



Advice on infant nutrition

For dayparents and staff of infant preschools

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Introduction

The nutrition of children in the first years of life provides the basis of their food habits later on as well as their attitudes to food. Therefore it is important that infants get an opportunity to eat a wide range of healthy food, in order to both widen their taste buds and allow them to thrive and develop normally.

Many children begin at dayparents or infant preschools before one year of age. Here is advice intended for dayparents and staff of infant preschools on food options that are particularly suited to each age group up to two years of age. The objective is to make it easier for them to give the children good, healthy food that is appropriate. The advice up to one year of age is based on the booklet *Nutrition: the first twelve months*, which provides good coverage of children's diets for their first year of life. However, advice for children aged one to two has not been published before.

At the back of the booklet are tables which provide an overview of which kinds of food suit each age group of children. In the case of food allergies, other advice applies. Finally, the booklet contains pointers to other booklets available on the home page of the Public Health Institute of Iceland (PHI) which contain interesting reading material that is relevant to the subject.

We at the PHI hope that the advice is very useful to dayparents and staff of infant preschools.

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For children 6 months and younger

Special advice applies for children who start at dayparents before the age of six months. It is important that parents and dayparents/staff of infant preschools discuss what the child has started to eat and whether vitamin D, in the form of drops or cod-liver oil, is given at home or at the dayparent/infant preschool. If the child is prospering well and is tranquil, there is no need for other nourishment than breast milk for the first six months. If breast milk, together with vitamin D, does not suffice as the only nourishment for the first four months, dried milk formula must be given – prepared according to instructions – in addition to breast milk or instead of it. See *Nutrition: the first twelve months* for more details. If the child has turned four months old and needs more, one may begin to give it solid food.

The first addition could be, for instance, one of the following: Rice flour porridge (without milk powder); boiled, pureed potatoes or carrots; or pureed banana.

It is not desirable to give a child younger than 6 months cow's milk/ products containing cow's milk (including follow-up milk) of any kind, neither should porridge containing gluten be given (e.g. porridge from oats, barley, wheat, rye or spelt. This is because of increased risk that the child might develop allergies or food intolerance.

For children 6–9 months

When the child is six months old, s/he gradually begins to eat a variety of pureed food and starts drinking from a beaker. The child must be given a reasonably long time to get to know new kinds of food: give small portions to begin with and increase the amount gradually.

The first addition: Rice flour porridge; boiled, pureed potatoes or carrots; or pureed banana.

After the first addition, the following foods can be given:

- Follow-up milk (after the child has reached 6 months of age). Water when thirsty. Whole milk and cultured dairy products are only suitable in porridge and in cooking, never as a drink or a meal. The use of pure, unsweetened products is recommended. Reduced-fat dairy products (semi-skimmed milk, vitamin-enriched low-fat milk, skimmed milk, *skyr*, semi-skimmed yoghurt) are not suitable, partly because of the high proportion of protein.
- Gradually one can begin to give porridge made from other grains, including those that contain gluten, e.g. porridge from oats, barley, wheat, rye and spelt. It is best to choose a pure meal, i.e. specially prepared infant cereal, which is enriched with iron and vitamins but without added flavourings or added sugar.
- Boiled, pureed meat with potatoes and pureed vegetables are added gradually.

Examples of vegetables could be broccoli, swedes, carrots, cauliflower, paprika or peas. It is not desirable

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to give children younger than one year of age rhubarb, spinach, celery or fennel because of the large amount of nitrates in these foods. All vegetables must be washed carefully and boiled. Liver can be given in moderation but definitely not every day or every week. Fish, egg, pasta and rice can be given after 7-8 months of age.

- One teaspoon of oil or butter can be added to pureed vegetables/meat as the child continues to need a high proportion of fat.
- It is good to give pureed fruit from, for instance, stewed apple, pear, melon and banana (mashed or given in small pieces).
- At 7-8 months of age, the time has come to give the child bread in small bits with a spread topping, e.g. liver pate. When bread is on offer, it is best to choose fibre-rich bread, i.e. bread with a high fibre content, at least 5-6 g fibre in 100 g of bread. Bread with whole grains is not recommended but bread from coarse flours is very good.
- Do not add salt or sugar to food for infants.
- Avoid giving sweet drinks, such as orange, blackcurrant or apple juice, as these can damage the child's teeth. Pure juices are also unsuitable for young children. It is not desirable to give young children drinks or other products with sweeteners.

For children 9–12 months

Children of this age can gradually begin to eat most healthy food as long as it is not very salty. There is no need to puree the food in the same way as for younger children, but instead it suffices to mash with a fork or cut into small pieces.

- Follow-up milk and water are recommended for drinking. Whole milk and cultured dairy products are at most suitable in porridge and in cooking, never as a drink or a meal. The use of pure, unsweetened products is recommended. Fat-reduced dairy products (semi-skimmed milk, vitamin-enriched low-fat milk, skimmed milk, *skyr*, semi-skimmed yoghurt) are not suitable, partly because of the high proportion of protein.
- All sorts of porridge are very suitable, e.g. normal oatmeal porridge, porridge from barley, wheat, rye or millet. Avoid giving sweetened blends.
- Meat can now be boiled or fried (but do not burn it or fry for too long) with potatoes and vegetables. It is not desirable to give children younger than one year of age rhubarb, spinach, celery or fennel because of the large amount of nitrates in these foods. Fish, egg, pasta and rice may be given.
- *Slátur* (blood pudding), most types of toppings, tomatoes, oranges and other fruit are added to the diet. However, note that salty toppings, such as salami and pepperoni, are not suitable for babies. Liver and liver pudding can be given in moderation but definitely not every day or every week.

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- One teaspoon of oil or butter can be added to the puree as the child continues to need a high proportion of fat.
- When bread is on offer, it is best to choose fibre-rich bread, i.e. bread with a high fibre content, at least 5-6 g fibre in 100 g of bread. Bread with whole grains is not recommended but bread from coarse flours is very good.
- Do not add salt or sugar to food for infants.
- Avoid giving sweet drinks, such as orange, blackcurrant or apple juice, as these can damage the child's teeth. Pure juices are also unsuitable for young children. It is not desirable to give young children drinks or other products with sweeteners.

For children 12 months – 2 years

At 12 months of age, the variety increases even more and the child can now eat normal family food as long as healthy, diverse food is on offer and not food which is too salty.

Recommended:

- To have a varied diet and choose from as many food categories as possible every day.
- Follow-up milk and water for drinking. That pure, unsweetened dairy products are chosen when these are offered. The consumption of dairy products should be limited to 500 ml over the day, including milk, yoghurt, cultured milk and *skyr*.
- That children younger than 2 years of age get a rather more fat-rich diet than older children do; the composition of the diet should be such that fat accounts for 30-35% of energy over the day but not more than that. At 2 years of age, fat should provide about 25-35% of energy. Reduced-fat dairy products (semi-skimmed milk, vitamin-enriched low-fat milk, skimmed milk, semi-skimmed yoghurt) are generally not suitable. It is also desirable to use a little more soft spread on bread or give the children a little more sauce with the food.
- Use oil in all cooking instead of butter or margarine, where possible.
- Have oatmeal porridge on offer, at least on some mornings.
- That vegetables and fruit accompany all meals, but also between meals and as a topping. The vegetables can be either raw or boiled.
- That high-fibre bread is on offer, at least 5-6 g fibre in 100 g of bread. Whole grains can now start to be given.
- Have fish at least twice a week, both fatty and lean.
- Choose lean meat when meat is on offer. Liver and liver pudding can be given in moderation but definitely not every day or every week.

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- Avoid giving drinks with added sugar, as these can damage the child's teeth. Neither is it desirable to give young children drinks or other products with sweeteners. One little glass of pure fruit juice is acceptable but it is not advisable for children to drink more than the equivalent of one little glass of pure fruit juice a day. However, pure fruit juice is not a necessary part of a healthy diet though it is a better choice than carbonated drinks and sweetened cordials, both of which contain added sugar or sweeteners.

Important points for all children up to 2 years of age

- It is not desirable to salt the food of young children up to 2 years of age or use seasoning that contains salt.
- Offal products (e.g. sausage meat, frankfurter sausages, meat loaf), nuggets, salted and smoked food are not suitable for young children so the supply of these foods should be limited. Salted and smoked food includes smoked sausages, salted meat, smoked lamb, ham (Bayonskinka), lightly smoked lamb (Londonlamb), smoked saddle of pork and salted cod. Choose fresh meat products instead. Minced meat is considered as fresh meat. Note that frozen products are also considered as fresh goods.
- Very salty toppings, such as salami, pepperoni and smoked lamb, are not suitable for young children.
- Food habits are formed early on and so it is not desirable to add sugar to the food of young children as the child could get used to the sweet taste and then find it difficult to reconcile him/herself to unsweetened products later. Here, "sugar" means white sugar, raw sugar, brown sugar, syrup (agave, maple, glucose, starch), honey, etc.
- Strictly limit sweets and other sweetened products. Food products that contain a lot of sugar are not desirable for the child as they can reduce appetite and there is a danger that the diet will become monotonous and nutrient-deficient. Sweetened carbonated drinks and cordials are not suitable for children, while sports- and energy drinks are definitely not suitable. Cola drinks and energy drinks also contain caffeine. Sweetened dairy products are not suitable.
- It is not desirable to give sweeteners or products containing sweeteners to children three years and under.
- It is important that children get vitamin D every day, in the form of vitamin D drops from four weeks and up and then a teaspoon of cod-liver oil after the child starts to eat solid food. Parents and dayparents/staff of infant preschools need to discuss whether the child gets vitamin D at home or at the dayparent.
- Never give a young child food that can get stuck in the throat, such as nuts, barley sugar, hard or large bits.
- Avoid giving honey to children younger than 12 months as it can contain spores of the pathogen *Clostridium botulinum*. Children can get botulism by eating honey and become seriously ill from it.
- The amount of sultanas given to young children should be a maximum of 120 g a week, because of a fungicide that can be present in sultanas.

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• Trans-fatty acids are undesirable for young children. These are particularly found in products where partially hydrogenated oils/fats are used in the production process. Partially hydrogenated oils are often found in biscuits, sweetmeats, deep-fried bought-in food, microwave popcorn, candy and other products. Ideally, the supply of these products should be strictly limited.

For children 2 years and over

When children have reached two years of age, the general advice given by the PHI on diet and nutrients applies. It is advisable for children aged two years and over to eat 5 portions of vegetables and fruit a day, like adults do, though the portions are somewhat smaller than for adults. Children over 2 years of age can now become accustomed to getting low-fat dairy products and semi-skimmed milk to drink.

Useful material connected to infant nutrition can be obtained from the webpage of the PHI
<http://www.lydheilsustod.is/english/other-languages/>

Nutrition: the first twelve months

Handbók fyrir leikskólaeldhús (Manual for preschool kitchens) – in Icelandic

Sælgæti og smáhlutir geta valdið köfnun (Candy and small objects that can cause choking) – in Icelandic

See also an article on the PHI website *Hvað hentar börnum best að drekka (What are the best drinks for children)* – in Icelandic

Specialists from the Centre for Child Health Services and the Unit for Nutrition Research at the University of Iceland formulate advice on infant nutrition in conjunction with professional health associations for healthcare staff, the Directorate of Health and the PHI.

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	Under 4 months	4–6 months	6–9 months	9–12 months	12 months – 2 years	2 years and over
Milk for drinking	Breast milk or special dried instant formula if breast milk does not suffice as the only nourishment.	Breast milk or special dried instant formula.	Breast milk or special dried instant formula. The child can begin to get follow-on milk.	Breast milk, special dried instant formula or follow-on milk.	Breast milk, follow-on milk.	Semi-skimmed milk. Note to limit consumption of dairy products to 500 ml a day.
Dairy products added to porridge	No	No	Follow-on milk. Whole milk is at most suitable in porridge in small quantities.	Follow-on milk. Whole milk is at most suitable in porridge and in cooking, in small quantities.	Whole milk, follow-on milk.	Semi-skimmed milk.
Cultured, full-fat dairy products (pure, unsweetened and without sweetenings)	No	No	Shall only be used in porridge and in cooking, not as a drink or a meal.	Shall only be used in porridge and in cooking, not as a drink or a meal.	Acceptable	Acceptable, but low-fat cultured products are advised.
Fat-reduced cultured dairy products (pure, unsweetened and without sweetenings)	No	No	No	No	Generally not suitable.	When the child has turned 2 years old, one can begin to give low-fat dairy products.
Porridge	No	If the child needs more, one can begin to give solid food. The first addition can be rice flour porridge, boiled and pureed potatoes, carrots or pureed banana.	Porridge from oats, barley, wheat, rye or millet. It is best to choose a pure meal, i.e. specially prepared infant cereal, which is iron and vitamin-enriched and without added flavourings or added sugar.	All kinds of porridge are suitable, e.g. normal oatmeal porridge, porridge from barley, wheat, rye or millet. Avoid giving sweetened blends.	All kinds of porridge are suitable, e.g. normal oatmeal porridge, porridge from barley, wheat, rye or millet. Avoid giving sweetened blends.	All kinds of porridge are suitable, e.g. normal oatmeal porridge, porridge from barley, wheat, rye or millet. Avoid giving sweetened blends.
Vegetables	No	If the child needs more, one can begin to give solid food. The first addition can be rice flour	All vegetables must be washed carefully and boiled. Vegetables can include broccoli, swedes,	Tomatoes added. It is not desirable to give rhubarb, spinach, celery or fennel up to 1 year of age.	Now it is suitable to give all vegetables, whether boiled or raw.	Now it is suitable to give all vegetables, whether boiled or raw.

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	Under 4 months	4–6 months	6–9 months	9–12 months	12 months – 2 years	2 years and over
		porridge, boiled and pureed potatoes, carrots or pureed banana	carrots, cauliflower paprika, and peas. It is not desirable to give rhubarb, spinach, celery or fennel up to 1 year of age.			
Fruit	No	If the child needs more, one can begin to give solid food. The first addition can be rice flour porridge, boiled and pureed potatoes, carrots or pureed banana	For instance, pureed apple, pear, melon and banana. It is not desirable to give rhubarb.	Oranges, mandarins and other fruit added. It is not desirable to give rhubarb.	All fruit except rhubarb is very suitable.	All fruit very suitable.
Meat	No	No	Boiled and thoroughly pureed meat, potatoes and vegetables. One teaspoon of oil or butter can be added to the vegetable/meat puree as the child needs a high proportion of fats. Liver and liver pate can be given in moderation, but never every day or in every week.	The meat may now be boiled or fried, but do not burn it or fry for too long. Mash the meat with potatoes and vegetables. Blood pudding is added and most kinds of toppings. Check the amount of salt in the product, though. Choose fresh products. Liver and liver pudding can be given in moderation, but never every day or in every week.	The meat may now be boiled or fried (but do not burn it or fry for too long). Blood pudding and most kinds of toppings. Check the amount of salt in the product, though. Choose fresh products. Liver and liver pudding can be given in moderation, but never every day or in every week.	The meat may now be boiled or fried (but do not burn it or fry for too long). Blood pudding and most kinds of toppings. Check the amount of salt in the product, though. Choose fresh products. Liver and liver pudding can be given in moderation, but never every day or in every week.
Fish, eggs	No	No	Can begin to give at 7-8 months.	Acceptable	Acceptable	Acceptable
Pasta, rice	No	No	Can begin to give at 7-8 months.	Acceptable	Acceptable	Acceptable
Bread	No	No	When bread is on offer, choose high-fibre bread as often as possible, i.e. bread with high fibre content,	When bread is on offer, choose high-fibre bread as often as possible, i.e. bread with high	When bread is on offer, choose high-fibre bread as often as possible, i.e. bread with high	When bread is on offer, choose high-fibre bread as often as possible, i.e. bread with high fibre content, at

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	Under 4 months	4–6 months	6–9 months	9–12 months	12 months – 2 years	2 years and over
			at least 5-6 g fibre in 100 g of bread. Bread with whole grains is not recommended but bread from coarse types of flour is very suitable.	fibre content, at least 5-6 g fibre in 100 g of bread. Bread with whole grains is not recommended but bread from coarse types of flour is very suitable.	fibre content, at least 5-6 g fibre in 100 g of bread. Now bread with whole grains can be given, but begin gradually.	least 5-6 g fibre in 100 g of bread.
Oil, dairy spreads, sauces	No	If vegetables are given, it is advisable to put a little oil in the mixture.	It is advisable to add a little oil or butter to the vegetable and/or meat mixture.	It is advisable to add a little oil or butter to the vegetable and/or meat mixture.	It is desirable to put a little more dairy spread on bread or have a little more sauce with the food.	Use oil for cooking. Put a thin layer of dairy spread on bread. Sauces with more fat with food that is low in calories e.g. boiled fish.