IN FORM
Deutschlands Initiative für gesunde Ernährung und mehr Bewegung

Gesund ins Leben
Netzwerk Junge Familie

Nutrition and physical activity in children from 1–3 years old

Recommendations by the network "Healthy Start – Young Family Network", a project of IN FORM

B. Koletzko[1,23] · M. Armbruster[2] · C.-P. Bauer[3,23] · K. Bös[4] · M. Cierpka[5] · M. Cremer[6] · B. Dieminger[7] · M. Flothkötter[8] · C. Graf[9] · I. Heindl[10] · C. Hellmers[11,23] · M. Kersting[12,23] · M. Krawinkel[13,23] · A. Plöger[14] · H. Przyrembel[15,23] · E. Reichert-Garschhammer[16] · T. Schäfer[17,23] · U. Wahn[18] · K. Vetter[19,23] · M. Wabitsch[20] · A. Weißenborn[21,23] · S. Wiegand[22]

[1] Pediatric Clinic and Polyclinic at Dr. von Haunersches Kinderspital, Medical Center of the University of Munich
[2] MAPP-Empowerment GmbH, Magdeburg
[3] Gaißach Specialist Clinic
[4] Karlsruhe Institute of Technology, Karlsruhe
[5] University of Heidelberg
[6] Idstein
[7] "Eat right from the beginning!" programme, Vienna
[8] aid infodienst e.V., Healthy Start – Young Family Network, Bonn
[9] German Sport University Cologne
[10] University of Flensburg
[11] German Society of Midwifery Science, Münster
[12] Research Institute of Child Nutrition, Dortmund
[13] German Nutrition Society, Bonn
[14] University of Kassel
[15] Berlin
[16] State Institute of Early Childhood Research (IFP), Munich
[17] Dermatologische Praxis (Dermatological Clinic), Immenstadt
[18] Berlin
[19] National Breastfeeding Committee at the Federal Institute for Risk Assessment, Berlin
[20] University of Ulm
[21] Federal Institute for Risk Assessment, Berlin
[22] Charité – Universitätsmedizin Berlin (University Clinic)
[23] The Network "Healthy Start – Young Family Network", Scientific Advisory Board, Bonn

The original article (German) was published in Monatsschr Kinderheilkd 2013, 161:1187-1200 and can be accessed here: http://dx.doi.org/10.1007/s00112-013-3031-3

Preamble

An age-appropriate, balanced diet and plenty of exercise are crucial to the healthy development and well-being of young children (aged 1–3). Increasingly, children approaching their first birthday will eat the same food as their families[1]. Transitioning from breast milk (or infant formula) and complementary food for infants to a mixed and balanced family diet means that a broader range of foods can be given to young children. The mother and child can also choose to continue breastfeeding into the 2nd year of life as an additional dietary feature. Children will increasingly eat without assistance, and in doing so adopt family and cultural customs. It is important to support young children as they transition and familiarise themselves with eating, as a balanced diet will contribute to good health, an enjoyment of food, and general well-being.

As young children grow older, their fine and gross motor skills become noticeably more refined[2], and their movements are more complex and deliberate. Movement is good in many areas of life, not just for health. It is an important tool for young children to acquire knowledge of their environment, to 'grasp' it, to influence their surroundings, to develop an awareness of themselves, their skills and bodies, and to communicate with others. This is why young children need their environment and daily routines to be structured in a way that promotes movement.

[1] Whenever the term 'family' is used in these recommendations, it refers to all communities in which young children feel at home. The word 'parent' refers to all persons who act as important attachment figures for the child.

[2] Motor skills describe all control and functional processes underlying patterns of movement.

The habits that young children learn are not just short-term. They also contribute to their eating and exercise patterns later on in life, as adults. A healthy lifestyle is commonly accepted as a key factor in the prevention of obesity and nutrition-related diseases. Plenty of physical exercise[3], a varied, balanced range of food, respect for bodily signals indicating hunger and satiety, but also sufficient sleep, little to no consumption of screen media, and little to no contact with food advertising, contribute to healthy weight development among young children [69]. These habits are particularly important in a society in which food is available almost everywhere and at any time, screen media dominate our everyday lives, and sufficient physical exercise can no longer be taken for granted.

An overview of the recommendations:

- Section 1 **Learning to eat** clearly shows the significance of shared meals, the importance of heeding signals indicating hunger or satiety, and of enlarging the diversity of foods served in the acquisition of healthy eating patterns, while also indicating what parents can do to support this process.
- Section 2 **Diet** provides recommendations for the allocation of food groups within a balanced diet that is suitable to satisfy a child's need for energy and nutrients. Precautionary measures taken when selecting and preparing the food help protect young children from food poisoning.
- Section 3 **Food intolerances** demonstrates plainly that any restriction in the selection of food requires a confirmed medical diagnosis. It is inadvisable to eliminate certain foods merely as a precautionary measure.
- Section 4 **Physical activity** provides recommendations on how to introduce plenty of exercise into the everyday routines and playtime that are fundamental to the development of young children, and how to limit inactivity. Sufficient sleep and alternate phases of rest and activity also contribute to healthy development.

[3] Physical activity means any form of movement accompanied by an increase in energy requirements.

Setting an example for children, and accepting responsibility

Children acquire knowledge in many different ways, but above all by observing and mimicking their parents and other attachment figures. Young children develop skills and abilities by interacting, communicating, and by sharing with others. It is difficult to teach children things they do not observe in their immediate environments. It is therefore crucial that parents promote healthy eating patterns, regular exercise, and a responsible attitude toward media. Clear rules, structures, and limits help the child learn behavioural patterns that will be beneficial for its health. Specialists that counsel parents should make them aware of the importance of their status as role models and their responsibility to educate their child, but should refrain from putting them under pressure. Instead, they require motivation and support to develop their own practicable ways of defining a healthy lifestyle within their family routines, based on their different needs, cultural backgrounds, and resources. In turn, parents will then be able to accompany and nurture their children as they experience the educational and learning processes needed to acquire healthy dietary and exercise patterns. The child's development and growth are assessed as part of the medical check-ups. Parents should consult their paediatricians if they have any questions concerning their child's weight.

Healthy Start – Young Family Network

Parents frequently have questions concerning a suitable diet and exercise patterns for their young children and about food intolerances. They are often confronted with a range of different recommendations and statements in everyday situations. This is why the network "Healthy Start – Young Family Network" has set itself the target of developing standardised recommendations in collaboration with the relevant specialist associations and professional groups. These recommendations are intended as a basis for communication measures and media produced by the network; their purpose is to instil the confidence that parents need in order to be able to proceed proactively.

The network "Healthy Start - Young Family Network" (http://www.gesund-ins-leben.de) is a project initiated by the German government as part of "IN FORM – Germany's national initiative to promote healthy diets and physical activity" (http://www.in-form.de). It is funded by the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV). The network consists of over 300 institutions, associations and specialist societies that help young families develop a healthy lifestyle. The project is organised by aid infodienst e.V. in Bonn.

From research to recommended action

Between 2012 and 2013, the Scientific Advisory Board and other experts in the field of nutritional education, psychology, psychosomatics, education in early childhood, paediatrics, sport medicine, and sport sciences conducted a screening and assessment of relevant publications, meta-analyses, systematic reviews, guidelines, and recommendations issued by specialist organisations and institutions containing statements on nutrition, exercise and food allergies (German Association of Pediatricians (BVKJ), Federal Institute for Risk Assessment, the Federal Centre for Health Education, Cochrane Library, the German Nutrition Society, the German Society of Pediatrics and Adolescent Medicine, the European

Food Safety Authority, European Society for Paediatric Gastroenterology, Hepatology and Nutrition, the Research Institute of Child Nutrition, Institute of Medicine (USA), National Institute for Health and Clinical Excellence (UK), National Association for Sport and Physical Education (USA), the German Society for Pediatric Allergology and Environmental Medicine, and the World Health Organization). The research and some of the writing took place in collaboration with the Austrian programme "Eat right from the beginning!", which simultaneously published recommendations on nutrition for young children. The joint statements are backed by sufficient evidence to apply as expert recommendations.

Note

The nutritional and exercise recommendations described here apply to healthy children aged between 1 and 3 years in a domestic setting. They are addressed to all health professionals that counsel and accompany the parents of young children (e.g. also as part of educating parents in daycare facilities for young children).

Nurseries and daycare facilities for young children are required to satisfy special hygiene requirements when handling and preparing food. The "DGE Quality Standard for School Meals" (DGE-Qualitätsstandard für die Verpflegung in Tageseinrichtungen für Kinder), drafted on behalf of the Federal Ministry of Food and Agriculture, is intended to provide practical assistance and to help those in positions of responsibility to provide needs-based, balanced meals (http://www.fitkid-aktion.de, http://www.in-form.de). The "Health Promotion Curriculum" (Curriculum Gesundheitsförderung), prepared on behalf of the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, provides information on the standards applicable to preventative health and education, and to working with children aged up to 3 years in nurseries and daycare facilities (http://www.kindergesund-betreut.de).

Abstract

© aid infodienst e.V. Bonn 2013

B. Koletzko · M. Armbruster · C.-P. Bauer · K. Bös · M. Cierpka · M. Cremer · B. Dieminger · M. Flothkötter · C. Graf · I. Heindl · C. Hellmers · M. Kersting · M. Krawinkel · A. Plöger · H. Przyrembel · E. Reichert-Garschhammer · T. Schäfer · U. Wahn · K. Vetter · M. Wabitsch · A. Weißenborn · S. Wiegand

Ernährung und Bewegung im Kleinkindalter. Handlungsempfehlungen des Netzwerks „Gesund ins Leben – Netzwerk Junge Familie", ein Projekt von IN FORM

Zusammenfassung

Hintergrund. Ernährung und Bewegung im frühen Kindesalter beeinflussen die gesunde Entwicklung und das Wohlbefinden des Kindes. Das Netzwerk „Gesund ins Leben – Netzwerk Junge Familie", ein Projekt von „IN FORM – Deutschlands Initiative für gesunde Ernährung und mehr Bewegung", entwickelte Empfehlungen für die Ernährung und Bewegung von Kindern von 1–3 Jahren.
Empfehlungen.
Regelmäßige Mahlzeiten sollten sich mit essensfreien Zeiten abwechseln. Gemeinsame Mahlzeiten in freundlicher Atmosphäre sind wünschenswert. Die Beachtung der Hunger- und Sättigungssignale des Kindes trägt zur Entwicklung eines gesundheitsförderlichen Essverhaltens bei. Eine ausgewogene, abwechslungsreiche Familienernährung kann den Bedarf des Kleinkindes decken. Nüsse, Mandeln und harte Lebensmittelstücke bergen Aspirationsgefahr. Rohe tierische Lebensmittel und daraus hergestellte, nichterhitzte Speisen sind zu meiden. Eine gesicherte ärztliche Diagnose ist Grundlage, bevor Nahrungsmittel wegen einer Unverträglichkeit aus der Ernährung ausgeschlossen werden. Die körperliche Aktivität des Kleinkindes ist aktiv zu unterstützen und der natürliche Bewegungsdrang nicht einzuschränken. Inaktivität sollte begrenzt werden.

Schlüsselwörter

Essen · Lebensmittel und Getränke · Nahrungsmittelallergie · Körperliche Aktivität · Kleinkind

Nutrition and physical activity in children from 1–3 years old. Recommendations by the network "Healthy Start – Young Family Network", a project of IN FORM

Abstract

Background. Nutrition and physical activity in early childhood influence the healthy development and well-being of children. The network "Healthy Start – Young Family Network", a project by "IN FORM, German national initiative to promote healthy diets and physical activity", has developed recommendations for nutrition and physical activity for children 1–3 years old.
Recommendations.
Regular mealtimes should be alternated with periods of abstinence from eating. Communal mealtimes in a friendly atmosphere are desirable. Paying attention to signs of hunger and satiety from children contributes to development of a healthy eating behavior. A balanced family diet rich in variety can fulfil the needs of children 1–3 years old. Nuts, almonds and hard pieces of food represent a danger due to aspiration. Raw animal meat and uncooked meals prepared from it should be avoided. A confirmed medical diagnosis is necessary before food can be excluded from nutrition due to intolerance. The physical activity of children 1–3 years old should be actively supported and the natural urge for movement should not be restricted. Inactivity should be limited.

Keywords

Eating · Food and beverages · Food hypersensitivity · Physical activity · Child

1. Learning to Eat in Early Childhood

Children learn how to eat in a manner similar to their acquisition of speech: by taking action, mimicry, interaction and communication. Eating is a pleasurable and sensual activity. Nevertheless, early childhood will include phases in which children become extremely picky or show little interest in food. Usually, these phases will pass by themselves.

1.1 Shared meals

Recommendations

- **Young children should be given their meals at regular intervals (e.g. 3 main meals and 2 smaller snacks). Meals should alternate with periods without eating.**
- **Snacks, sugary drinks or milk should not be offered in the breaks between meals (e.g. for 2–3 h). Children can and should be allowed to drink water whenever they like.**
- **Leisurely meals in a relaxed family setting (without distraction, for instance from a television set) are desirable. Families should make an effort to share at least one meal each day.**
- **A warm atmosphere at mealtimes makes eating together a positive experience.**
- **Parents should allow their child to eat unassisted and support the child in participating actively in mealtimes.**

Background information

The family in which a child grows up is its first and most important social setting [18]. During meals, young children mimic family rituals and habits, cultural rules, and customs, and also play an active role in shaping them.

Regular meals that start and end at clearly defined times help structure the day. The child learns that times to eat and times to do other things such as to play or move around alternate with each other. It learns that not every hunger pang needs to be satiated immediately, and that it can be postponed until the (shared) mealtimes arrive. Mealtimes do not all last the same length of time. It is an important learning process for the child to remain seated during mealtimes, and to take time to eat and to satisfy its hunger. On average, lunch and dinner in Germany last 20 minutes [37]. Main meals taken with young children should not take longer than 30 minutes [25].

There are cultural differences in terms of the number, intervals and type of meals [103]. But even very different mealtime patterns can satisfy the needs of a young child. The number of meals it will need depends on the energy it requires and the amount it eats at each meal, as well as on the energy density of the food, i.e. dishes it receives [117]. Studies have shown that the risk of obesity rises if fewer meals are consumed [76], especially among boys [70]. The European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) recommends at least 4 daily meals for children aged over 2 [1]. Here in Germany it is commonplace for there to be 3 main meals (breakfast, lunch and dinner), and 2 smaller snacks, one mid-morning and another in the afternoon. In most cases, the young child will not need any additional food in the periods between meals. Energy-rich drinks should also be avoided (see 2.2 Beverages for young children).

Sharing meals is an important element of family life. A pleasant and sociable atmosphere not only encourages communication [63]; it also acts as positive reinforcement in the emergence of preferred foods and eating habits [11, 104, 105]. A meta-analysis has shown that children and adolescents (2.8–17.3 years) who share regular meals with their families more frequently exhibit recommended eating patterns and remain within a normal weight range, compared with those who rarely eat in a family setting [59].

Learning to eat also means acquiring skills to handle cutlery, crockery and drinking receptacles. Nevertheless, children are very different in terms of when they acquire specific fine motor skills. A survey among mothers has shown: Some children are able to use a spoon to guide pudding to their mouths at as early as 11 months, while others do not acquire this ability until the age of 2 [27, 28]. Smaller forks and spoons can help children learn how to eat without assistance. Special 'learning to eat cutlery' (e.g. sliding implements and drinking receptacles) are not necessary. But a certain degree of tolerance will be, as 'practicing' will always involve some spillage.

1.2 Paying attention to hunger and satiety

Recommendations

- **Parents are responsible for ensuring a balanced range of food. The child decides how much it wants to eat. Parents should respect their child's hunger and satiety signals.**
- **Parents should offer a small portion initially; the child can take its own helping as soon as it possesses the necessary skills. The child can ask for, or take, seconds until it has had enough.**
- **Parents should enable their child to concentrate on eating. They help avoid distractions. They refrain from using tricks, persuasion, promises, or games to encourage their child to eat.**
- **Food must not be used as a reward or punishment.**
- **Eating is not an achievement. Parents should not excessively praise their child for how much it manages to eat.**
- **If the child prematurely stops eating or refuses any more food, the parents should only make 1-2 attempts to encourage the child to take some more. They should not offer other foods as replacement.**

Background information

The ability to self-regulate energy intake by means of hunger, satiety, and the amounts consumed to satisfy physiological needs is an inherent capacity which is most distinct among infants and young children. A large number of additional factors influence food consumption later on in life [47]. Respecting the signals that the child communicates, and showing an appropriate response, can help strengthen self-regulation and prevent the emergence of obesity [32, 69]. Exerting pressure to eat (something specific) can interfere with this ability [69, 91, 104].

Hunger and satiety manifest in different ways. Children frequently use gestures or verbal signals to express their desire to eat [9, 26]. A rumbling tummy, a grumpy distemper, loss of concentration, a pallor or a lacklustre demeanour may indicate hunger. While being fed, children show their eagerness to eat, for instance by opening their mouths before the spoon touches their lips or by reach-

ing forward with their heads. If the child wishes to eat at a slower pace, it will turn its head or body to the side. If its interest wanes and it starts playing with its food and assumes a relaxed posture, this may indicate that the child is full [9, 26]. Parents should respect their child's decision, respond calmly, and demonstrate clearly that the meal is over (e.g. by taking away the plate) if the child does not want to eat (or no longer wants to), or if it rejects the food (after sampling it). Parents must not punish their children or threaten sanctions, e.g. by banning favourite foods or excluding the child from shared meals.

Learning to eat independently at a young age also means learning to able to distinguish between emotional states and hunger or satiety as a regulatory mechanism for food intake [30]. Eating has a calming, relaxing effect. Parents who frequently use food to comfort or reward their child may promote unhealthy eating habits or contribute to obesity [32].

Children can easily feel overwhelmed if they are presented with large quantities of food. This is why they should initially receive a small portion, and a second helping can be given later on in response to a prompt by the child. Many parents are concerned that their children do not eat enough. However, evaluations produced as part of the DONALD study have shown that the actual amounts that children eat differ substantially from child to child [3]. Parents can assume that their child is eating enough if it is healthy, active, and satisfied. They should consult a paediatrician if they are concerned about the child's weight. Children are weighed during medical check-ups, and then assessed based on percentile curves (e.g. in the medical check-up booklet for children).

1.3 Enlarging the variety of food

Recommendations

- **Children should be encouraged to sample and discover new foods/dishes, to see what they look, smell or feel like, how they taste, and what kind of consistency they have. Parents should ensure their children receive a varied diet.**
- **Preferred tastes emerge after repeated sampling. Here, parents should offer new foods/dishes several times and without compulsion, and should accept it if their child (temporarily) rejects some things.**
- **Parents should also offer individual foods so that children learn what they taste like on their own.**

Background information

Variety and diversity in the selection of food and dishes contribute to the pleasure we take in eating. These factors are integral to our culinary culture – we eat different meals during the day, in daily routines, on special days – and are beneficial for a balanced nutrient intake as well. It is desirable to encourage the acceptance of nutrient-rich[4] foods in particular, for instance fruit and vegetables, as taste preferences acquired in early childhood will persist into adulthood [92].

Children do not always accept new things immediately. Our preference for sweet things is inherent, and we develop a taste for salty foods at an age of around 4 months, which makes it easier to accept this kind of food [11]. However, other preferences need to be learnt. This starts in the womb (through the food we receive from our mothers), and continues through infancy and early childhood [8, 10, 48, 54, 88]. Infants aged around 6 months and young children up to the age of 2 are particularly open to new taste experiences. The phase in which foods are most frequently rejected (neophobia) reaches its apex between the ages of 2 and 6 [44].

What children (like to) eat depends on the range on offer and their habits. Offering a child the same food several times can help make new food and dishes seem familiar [11]. Combining new food with familiar tastes, ingredients or favourite dishes can also encourage a child to accept unfamiliar foods [11, 96].

Parents will make their children inquisitive if they prepare foods in an appetising and age-appropriate (e.g. in terms of texture and size of the pieces) form, if they themselves also signal their pleasure in eating, and actively involve the children in creating the mealtime situation — for instance by helping to set or clear the table, or by taking their own food within a defined setting.

Eating is a process of sensory and, at the same time, emotional experience. It is desirable to foster and enhance this perception of sensuality [64]. Studies with older children have shown that honing the senses can increase, at least temporarily, the willingness to try out new things [97]. A varied sensitivity to taste may help reduce the risk of obesity. A correlation between the ability to perceive taste and body weight has been demonstrated among schoolchildren [94]. Shared meals and the joint preparation of food are welcome opportunities for active and playful familiarisation with different foods as part of everyday routines.

Note. Parents may initially encounter difficulties when transitioning from pureed to solid food, when introducing new tastes, or when the child starts eating unassisted. In most cases these difficulties with eating will subside on their own. However, parents should always consult a paediatrician if their child is excessively picky, bluntly refuses to take solids, manifests a distinct lack of desire to eat, never shows signs of hunger, only eats under extreme distraction, constantly regurgitates food, spits it out, vomits, or if they are concerned about their child's weight.

[4] Nutrient density = quantity of a nutrient found in a food in relation to its energy content

2. Diets for Young Children

Recommended diets for young children are largely the same as a balanced family diet. There are only a few types of food that young children should not eat, as they may choke, and their immune systems are not yet sufficiently mature.

2.1 Diet

Recommendations

- **A balanced and varied family diet is sufficient to cover all the needs of a young child. Young children can and ought to eat with their families.**
- **A balanced and varied family diet contains:**
  - **Plenty to drink: water is best, or alternatively unsweetened/sugar-free beverages**
  - **Plenty of vegetables: fruit, vegetables, cereals and products derived from them, potatoes**
  - **A moderate quantity of animal products: milk/dairy products, meat, fish, eggs**
  - **Sparing amounts of sugar and sweet foods, salt and fats with a high content of saturated fatty acids, as well as snack products**
- **Healthy young children can be given a balanced diet without resorting to special products.**
- **Nuts, almonds, and other hard foods in 'peanut size' come with the risk of choking (becoming caught in the oesophagus), and should not be made accessible to young children.**

Background information

Young children complete the transition from baby food to a normal diet at the age of around 1; from then on the young child can take part in family meals [50]. Studies conducted by the Research Institute for Child Nutrition have indicated a trend toward giving young children the bottle until a more advanced age, which means that the child's introduction to the family diet does not take place until later on [53].

Although young children need more energy per kilogram of body weight than older children and adolescents, the recommended nutrient content per 100 kilocalories of required energy is similar [41]. This is why a balanced family diet is also suitable for young children. However, it is important to serve age-appropriate quantities and dishes [72, 73].

The recommended allocation of the different food groups with a substantial intake of unsweetened/sugar-free drinks and plant foods, a moderate consumption of animal products and the sparing use of foods that are rich in sugar, salt, and/or saturated fatty acids, corresponds to national and international recommendations [2, 40, 56] and is also in harmony with the concept of an optimised mixed diet [52]. It contains guideline values for age-appropriate intake quantities in the individual food groups; they were developed to ensure that the reference values for energy and nutrient intake are reached, provided the recommendations are followed [4]. Although only moderate quantities of animal products are necessary, it is important when counselling parents to make clear that greater preference should be given to milk/dairy products as compared to meat or sausage.

Studies have shown that on average, young children in Germany eat less vegetables, bread, side dishes (potatoes, rice, and pasta) and fish, but more meat, sausage and eggs than recommended. The consumption of sweets is substantially higher than the recommendations [51, 66]. On average, consumption of milk and dairy products remains within the recommended levels [66]. The intake of saturated fatty acids is higher than, while the consumption of unsaturated fatty acids falls short of, the recommended amounts [66]. Multiply unsaturated fatty acids are crucial to the health and development of children [111], which is why it is important to use vegetable oils (e.g. canola oil) to prepare food; it is also advisable to eat 1-2 portions of fish per week, one of which should consist of high-fat saltwater fish.

Young children are exposed to a greater risk of choking. They frequently place objects in their mouths, talk while chewing, and their mastication is still severely restricted as they do not yet possess molar teeth [16, 58]. Small, round foods such as nuts, seeds, berries, and legumes are the most frequent foreign bodies that become trapped in the oesophagus. Raw root vegetables (whole or in pieces), fish with bones, boiled sweets, entire grapes with seeds, or large pieces of meat can easily cause a young child to choke [9], as can the small balls in bubble tea [19] or chewing gum. That is why young children should not consume these foods.

It is possible to give young children a balanced diet entirely without convenience products. Nevertheless, they can still be part of a balanced diet for young children. When selecting products, it is important to pay attention to the criteria given in Tab. 1. Side dishes, dishes for young children and even so-called children's food are available from retail outlets. Side dishes and foods offered specifically for children (indication: "Age 1–3") must adhere to the provisions of the German regulations on foods for special dietary uses. This also includes side dish menus for hot meals, for instance. The individual convenience products can be assessed based on their respective ingredients. For instance, a side dish menu containing the main constituents stated in Tab. 2 can be used as an alternative to a balanced, home-cooked meal. Cow's milk is a valuable food for young children. As a rule, special milk drinks are not necessary in order to provide young children with a balanced diet [14]. If children's milk drinks are provided, it is important to select products that are based on the recommended composition of children's milk beverages issued by the DGKJ [14]. So-called children's foods that only appeal to children because of their packaging are not required to adhere to the provisions of the German regulations on foods for special dietary uses. Many of these children's foods contain excessive amounts of sugar, fat, saturated fatty acids, or salt, and should therefore only be consumed sparingly as part of a balanced diet.

The DONALD study indicates that children with a substantial consumption of convenience foods (e.g. frozen pizza) show a lower intake of vitamins and minerals. High salt intake is associated with a greater risk of hypertension [21]. Children are likely to consume larger quantities of food with a high salt content [15], which is undesirable for foods with a high energy density due to the risk of obesity. Table salt should be used sparingly. Vitamin and

Tab. 1 Food groups, their significance for nutrient intake, and selection recommendations

Food group	Nutrients	Prefer these items	Additional information
Plenty of these			
Drinks (unsweetened/sugar-free)	Water	Drinking water (tap water), mineral water, unsweetened herbal or fruit teas	Do not exclusively offer herbal and fruit teas, and change the type every now and then
Fruit and vegetables	Provitamin A, folate, vitamin C, potassium, magnesium, roughage	All kinds of fruit and vegetables, legumes, and salad	Prepare vegetables without much fat, raw, or cooked; fruit is best served raw Only serve sprouts and frozen berries when they have been thoroughly heated
Cereal products/potatoes	Vitamin B_1, magnesium, roughage (whole grain products)	Whole grain products several times daily, bread made of finely ground whole grain flour	Do not serve bread with whole or crushed nuts (risk of choking) Serve deep-fried or other high-fat potato dishes sparingly (chips, potato fritters)
In moderation			
Milk and dairy products	Protein, calcium, iodine, Vitamin B_2, Vitamin B_{12}	Pasteurised and UHT low-fat milk and dairy products (1.5% fat) and cheese with less than 50% fat	No unpasteurised milk and unpasteurised milk products Any breastfeeding that the child continues to receive will replace a portion of the milk and dairy products
Meat, sausage, fish, egg	Protein, vitamin B_1, vitamin B_6, vitamin B_{12}, niacin, biotin, iron, zinc Saltwater fish: Vitamin D, iodine, long chain fatty omega-3 fatty acids (fat-rich species)	Lean pieces of meat, lean sausage, fish fillet without bones (low-fat and high-fat saltwater fish)	Always heat meat, fish and eggs thoroughly. No raw sausage Serve high-fat dishes rarely (e.g. breaded or deep fat fried)
Sparingly			
'Solid' fats (fats with a high proportion of saturated fatty acids)	Fat		Use vegetable oils (e.g. canola oil) (omega-3 and omega-6 fatty acids)
Sweets, sugary drinks, sugary pastries, snack products			

Tab. 2 Example for the composition of a recommended main meal

– One portion of a cereal/cereal product (bread, oatmeal, pasta, rice, semolina) or potatoes
– One portion of fruit or vegetables
– One portion of an animal product (milk/dairy product, meat, fish, egg)
– A small glass of an unsweetened/sugar-free beverage

mineral supplements should only be given on medical advice and after consulting a paediatrician. This applies to vitamin D, for instance, which is produced under the influence of sunlight; there is an increased risk of deficiency if the child is not exposed to much sunlight, possesses a dark skin pigmentation, or receives a strictly vegan diet [13].

2.2 Beverages for young children

Recommendation

- **Young children should drink water (or other unsweetened/sugar-free drinks) from a glass, cup or an open mug with each meal and between meals.**

Background information

Based on body weight, young children require more water than adults [41]. Young children should drink 820 ml of water per day [41]. The Research Institute of Child Nutrition recommends 600–700 ml of fluid per day as part of an optimised mixed diet [52]; this volume rises if the child engages in intense physical activity, or if the ambient temperature is high. However, on average children only drink around 60% of the amount recommended for an optimised mixed diet [66].

Surveys have shown that the proportion of sugary drinks consumed by young children rises from 5 to 10% of the intake volume as they progress through early childhood [66]. Calorie-containing drinks (e.g. sweetened tea, lemonade, fruit juices) cause an increased energy intake [1, 42, 69, 115], and compound the risk of obesity [34, 49, 67, 69, 108, 114]. The study conducted by Marshall et al. [86] also indicated a correlation between a higher consumption of sugary drinks and a poor intake of many micronutrients [86]. Moreover, sugary drinks increase the risk of tooth decay [116]. The acids contained in drinks such as lemonades, juices and similar drinks promote the emergence of caries, and can also cause erosive damage to the tooth enamel [22, 112, 116]. Above all, continuous sucking on sweet or acidic drinks and the nighttime baby bottle can endanger the teeth [35]. This is why it is beneficial and important for children to learn how to drink out of a mug from the age of around 9 months. Moreover, using a baby bottle to help the young child fall asleep may disrupt the development of childhood self-regulation skills [95] (see also 1.2 Paying attention to hunger and satiety)

Fruit juices (e.g. apple, pear or grape juice) contain significant amounts of fructose (fruit sugar). Children who consume large quantities may exceed their individual fructose absorption capacity in the small intestine. Fructose then enters the large intestine, where it is broken down by the bacteria there. Complaints

arising from this phenomenon, such as stomach pains and diarrhoea, will disappear as soon as the intake is restricted. Sugar surrogates, for instance sorbitol, which may be contained in tooth-friendly or low-calorie foods, can also cause these unpleasant symptoms [83].

Young children should not consume any beverages containing caffeine or alcohol.

2.3 Vegetarian diets for young children

Recommendations

- **It is possible to provide young children with a balanced vegetarian diet containing milk/dairy products and eggs (ovolacto-vegetarian diet). It is important to take care that they consume sufficient amounts of iron and zinc.**
- **It is not advisable to give young children a strictly vegan diet. The risk of nutrient deficiency is too high, which is why parents who decide to give their children a vegan diet despite this will always require specific medical supervision involving dietary supplements.**

Background information

Parents providing their children with a vegetarian diet should take particular care to ensure an adequate intake of protein, iron, zinc, calcium, vitamin B_{12}, and vitamin D, as well as long chain omega 3 fatty acids, eicosapentaenoic acid (EPA), and docosahexanoic acid (DHA) [6]. Eggs, legumes, whole grain cereal products, some types of fruit and vegetables (e.g. green leafy vegetables and berries) are rich in iron. The availability of iron in plant foods can be improved by combining them with foods containing vitamin C. Eggs, milk, and dairy products provide vitamin B_{12} and protein, while legumes, soy products, and nuts (finely ground) contain zinc and protein. Vegetable oils such as canola, walnut or linseed oil, but also walnuts (finely ground), contribute to an adequate supply of essential alpha-linolenic acid, which the body can use to produce – albeit in limited amounts – long chain omega-3 fatty acids. But even a balanced ovolacto-vegetarian diet can heighten the risk of a deficient intake of certain nutrients such as iron, zinc, and long chain omega-3 fatty acids.

A strictly vegetable (vegan) diet does not provide young children with adequate quantities of nutrients, and can lead to a failure to thrive, or to a risk to the health and development of a child [39, 74]. As a rule: The greater the dietary imbalance and the younger the child, the higher the risk of nutrient deficiency [113]. This is why young children with restrictive dietary patterns require specialist medical supervision and advice.

2.4 Protecting young children from infections and intoxication caused by food

Recommendations

- **Young children should not eat uncooked animal products. This includes uncooked or partially cooked meat, uncooked sausage, raw fish, unpasteurised milk and soft cheese made of unpasteurised milk, raw eggs, and foods made of egg that have not been sufficiently heated.**
- **Hot dishes should be eaten shortly after they are prepared.**
- **It is important to observe standard hygiene rules when preparing and storing foods:**
  - **Wash your hands thoroughly with soap before preparing/cooking food, and before eating.**
  - **Store cooked and uncooked foods separately, and always at the recommended temperatures.**
  - **Do not use the same kitchen utensils to handle uncooked and cooked food (knives, chopping boards, etc.).**
  - **Make sure to observe cleanliness and hygiene rules when preparing food.**

Background information

Hygiene is particularly important when preparing food for children aged up to 5 years of age, as their immune systems are not yet fully developed [24]. Therefore, food poisoning can have very serious consequences.

Food poisoning in young children is most often caused by salmonella, campylobacter, yersinia and enterohaemorrhagic Escherichia coli (EHEC) [100]. Uncooked animal products are at a greater risk of harbouring these bacteria [20]. This product group includes unpasteurised milk and products, foods and soft cheeses prepared using unpasteurised milk, uncooked meat (e.g. carpaccio, raw minced meat), uncooked sausage (especially paté-type sausage that was matured quickly, e.g. sausages made with raw minced meat and onions „Zwiebelmettwurst“), uncooked fish and raw shellfish (e.g. oysters or sushi), as well as raw eggs and unheated dishes made with raw eggs. This is why it is inadvisable for young children to eat these foods. Uncooked animal products such as meat, fish and eggs must be heated thoroughly before eating (core temperature at least +70°C for 2 min.). It may not be sufficient to briefly bring the food to a boil or heat it up in the microwave.

Vegetable products also carry certain risks. Sprouts have been identified as the cause of at times life-threatening EHEC infections [98], while the consumption of frozen berries has resulted in infections with norovirus and hepatitis viruses [99]. It is important to boil or fry these foods at a sufficient temperature before they are served.

Foods should not be kept warm in private households. Any food not consumed immediately after preparation, or if there are any leftovers, must be cooled down to below +7°C as quickly as possible, and must be thoroughly heated up again before they are put back on the table (core temperature at least +70°C for 2 min., e.g. by simmering; [23]).

Hygiene in the storage and preparation of food is an important factor in protecting against food poisoning. The Federal Institute for Risk Assessment has published suitably detailed instructions [20, 23].

Additional measures to maintain hygiene are recommended or are governed by mandatory legal provisions in facilities that provide shared meals such as in nurseries and daycare centres. The competent food administration authority can provide more detailed information in this respect.

3. Food Intolerance among Young Children

The recommendations for a balanced family diet apply just as much to children at a greater risk of suffering from allergies. It is important not to eliminate any foods from the diet merely as a precautionary measure [36]. Only a small proportion of children experience food intolerances. Parents suspect allergic and non-allergic food intolerances far more frequently than they actually occur [101]. The significance of food as a cause of neurodermatitis is also exaggerated.

Recommendations

- **The mere suspicion of a food intolerance does not justify the long-term elimination of certain foods from a child's diet. This may be a substantial source of stress for children, and can also damage their health, which is why this is only to take place based on a confirmed medical diagnosis.**
- **The treatment of neurodermatitis through diet is only indicated if there is a confirmed intolerance to certain foods.**
- **If a food allergy is diagnosed, it is necessary to completely eliminate the food or the ingredient causing the intolerance[5]. Other than that, the diet must be balanced and varied. It must ensure the age-appropriate intake of energy and nutrients. Such nutritional therapy is to take place under specialist supervision.**

Background information

Around 2–3% of all infants and young children suffer from a confirmed cow's milk allergy [80], while approximately 4% of young children have a food allergy [7, 12, 93]. Besides cow's milk, chicken eggs, peanuts, wheat, and soy are frequent causes of allergic reactions among infants and children [7, 93]. Non-allergic food intolerances, for instance when additives cause symptoms similar to allergic reactions, are extremely rare among young children. Around 33–50% of all young children suffering from atopic dermatitis have a food allergy. However, sugar does not act as a trigger [46].

Many food allergies subside by the time the children start school [7]. Around 75% of children allergic to cow's milk were tolerant by the age of 2, while 90% of children showed tolerance by the time they reached schooling age [80]. Up to 70% of children allergic to chicken eggs were tolerant by the time they reached schooling age, while roughly 20% suffering from an allergy to peanuts develop tolerance [81].

The introduction of dietary restrictions is only indicated if a food tolerance has been unequivocally confirmed. Secure methods to diagnose food intolerance include reviewing medical histories, elimination and provocation using suspected foodstuffs, and where necessary skin tests or in vitro tests for IgE antibodies. The attending physician will recommend the diagnostic methods necessary in the specific case.

Note. Among others, the following methods are unsuitable to determine an allergic or non-allergic food intolerance: Determination of IgG and IgG4, bioresonance, kinesiology, electroacupuncture, cytotoxic food tests, lymphocyte transformation test, Vega test, iris diagnosis, hair analyses, medical dowsing.

If the child is suffering from an allergic food intolerance, the allergen must be avoided completely. Nevertheless, in many cases the child will develop a tolerance, which means that the majority of children with food allergies will only have to avoid the allergen on a temporary basis. However, it is still important to consult a physician before reintroducing the eliminated food (e.g. after 6 to 12 months).

The child may experience substantial social stress due to a restriction in its selection of foods. It may even be harmful, for instance if the child does not have an adequate intake of vital nutrients [79, 90]. Nutritional therapy must take place under specialist supervision [84] in order to ensure that the eliminated foods are adequately replaced in the nutrient intake. Parents of children suffering from neurodermatitis should be encouraged to take part in a specific training programme that suitably reflects the complex symptoms of this condition.

A confirmed diagnosis is also required before dietary intervention in the case of lactose intolerance (intolerance to milk sugar), a developmental phenomenon in which the enzyme lactase becomes less active after the child is weaned off breast milk. It is quite rare for this condition to afflict children aged 2 to 3 [45, 65]. Still, children suffering from lactose intolerance can still tolerate small quantities of lactose, which means it is not necessary to eliminate milk and dairy products entirely.

Celiac disease is caused in genetically predisposed humans by the cereal product gluten (e.g. in rye, wheat, spelt, barley, oats) and related proteins; it manifests as an atrophy of the mucous membrane in the small intestine. Around 0.7% of children are affected by celiac disease [78]. Once diagnosis has been confirmed (determination of specific antibodies, analysis of the mucous membrane in the small intestine), it is necessary to eliminate gluten from the diet [68] entirely.

The DGE Quality Standard for School Meals [38] and the instructions on handling food intolerances provided in the Health Promotion Curriculum (http://www.kinder-gesund-betreut.de) offer advice on how to handle food intolerances in daycare facilities for children.

4. Physical Activity for Young Children

Every child benefits from movement, and parents can deliberately influence the activity patterns of their offspring. Parents of children with special needs or chronic diseases can consult with their paediatrician or physiotherapist to find individual activities suitable to the needs of their children.

4.1 Type and extent of activity

Recommendations

- **Do not inhibit young children in their natural urge to move. This is why they should be active as much as possible, especially outside.**
- **Complex movement patterns (e.g. climbing, playing ball or moving to rhythms or music) are particularly beneficial to the development of motor skills.**

Background information

Young children are active simply because they love moving. Therefore, fostering physical activity at a young age primarily means preserving the joy children experience by moving around, and therefore not restricting their activities. Physical activity has a positive impact on health and fitness throughout a person's life. It strengthens the cardiovascular system, the musculoskeletal system, and helps prevent lifestyle-related diseases. A correlation between physical activity, healthy bones and cardio-metabolic parameters can already be observed in early childhood [110]. Movement is particularly important in the initial phases of life. Children appraise their environments actively and sensually, absorbing what they experience [119].

Intense physical activity is desirable, and there is no such thing as too much movement for a healthy child occupying itself. Recommendations for daily activity periods can provide pointers as to a minimum amount of movement. A panel of German experts – as do recommendations from the US – recommend that young children be physically active for at least 90 minutes per day [57, 89]. The WHO recommends that children aged over 5 engage in moderate to intense physical exercise for at least 60 minutes daily [118].

Short sequences of movements, such as skipping or jumping, are typical of young children. But young children also enjoy complex movement patterns that are especially good for the development of motor skills, such as climbing, moving to music, throwing, catching, and cartwheels. The great outdoors is a fantastic source of inspiration for all kinds of physical activity, and the time spent moving outside also helps supply the child with vitamin D during the summer months (see 2.1 Diet).

4.2 Promoting physical activity

Recommendations

- **Parents should support their young children in acquiring experience with movement in the following ways:**
  - **Work with your child to introduce movement into your daily routines, and deliberately give your child plenty of incentives to be active.**
  - **Create as much time and space as possible in which your child can move safely.**
  - **Allow your child to be active with other children.**
  - **Make use of family services such as parent/child gymnastics and other activities on offer for young children.**
- **Allow your child to learn how to handle risks and dangers with aplomb. Therefore, parents should not interrupt a child if it has chosen to pursue a course of action, unless there are imminent and serious dangers.**

Background information

Young children need opportunities and inspiration to apply their age-appropriate motor skills, and to develop new abilities. But children are very different in terms of when they learn specific movement skills, and these processes are quite difficult to influence. Some children can walk unassisted at the age of 11 months, for instance, while others need 16 months [75]. It can no longer be taken for granted that our daily routines will involve plenty of movement, especially as many areas of our lives are becoming increasingly automated. This is why it is crucial to consciously incorporate physical activity into our daily routine. The promotion of physical activity takes place on the levels of behavioural and conditional prevention [57].

The easiest way to introduce more exercise to everyday family routines is to run short errands with your child on foot, or to let your child ride its kid's bike or scooter. Here, independent experiences with movement (unstructured movement) are particularly important. It allows the young child to gradually acquire movement skills 'at its own speed', and to practice them until they become increasingly confident, controlled, deliberate, fluid and complex. This autonomous experimentation that allows the child to experience its own skills, limits and self-efficacy helps strengthen self-confidence and promote positive self-conceptualisation. But children also need other children. Together, they come up with individual activities and ideas for games, share new experiences [119], and experience progress while developing motor and social skills. Spontaneous, varied encouragement to engage in activities (e.g. activity games, moving to music, using everyday materials, or the development of appropriate playthings) suit the natural movement patterns found among children, and offer incentives for physical activity — as do structured options.

Conditional prevention measures include, for instance, routinely taking time for physical activity over the course of a normal day in the family, at daycare or in daycare facilities. Whether inside or out, spaces can be suitably arranged to encourage movement and to provide as few restrictions as possible. Safety precautions are necessary, though. Parents are afraid that their children will hurt themselves. But most minor tumbles are harmless. Also, children need the opportunity to become skilled in handling dangers and risks. A child that moves frequently and in many different ways, acquiring new skills, will become increasingly confident and dextrous [102]. It learns how to catch a fall, or the right way to fall. Accidents in kindergarten are usually caused by insufficiently practised motor skills [71]. This is why parents should allow their child to do as much as possible by itself, and also refrain from putting it into positions (e.g. upright, walking) it cannot yet attain by itself. In fact, special walkers are dangerous, as they allow young children to reach high speeds (up to 10 km/h), which can lead to serious injuries [87, 107].

Healthy Start – Young Family Network

The network "Healthy Start" (http://www.gesundinsleben.de) is a collaboration between the relevant institutions, specialist societies and associations that deal with young families. It is a project that is part of the National Action Plan IN FORM, Germany's national initiative to promote healthy diets and physical activity (http://www.in-form.de).

IN FORM was founded in 2008 by the Federal Ministry of Food and Agriculture (BMELV) and the Federal Ministry of Health (BMG), and has since cooperated with project partners across Germany to positively influence all areas of life. The aim is to sustainably improve dietary and exercise patterns within the population.

Contact: aid infodienst e. V., Healthy Start – Young Family Network, Heilsbachstr. 16, 53123 Bonn, Email: post@gesund-ins-leben.de

4.3 Limiting inactivity

Recommendations

- **Stop your child from sitting for too long, and avoid unnecessary sitting times (e.g. in the buggy or high chair).**
- **Screen media (TV sets, computers, mobile phones, games consoles, etc.) are unsuitable for young children.**

Background information

More activity and less sitting are good for a child's development. This is why high chairs and car seats should only be used for their intended purpose. If possible, young children should not remain seated for longer than 30 min. at a time [69]. Numerous studies have shown a correlation between watching television and obesity [61], and this phenomenon has been proven for young children, also [82, 85].

Screen media may be overtaxing for young children, and can have negative repercussions. Studies have discussed an overstimulation of the brain, which in the initial years of life develops at a breathtaking pace, and a suppression of other activities [31]. In order to experience healthy development, it is crucial that young children receive balanced stimulation from their environments and from independent activity. Unstructured play allows children to actively experience a variety of physical and sensual stimuli 'at their own pace', and hence to independently grasp their causes and effects. In contrast, our sensual activity is restricted almost entirely to audio and visual perception when we use screen media.

Young children absorb media content differently from adults, and are unable to distinguish between commercials and the programmes themselves. They tend, therefore, to believe that advertising is authentic. Available data convincingly links the deleterious effects of television commercials on food preferences, and the consequent risk of succumbing to obesity [69]. The World Health Organization also concludes that food commercials affect eating patterns, and contribute to excessive weight and obesity [62].

Studies have reported on the correlation between the length of time spent watching television and the irregular sleeping patterns among young children [109]. They have also discussed the negative implications for language acquisition. In this case, television sets playing in the background can also have an effect, and not just the personal consumption of television programmes. They distract parents and children, and can hence reduce the time that parents and children spend interacting [17].

Prevalent intra-family circumstances influence how often children watch television, and for how long. A television set in a child's room, the parents' viewing habits, their style of upbringing, their attitudes toward television, and their self-efficacy (confidence in their own ability to reduce the time their child spends in front of a screen) are all contributing factors [29].

It is desirable to prevent young children from watching television or consuming other screen media entirely. But putting our recommendation into practice in families, especially if there are older siblings, can sometimes prove difficult. On no account should the child consume, or be actively exposed to, screen media without adult supervision, and a television set or computer should not be installed in a young child's room [25].

4.4 Sleep and rest

Recommendation

- **Parents should give their child opportunities to rest and sleep. Each child is unique in respect to how much rest and sleep it needs.**

Background information

Sufficient, restful sleep and relaxation are important factors in allowing the brain to grow and develop, to process information, for mnemonic capacities, to acquire new knowledge, and for many other neural functions [106]. A correlation between insufficient sleep and a heightened risk of obesity can be observed not only among adults, but also children [32]. However, the underlying mechanisms require additional research [33, 69].

Sleep becomes increasingly focused on the night-time hours as the young child grows older. Children usually abandon sleeping during the day between the ages of 3 and 4. Each child is entirely different in terms of how much accumulated sleep it needs, and when it will stop napping during the day [43]. Scientific studies have shown that children sleep between 10 and 14 hours per day [55].

Alternating between rest and activity, between excitement and relaxation, also contributes to a healthy development, and helps the child acquire a flexible repertoire of strategies to handle stress [60]. Parents should take care to ensure that phases of intense activity and movement are interspersed with phases of rest.

Addresses for Correspondence

Prof. Dr. B. Koletzko
Pediatric Clinic and Polyclinic,
Dr. von Haunersches Kinderspital,
Medical Centre of the University of Munich
Lindwurmstr. 4, 80337 Munich
office.koletzko@med.uni-muenchen.de

M. Flothkötter
aid infodienst e.V., Healthy Start –
Young Family Network
Heilsbachstr. 16, 53123 Bonn
m.flothkoetter@aid-mail.de

Acknowledgements. The Network "Healthy Start - Young Family Network" would like to thank M. Abel (BAG Safe Kids Germany), M. Bruckmüller ("Eating Right from the Beginning" programme), S. Fahmy (German Nutrition Society), N. Fröschl ("Eating Right from the Beginning" programme), M. Krüger (aid expert forum http://www.was-wir-essen.de), M. Radke (Ministry for Rural Areas and Consumer Protection in Baden-Württemberg), M. Schönwandt (German Youth Sport Association), C. Splieth (German Society of Pediatric Dentistry), C. Thienel (aid expert forum http://www.was-wir-essen.de) and F. Widmer (Health Promotion Switzerland) for their valuable contributions to the discussion.

Adherence to Ethical Guidelines

Conflicts of Interest. B. Koletzko, M. Armbruster, C.-P. Bauer, K. Bös, M. Cierpka, M. Cremer, B. Dieminger, M. Flothkötter, C. Graf, I. Heindl, C. Hellmers, M. Kersting, M. Krawinkel, A. Plöger, H. Przyrembel, E. Reichert-Garschhammer, T. Schäfer, U. Wahn, K. Vetter, M. Wabitsch, A. Weißenborn and S. Wiegand hereby confirm that there are no conflicts of interest.

This article did not involve any experiments conducted on animals or humans.

References

1. Agostoni C, Braegger C, Decsi T et al (2011) Role of dietary factors and food habits in the development of childhood obesity: a commentary by the ESPGHAN Committee on Nutrition. J Pediatr Gastroenterol Nutr 52:662–669
2. aid infodienst (2009) aid-Ernährungspyramide. aid infodienst e. V., Bonn
3. Alexy U, Kersting M (2006) Schwankungen im Nahrungsverzehr. Studie zu Säuglingen, Klein- und Vorschulkindern. Monatsschr Kinderheilkd 154:998–999
4. Alexy U, Clausen K, Kersting M (2008) Die Ernährung gesunder Kinder und Jugendlicher nach dem Konzept der Optimierten Mischkost. Ernähr Umschau 3:168–177
5. Alexy U, Libuda L, Mersmann S, Kersting M (2011) Convenience foods in children's diet and association with dietary quality and body weight status. Eur J Clin Nutr 65:160–166
6. Amit M, Canadian Paediatric Society CPC (2010) Vegetarian diets in children and adolescents. Paediatr Child Health 15:303–314
7. Augustin M, Bachert C, Bauer C et al (2010) Weißbuch Allergie in Deutschland. Springer, Berlin Heidelberg New York
8. Beauchamp GK, Mennella JA (2009) Early flavor learning and its impact on later feeding behavior. J Pediatr Gastroenterol Nutr 48(Suppl 1): P. 25–P. 30
9. Benjamin SE (2012) Making food healthy and safe for children: how to meet the caring for our children: national health and safety performance standards; guidelines for early care and education programs. The National Training Institute for Child Care Health Consultants, Chapel Hill/NC
10. Birch LL, Fisher JO (1998) Development of eating behaviors among children and adolescents. Pediatrics 101:539–549
11. Birch LL, Anzman-Frasca S (2011) Promoting children's healthy eating in obesogenic environments: lessons learned from the rat. Physiol Behav 104:641–645
12. Bischoff SC (2012) Nahrungsmittelunverträglichkeiten – Update. Gastroenterologie up2date 143–150
13. Böhles H, Fusch C et al; the Nutrition Commission of the German Society of Pediatrics and Adolescent Medicine (DGKJ) in cooperation with the German Pediatric Endocrine Society (APE) (2011) Vitamin-D-Versorgung im Säuglings-, Kindes- und Jugendalter. http://www.dgkj.de/wissenschaft/stellungnahmen/meldung/meldungsdetail/vitamin_d_versorgung_im_saeuglings_kindes_und_jugendalter/. Accessed on: 7 July 2013
14. Böhles HJ, Fusch C et al; the Nutrition Commission of the German Society of Pediatrics and Adolescent Medicine (DGKJ) (2011) Zusammensetzung und Gebrauch von Milchgetränken für Kleinkinder. Updated recommendations by the Nutrition Commission of the German Society of Pediatrics and Adolescent Medicine (DGKJ). Monatsschr Kinderheilkd 159:981–984
15. Bouhlal S, Issanchou S, Nicklaus S (2011) The impact of salt, fat and sugar levels on toddler food intake. Br J Nutr 105:645–653
16. Brkic F, Umihanic S (2007) Tracheobronchial foreign bodies in children. Experience at ORL clinic Tuzla, 1954–2004. Int J Pediatr Otorhinolaryngol 71:909–915
17. Brown A, Council on Communications and Media Executive Committee 2010–2011 (2011) Media use by children younger than 2 years. Pediatrics 128:1040–1045
18. Brunner KM (2011) Der Ernährungsalltag im Wandel und die Frage der Steuerung von Konsummustern. In: Ploeger A, Hirschfelder G, Schönberger G (Hrsg) Die Zukunft auf dem Tisch. Analysen, Trends und Perspektiven der Ernährung von morgen. VS Verlag für Sozialwissenschaften/Springer Fachmedien, Wiesbaden, P. 203–218
19. Federal Institute for Risk Assessment (2012) Trendgetränk Bubble Tea kann für Kleinkinder ein Gesundheitsrisiko bergen. Statement no. 031/2012 by the BfR dated 19 June 2012. http://www.bfr.bund.de/cm/343/trendgetraenk-bubble-tea-kann-fuer-kleinkinder-ein-gesundheitsrisiko-bergen.pdf. Accessed on: 25 April 2013
20. Federal Institute for Risk Assessment (2012) Hackepeter und rohes Mett sind nichts für kleine Kinder! Press release 11/2012, 12 March 2012. http://www.bfr.bund.de/de/presseinformation/2012/11/hackepeter_und_rohes_mett_sind_nichts_fuer_kleine_kinder_-129122.html. Accessed on: 17 April 2013
21. Federal Institute for Risk Assessment (2011) Blutdrucksenkung durch weniger Salz in Lebensmitteln. Statement no. 007/2012 by the BfR, MRI and RKI dated 19 October 2011. http://www.bfr.bund.de/cm/343/blutdrucksenkung-durch-weniger-salz-in-lebensmitteln.pdf. Accessed on: 17 April 2013
22. Federal Institute for Risk Assessment (2005) Hohe Gehalte an Zitronensäure in Süßwaren und Getränken erhöhen das Risiko für Zahnschäden. Updated statement no. 006/2005 by the BfR dated 9 January 2004. http://www.bfr.bund.de/cm/343/hohe_gehalte_an_zitronensaeure_erhoehen_das_risiko_fuer_zahnschaeden.pdf. Accessed on: 17 April 2013
23. Federal Institute for Risk Assessment (2007) Consumer tips: Schutz vor Lebensmittelinfektionen im Privathaushalt. http://www.bfr.bund.de/cm/350/verbrauchertipps_schutz_vor_lebensmittelinfektionen_im_privathaushalt.pdf. Accessed on: 25 April 2013
24. Federal Institute for Risk Assessment (2013) Sicher verpflegt. Besonders empfindliche Personengruppen in Gemeinschaftseinrichtungen. http://www.bfr.bund.de/cm/350/sicher-verpflegt-besonders-empfindliche-personengruppen-in-gemeinschaftseinrichtungen.pdf. Accessed on: 25 April 2013
25. Federal Centre for Health Education (2011) Gesund groß werden. Eltern-Ordner zum gesunden Aufwachsen und zu den Früherkennungsuntersuchungen für Kinder U1–U9 und J1. Federal Centre for Health Education, Cologne
26. Butte N, Cobb K, Dwyer J et al (2004) The start healthy feeding guidelines for infants and toddlers. J Am Diet Assoc 104:442–454
27. Carruth BR, Skinner JD (2002) Feeding behaviors and other motor development in healthy children (2–24 months). J Am Coll Nutr 21:88– 96
28. Carruth BR, Ziegler PJ, Gordon A, Hendricks K (2004) Developmental milestones and self-feeding behaviors in infants and toddlers. J Am Diet Assoc 104:S51–S56
29. Carson V, Janssen I (2012) Associations between factors within the home setting and screen time among children aged 0–5 years: a cross-sectional study. BMC Public Health 12:539
30. Chatoor I (2012) Fütterstörungen bei Säuglingen und Kleinkindern. Diagnose und Behandlungsmöglichkeiten. Cottas'sche Buchhandlung, Stuttgart
31. Christakis DA (2009) The effects of infant media usage: what do we know and what should we learn? Acta Paediatr 98:8–16
32. Dattilo AM, Birch L, Krebs NF et al (2012) Need for early interventions in the prevention of pediatric overweight: a review and upcoming directions. J Obes 2012:123023
33. Jong E de, Stocks T, Visscher TL et al (2012) Association between sleep duration and overweight: the importance of parenting. Int J Obes 36:1278–1284
34. Deboer MD, Scharf RJ, Demmer RT (2013) Sugar-sweetened beverages and weight gain in 2- to 5-year-old children. Pediatrics 132(3):413– 420

35. Deichsel M, Rojas G, Lüdecke K, Heinrich-Weltzien R (2012) Frühkindliche Karies und assoziierte Risikofaktoren bei Kleinkindern im Land Brandenburg. Bundesgesundheitsbl Gesundheitsforsch Gesundheitsschutz 55:1504–1511
36. German Society for Allergology and Immunology (DGAKI) in cooperation with the Association of German Allergologists (ÄDA), the German Society for Pediatrics and Adolescent Medicine (DGKJ), the German Dermatological Society (DDG), and the German Society of Pediatrics Allergology (GPA) (2009) S3-Leitlinie Allergieprävention. AWMF Guidelines Register No. 061/016. http://www.awmf.org/uploads/tx_szleitlinien/061-016_S3_Allergiepraevention_03-2009_03-2014.pdf. Accessed on: 24 Sep. 2013
37. German Nutrition Society (2004) Nutrition Report 2004. German Nutrition Society, Bonn
38. German Nutrition Society (2011) DGE-Qualitätsstandard für die Verpflegung in Tageseinrichtungen für Kinder, 3rd edition, German Nutrition Society, Bonn
39. German Nutrition Society (2011) Vegane Ernährung: Nährstoffversorgung und Gesundheitsrisiken im Säuglings- und Kindesalter. DGEinfo 58:48–51
40. German Nutrition Society, aid infodienst (2011) Vollwertig essen und trinken nach den 10 Regeln der DGE. aid infodienst, Bonn
41. German Nutrition Society, Austrian Nutrition Society, Swiss Nutrition Society (2012) D-A-CH Nutrient Reference Values. Umschau/Braus, Frankfurt/Main
42. German Nutrition Society (Ed.) (2011) Evidenzbasierte Leitlinie. Kohlenhydratzufuhr und Prävention ausgewählter ernährungsmitbedingter Krankheiten. German Nutrition Society, Bonn
43. German Sleep Society (DGSM) AP (2011) Schlafstörungen bei Säuglingen, Kleinkindern, Kindern und Jugendlichen. http://www.charite.de/dgsm/dgsm/downloads/dgsm/arbeitsgruppen/ratgeber/neu-Nov2011/Kinder_A5.pdf. Accessed on: 18 June 2013
44. Dovey TM, Staples PA, Gibson EL, Halford JC (2008) Food neophobia and 'picky/fussy' eating in children: a review. Appetite 50:181–193
45. EFSA Panel on Dietetic Products NaAN (2010) Scientific opinion on lactose thresholds in lactose intolerance and galactosaemia. EFSA J 8:1777
46. Ehlers I, Worm M, Sterry W, Zuberbier T (2001) Sugar is not an aggravating factor in atopic dermatitis. Acta Derm Venereol 81:282–284
47. Ellrott T (2009) Einflussfaktoren auf die Entwicklung des Essverhaltens im Kindesalter. Oralprophylaxe Kinderzahnheilkunde 31:78–85
48. Elsner B, Pauen S (2012) Vorgeburtliche Entwicklung und früheste Kindheit. In: Schneider W, Lindenberg U (Ed.) Entwicklungspsychologie. Beltz, Weinheim, P. 159–186
49. Nutrition Commission of the German Society of Pediatrics and Adolescent Medicine (DGKJ), Nutrition Commission of the Austrian Society of Pediatrics and Adolescent Medicine (ÖGKJ), Nutrition Commission of the Swiss Society of Pediatrics (SGP) (2008) Empfehlungen zum Verzehr zuckerhaltiger Getränke durch Kinder und Jugendliche. Monatsschr Kinderheilkd 156:484–487
50. Fleischer Michaelsen K, Weaver L, Branca F, Robertson Al (2003) Feeding and nutrition of infants and young children. Guidelines for the WHO European Region, with emphasis on the former Soviet countries. WHO regional publications, European series No. 87. http://www.euro.who.int/__data/assets/pdf_file/0004/98302/WS_115_2000FE.pdf. Accessed on: 25 April 2013
51. Research Institute of Child Nutrition (2003) Ernährungsphysiologische Auswertung einer representativen Verzehrsstudie bei Säuglingen und Kleinkindern VELS mit dem Instrumentarium der DONALD Studie 2003. download.ble. de/02HS007.pdf
52. Research Institute of Child Nutrition (2012) Empfehlungen für die Ernährung von Kindern und Jugendlichen. Die Optimierte Mischkost optimiX. Research Institute of Child Nutrition, Dortmund
53. Foterek K, Cheng G, Kersting M, Alexy U (2012) Gibt es einen Trend zur Fortführung der speziellen Säuglingsernährung ins Kleinkindalter? Ernähr Umschau 59:442–447
54. Gahagan S (2012) Development of eating behavior: biology and context. J Dev Behav Pediatr 33:261–271
55. Galland BC, Taylor BJ, Elder DE, Herbison P (2012) Normal sleep patterns in infants and children: a systematic review of observational studies. Sleep Med Rev 16:213–222
56. Gidding SS, Dennison BA, Birch LL et al (2006) Dietary recommendations for children and adolescents: a guide for practitioners. Pediatrics 117:544–559
57. Graf C, Beneke R, Bloch W et al (2013) Vorschläge zur Förderung der körperlichen Aktivität von Kindern und Jugendlichen in Deutschland. Ein Expertenkonsens. Monatsschr Kinderheilkd 161, S 439-446
58. Gregori D, Salerni L, Scarinzi C et al (2008) Foreign bodies in the upper airways causing complications and requiring hospitalization in children aged 0–14 years: results from the ESFBI study. Eur Arch Otorhinolaryngol 265:971–978
59. Hammons AJ, Fiese BH (2011) Is frequency of shared family meals related to the nutritional health of children and adolescents? Pediatrics 127:e1565–e1574
60. Hampel P (2007) Stressbewältigungstraining im Kindes und Jugendalter. In: Seiffge-Krenke I, Lohaus A (Ed.) Stress und Stressbewältigung im Kindes und Jugendalter. Hogrefe, Göttingen, P. 235–246
61. Hancox RJ, Milne BJ, Poulton R (2004) Association between child and adolescent television viewing and adult health: a longitudinal birth cohort study. Lancet 364:257–262
62. Hastings G, McDermott MP, Angus K et al (2007) The extent, nature and effects of food promotion to children: a review of the evidence. Technical paper prepared for the WHO. http://www.who.int/dietphysicalactivity/publications/Hastings_paper_marketing.pdf. Accessed on:10 Sep. 2013
63. Heindl I, Plinz-Wittdorf C (2013) Essen ist reden mit anderen Mitteln – Esskultur, Kommunikation, Küche. Ernähr Umschau 60:8–15
64. Heindl I, Methfessel B, Schlegel-Matthies K (2011) Ernährungssozialisation und -bildung und die Entstehung einer "kulinarischen Vernunft". In: Ploeger A, Hirschfelder G, Schönberger G (Ed.) Die Zukunft auf dem Tisch. Analysen, Trends und Perspektiven der Ernährung von morgen. VS Verlag für Sozialwissenschaften/Springer Fachmedien, Wiesbaden, P. 187– 202
65. Heyman MB, Committee on Nutrition (2006) Lactose intolerance in infants, children, and adolescents. Pediatrics 118:1279–1286
66. Hilbig A, Alexy U, Drossard C, Kersting M (2011) GRETA: Ernährung von Kleinkindern in Deutschland. Aktuel Ernahrungsmed 36:224–232
67. Hu FB, Malik VS (2010) Sugar-sweetened beverages and risk of obesity and type 2 diabetes: epidemiologic evidence. Physiol Behav 100:47– 54
68. Husby S, Koletzko S, Korponay-Szabo IR et al (2012) European society for pediatric gastroenterology, hepatology, and nutrition guidelines for the diagnosis of coeliac disease. J Pediatr Gastroenterol Nutr 54:136–160
69. Institute of Medicine; Committee on Obesity Prevention Policies for Young Children (2011) Early childhood obesity prevention policies. National Academies Press, Washington DC. http://www.nap.edu. http://www.nap.edu/catalog.php?record_id=13124. Accessed on: 19 June 2013
70. Kaisari P, Yannakoulia M, Panagiotakos DB (2013) Eating frequency and overweight and obesity in children and adolescents: a meta-analysis. Pediatrics 131:958–967
71. Kambas A, Antoniou P, Xanthi G et al (2004) Unfallverhütung durch Schulung der Bewegungskoordination bei Kindergartenkindern. Dtsch Z Sportmed 55:44–47
72. Kersting M, Hilbig A (2012) Ernährung bei Kleinkindern: Empfehlungen und Ernährungspraxis. J Ernährungsmed 14:24–29
73. Kersting M, Alexy U, Clausen K (2005) Using the concept of food based dietary guidelines to develop an Optimized Mixed Diet (OMD) for German children and adolescents. J Pediatr Gastroenterol Nutr 40:301–308
74. Koletzko B (1996) Alternative Ernährung im Kindesalter in der Kontroverse. Springer, Berlin Heidelberg New York
75. Koletzko B (2013) Kinder- und Jugendmedizin, 14th edition, Springer, Berlin Heidelberg New York
76. Koletzko B, Toschke AM (2010) Meal patterns and frequencies: do they affect body weight in children and adolescents? Crit Rev Food Sci Nutr 50:100–105
77. Koletzko B, Bergmann KE, Przyrembel H (2013) Prophylaktische Fluoridgabe im Kindesalter. Recommendations by the DGKJ (German Society for Pediatrics and Adolescent Medicine) and the DAKJ (German Academy for Pediatrics and Adolescent Medicine). Monatsschr Kinderheilkd 161:508–509
78. Koletzko S (2013) Diagnose und Therapie der Zöliakie im Kindesalter. Monatsschr Kinderheilkd 161:63–78
79. Koletzko S, Koletzko B (2009) Allergen avoidance approaches in food allergy management. Nestle Nutr Workshop Ser Paediatr Program 64:169–180 (discussion 80–84, 251–257)
80. Koletzko S, Niggemann B, Koletzko B (2009)

Vorgehen bei Säuglingen mit Verdacht auf Kuhmilchproteinallergie. Policy paper by the German Society for Pediatric Gastroenterology and Nutrition (GPGE), the German Society for Pediatric Allergology and Environmental Medicine (GPA) and the Nutrition Commission of the German Society of Pediatrics and Adolescent Medicine. Monatsschr Kinderheilkd 7:687–691

81. Lange L (2009) Übersicht über die zehn wichtigsten allergieauslösenden Nahrungsmittel. Pädiatr Allergol 12:7–9
82. LeBlanc AG, Spence JC, Carson V et al (2012) Systematic review of sedentary behaviour and health indicators in the early years (aged 0–4 years). Appl Physiol Nutr Metab 37:753–772
83. Ledochowski M, Bair H, Gufler V (2005) Fructosemalabsorption. Ernährung/Nutrition 29:157– 165
84. Lepp U, Ballmer-Weber B, Beyer K et al (2010) Therapiemöglichkeiten bei der IgE vermittelten Nahrungsmittelallergie. S1 Guidelines by the German Society for Allergology and Clinical Immunology (DGAKI) in collaboration with the German Dermatological Society (DDG), the Association of German Allergoloists (ÄDA) and the German Society for Pediatric Allergology and Environmental Medicine (GPA). Allergo J 19:187–195
85. Lissner L, Lanfer A, Gwozdz W et al (2012) Television habits in relation to overweight, diet and taste preferences in European children: the IDEFICS study. Eur J Epidemiol 27:705–715
86. Marshall TA, Eichenberger Gilmore JM, Broffitt B et al (2005) Diet quality in young children is influenced by beverage consumption. J Am Coll Nutr 24:65–75
87. Mayr J, Gaisl M, Purtscher K et al (1994) Baby walkers - an underestimated hazard for our children? Eur J Pediatr 153:531–534
88. Mennella JA, Trabulsi JC (2012) Complementary foods and flavor experiences: setting the foundation. Ann Nutr Metab 60(Suppl 2):40–50
89. National Association for Sport and Physical Education (2002) Active start: a statement of physical activity guidelines for children from birth to age 5, 2nd edition http://www.aahperd.org/naspe/standards/nationalGuidelines/ActiveStart.cfm. Accessed on: 15 May 2013
90. National Institute for Health and Clinical Excellence (2011) Food allergy in children and young people. Diagnosis and assessment of food allergy in children and young people in primary care and community settings. http://www.nice.org.uk/nicemedia/live/13348/53214/53214.pdf. Accessed on: 31 May 2013
91. Nicklas TA, Hayes D; American Dietetic Association (2008) Position of the American Dietetic Association: nutrition guidance for healthy children ages 2–11 years. J Am Diet Assoc 108:1038–1044, 1046–1047
92. Nicklaus S (2009) Development of food variety in children. Appetite 52:253–255
93. Niggemann B (2009) Nahrungsmittelallergien bei Kindern und Jugendlichen. Pädiatr Allergol 12:5–7
94. Overberg J, Hummel T, Krude H, Wiegand S (2012) Differences in taste sensitivity between obese and non-obese children and adolescents. Arch Dis Child 97:1048–1052
95. Paul IM, Bartok CJ, Downs DS et al (2009) Opportunities for the primary prevention of obesity during infancy. Adv Pediatr 56:107–133
96. Pliner P, Stallberg-White C (2000) "Pass the ketchup, please": familiar flavors increase children's willingness to taste novel food. Appetite 34:95– 103
97. Reverdy C, Chesnel F, Schlich P et al (2008) Effect of sensory education on willingness to taste novel food in children. Appetite 51:156–165
98. Robert Koch-Institut (2012) Infektionsepidemiologisches Jahrbuch meldepflichtiger Krankheiten für 2011. RKI, Berlin. http://www.rki.de/DE/Content/Infekt/Jahrbuch/Jahrbuch_2011.pdf?__blob=publicationFile. Accessed on: 10 June 2013
99. Robert Koch Institute (2012) Großer Gastroenteritis-Ausbruch durch eine Charge mit Noroviren kontaminierter Tiefkühlerdbeeren in Kinderbetreuungseinrichtungen und Schulen in Ostdeutschland, 09–10/2012. Epidemiol Bull 41
100. Robert Koch Institute (2013) SurvStat. http://www3.rki.de/SurvStat. Accessed on: 10 Jan. 2013
101. Rona RJ, Keil T, Summers C et al (2007) The prevalence of food allergy: a meta-analysis. J Allergy Clin Immunol 120:638–646
102. Ruhe I (2013) Mehr Sicherheit für die Kleinsten. Gefahrenbewusstsein und Risikokompetenz fördern in der Krippe. klein&groß 28–31
103. Schlegel-Matthies K (2011) Mahlzeit im Wandel – die Entideologisierung einer Institution. In: Schönberger G, Methfessel B (Hrsg) Mahlzeiten: alte Last oder neue Lust? VS Verlag für Sozialwissenschaften/Springer Fachmedien, Wiesbaden
104. Schwartz C, Scholtens PA, Lalanne A et al (2011) Development of healthy eating habits early in life. Review of recent evidence and selected guidelines. Appetite 57:796–807
105. Shutts K, Kinzler KD, DeJesus JM (2013) Understanding infants' and children's social learning about foods: previous research and new prospects. Dev Psychol 49:419–425
106. Spruyt K, Gozal D (2012) The underlying interactome of childhood obesity: the potential role of sleep. Child Obes 8:38–42
107. Stiftung Warentest (2011) Lauflernhilfen: Überflüssig und gefährlich. http://www.test.de/Lauflernhilfen-Ueberfluessig-und-gefaehrlich-4266104-0/. Accessed on: 18 June 2013
108. Te Morenga L, Mallard S, Mann J (2013) Dietary sugars and body weight: systematic review and meta-analyses of randomised controlled trials and cohort studies. BMJ 346:e7492
109. Thompson DA, Christakis DA (2005) The association between television viewing and irregular sleep schedules among children less than 3 years of age. Pediatrics 116:851–856
110. Timmons BW, Leblanc AG, Carson V et al (2012) Systematic review of physical activity and health in the early years (aged 0–4 years). Appl Physiol Nutr Metab 37:773–792
111. Uauy R, Dangour AD (2009) Fat and fatty acid requirements and recommendations for infants of 0–2 years and children of 2–18 years. Ann Nutr Metab 55:76–96
112. Vadiakas G (2008) Case definition, aetiology and risk assessment of early childhood caries (ECC): a revisited review. Eur Arch Paediatr Dent 9:114–125
113. Van Winckel M, Vande Velde S, De Bruyne R, Van Biervliet S (2011) Clinical practice: vegetarian infant and child nutrition. Eur J Pediatr 170:1489– 1494
114. Vartanian LR, Schwartz MB, Brownell KD (2007) Effects of soft drink consumption on nutrition and health: a systematic review and meta-analysis. Am J Public Health 97:667–675
115. Wang YC, Ludwig DS, Sonneville K, Gortmaker SL (2009) Impact of change in sweetened caloric beverage consumption on energy intake among children and adolescents. Arch Pediatr Adolesc Med 163:336–343
116. WHO (2003) Diet, nutrition and the prevention of chronic diseases. Report of a Joint WHO/FAO Expert Consultation. WHO, Geneva
117. World Health Organization (2009) Infant and young child feeding: model chapter for textbooks for medical students and allied health professionals. WHO, Geneva
118. World Health Organization (2010) Global recommendations on physical activity for health. WHO, Geneva
119. Zimmer R (2008) Bildung durch Bewegung in der frühen Kindheit. In: Schmidt W (Ed.) Zweiter Deutscher Kinder- und Jugendsportbericht, Schwerpunkt: Kindheit. Hofmann, Schorndorf

Gefördert durch:

Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz

aufgrund eines Beschlusses des Deutschen Bundestages

IN FORM
Deutschlands Initiative für gesunde Ernährung
und mehr Bewegung

Gesund ins Leben
Netzwerk Junge Familie

Discovering Life

Fotolia: drubig-photo

Healthy Development for Young Children

Improving advice for parents!

Sharing Knowledge –
free information material for parental advisers
www.gesundinsleben.de/fuer-fachkraefte/medien

Always Up to Date –
continuing education courses for health professionals
www.gesundinsleben.de/fuer-fachkraefte/fortbildungen

Healthy Start – Young Family Network – without advertising or commercial interests!

www.gesund-ins-leben.de

For more information on IN FORM:
www.in-form.de