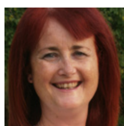
NHD
THE DIETITIANS' MAGAZINE

eArticle with CPD
SPONSORED BY HiPP organic

Volume 6.01 - January 14th 2016

NUTRITION IN THE EARLY YEARS: THE CHALLENGES FACED

From their first birthday to when they start school, children start to assert their independence and explore their boundaries and that includes with food. However, this is not the case for some children and this can lead to many of the challenges of toddler nutrition as described in this article.



Kate Harrod-Wild
Specialist Paediatric Dietitian, Betsi Cadwaladr University Health Board

By their first birthday children should be eating foods from all food groups; eating family foods that are the broadly the same texture as the rest of the family and drinking from a cup instead of a bottle. However, this is not the case for some children and feeding and mealtimes can be a challenge.

FUSSY FEEDERS

Fussy eating is undoubtedly the issue that causes the most stress for parents and carers. It is very common and minor food refusal and fussiness is entirely expected at this stage. Neophobia - or fear of new foods - is a totally normal developmental phase. This may have emerged as a survival mechanism to ensure that increasingly mobile children did not poison themselves. It is, therefore, important to introduce older infants to as many flavours and textures as possible while they are open to try them. In addition, children will be testing the boundaries and attempting to assert their independence during the toddler years. How parents respond to their fussy feeder can have an impact on the duration and severity of this common issue.

Key tips to parents/carers include the following:

- Provide an element of choice - for instance, let them choose the flavour of their yoghurt or what to have in their sandwich between two options. This allows them to assert their independence and develop opinions within clear boundaries.
- Offer very small portions so that the child has a realistic chance of finishing what is on their plate; they can always ask for more.
- Ignore food refusal and take the plate away without comment. Don't give endless alternatives, but do give foods that the child has accepted before; now is not the time to experiment.
- Praise any food eaten.
- Limit mealtimes to 20 to 30 minutes; you will both have had enough by then.
- If meals are not being eaten, avoid snacks between meals, as this will just reduce their appetite for the next meal as well.
- Watch drinking - it is tempting to offer a drink, particularly milk, if food is refused, but this will reduce their appetite for food. Cows' milk is a good source of protein and calories, but a poor source of iron. Children who drink large quantities of milk thrive, but become iron deficient, establishing a vicious circle of poor appetite and increasing iron deficiency.
- Do try to eat all together as much as possible at a table without distractions

Kate Harrod-Wild is a Paediatric Dietitian with over 20 years' experience of working with children in acute and community settings. Kate has also written and spoken extensively on child nutrition.

Copyright © 2016 NH Publishing Ltd - All rights reserved. Available for printing and sharing for the use of CPD activities for personal use.
Not for reproduction for publishing purposes without written permission from NH Publishing Ltd.

Table 1: Food groups

Food group	Which foods	Servings per day	Key nutrients
Meat and alternatives	Lamb, beef, pork, chicken, turkey, fish, eggs, pulses (peas, beans, lentils, dahl), nuts. Includes mince, cold meats, meat products etc.	2-3	Protein, iron and other minerals
Cereal foods	Breakfast cereals, bread products (including tea cakes, bagels, pitta, bread muffins, crumpets, malt bread, bagels etc), crackers, potatoes, rice, pasta, chapatti, plantain, yam.	3-6	Energy, fibre (if higher fibre alternatives), B vitamins
Milk and dairy products	Milk, yoghurt, cheese, fromage frais, custard, cheese sauce etc.	3 - one serving = cup of milk = pot yogurt, = 4 x small pots fromage frais, = 30g cheese	Protein, calcium
Fruit and vegetables	All fresh, frozen, tinned and dried fruit and vegetables.	5 - (portion equivalent to a handful)	Vitamins A and C, fibre

such as the television. This will help to show that eating is a relaxed and pleasant activity.

- Don't force, coax or bribe the child to eat - this can put a child off eating altogether; or they may simply realise that not eating is a good way of getting attention.
- For older toddlers, a star chart can work well (in conjunction with reasonable portion sizes). Make sure rewards are not food related – ideas include swimming, a trip to the park, colouring book, stickers - whatever the child sees as a treat.

Ultimately, parents need to be reassured that a healthy child will eat enough calories and protein if viewed over the longer term - even if they have days when they eat almost nothing, they will make up for it at a later stage. Children grow in 'spurts' and this drives the variable appetite. Parents should be advised to consult their Health Visitor if they are concerned. Often weight gain can reassure parents. Professionals should avoid weighing too often as toddlers grow much more slowly than infants.

To provide all the nutrition a toddler needs, they should eat foods from each of the food groups every day, as can be seen in Table 1. They may not eat a large range in each group at times, but parents can be reassured that they are meeting their requirements as long as they eat some food from each group.

HEALTHY SNACKS

Toddlers may need snacks in addition to their meals, as they still have small stomachs and high requirements. However, snack times should be at least two hours before the next meal; constant grazing should be discouraged, as it can lead to both poor appetite and overeating in different children. Many popular snacks such as crisps, biscuits, cakes and chocolate are high in fat, sugar and/or salt. Families need advice on suitable alternatives.

DRINKS

Toddlers need about four to six cups of drink per day, more if it is very hot or they have a temperature. The best drinks to offer are milk and water; however, offer a maximum of two to three cups of milk per day, as more can affect appetite. Whole milk should be given until two years, when semi-skimmed milk can be introduced if a child is gaining weight appropriately. One percent and skimmed milk should not be introduced before school age, except on the advice of a dietitian. Fresh fruit juice can be offered at mealtimes. If parents use fresh fruit juice or squash between meals, they should dilute 1 in 10 with water. If a child is still using a bottle, they should gradually be moved over to a cup to protect their teeth and discourage excessive drinking. Avoid valve type cups, which have all the same disadvantages as bottles.

COMMON PROBLEMS

Constipation

Children with poor bowel habits often have a poor fluid intake. If the child will not drink enough, parents can try high fluid foods such as jelly, custard, gravy and ice lollies made with fruit

Copyright © 2016 NH Publishing Ltd - All rights reserved. Available for printing and sharing for the use of CPD activities for personal use.
Not for reproduction for publishing purposes without written permission from NH Publishing Ltd.

BREASTFEEDING IS BEST FOR BABIES

Science & nature hand in hand

From the leading experts in organic infant nutrition, comes the UK's lowest protein infant milk.

Ours is the first infant milk in the UK to contain less than 2g/100kcal protein, making the protein level and quality closer to that found in breastmilk[1]. High protein intake in the first two years of life has been linked with an increased long term risk of being overweight or obese.[2]

All the natural benefits of organic, coupled with 50 years of breastmilk research – and **still costs less** than the leading brand.[3]

Discover more at hipp4hcps.co.uk

@hipp_for_hcps

1 Contains 1.89g/100kcal of protein, including α-lactalbumin, making the protein level and quality closer to that found in breastmilk (1.7g/100kcal). Nommsen LA et al. Am J Clin Nutr 1991; 53: 457–465.

2 Koletzko B et al. Am J Clin Nutr 2009; 89(5):1502S–8S.

3 Price per 100g of infant milk powder: HiPP £1.06, Aptamil £1.11. Price per case of 24 infant milk hospital formula: HiPP £8.36, Aptamil £8.84. Prices correct as at April 2015.

Important Notice: Breastfeeding is best for babies. Breastmilk provides babies with the best source of nourishment. Infant formula milks and follow on milks are intended to be used when babies cannot be breastfed. The decision to discontinue breastfeeding may be difficult to reverse and the introduction of partial bottle feeding may reduce breastmilk supply. The financial benefits of breastfeeding should be considered before bottle feeding is initiated. Failure to follow preparation instructions carefully may be harmful to a baby's health. Infant formula and follow on milks should be used only on the advice of a healthcare professional.

Table 2: Iron sources

Meat	Liver and kidney are the richest sources of iron. Beef (including mince, beef burgers, sausages, corned beef and meatballs), lamb, pork and pate (not for children under one year) are also good sources.
Fish	Tuna, salmon, mackerel, sardines, pilchards or kippers.
Bread & cereals	Iron fortified breakfast cereals are a popular choice with children (e.g. Weetabix, Rice Krispies, Shreddies). Wholemeal bread, brown pasta and brown rice all provide more iron than the white types.
Dried fruits	Apricots, peaches and prunes are the best sources. Dates, raisins and currants also contain some iron.
Pulses/lentils	Baked beans, kidney beans, lentils and soya beans.
Green vegetables	Spinach, broccoli, spring greens, kale, okra, watercress and rocket all contain some iron. Cooking vegetables for too long destroys their vitamin C content, so try steaming or stir frying instead.
Nuts and seeds	Cashew nuts, sesame seeds and tahini are particularly good sources (avoid whole nuts for toddlers).
Misc	Egg yolk contains iron, but the iron is not easily used in the body. Curry powder, Quorn and tofu are particularly good sources of iron for vegetarians. Bombay mix, plain chocolate, liquorice and treacle all contain iron - but should only be eaten in moderation, as they are high in fat and/or sugar.

juice or fruit puree. Also, increase the amount of fibre the child eats, e.g. high fibre breakfast cereals such as Weetabix, puffed wheat, porridge, wholemeal bread, wholewheat pasta, all fruit and vegetables. If these simple measures do not correct the problem, then laxative medication should be prescribed. It should be increased until the child is passing soft stool every day and may be needed for a considerable period of time. It is important that young children do not habitually struggle to open their bowels as this can lead to fear of opening their bowels and difficulties with toilet training. Withholding stool also causes a megacolon, which then makes it very difficult for a child to evacuate their bowels even when they try to do so. If problems persist, children should be referred to a constipation clinic or a paediatrician.

Iron deficiency anaemia

This is the most common deficiency in young children. Using figures from the National Diet and Nutrition Survey, SACN (Scientific Advisory Committee on Nutrition),[1] the survey found that the majority of children aged 1½ to 3½ years (73-81%) had iron intakes <90% of the RNI for iron. They also found that one of the highest risk groups for iron deficiency anaemia (haemoglobin and serum ferritin concentration below WHO thresholds - haemoglobin <110g/l; ferritin <12ug/l for children aged six months to five years[2]) was children aged 1½ to 2½ years (5.0 to 6.0%). This is probably because children have variable appetites and often have poor intakes of meat, possibly because many find it a difficult texture. However, many families do not seem to offer their children meat routinely as part of the weaning diet, which will place children at risk of iron deficiency in late infancy and the toddler years. SACN found evidence from randomised controlled trials of iron supplementation, suggesting that iron deficiency anaemia is a cause of poor motor development in children in the first three years of life, although the long-term effects are unknown. There was insufficient evidence to determine whether iron deficiency or iron deficiency anaemia affects cognitive or language development in children aged three years or under. Evidence from randomised controlled trials also suggested that iron treatment has beneficial effects on cognitive development in anaemic children aged over three years, but it is not known whether these benefits are sustained in the long term.

Symptoms of iron deficiency anaemia include poor appetite, lethargy and irritability. If iron deficiency is suspected, a blood test to check serum haemoglobin and ferritin should be performed. If it is confirmed, the child will be prescribed iron medicine to correct the problem; it is not very well tolerated, but it is important that the toddler takes the medicine until the doctor confirms that they can stop. If iron medication is refused, an alternative is to use sachets of iron rich water. This is classed as a food supplement and is not usually prescribable, but due to the high bioavailability of the iron, it can be a useful alternative to boost iron stores. After four to six weeks on iron therapy, appetite should start to improve. Parents should be advised to offer iron rich foods at least twice a day (see Table 2). In addition to the extra iron, they should offer

Copyright © 2016 NH Publishing Ltd - All rights reserved. Available for printing and sharing for the use of CPD activities for personal use.
Not for reproduction for publishing purposes without written permission from NH Publishing Ltd.

Table 3: Ten Steps for Healthy Toddlers (Infant and Toddler Forum)[6]

1	Eat together as a family and mealtimes relaxed happy occasions.
2	You decide which nutritious foods to offer but let your toddler decide how much to eat.
3	Offer foods from all five food groups each day.
4	Have a routine and offer three meals and two to three snacks each day.
5	Offer six to eight drinks a day.
6	Give vitamins A and D each day.
7	Respect your toddlers' tastes and preferences - don't force feed
8	Reward your toddler with your attention - never give food and drink as a reward, treat or for comfort.
9	Limit fried foods, high fat and high sugar foods to very small amounts a day and avoid sweetened drinks, undiluted fruit juices (well diluted at mealtimes only) and whole nuts.
10	Encourage physical activity for at least three hours every day and about 12 hours sleep.

a source of vitamin C, such as fruit or vegetables, with every meal, as this improves iron absorption.

Vitamin D

Problems relating to vitamin D deficiency are increasingly being recognised in all age groups. As well as the traditionally recognised problems of vitamin D and osteomalacia in young children, vitamin D deficiency has been implicated in other conditions such as cardiovascular disease and multiple sclerosis. Many populations in northern latitudes (usually described as 52 degrees north - above Birmingham in the UK) do not receive sufficient annual sunlight to synthesise enough vitamin D in the skin to meet their requirements and, additionally, anyone who has darker skin or habitually covers most of their skin is also at risk. Currently, apart from groups who are thought to be at risk (including young children), there is no RNI for vitamin D. However, a draft SACN report[3] has recommended that a RNI for all age groups aged four and over should be set at 10ug/d and a safe intake (due to there being less evidence to make the recommendation) of 10ug/d for younger children and 8.5-10ug for infants to be established. In effect, population supplementation of vitamin D is being proposed. This would mean recommending a vitamin supplement containing sufficient vitamin D to every infant, child and adult that we encounter in our professional practice.

Obesity

Unfortunately, this is an increasing problem, even among toddlers. The Child Measurement Programme for England 2013/14,[4] found that by school entry, over a fifth of children (22.5%) were already overweight or obese and results in the other countries of the UK are similar. If a health professional (or parent) is concerned that their child's weight is increasing too fast, their weight and height (length under two years) should be measured and plotted on a Body Mass Index (BMI) chart. Unlike in adults, a healthy BMI varies throughout childhood; a value above the 91st centile is overweight and above the 98th centile is obese.

If there are concerns about a child's weight, or to prevent weight becoming excessive in a child who comes from a family which is overweight (and is therefore known to be at higher risk), the following advice may help:

- Offer three meals a day - avoid high fat foods and increase vegetables.
- Offer fruit or salad only in between meals.
- Reduce the amount of high fat and sugar foods in the house.
- Don't use food as a reward.
- Encourage the child to drink water rather than juice or milk between meals.
- Limit the amount of time the child spends in front of screens.
- Encourage the child in active play - inside and outside.
- Make efforts as a whole family to adopt a healthy lifestyle - see Change 4 Life for more details.[5]

IN SUMMARY

The toddler years can be difficult and food can become a big issue with many young children. However, a firm foundation of good nutrition and healthy lifestyle will effectively prepare toddlers for the challenges of the school years.

For article references please email:
info@networkhealthgroup.co.uk

Copyright © 2016 NH Publishing Ltd - All rights reserved. Available for printing and sharing for the use of CPD activities for personal use.
Not for reproduction for publishing purposes without written permission from NH Publishing Ltd.

NHD
THE DIETITIANS' MAGAZINE

eArticle with CPD

Volume 6.01 - January 14th 2016

Questions relating to: *Nutrition in the early years: the challenges faced*
Type your answers below and then **print for your records** or print and complete answers by hand.

Q.1	What is neophobia and how did it emerge in children?
A	
Q.2	Give three key tips to help parents/carers respond to fussy eaters.
A	
Q.3	Why is food choice for fussy eaters so important?
A	
Q.4	How can drinking impact on the diet of a fussy eater?
A	
Q.5	Describe the four food groups giving examples in each category.
A	
Q.6	Explain what dietary measures can be put in place if a child suffers from constipation.
A	
Q.7	Explain why the 1½ to 2yrs age group is at a high risk of developing iron deficiency anaemia.
A	
Q.8	What are the risks of vitamin D deficiency in children?
A	
Q.9	Provide an eight-point plan for parents/carers who have concerns regarding a child being overweight.
A	

Please type additional notes here . . .

Copyright © 2016 NH Publishing Ltd - All rights reserved. Available for printing and sharing for the use of CPD activities for personal use.
Not for reproduction for publishing purposes without written permission from NH Publishing Ltd.