supplements for children reached these maximum quantity proposals, this was in any case to be criticized from the point of view of the consumer centres. The BfR recommendations take into account

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the supply situation in Germany and the risk posed by individual substances if their supply is too high. These recommendations for the maximum daily intake of individual vitamins and minerals in food supplements are not legally binding and are therefore not binding for producers. However, they help the consumers to a safe purchase.

The consumer centres also examined advertising practices for this product group. In particular, the wording and legality of health claims were checked. The complete and correct labelling of legally required (warning) notices has also been verified. They evaluated the advertising messages on the packaging of the food supplements offered. Statements on the package leaflet or on the inner packaging were not taken into account because they are not visible to consumers at the time of the purchase decision and are therefore not decisive for the purchase.

4. RESULTS

4.1 COMPOSITION AND DOSAGE

The evaluation of the 26 products focused on the composition and recommended dosage.

4.1.1 Composition

Each of the products listed in the market check contained vitamins and minerals for which there are D-A-CH reference values [21]. The composition varied considerably from product to product – a uniformity could not be determined. Vitamins A and C were most abundant, namely in 22 products (85 percent). Vitamins B₆ and niacin were present in 21 food supplements (81 percent). In terms of minerals, zinc was on the first place (ten products), followed by selenium (seven products) and magnesium and calcium (six products each). All the vitamins and minerals mentioned and others beyond were contained in the product "Orthomol junior C plus", for example, as can be seen from the nutrition label (Fig. 1). Other ingredients played a role in eight products (31 percent), with omega-3 fatty acids (a combination of docosahexaenoic acid and eicosapentaenoic acid) dominating and occurring five times. The ingredient lists also showed that 21 out of 26 products (81 percent) contained sugar and/or other sweeteners such as sucralose. Sweetening ingredients were also used, such as juices, extracts and fruit purees. Only two of the 26 products examined were without any sweetness.

Also the dosage form and consumption recommendations differed from producer to producer. The food supplements were most frequently available in tablet form or in liquid form, followed by fruit gums. Occasionally, powders, capsules, jellies or toffees played a role. Children-attractive shapes such as little bears or cars as tablets, easy ways of absorption such as juices and fruit jelly figures in combination with sweetness can lead to greater attractiveness for children and parents [18]. This, in turn, entails the risk of exceeding the recommended intake, which may have consequences for the health. With regard to daily consumption, there was a range of recommendations, varying from exact data such as "children from 4 to 7 years suck 2 tablets per day" to non-specific recommendations such as "1-3 tablets per day", e.g. for the product "naturafit Kindervitamine mit Calcium" (Fig. 2). In the case of the recommended intake of three tablets, the D-A-CH reference values for children aged four to seven years would be exceeded for ten out of eleven ingredients – for this product alone [21].

Zusammensetzung: 30 Tagesportionen zu je 3 Kautabletten (3,8 g) = Gesamtfüllgewicht 114 g			
Vitamine	pro Tagesportion	%RM**	
Vitamin A	300 µg RE°	38	
Vitamin D	10 µg (400 I.E.°)	200	
Vitamin E	36 mg alpha-TE°	300	
(enthält u.a. Alpha- und Gamma-Tocopherol)			
Vitamin K	50 µg	67	
Vitamin C	200 mg	250	
Vitamin B ₁ (Thiamin)	1,2 mg	109	
Vitamin B ₂ (Riboflavin)	2,1 mg	150	
Niacin	18 mg NE*	113	
Vitamin B ₆	1,8 mg	129	
Folsäure	200 µg	100	
Vitamin B ₁₂	5 µg	200	
Biotin	100 µg	200	
Pantothensäure	12 mg	200	
Mineralstoffe bzw. Spurenelemente			
Calcium	120 mg	15	
Magnesium	60 mg	16	
Eisen	6 mg	43	
Zink	3 mg	30	
Kupfer	500 µg	50	
Mangan	0,75 mg	38	
Selen	10 µg	18	
Chrom	10 µg	25	
Molybdän	20 µg	40	
Jod	50 µg	33	
Sekundäre Pflanzenstoffe	pro Tagesportion	%RM**	
Citrus-Bioflavonoide	3 mg	***	
Beta-Carotin	2 mg	***	
Lutein	800 µg	***	
Lycopin	200 µg	***	
Zutaten:			
Süßungsmittel Sorbit und Xylit, Calciumphosphat, Magnesiumcarbonat, L-Ascorbinsäure, Maltodextrin, Rote-Beete-Saft-Konzentrat, Säuerungsmittel Citronensäure, Trennmittel Siliciumdioxid, Trennmittel Calciumsalze von Speisefettsäuren, Aroma, D-α-Tocopherylsäuresuccinat, gemischte Tocopherole, Nicotinamid, Eisenfumarat, Calcium-D-pantothenat, Beta-Carotin, Zinkcitrat, Citrusfrüchte-Extrakt mit Bioflavonoiden, Lycopin-angereicherter Tomaten-Extrakt, Chrom(III)-chlorid, Cholecalciferol, Retinylacetat, Lutein, Pyridoxinhydrochlorid, Riboflavin, Mangansulfat, modifizierte Stärke, Emulgator Zuckerester von Speisefettsäuren, Maisstärke, pflanzliche Öle (Kokos-, Sonnenblumenöl in veränderlichen Gewichtsanteilen), Emulgator Soja-Lecithine, Süßungsmittel Sucralose, Thiaminhydrochlorid, Süßungsmittel Acesulfam K, Phyllochinon, Kupfercarbonat, Pteroylmonglutaminsäure, D-Biotin, Kaliumiodid, Natriummolybdat, Natriumselenat, Cyanocobalamin			
° RE = Retinoläquivalente			
° I.E. = Internationale Einheiten			
° alpha-TE = Alpha-Tocopheroläquivalente			
° NE = Niacinäquivalente			
** RM = Referenzmenge nach EU-Verordnung 1169/2011			
*** keine Empfehlung der EU vorhanden			

Figure 1: Composition of a food supplement containing 27 different ingredients from a pharmacy intended for children from the age of four (Orthomol junior C plus). The product contains copper, which, according to the BfR recommendations for children and adolescents, should not be contained at all in food supplements. The maximum level proposed by the BfR in food supplements (applies to the age group from 15 years onwards) is exceeded for vitamin A, vitamin E, copper, manganese and reached for folic acid and iron [22].



Figure 2: Composition of a food supplement from the pharmacy with non-specific consumption recommendation of the producer (naturafit Kindervitamine mit Calcium). With a daily dosage of three tablets, the maximum amount of 200 µg folic acid per day in food supplements proposed by the BfR (applies to the age group from 15 years onwards) is exceeded [22].

4.1.2 Dosage

In total, 22 of the 26 products (85 percent) have exceeded the D-A-CH reference values for at least one vitamin or mineral for children between the ages of four and seven years when used as intended in accordance with the intake recommendations (Annex 1) – up to exceeding the values for all vitamins and minerals within a product (Mulgatol® Junior jelly). In addition, with this food supplement an exact dosage and adherence to the consumption recommendation is difficult. To measure the gel, it is referred to one teaspoon, however, a dosage spoon is missing (Fig. 3). The food supplements offered for children most frequently exceeded the D-A-CH reference values for children aged four to seven years for vitamin C, vitamin B₆, biotin and vitamin E (Annex 1).



Figure 3: Composition and recommendation for consumption of a food supplement from a pharmacy that makes exact dosage difficult (Mulgatol® Junior jelly). To measure the gel, it is referred to one teaspoon, however, a dosage spoon is missing.

The D-A-CH estimate for an adequate vitamin D intake in the absence of endogenous formation, which is 20 µg per day, was problematic in the assessment [21]. An inquiry with the DGE, whether a food supplement with 10 µg was already dosage too highly, resulted in: "For a child who corresponding to the age, likes to be outdoors a lot, the supplement of 10 µg vitamin D daily is not indicated. As soon as the body's own formation is sufficient, the question arises as to the benefits of such a supplement". This statement can be seen as a confirmation that an additional intake of vitamin D, which acts as a hormone, makes no sense if the body's endoge-

nous formation exists.² Consequently, enrichment and supplementation with vitamin D should be questioned if no information is available on the actual supply situation. This would have to be determined beforehand by the paediatrician and, if necessary, an appropriate medication would have to be prescribed [23]. For four products of our sample the recommended daily dosage of the producers was 10 µg for vitamin D. Particularly with fat-soluble vitamins, which include vitamin D and vitamin A, increased caution is required. These can accumulate in the body and have a negative effect on health.

The proposed maximum levels for vitamins and minerals in food supplements proposed by BfR, which refer to the age group from 15 years onwards have also been used for the assessment with sobering results [22]: **Still, eleven products and thus 42 percent exceeded these recommendations for at least one vitamin or mineral (Figs. 1, 2 and 4), six other products (23 percent) were at the limit of the recommended maximum quantities.** From this point of view, vitamin A was particularly conspicuous (Annex 1). The risk of adverse effects is high (e.g. headache, fatigue, exhaustion, nausea, loss of appetite, dehydration of the skin, cracked lips, itching, muscle pain, joint and bone pain, edema, growth retardation, etc.) [24-26]. For the product "sanostol® lozenges", for example, the vitamin A intake when the consumption instructions were observed was almost 2.5 times higher than the maximum daily dosage of 200 µg recommended by the BfR for food supplements (Fig. 4).³

²To ensure adequate care, the DGE recommends exposing the face, hands and arms uncovered and without sun protection to the sun two to three times a week between March and October (10 to 25 minutes). Sunburn should be avoided at all costs. In the winter months, the formation of vitamin D is only possible to a limited extent in our latitudes, but vitamin D formed in summer can be stored in the fatty tissue and skeletal muscles and contribute to maintaining the vitamin D serum concentration in winter.

³In the case of vitamin A, the BfR even does not recommend the general enrichment of other foods with vitamin A in order to counteract the health consequences of an overdose [22].



Nährstoffe	pro 2 (3) Tabletten	% der Referenzmenge* 2 (3) Tabl.
Vitamin A	533 (800) µg RE	66,6 (100) %
Vitamin D3	3,3 (5) µg	66 (100) %
Vitamin E	6,7 (10) mg α-TE	55,8 (83,3) %
Vitamin B1	0,67 (1,0) mg	60,9 (90,9) %
Vitamin B2	0,73 (1,1) mg	52,1 (78,6) %
Vitamin B6	0,46 (0,7) mg	32,9 (50) %
Vitamin B12	1,2 (1,8) µg	48 (72) %
Niacin	8 (12) mg NE	50 (75) %
Pantothensäure	3,3 (5) mg	55 (83,3) %
Vitamin C	33 (90) mg	66,3 (100) %
Folsäure	200 (300) µg	100 (150) %
Biotin	13 (20) µg	26 (40) %
Calcium	200 (300) mg	25 (37,5) %

* gemäß Lebensmittelinformationsverordnung

Verzehrsempfehlung:
Kinder von 4 bis 7 Jahren Lutsch-Tabletten täglich, Kinder ab 7 Jahren, Jugendliche und Erwachsene 3 Tabletten.
Die angegebene empfohlene tägliche Verzehrsmenge darf nicht überschritten werden.
Das Produkt enthält Vitamin A.
Schwangere Frauen und Frauen, bei denen eine Schwangerschaft nicht ausgeschlossen werden kann, sollten vor dem Beginn des Verzehrs ihren Arzt befragen.
glutenfrei, ohne Zucker, ohne Farbstoff

Figure 4: Composition of a food supplement from a pharmacy with a very high recommended daily dosage of vitamin A intended for children from the age of four (sanostol® lozenges). The maximum amount of 200 µg vitamin A per day in food supplements proposed by the BfR (applies to the age group from 15 years onwards) is clearly exceeded. With a daily consumption of three tablets for children from seven years onwards, as recommended by the producer, the BfR value is even four times exceeded [22].

4.1.3 Legal aspects

From a legal point of view, food supplements are food-stuffs and do not have to undergo an authorisation procedure. They only have to be notified to the Federal Office of Consumer Protection and Food Safety (BVL) before being placed on the market. It is sufficient to indicate the name of the product and the person responsible (producer, distributor or importer) and to attach a sample of the label. Some producers have not complied with this notification obligation according to paragraph 5 of the Directive on Food Supplements (NemV). **A request to the BVL revealed that four of the 26 products (15 percent) were not listed in the BVL database (Annex 1).** These products should not be on the market. These include the "Amos Vital FIZZY VITS Kinder-Multivitamin lozenges" from the pharmacy, which exceed the D-A-CH reference values for almost all vitamins and minerals contained (Fig. 5).



Figure 5: Composition of a food supplement from the pharmacy (Amos Vital FIZZY VITS Kinder-Multivitamin lozenges), which is NOT deposited in the database of the BVL (obligation to notify according to § 5 of the Directive on Food Supplements). With a daily dosage of two lozenges, the maximum amount of 200 µg folic acid per day in food supplements proposed by the BfR (applies to the age group from 15 years onwards) is reached [22].

4.2 ADVERTISING STATEMENTS UNDER THE MAGNIFYING GLASS

A further objective of the market check was to check the admissibility of the advertising statements on the products.

4.2.1 Addressing the target group

In almost all products, terms such as "children", "kids", "junior" or "family" are part of the product name, for example "children's vitamins with calcium", "aronia+ Kids", "Orthomol junior C plus" or "Immun Multivitamin family". The packaging of most products is colourful and the pictures are attractive for children and their parents. In addition to images of children's faces, comic-like images of animals or humans are used. One product even advertises with the picture of Yakari, an Indian boy known from television (Fig. 6). The following statement can be found on the provider's website with regard to the aronia juice contained: "Just like the little Indian boy Yakari, the indigenous peoples of the North American continent already collected the bluish berries and processed them into nutritious food."



Figure 6: Example from the pharmacy for images that appeal to children on the packaging (aronia+ KIDS). The maximum amount of 200 µg vitamin A per day in food supplements proposed by the BfR (applies to the age group from 15 years onwards) is reached [22].

Eight packages contain – as already recognizable from the outside – tablets or fruit gums attractive to children, for example in the form of bears or racing cars. The collection campaign for the product "Orthomol junior Omega plus" is particularly striking: If sufficient coupons are handed in, the producer promises a small surprise – naturally only with simultaneous indication of personal data. From a consumer perspective, it is worthy of criticism if children are introduced to food supplements at an early stage through targeted marketing campaigns such as membership in a "junior club" (Fig. 7).

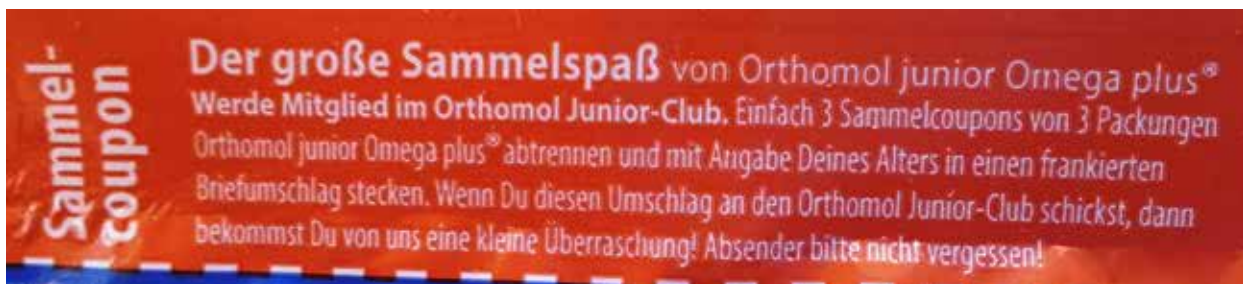


Figure 7: Example of a collection campaign for a food supplement (Orthomol junior Omega plus)

In addition, the target group at which the food supplements are directed to, can be identified by the age information, special health-related information for children and other advertising slogans. For example, according to recommended consumption or age indications elsewhere on the packaging, many products are recommended for children aged four and above. General statements such as "Vitamins and minerals are indispensable for a smooth functioning organism, especially for children" or "Natural vitamins and minerals for children" or health-related statements such as "With vitamin D as a contribution to a normal function of the immune system for children" or "Calcium and vitamin D are needed for normal growth and bone development of children" also point to children as a target group.

4.2.2 Advertising with promises about health

Together with a positive list, the HCVO regulates which health claims are permitted on foodstuffs and under which conditions they may be used for product advertising [19, 20].

For a few ingredients, health claims that specifically refer to children's development and health ("child claims"), for example, "Calcium and vitamin D are essential for healthy growth and a healthy development of bones in children" are also permitted.

Ten out of 26 products do not require any health claims. A total of 171 health claims were found on the other 16 products (an average of 10.7 claims per product). Most health claims were found on the back of each product.

The health claims related mainly to vitamins and minerals – most frequently vitamins D, C, B₂ and B₆ as well as zinc. Health claims were also used for the omega-3 fatty acids docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA).

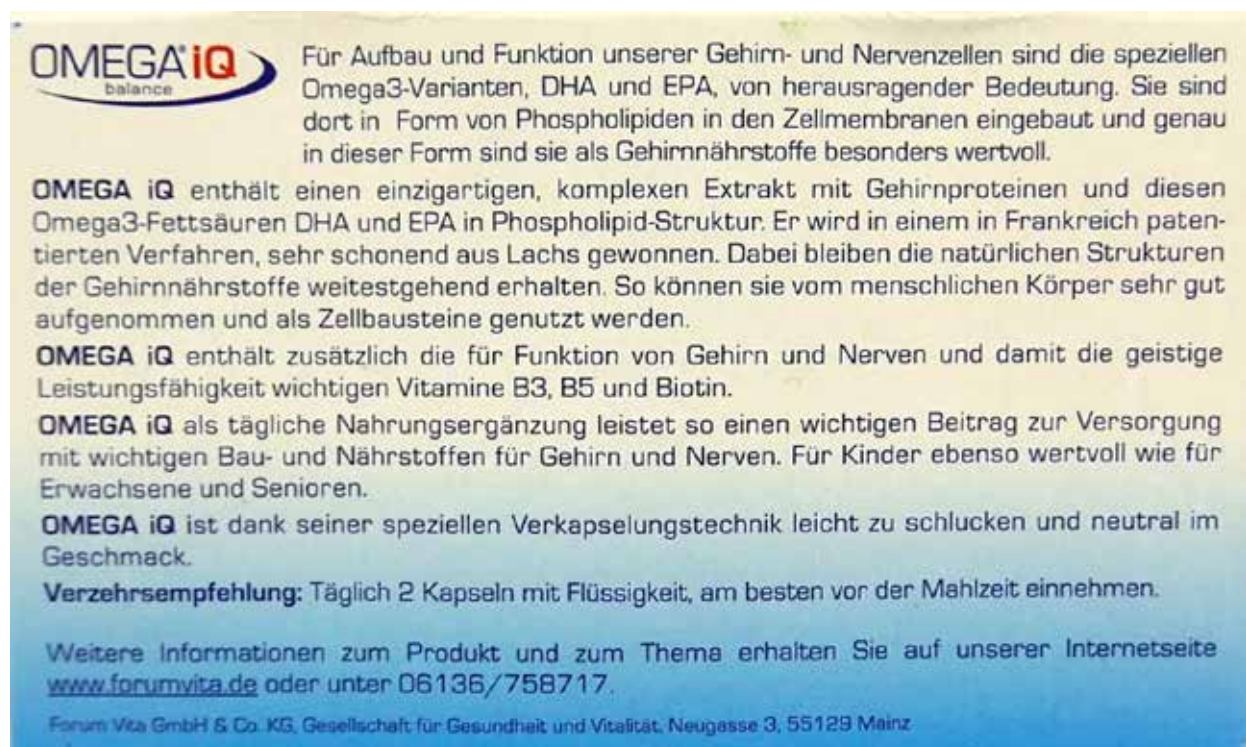
A review of all the claims against the HCVO revealed that one of the health claims used is not authorised (Fig. 8).

It read: "The special Omega 3 variants DHA and EPA are of outstanding importance for the structure and function of our brain and nerve cells. They are incorporated into the cell membranes in the form of phospholipids and it is precisely in this form that they are particularly valuable as brain nutrients."

A statement on brain function is permissible for DHA. It reads "DHA contributes to the maintenance of normal brain function". However, this statement may not be applied to the EPA. In addition, in the above permissible statement on DHA, there was no mandatory reference to the fact that the positive effect occurs with a daily intake of 250 mg DHA.

The supplier of this product is known to the consumer centres. The company was warned in 2014 for inadmissible advertising statements on the food supplement "Omega iQ Junior" [27].

From the point of view of the consumer centres, a further 39 health claims should be examined by the food control authority or by the courts.



OMEGA^{iQ} balance

Für Aufbau und Funktion unserer Gehirn- und Nervenzellen sind die speziellen Omega3-Varianten, DHA und EPA, von herausragender Bedeutung. Sie sind dort in Form von Phospholipiden in den Zellmembranen eingebaut und genau in dieser Form sind sie als Gehirnnährstoffe besonders wertvoll.

OMEGA iQ enthält einen einzigartigen, komplexen Extrakt mit Gehirnproteinen und diesen Omega3-Fettsäuren DHA und EPA in Phospholipid-Struktur. Er wird in einem in Frankreich patentierten Verfahren, sehr schonend aus Lachs gewonnen. Dabei bleiben die natürlichen Strukturen der Gehirnnährstoffe weitestgehend erhalten. So können sie vom menschlichen Körper sehr gut aufgenommen und als Zellbausteine genutzt werden.

OMEGA iQ enthält zusätzlich die für Funktion von Gehirn und Nerven und damit die geistige Leistungsfähigkeit wichtigen Vitamine B3, B5 und Biotin.

OMEGA iQ als tägliche Nahrungsergänzung leistet so einen wichtigen Beitrag zur Versorgung mit wichtigen Bau- und Nährstoffen für Gehirn und Nerven. Für Kinder ebenso wertvoll wie für Erwachsene und Senioren.

OMEGA iQ ist dank seiner speziellen Verkapselungstechnik leicht zu schlucken und neutral im Geschmack.

Verzehrempfehlung: Täglich 2 Kapseln mit Flüssigkeit, am besten vor der Mahlzeit einnehmen.

Weitere Informationen zum Produkt und zum Thema erhalten Sie auf unserer Internetseite www.forumvita.de oder unter 06136/758717.

Forum Vita GmbH & Co. KG, Gesellschaft für Gesundheit und Vitalität, Neugasse 3, 55129 Mainz

Figure 8: Illegal health claim (OMEGA[®] iQ balance)

The decisive factors for this evaluation were, for example:

Missing elements of approved health claims or simplification of health claims: Several statements lacked the word "normal" or "healthy" in the context of the authorised health claim, e.g.

- shortening the permissible statement "Calcium and vitamin D are needed for healthy growth and bone development of children" to "Calcium and vitamin D for growth and bone development" (Fig. 9) or
- Shortening the statement "Vitamin A contributes to the maintenance of normal vision" to "Vitamin A is important for vision" (Fig. 10) or
- Shortening the statement "Vitamin D contributes to a normal function of the immune system of children" to "with vitamin D for the immune system" (Fig. 11). Although there was a number in brackets under which the complete health claim was explained on the reverse side, the consumer centres consider that such clarifying references should be in the same field of vision, or
- Reinforcement of the statement "Zinc/Selenium contribute to a normal function of the immune system" to "The plus for the immune system. With zinc and selenium". The correct health claim could not be found on this product at all (Fig. 6).



Figure 9: Health claim, inadmissible from the point of view of the consumer centres (Salus Kindervital® Special Tonic)



Figure 10: Health claim, inadmissible from the point of view of consumer centres (Das Originale Möller's Omega-3 Kids)



Figure 11: Health claim, inadmissible from the point of view of the consumer centres, on the front page (Kinder-Immun Dr. Wolz)

Strengthening the admissible health claims: For some products, the admissible statement "contributes to reducing fatigue" has been reinforced by replacing the term "fatigue" with "exhaustion" (Fig. 12).



Figure 12: Health claim, inadmissible from the point of view of consumer centres (GSE Kinder Vital Complex and Doppelherz® system ENERGIE Multivitamine family)

Important: An admissible health claim does not necessarily mean that the food supplement is a meaningful addition to the diet for everyone. The admissible claims usually relate to nutrients which are ingested in sufficient quantities under normal conditions and in a balanced and varied diet. An excessive intake of the nutrient above the necessary level is not accompanied by an additional or improved effect, in certain cases it can even be harmful.

4.2.3 "Free of" advertisement

In 20 out of 26 products, at least one "free of" advertisement was found, which is marketed as additional health value. The most frequent indications were "gluten-free" (on 18 products) and "lactose-free" (on 14 products) or equivalent statements. By far most used were the claims "no sugar" (seven products – but then mostly the sweetener sorbitol was used) and "no colouring" (six products) or equivalent claims followed.

4.3. WARNINGS AND INSTRUCTIONS FOR USE

A further aim of the market check was to check whether the legally prescribed references to the food supplements were correctly indicated and, if necessary, whether specific instructions for use could be found. According to paragraph 4 of the NemV, food supplements must be labelled with the following information [28]:

- Food supplements should not be used as a substitute for a balanced and varied diet and healthy lifestyle.
- The recommended consumption must not be exceeded.
- Keep out of the reach of small children.

On all of the products, the instructions found were accurate and legible.

Nine products were labelled as "may cause laxative effects if consumed excessively". This is mandatory for foodstuffs containing more than 10 % polyhydric alcohols (e.g. xylitol or sorbitol). If the sweetener aspartame is used, the words 'contains a source of phenylalanine' shall be printed on the product. This was the case with all four products.

It was positively noted that three products were indicated as not being confectionery. In two products, the voluntary statement "Excessive consumption of vitamins (and minerals) can endanger health" was also found (Fig. 13).

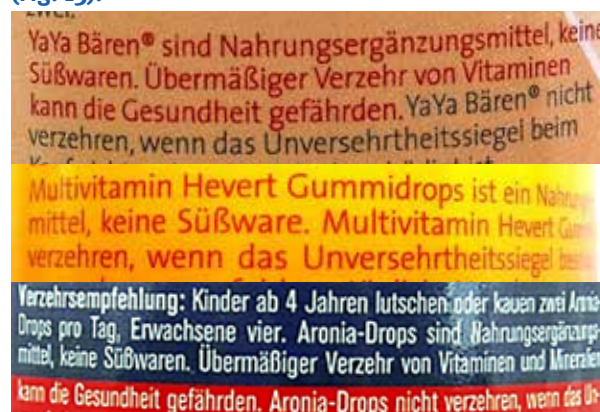


Figure 13: Products marked "not confectionery" (YaYa Bären® Multivitamin, MULTIVITAMIN HEVERT jelly drops and aronia® KIDS)

4.4. WIDE PRICE RANGE

When calculating the cost of food supplements for children, significant differences were noted. The price range of the products covered ranged from 0.04 euros to 1.43 euros per daily dosage recommended by the producer. On average, users of these products have to expect expenditure of 0.54 euros per day or around 198 euros per year. The most expensive product in the market check, when used daily, costs a proud 522 euros a year (Fig. 14).



Figure 14: Most expensive product of the market check (Orthomol junior Omega plus)

5. CONCLUSION AND RECEIVABLES

On average, children in Germany are sufficiently supplied with most vitamins and minerals. The D-A-CH reference values for folic acid, vitamin D, iron, iodine and calcium are not fully achieved. However, this does not mean that affected children develop a clinical nutrient deficiency. The vitamin D supply is significantly improved by regular, prolonged outdoor play, at least during the summer months. Fresh air, exercise and a varied diet with plenty of cereal products, potatoes, vegetables, fruit and dairy products, supplemented by meat, (sea) fish and eggs, have been proven to contribute to the optimal development of the child.

Children therefore usually do not need any food supplements – neither in kindergarten nor at school.

But parents want to do good for their children and want them to be better able to meet the challenges of modern children's everyday lives – especially if they are to be more efficient than others or if they have learning difficulties or concentration problems. In our experience, they are all too happy to believe in the sophisticated advertising messages of the providers, who promise a simple solution to the problem using pills or powders. This supposedly simple solution can sometimes cost the parents a lot. **In the current market check the costs, allotted to food supplements for children, with regular intake, ranged from approx. 15 to 522 Euro per year.**

The problem for assessing the daily intake recommended by the producers is that there are no specific recommendations from the BfR for children regarding the maximum intake of certain nutrients via food supplements [22]. In order to exclude risks due to excessive dosages, the BfR has derived maximum quantity recommendations for adults. Maximum recommended quantities would also be important for the more sensitive metabolism of children. For the evaluation of the dosage recommendations, we used the D-A-CH reference values for the daily vitamin and mineral intake for children aged four to seven years due to the lack of corresponding maximum quantities recommended for children [21]. Although these values already include the total daily dietary intake (including food supplements), producers design their products to contain twice or more

of the recommended content per daily intake of a food supplement. **Particularly critical is the fact that eleven of the 26 food supplements examined (42 percent) even exceed the maximum amounts of vitamins and minerals proposed by the BfR [22], which are intended for persons aged 15 and above.** Further six products reach the maximum amount in food supplements for vitamin A or folic acid recommended by BfR.

Overall, the dosages of the producers appear to be very arbitrary and without a concept. If, for example, the DGE recommends a daily intake of 30 mg of vitamin C for a child between the ages of four and seven, which can easily be achieved through a normal diet, the products we are looking at, range from 20 mg to 200 mg vitamin C per daily dosage. While the DGE recommends 10-15 µg biotin per day for children of this age group [21], food supplements contain between 10 and 150 µg per day.

Legislators should set binding maximum levels for nutrients in food supplements, taking into account the specific needs of children. Against the background of the precautionary principle, consumer centres do not consider food supplements for children to be a sufficiently safe product group until such a binding regulation is in place.

In the current market check, we found only one inadmissible health claim, which is positive in comparison to other market checks. However, the number of claims which, from the point of view of the consumer centres, should be examined by the food control authorities or the courts was very high, at 39. These claims have been reinforced in wording or altered by adding or omitting words. **The monitoring authorities are called upon to take stronger action and punish the inadmissible claims in accordance with the HCVO.**

The previous notification procedure must be replaced by an official examination and approval. This is the only way to guarantee the safety of the products and the accuracy of the health claims. In view of the fact that around one fifth of the products examined by the current market check were not even registered officially, this requirement is becoming ever more relevant.

Parents who buy food supplements for children should preventively be informed about the importance of a balanced diet, sufficient sleep and exercise on the fresh air. Since food supplements are not medicine, parents

should know that they are not tested and approved for safety by the authorities. Only then would they be able to make a conscious decision and accept possible risks.

Parents should discuss health problems with their paediatrician and only administer food supplements after consultation with a doctor.

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7. ANNEX

Annex 1

Overview of the tested food supplements for children from the stationary trade

The product overview shows the status at the time of the market survey. Since then, the product presentation, labelling and/or composition may have changed. We ask the suppliers and consumers to inform us, should any changed products be present in the trade or on the Internet.

Annex 1: Overview of the tested food supplements for children from stationary trading – Part 1

No.	Product name	Company / Manufacturer	Type of transaction	Exceeds D-A-CH reference value for daily supply from four to seven years of age [21]
				Yes
1	altapharma Chewing Tablets Multivitamins for Children	Dirk Rossmann GmbH	Drugstore	
2	AmosVital FIZZY VITS Kinder-Multivitamin lozenges ¹	AmosVital Pharma- und Nahrungsmittel GmbH	Pharmacy	Vitamin C, vitamin E, niacin, pantothenic acid, vitamin B ₁ , vitamin B ₂ , vitamin B ₆ , folic acid, biotin
3	aronia ⁺ KIDS	URSAPHARM Arzneimittel GmbH	Pharmacy	Vitamin C, vitamin B ₆ , biotin
4	Centrum Frisch & Fruchtig lozenges	Pfizer Consumer Healthcare GmbH	Pharmacy	Vitamin C, biotin, folic acid
5	Centrum Vita Soft gums ¹	Pfizer Consumer Healthcare GmbH	Pharmacy	Vitamin C, vitamin B ₆
6	DAS gesunde PLUS Multivitamin für Kinder lozenges	dm-drogerie markt GmbH + Co. KG	Drugstore	
7	DAS gesunde PLUS Vitamin D ₃ für Kinder chewing tablets	dm-drogerie markt GmbH + Co. KG	Drugstore	
8	Das Originale Möllers Omega-3 Kids ²	Orkla Health AS Norway; Sales Germany: Doletra GmbH	Pharmacy	Vitamin E
9	Doppelherz [®] system IMMUN MULTI-VITAMINE family	Queisser Pharma GmbH & Co. KG	Pharmacy	Vitamin C, vitamin E

1) Food supplement was NOT in the database of the Federal Office of Consumer Protection and Food Safety (BVL)

(obligation to notify according to § 5 of the Food Supplements Directive).

2) Further ingredient: Omega-3 fatty acids (docosahexaenoic acid, eicosapentaenoic acid)

of vitamins and minerals for children		Maximum recommended daily intake of vitamins and minerals in BfR food supplements for adolescents aged 15 and above and adults [22]		Number of health claims on the product		
	No	Exceeded	Reached	Admitted	Not admissible from the VZ point of view	Clearly not admitted
	Vitamin C, vitamin D, vitamin E, vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, vitamin B ₆ , vitamin B ₁₂ , folic acid, biotin			0	0	0
n	Calcium, vitamin B ₁₂		Folic acid	0	0	0
	Vitamin A, vitamin E, niacin, folic acid, vitamin B ₁₂ , zinc, selenium		Vitamin A	0	2	0
	Vitamin A, vitamin E, vitamin K, vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, vitamin B ₆ , vitamin B ₁₂ , vitamin D, magnesium, iron, manganese, selenium, zinc	Vitamin A	Folic acid	0	0	0
	Vitamin A, vitamin D, vitamin E, niacin, vitamin B ₁₂ , biotin, zinc, iodine	Vitamin A		0	0	0
	Vitamin C, vitamin D, vitamin E, vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, vitamin B ₆ , vitamin B ₁₂ , folic acid, biotin			0	0	0
	Vitamin D			2	0	0
	Vitamin A, vitamin D	Vitamin A		6	8	0
	Vitamin A, vitamin D, zinc, selenium	Vitamin A		16	2	0

Annex 1: Overview of the tested food supplements for children from stationary trading – Part 2

No.	Product name	Company / Producer	Type of transaction	Exceeds D-A-CH reference value for daily supply from four to seven years of age [21]
				Yes
10	Doppelherz®system ENERGIE Multivitamine family	Queisser Pharma GmbH & Co. KG	Pharmacy	Vitamin C, vitamin B ₁ , vitamin B ₂ , niacin
11	Doppelherz®system OMEGA-3 liquid family ²	Queisser Pharma GmbH & Co. KG	Pharmacy	Vitamin C, vitamin B ₆ , biotin
12	Fit+Vital Multivitamin + Calcium lozenges ¹	SUNLIFE Produktions- und Vertriebsgesellschaft mbH	Pharmacy	Vitamin C, vitamin B ₁ , vitamin B ₂ , niacin, folic acid
13	GSE Kinder Vital Complex	GSE Vertrieb Biologische Nahrungsergänzung & Heilmittel GmbH	Pharmacy	Vitamin E, vitamin B ₆ , biotin
14	KinderImmun Dr. Wolz ³	Dr. Wolz Zell GmbH	Health Food Shop	Vitamin C
15	MensSana Vitaldrink Kinder	MensSana AG	Pharmacy	Biotin
16	Mulgatol® Junior jelly	STADAvita GmbH	Pharmacy	Vitamin C, vitamin E, vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, vitamin B ₆ , biotin
17	MULTIVITAMIN HEVERT jelly drops	Hevert-Arzneimittel GmbH & Co. KG	Pharmacy	Vitamin C, vitamin B ₆
18	naturafit Cocktail for Kids ^{1, 4}	Naturafit GmbH	Pharmacy	Vitamin C, vitamin E, vitamin B ₁ , vitamin B ₂ , niacin, vitamin B ₆ , vitamin B ₁₂ , folic acid, biotin, manganese, selenium

1) Food supplement was NOT in the database of the Federal Office of Consumer Protection and Food Safety (BVL)

(obligation to notify according to § 5 of the Food Supplements Directive).

2) Further ingredient: Sea fish oil (docosahexaenoic acid, eicosapentaenoic acid)

3) Other ingredients: Beta-glucans from yeast (*S. cerevisiae*), colostrum concentrate, inulin, Lactic acid bacteria *Bifidobacterium longum*

4) Further ingredient: Lecithin

of vitamins and minerals for children		Maximum recommended daily intake of vitamins and minerals in BfR food supplements for adolescents aged 15 and above and adults [22]		Number of health claims on the product		
	No	Exceeded	Reached	Admitted	Not admissible from the VZ point of view	Clearly not admitted
	Vitamin A, vitamin D, vitamin E, pantothenic acid, vitamin B ₆ , folic acid, biotin, vitamin B ₁₂ , magnesium	Vitamin A		24	1	0
	Vitamin A, vitamin D, vitamin E, vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, vitamin B ₁₂		Vitamin A	9	0	0
d	Vitamin D, vitamin E, vitamin B ₆ , vitamin B ₁₂ , pantothenic acid, calcium			15	0	0
	Vitamin C, vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, folic acid, iron, zinc, chromium, selenium	Vitamin B ₆		35	8	0
	Vitamin D, vitamin B ₁ , vitamin B ₂ , vitamin B ₆ , vitamin B ₁₂ , folic acid, zinc			15	11	0
	Vitamin C, vitamin A, vitamin D, vitamin E, vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, vitamin B ₆ , folic acid, vitamin B ₁₂ , chromium, iodine, copper, magnesium, selenium, zinc	Copper		2	0	0
n,				0	0	0
	Vitamin A, vitamin D, vitamin E, vitamin B ₁₂ , biotin, niacin, folic acid		Vitamin A	0	0	0
n, ese,	Vitamin D, pantothenic acid, magnesium, zinc, chromium, molybdenum		Folic acid	0	0	0

Annex 1: Overview of the tested food supplements for children from stationary trading – Part 3

No.	Product name	Company / Producer	Type of transaction	Exceeds D-A-CH reference value for daily supply from four to seven years of age [21]
				Yes
19	naturafit Kindervitamine mit Calcium	Naturafit GmbH	Pharmacy	Vitamin C, vitamin E, vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, vitamin B ₆ , folic acid, vitamin B ₁₂ , biotin
20	OMEGA® iQ balance ¹	Forum Vita GmbH & Co. KG	Pharmacy	Biotin
21	OMEGA 3-Loges junior chewing dragées ²	Dr. Loges + Co. GmbH	Pharmacy	
22	Orthomol junior C plus ³	Orthomol pharmazeutische Vertriebs GmbH	Pharmacy	Vitamin C, vitamin E, vitamin K, vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, vitamin B ₆ , folic acid, vitamin B ₁₂
23	Orthomol junior Omega plus ⁴	Orthomol pharmazeutische Vertriebs GmbH	Pharmacy	Vitamin C, vitamin E, vitamin B ₆ , zinc
24	Salus Kindervital® Special Tonic	SALUS Haus GmbH & Co. KG	Health Food Shop	Vitamin B ₆
25	sanostol® lozenges	DR. KADE Pharmazeutische Fabrik GmbH	Pharmacy	Vitamin C, folic acid
26	YaYa Bears® Multivitamin	Amapharm GmbH	Pharmacy	Vitamin C, vitamin B ₆ , biotin

1) Other ingredients: Docosahexaenoic acid, eicosapentaenoic acid, phospholipids

2) Further ingredient: Microalgae oil (docosahexaenoic acid, eicosapentaenoic acid)

3) Other ingredients: Citrus bioflavonoids, beta-carotene, lutein, lycopene

4) Other ingredients: Omega-3 fatty acids (docosahexaenoic acid, eicosapentaenoic acid), borage oil (gamma linolenic acid)

of vitamins and minerals for children		Maximum recommended daily intake of vitamins and minerals in BfR food supplements for adolescents aged 15 and above and adults [22]		Number of health claims on the product		
	No	Exceeded	Reached	Admitted	Not admissible from the VZ point of view	Clearly not admitted
in, 12,	Calcium	Folic acid		0	0	0
	Niacin, pantothenic acid			0	4	1
	Iron			1	0	0
in d,	Vitamin A, vitamin D, calcium, magnesium, iron, zinc, copper, manganese, selenium, chromium, molybdenum, iodine	Vitamin A, vitamin E, copper, manganese	Folic acid, iron	3	1	0
	Vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, folic acid, vitamin B ₁₂ , biotin, magnesium, iron	Zinc		2	0	0
	Vitamin C, vitamin A, vitamin D, vitamin E, vitamin B ₁ , vitamin B ₂ , niacin, vitamin B ₁₂ , calcium			1	1	0
	Vitamin A, vitamin D, vitamin E, vitamin B ₁ , vitamin B ₂ , niacin, pantothenic acid, vitamin B ₆ , vitamin B ₁₂ , biotin, calcium	Vitamin A	Folic acid	0	1	0
	Vitamin A, vitamin E, vitamin D, niacin, folic acid, vitamin B ₁₂		Vitamin A	0	0	0

CONCEPTION:

Verbraucherzentrale Bayern e. V.
Verbraucherzentrale Hessen e. V. (lead)
Verbraucherzentrale Nordrhein-Westfalen e. V.
Verbraucherzentrale Sachsen e. V. (lead)
Verbraucherzentrale Sachsen-Anhalt e. V. (lead)

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Verbraucherzentrale Schleswig-Holstein e. V.
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LAYOUT:

Verbraucherzentrale Baden-Württemberg e. V.

verbraucherzentrale



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State: May 2018