Feeding Toddlers and Preschool Children

1-5 Year Olds
Section 4
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1-5 Year Olds

Toddlers and preschool children between 1 and 5 years have high nutrient requirements relative to their size, as they are still undergoing rapid growth and development and usually very active. Good nutrition is important for children of this age:

- To ensure that they are getting a balanced varied diet that meets their nutrient requirements
- Dietary habits adopted in the early years will be taken forward into later childhood and adult life
- Continue to develop self feeding skills
- Eating together helps children develop social skills
- Helps prevent childhood obesity

This section covers:
- Nutritional requirements of 1-5 year olds
- Food safety
- Dental health
- Common feeding challenges
Nutritional requirements of 1-5yr olds

Toddlers and pre-school children have high nutrient requirements relative to their size as they are still undergoing rapid growth and development and are usually very physically active.

Their average energy requirements are:

<table>
<thead>
<tr>
<th>Age</th>
<th>Kilo calories / day</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3 years</td>
<td>1230</td>
<td>1165</td>
<td></td>
</tr>
<tr>
<td>4-6 years</td>
<td>1715</td>
<td>1545</td>
<td></td>
</tr>
</tbody>
</table>

Ref: Dietary reference values (DH, 1991).

A healthy balanced diet for 1-5yr olds is based on the 4 food groups as each group provides different key nutrients.

To achieve the nutritional requirements children should be encouraged to enjoy different foods. To achieve this they should be provided with foods from each of the four food groups every day:

- Bread, rice, potatoes, pasta and other starchy foods
- Fruit and vegetables
- Milk and dairy foods
- Meat, fish, eggs, beans and other non-dairy sources of protein

By choosing food from each food group every day the correct balance of nutrients will be provided. However, a child’s requirement for vitamins A and D will only be met by taking a supplement (see page 76)
The 4 food groups and the nutrients they provide are:

<table>
<thead>
<tr>
<th>Food groups</th>
<th>Food included</th>
<th>Main nutrients</th>
<th>Recommended servings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bread, rice, potatoes, pasta and other starchy foods</td>
<td>Bread, chapatti, breakfast cereals, rice, couscous, pasta, millet, potatoes, yam, and foods made with flour such as pizza bases, buns, pancakes</td>
<td>Carbohydrate, B Vitamins, Fibre, Some Iron, Zinc, Calcium</td>
<td>Serve at each meal and some snacks</td>
</tr>
<tr>
<td>Fruit and vegetables</td>
<td>Fresh, frozen, tinned and dried fruits and vegetables</td>
<td>Vitamin C, Carotenones which are a form of Vitamin A, Fibre, Zinc, Iron</td>
<td>Serve at each meal and some snacks</td>
</tr>
<tr>
<td>Milk and dairy</td>
<td>Cows milk, goats milk, milks, yoghurts, cheese, calcium enriched soy milks and desserts, tofu</td>
<td>Calcium, Phosphorus, Protein, Iodine, Riboflavin</td>
<td>3 servings each day</td>
</tr>
<tr>
<td>Meat, fish, eggs, beans and other non-dairy sources of protein</td>
<td>Meat, fish, eggs, nuts and pulses e.g. lentils, dhal, chick peas, hummus, kidney beans and other similar starchy beans</td>
<td>Iron, Protein, Zinc, Magnesium, B Vitamins, Vitamin A, Omega 3 &amp; Omega 6 fats, Omega 3 long chain fatty acids: EPA and DHA from oily fish</td>
<td>2 servings a day</td>
</tr>
</tbody>
</table>

The wider the variety of foods eaten within each food group the better the balance of nutrients provided.
Bread, rice, potatoes, pasta and other starchy foods

- This group provides a good source of energy, carbohydrates, fibre and B vitamins
- Starchy foods should make up about a third of the diet
- Wholegrain varieties of bread and cereals such as rice and pasta provide fibre and can be gradually introduced into the diets of children from the age of 2 years
- Aim for a variety of wholegrain and white breads and cereals across meals and snacks each week
- Too much fibre in younger children can be very filling and can also bind with certain minerals thereby reducing their absorption

Milk and dairy foods

- Foods from this group are a good source of energy, protein, calcium and vitamin A
- Full fat cows milk should be given until a child is at least 2 years old and semi-skimmed milk can be introduced from this age. Skimmed milk is not suitable as the main drink for children under 5 years of age as it does not provide enough energy and contains very little vitamin A
- Drinks of milk should be offered in cups, feeding bottles should be discouraged
- Milk or dairy foods should be provided at 2-3 meals and snacks each day
- Children should have three servings per day of these foods. A serving for 1-5 year olds is:
  - Cup of milk (120ml/3-4 oz)
  - Cheese in a sandwich or sauce, or on pasta or pizza
  - A small pot yoghurt (about 120g)

Fruit and vegetables

- Fruit and vegetables are important sources of many nutrients including vitamin A and C, zinc, iron and fibre
- Ensure a variety of fruits and vegetables are offered at every meal and with snacks
- Fruit and vegetables can be fresh, frozen or tinned. If using tinned vegetables check that they do not have added salt and only use fruit tinned in natural juice
- Dried fruit and fruit juice (100% unsweetened diluted 1 part juice to 1 part water) can be included but only at meal times as they contain sugars that may damage teeth
Meat, fish, eggs, beans and other non-dairy sources of protein

- Foods from this group provide protein, iron and zinc
- This food group is the richest source of iron and a significant number of children become anaemic from not having enough food from this group
- If children do not eat meat it is important they receive two or three portions per day of an alternative source of protein, for example, beans, chickpeas, lentils and dhal. Processed meat alternatives should not be offered more than once per week
- Oily fish provide long chain omega 3 fatty acids, vitamin D and A however, should not be served more than twice a week as oily fish can contain dioxins and polychlorinated biphenyls
- Shark, swordfish and marlin should be avoided because of their mercury content
- Ground and chopped nuts and nut butters can be offered but whole nuts should not be given as they can cause choking or severe lung inflammation if inhaled

Foods and drinks high in fat and/or sugar

- These energy dense foods should be limited to small amounts
- Puddings that are made with cereals, milk and fruit can be included in a healthy balanced diet for young children but these should only be served with meals and not as snacks
- Fats and oils are needed in cooking and can be used as spreads on bread
- Use fruit and fruit purée to sweeten dishes

Salt and sodium

The Food Standards Agency recommends that salt and sodium should be limited to less than:

- 2g of salt (0.8g sodium) per day for 1-3 year olds
- 3g of salt (1.2g sodium) per day for 4-6 year olds

Note: Salt and sodium are not the same. If a food label only provides an amount for sodium, to convert to salt, multiply the amount of sodium by 2.5, for example 0.4g sodium = 1g salt.

This is hard to estimate as many foods naturally contain some sodium. But in practice it means:

- Salt should not be added to food at the table
- Herbs and spices rather than extra salt can be used to flavour food
- If using tinned foods choose varieties without added salt
- Limit the amount of processed foods offered as these usually have a higher salt content than home cooked foods
- Limit salty snacks like crisps and corn snacks. As well as being high in salt, they are generally high in fat and low in key nutrients.
Vegetarian and vegan diets

Vegetarianism can be divided into four main groups:

- **Partial vegetarian** - red meat and offal are excluded
- **Lacto-ovo vegetarian** - red meat, offal, poultry and fish are excluded
- **Lacto-vegetarian** - red meat, offal, poultry and fish and eggs are excluded
- **Vegans** - all animal products including eggs and cows milk are excluded

Vegetarian diets

The main nutrient at risk for 1-5 year olds that do not eat meat is iron. Iron from vegetarian foods is less well absorbed than from meat and fish. Omega 3 fat may be low in diets that exclude all fish.

Nutritional requirements for growth and development can be achieved by:

- Offering 3 servings per day of the vegetarian protein source such as eggs, nuts and pulses
- A food high in vitamin C should be offered at each meal to increase the iron uptake from the plant based foods
- Choosing breakfast cereals with added iron
- Increasing Omega 3 fats from plant sources for those excluding fish by using:
  - Rapeseed oil for cooking
  - Walnut, soya or olive oil for dressings
  - Chopped walnuts in place of other chopped nuts
  - A supplement of omega 3 fatty acids may be considered

Vegan diets

Vegan diets are not recommended for young children as they are unlikely to provide all the energy and nutrients required in adequate amounts. This is because these children may not be able to eat enough vegan food, which is bulky and high in fibre, to obtain all the energy (calories) and nutrients they need for growth and development.

A child on a vegan diet should always be referred to a dietitian for assessment to ensure that the foods consumed by the child contain all the essential nutrients.

Calcium enriched soya milk can be used as a substitute for dairy foods. However, an extra supplement may be needed for the key ‘at risk’ nutrients which are iron, zinc, calcium and vitamin B12.

Vegan mothers who are breastfeeding should also have their diets assessed as they may need a supplement of calcium, vitamins D and B12.

Diets more restricted than a vegan diet e.g. Zen Macrobiotic, Fruitarian and raw food diets, are not recommended for young children as they cannot provide all the energy and nutrients for growth and development.
Vitamin supplements

The Department of Health recommend that all young children are given a vitamin supplement containing vitamins A & D as they have high requirements for both these vitamins.

The Healthy Start Scheme replaced the Welfare Food Scheme in November 2006. Children whose families are receiving the Healthy Start vouchers can use them to purchase cows milk, fruit and vegetables as well as vitamin drops containing A, C and D.

Drinks

Drinks should be offered in open cups or if using a lidded cup it should be a free-flowing one. Children should be offered 6-8 drinks (of 100-120mls) per day to provide adequate fluid. They may need more drinks in very hot weather or after extra physical activity as young children can dehydrate quite quickly.

Water and milk are the safest drinks to offer between meals as they do not cause tooth erosion or increase the risk of dental decay. Up to 3 drinks per day can be milk but this should not be exceeded.

Pure fruit juices do provide nutrients from fruit but they contain large amounts of the fruit sugar, fructose, and they are acidic. Both this sugar and acid can cause dental decay. To lower the acid and sugar content fruit juices should be given diluted (1 part juice to 1 part water) and only be given at meal times to lessen the risk of dental decay.

Avoid all soft drinks like squashes, fizzy drinks, energy drinks and flavoured waters, even those saying ‘sugar free’, ‘no added sugar’ or ‘reduced sugar’. They can contribute to tooth damage and provide little nutritional value.

Avoid tea, coffee, cola or any other drinks with added caffeine as they are not recommended for young children as caffeine is a stimulant. Tea and coffee contain tannins and can interfere with iron absorption.
Mealtimes should be a happy social occasion

Where possible parents and or carers should eat with children

Children should be sitting comfortably and utensils should be appropriate to the child’s age

If the family sit at a table to eat, the chair and table should be at the right height for children to eat

Allow plenty of time for the meal, but ensure it is not prolonged beyond about 30 minutes

Sweets should not be used as bribes or treats

Encourage self-feeding as much as possible. Toddlers up to about 3 may still need help to eat

Accept mess as a normal part of the feeding process
Food Safety

Choking

Children under 36 months are more at risk from choking than older children, however, children above this age can also be at risk. As children get older, they put fewer non-edible items into their mouths but food risks are present at any age.

To minimise the risk:

• Advise parents that children should not run around or play whilst eating, and that all mealtimes are supervised. Young children should be seated and in a calm atmosphere when eating.

• Advise that foods are cut up into small lengths rather than round pieces. Grapes, cherry tomatoes can be cut into quarters.

Specific foods and ingredients

The Food Standards Agency currently advise that the following colours and preservatives should be avoided as they may affect children’s behaviour:

Colours:

<table>
<thead>
<tr>
<th>Colour</th>
<th>E Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tartrazine</td>
<td>E102</td>
</tr>
<tr>
<td>Ponceau</td>
<td>E124</td>
</tr>
<tr>
<td>Sunset yellow</td>
<td>E110</td>
</tr>
<tr>
<td>Carmosine</td>
<td>E122</td>
</tr>
<tr>
<td>Quinoline yellow</td>
<td>E104</td>
</tr>
<tr>
<td>Allura red</td>
<td>E129</td>
</tr>
</tbody>
</table>

Preservative:

<table>
<thead>
<tr>
<th>Preservative</th>
<th>E Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium benzoate</td>
<td>E211</td>
</tr>
</tbody>
</table>

The foods that present themselves time and time again in choking incidents are:

• Sweets
• Popcorn
• Grapes and cherries
• Hard fruit
• Hard vegetables – especially peas, celery, carrots
• Hot dogs / sausages
• Burgers
• Chunks of cheese
• Meatballs
• Peanuts and large nuts and seeds (crunchy peanut butter also can cause a risk)
Dental Health

Dental caries are common in under-fives and are mainly due to poor dental health care in the home. The NDNS Dental Survey (Hinds and Gregory 1995) found that 30% of 3½ - 4½ year olds had some experience of dental decay and this was higher in children:

• From lower socio-economic groups
• Whose teeth brushing began at a later age
• Whose teeth were brushed less frequently than twice a day
• Who always brushed their own teeth compared to those who had an adult helping them
• Who used a bottle, dinky feeder or dummy
• Who more frequently ate sugar and confectionery and drink carbonated drinks
• Who had a drink containing non-milk extrinsic sugars in bed at night

Sugar and acid in food and drinks cause dental decay. By limiting the quantity and frequent consumption of these products can reduce the risk of decay. Decay (caries) is the breakdown and wearing away of enamel caused by constant exposure to acid that is either contained in food and drink or produced by bacteria in the plaque on teeth.

To reduce the risk of dental decay

• Limit the consumption of food and drink containing sugar and/or acid to meal times
• Water and milk are the only safe drinks to give between meals should be given in an open or lidded beaker
• Saliva has a protective effect on teeth but saliva production reduces during sleep. Hence sweet or acidic drinks given at bedtime are very harmful. Most harmful are sweet and acidic drinks given in a feeding bottle.

A child should never be left alone sucking on a bottle

• If any confectionery or chocolate is included it should only be offered at the end of a meal and not be given between meals

Medicines

Children who require frequent and multiple medications are particularly at risk of dental decay and associated dental treatment. Effective prevention of dental disease should therefore be a priority. Sugar free medicines should be used where possible.
**Brushing teeth**

Brushing teeth reduces the plaque coating on teeth that contains the bacteria that converts sugar into acid. Brushing should start either at the introduction of solid foods around six months or if sooner, as the first tooth appears to break through. Cleaning teeth last thing at night and at one other time in the day should be encouraged and supervised by an adult until the child is at least 7 years old.

**Children under the age of 3 years**

- Use a toothpaste containing no less than 1000ppm fluoride
- Apply a smear of paste (a thin film covering no less than three-quarters of the brush)
- Once brushing is completed wipe away the froth with a cloth until spitting can be encouraged
- Do not rinse
- Never allow toothpaste to be eaten or licked from the tube
- For maximum control of caries a toothpaste containing 1,350–1,500ppm fluoride can be used, but the advice above must be followed.

**Children over the age of 3 years**

- Use a toothpaste containing no less than 1000ppm fluoride
- Apply a pea-size amount to the brush (a blob covering 3 tufts of filaments)
- Once brushing is completed spit out excess froth and paste
- Do not rinse
- Never allow toothpaste to be eaten or licked from the tube
- For maximum control of caries a toothpaste containing 1,350–1,500ppm fluoride can be used, but the advice above must be followed

**Registering with a dentist**

All infants and young children should be registered with a dentist and have regular checkups.

To find a dentist in North Somerset contact

- **NHS Direct - 0845 46 47**
- **NHS Dental Helpline - 0845 120 66 80**
- **NHS Choices - www.nhs.uk**
- **NHS North Somerset - www.northsomerset.nhs.uk**
Iron deficiency anaemia

Iron deficiency is a common nutritional problem of early childhood (Gregory 1995). It is not unique to any population although its incidence tends to be higher in inner city areas and amongst Asian populations (Lawson 1998).

Children 1-5 years old are at high risk of iron deficiency anaemia if they:

• Were changed to cows milk as their main drink before 12 months of age
• Consume excessive amounts of cows milk - frequently from a bottle (an excess is more than 600mls or 1 pint per day)
• Eat an unbalanced diet with excess low nutrient foods and eat too little good dietary sources of iron such as meat, fortified cereals and vegetables

Symptoms of iron deficiency include:

• Poor appetite
• Lethargy
• Poor weight gain
• Developmental delay
• Frequent infections

Iron deficiency is diagnosed from a blood test.

The WHO definition of iron deficiency anaemia is a haemoglobin of <11.0g/dl

Preventing iron deficiency

Good dietary sources of iron should be included and introduced into the diet during the early stages of weaning. Food containing haem iron that is easily absorbed are red meat and oily fish they are the richest source of iron.

A food high in vitamin C should be offered at each meal, this will increase the iron uptake from the plant based foods. Alternatively a drink rich in vitamin C such as diluted pure fruit juice (1 part juice to 1 part water) could be provided with meals.

Dairy products such as milk, cheese and yogurt limited to 3 servings per day.

Tea should be avoided as it contains tannin, which decreases the absorption of iron from food.

In some circumstances it may be necessary for a medical practitioner to prescribe an iron supplement.
Obesity in 1-5 year olds is becoming increasingly prevalent. The National Child Measurement Programme in North Somerset for 2009/10 revealed that of 4-5 year olds measured:

- 13.2% were overweight
- 8.9% were obese

In most cases the cause of the obesity will be multi-factorial and a single solution will not suit every family.

**Causes of obesity in under fives**

The genes, ethnic group and environment of a child all contribute to their risk of obesity. However for most under fives poor eating patterns and low activity levels are the main reason for being overweight. If the food energy (calories) eaten is in excess of the energy expended for physical activity, growth and development, then the excess energy is stored as body fat (adipose tissue).

Medical causes are very rare and include:

- Endocrine disorders often signalled by short stature such as hypothyroidism, Cushing’s syndrome, growth hormone deficiency and leptin deficiency
- Chromosomal disorders Such as Prader-Willi syndrome

**Risk factors for developing obesity**

(Reilly et al. 2005)

- Parental obesity of one or both parents
- High birth weight and/or rapid weight gain in the first year
- Sedentary behaviour:
  - more than eight hours watching TV per week at 3 years
- Less than ten hours sleep per day at three years

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Preventing and treating obesity in under fives in North Somerset

There is currently limited evidence of what works in terms of treatment but primarily there has to be engagement of the whole family. North Somerset’s Healthy Weight Strategy was published in 2010, including an action plan to help tackle childhood obesity which is developed and monitored by the multi-agency Childhood Obesity Action Group. A Healthy Weight Care Pathway for school-aged children is available on North Somerset Council’s Family Information Service Directory www.northsomerset.nhs.uk and a Healthy Weight Care Pathway for early years will be developed following publication of this guidance.

Health professionals and early years settings could offer a range of interactive parental education sessions to prevent obesity such as:

- Interactive cooking activities
- Videos and group discussions on practical issues such as healthy eating, meal planning and shopping for food and drink
- Encourage active play by:
  - Giving ideas for family activities involving physical activity
  - Promoting local facilities for active play
  - Overcoming any safety concerns that limit physical activity of young children
  - Encouraging more walking instead of using the car or pushchair

Obese under fives do not need to lose weight but the family lifestyle will need to change so that weight gain slows down. Professionals need an empathic and non-judgemental approach to empowering families and carers to make lifestyle changes. This may involve support for parents by enhancing their parenting skills.

The Government’s Change4Life campaign aims to get families eating well, moving more and hence living longer. Start4life is a sub-brand for the campaign aimed at families with children under 2 years. Information on the campaigns can be found:

www.nhs.uk/change4life
www.nhs.uk/start4life
Healthy family lifestyles are the key to success

Encourage physical activity

Toddlers should have opportunities and be encouraged to take part in active play every day to promote development of co-ordination.

Most under fives do not need encouragement to play and will enjoy active play. However many 3-5 year old children may be moderately or vigorously active for only 20 to 25 minutes per day (BHF 2004).

There are many opportunities for active play in North Somerset.

For more information, visit North Somerset Council’s Family Information Service Directory at www.n-somersetcsd.org.uk and Go4Life at North Somerset’s healthy lifestyle initiative, at www.go4life.org.uk

Encourage healthy eating

Encourage a balanced diet including foods from all the food groups:
- Bread, rice, potatoes, pasta and other starchy foods
- Fruit and vegetables
- Milk and dairy foods
- Meat, fish, eggs, beans and other non-dairy sources of protein

Changing eating habits is often difficult but particular support is needed for families who:
- Have limited knowledge of healthy eating
- Do not have the cooking skills necessary to prepare simple home-cooked food and instead rely on convenience foods which are usually energy dense and high in fat, sugar and salt
- Do not have set mealtimes and consequently frequent snacking forms part of their eating pattern

Limit sedentary behaviour

Many toddlers spend a lot of time watching a TV/DVD/video. The American Academy of Paediatrics recommends no more than two hours per day of sedentary behaviour such as TV viewing. Parents may need help exploring activities that can be substituted for watching TV or DVDs.

Encourage 12 hours sleep in children under five

Under fives normally sleep about 12 hours in each day and this is important for growth.
Fussy eating and food neophobia

Both fussy eating and food neophobia (fear of new foods) are considered normal development stages in young children. Evidence shows that fussy eating affects about 10-20% of children under five. Severe selective eating is rare and generally has its roots in early feeding difficulties or significant health problems (Carruth, 1998). Neophobia typically emerges in the latter half of the second year of life in children and is thought to be an innate predisposition (Cooke et al 2007).

Causes of fussy eating

**Giving frequent drinks of milk or juice:** Many young children prefer drinking to eating and readily fill themselves up with drinks (Houlihane and Rolls 1995, Smith and Lifshitz 1994). Useful advice is that drinks should be limited to water in between meals. Cups should replace any bottles still being given as this will help to reduce fluid intake.

**Frequent snacking:** Some children end up eating most of their food between meals and the snack food often tends to be high in fat, sugar and salt. There is often little or no incentive for the toddler to eat an appropriate meal if they are allowed to fill up on confectionary, biscuits and crisps. Less frequent snacking and more appropriate snacks such as fruit should be suggested.

**Snacks being given when a meal is refused:** Children may prefer snack foods and refuse meals in order to be given snacks instead.

**Coercing children to eat more** and/or extending mealtimes when the child has indicated they have had enough to eat.

The situation can sometimes be exacerbated by parents becoming very anxious at mealtimes.
Simple strategies for management of fussy eating and neophobia

Although, fussy eating and neophobia are thought by some to be behaviourally distinct, they can both be helped using similar techniques. A consistent approach is essential and all those involved in the care of the child, including relatives and child carers need to co-operate with any measures agreed.

- Offer small well-spaced meals and snacks
- Parents and/or carers should eat with children where possible
- Regular and repeated opportunities to taste new foods results in children in accepting foods, 10-15 tastings may be required
- Do not allow mealtimes to be too long 20-30 minutes is about right
- Give lots of praise, even if the smallest quantity of food is eaten
- Remove uneaten food without comment at the end of a meal
- Do not discuss eating and food with others in front of the child
- Do not coax or force a child to eat
- Do not use food as a reward
- Keep calm
- Preschool children’s eating habits can improve once they begin eating with other children on starting nursery or school

Additional support

If these types of feeding problems persist, consult the local health visiting team for additional support, particularly if the child’s growth is faltering.

Children can also be referred by their health visitor, GP or paediatrician to the paediatric dietetic clinic at the Seashore Centre at Weston General Hospital.

In addition, there is a monthly multi-disciplinary outpatient clinic held alternately at the Seashore Centre and Baytree Special School. This is for children who have feeding problems associated with additional special needs, and takes referrals from paediatricians, speech therapists or dietitians.
Faltering growth

This is assessed by plotting weights and heights on growth charts.

In 2002 the Children’s Society defined faltering growth as:

<table>
<thead>
<tr>
<th>Weight faltering</th>
<th>Growth faltering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight falling through centile spaces, low weight for height or no catch-up from a low birth weight</td>
<td>Crossing down through length/height centile(s) as well as weight. A low height centile or a height less than expected from parental heights</td>
</tr>
</tbody>
</table>

Causes of faltering growth are:

- Malnutrition through poor eating
- Diseases involving malabsorption or decreased appetite
- Hormonal syndromes e.g. Hypothyroidism, Turner syndrome, Growth hormone insufficiency
- Physical or emotional neglect

Most faltering growth in 1-5 year olds is due to poor eating. Only 5% is due to disease or hormonal disorders. It is estimated that a further 5% is due to neglect and will need the support of those involved in child protection.

When to refer

Referral to a paediatrician should be made if weight or height is noted, for the first time, to be below the 0.4th centile.

A referral should be considered if:

- Weight or height is below the 2nd centile
- Weight or height falls through 2 centile spaces

Dietary treatment for growth faltering will involve increasing calorie intake and this is best achieved by increasing the calorie content of foods and meals that are eaten. This will require appropriate medical and dietetic support.
Gastroenteritis and toddler diarrhoea

Toddler diarrhoea may occur in children who are otherwise healthy and growing well. The condition is thought to be due to a degree of immaturity of gut function and often improves spontaneously at around three to four years of age. Frequent loose stools containing recognisable food matter (peas, carrots, sweetcorn) may be passed up to eight times a day.

A dietary cause can be the consumption of large quantities of some squashes and fruit juices because they contain large quantities of non-absorbable monosaccharides and oligosaccharides (Hoekstra 1998).

Dietary advice should be a healthy balanced diet with a limit on squash and fruit juice intake. Continued diarrhoea (> 7 days) after acute gastroenteritis may be associated with a temporary intolerance to lactose (Davidson et al. 1984). This might require the exclusion of dairy products and other lactose containing foods for a few weeks. Lactose free milks such as Lactofree or a calcium fortified soya milk can be used as a direct substitute for cows milk.

Constipation

Constipation in children is often a complex problem. It can be associated with formula feeding (see page 63) or begin at the time of weaning and again at around two years of age in relation to potty training. It can be a distressing problem for the child and the family.

Symptoms include infrequent defecation, pain and distress and refusal to defecate. Causes include insufficient intake of dietary fibre and fluid, emotional disturbances, possible childhood infection or a change in routine (Burnett and Wilkins, 2002).

Dietary changes to suggest

- Encourage foods with a higher fibre content e.g. wholegrain breakfast cereals, wholemeal bread, fruit, vegetables, beans, pulses and lentils e.g. baked beans
- Offer 6-8 drinks per day of about 120mls /4ozs each. More may be required in hot weather and after physical activity
- Unprocessed bran should not be given to young children as it can cause bloating and interferes with the absorption of micronutrients such as iron, calcium and zinc
- In some circumstances it may be necessary for a medical practitioner to prescribe medication
Food hypersensitivity: food allergy and food intolerance

This affects 2-4% of children 1-3 years old and most grow out of it by about 3 years of age (Zuberier et al. 2004, Venter et al. 2008). Food hypersensitivity is the umbrella term for food allergy and food intolerance which are different (Johansen 2003).

Food allergy

The term food allergy is used when the immune system is triggered and treatment is to exclude the food causing the problem. However this should only be undertaken under the guidance of a medical practitioner and dietitian. It is important to monitor the condition so that foods are not excluded for longer than is necessary.

Food intolerance (or non-allergic food hypersensitivity)

The symptoms usually appear a few hours or even days after eating the food and they are rarely life-threatening. Virtually any food can cause an intolerance, although in practice this does not occur. Foods which commonly cause intolerance include milk, chocolate, citrus fruits, fruits and vegetables, foods containing Monosodium glutamate, cheese, especially if matured, fermented foods such as blue cheese, sauerkraut, fermented soya products, yeast extracts fish, especially if stale or pickled and microbial contaminated foods.

Diagnosis

There is no simple diagnostic test for food allergy or food intolerance. The gold standard test is the placebo-controlled double blind challenge. In clinical practice, however, open challenges are usually performed. This involves offering a food, thought to be the cause of symptoms to the child and monitoring the response to that food. Food challenges are an integral part of diagnosis in order to:

- Detect a specific food which causes symptoms. A positive result confirms the need to exclude that food from the diet
- Confirm that a specific food is not responsible. An absence of symptoms confirms that a restricted diet is not needed

Many food challenges can be carried out at home with prior medical agreement. However there are some children who require a hospital setting where immediate medical treatment is available. Nut challenges should never be tried at home. All children with food intolerance should be under the care of a Paediatrician and GP.

Additional investigations that may be helpful include RASTs (Radio-Allergosorbent Tests), skin prick tests, patch tests, endoscopy and biopsy. There is no clinical or scientific evidence to support the use of various other tests including hair analysis, kinesiology and bioresonance in the diagnosis of food intolerance.
Cultural diets

Minority ethnic communities may follow the dietary habits of their own country; these practices will vary not only according to religion but also region. They may require support to ensure an adequate diet and eliminate any potential nutrient deficiencies. Iron, vitamin B12 and total energy intake may present a particular problem.

The following practical points may act as a guide when supporting these families:

• Find out about the family’s usual dietary intake and meal pattern
• Find out about any dietary restrictions they may follow
• Work within the decision making structure of the family
• Where any dietary changes are necessary make sure the advice given is practical
• Check that understanding has taken place

There may be periods of fasting though very young children do not normally fast. However the meals eaten at home may be different during fasting periods, such as a main meal late at night or breakfast early.

The food customs may involve what foods are eaten, how the foods are prepared, what combinations of foods are used or when particular foods are eaten. A guide to some of the differences in food choice commonly observed by those from different religious and cultural groups is shown Appendix 2.
References


Further Information is available from:

British Dietetic Association
Weaning Fact Sheet
www.bda.uk.com

Comic Company
Resources on healthy eating and oral health
www.comiccompany.co.uk

Caroline Walker Trust
Eating Well for Under-5’s in Childcare (2000) Training Materials for people working with under fives in child care
www.cwt.org.uk

Eating Well for 1-4 year olds (2010) Practical Guide & Food Photo cards
www.cwt-chew.org.uk

Change4life
www.nhs.uk/change4life

Department of Health
www.dh.gov.uk

Food Standards Agency website
www.eatwell.gov.uk/agesandstages/children/ytoddler

Harlow Printing
Growth charts and BMI Charts
www.healthforallchildren.co.uk

Healthy Start
www.healthystart.nhs.uk

National Childminding Association
www.ncma.org.uk

National Daycare and Nurseries Association
www.ndna.org.uk

NHS Choices
www.nhs.uk/LiveWell/Childhealth1-5

Pre-school Learning alliance
www.pre-school.org.uk

School Food Trust

Start4life
www.nhs.uk/start4life

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School Food Trust

Start4life
www.nhs.uk/start4life