Guidelines for school lunches

– advice, tips and volume tables

Contents

Guidelines for a good school lunch

Good eating habits are essential for children to be in good health, grow, develop and be able to study and go to school. Pupils who eat a proper lunch are better able to concentrate during lessons and are therefore more likely to perform well in school. Lunch is therefore an important part of school life. Ideally school lunches should be so appealing that neither the pupils nor the teaching staff feel the need to seek out other alternatives. The school canteen can then be a good place for the whole school to meet, and a decent school lunch can be tasty, healthy and fun!

These guidelines have been produced to make it easier for both local authorities and individual schools to offer all pupils an attractive, nutritious school lunch. They are based on the 1997 Swedish Nutrition Recommendations (SNR) for children and adolescents of school-going age. If the guidelines are followed, both schools and parents can be safe in the assurance that children are receiving a nutritious, well-balanced meal each day.

It is our hope that these guidelines will be used for various purposes, and by all the different groups involved in matters of food and nutrition. Putting together a good school menu with the scarce resources available can be a difficult task. These guidelines should be seen as an attempt at making that job easier. They can, for example, be used for planning menus, purchasing food and preparing the meals themselves. The guidelines can also be used as a basis for developing local nutritional objectives, or as a means of producing high quality meals in individual schools. For authorities which purchase meals from outside contractors the guidelines can usefully serve as a set of basic requirements, a basis for calculating cost and also as a way of monitoring the meals provided.

The guidelines have been developed by the Centre for Applied Nutrition as part of the Stockholm County Council Health Objective project ("Hälsomålet"), in cooperation with the National Food Administration. School meal experts from the municipalities of Botkyrka, Huddinge, Järfälla, Nacka, Sigtuna, Värmdö och Österåkers were involved in the reference group during the development phase.

The guidelines revise and build on the 1994 proposals for school lunch requirements and guidelines under the Health Objective project. They have primarily been adapted to the 1997 version of the Swedish Nutrition Recommendations (SNR).

Ulla Hagman
National Food Administration

Eva Callmer
Centre for Applied Nutrition/Health Objective project, Stockholm county Council

How should the guidelines be used?

The guidelines are based on current recommendations for energy and nutrient content in school lunches, This brochure contains practical advice on how to put together and prepare meals in such a way that the recommendations are met. The guidelines can be used as a complement to or instead of nutritional value calculations.

Uses

- planning menus,
- purchasing food/ready-prepared meals,
- preparing meals,
- quality assurance for meals,
- developing requirements/specifications for purchasing meals,
- monitoring the purchase of meals,
- formulating objectives for school lunches.

Energy and nutrients in school lunches

The Swedish Nutrition Recommendations (SNR) provide the scientific basis for planning a healthy diet. They indicate reference values for energy and recommended daily intake of various nutrients, and also recommend a certain distribution of energy over the meals in a given day.

According to SNR, lunch should provide 25 to 30 percent of a person's total daily energy intake. An appropriate level when planning school lunches is, therefore, 30 percent of the reference value for daily intake, which for pupils in years 4–6 (10–12 years old) is 2.6 megajoules (625 kcal).

The average pupil in classes 4-6 is taken as the reference. Other groups' energy and nutrient needs are extrapolated using various factors. These factors are 0.95 for 6-year olds and years 1–3 (7–9 years old), 1.1 for years 7–9 (13–16 years old) and 1.2 for upper secondary school pupils (17–19 years old).

Table 1. Amount of energy per portion when planning school lunches

Year	1–3*	4–6 (Reference-portion)	7–9	Upper secondary
MJ/portion	2.4	2.6	2.8	3.0
Kcal/portion	575	625	675	725

*The same values can be used for six-year olds.

The amount of fat, saturated fat, protein and carbohydrates in a meal gives a very good idea of how well-balanced it is. The lunchtime meal can contain more fat and more protein than is recommended for the whole diet (see Table 2). This is offset by the fact that meals like breakfast and snacks are generally lower in fat and richer in carbohydrates.

Lunch is an important source of, for example, vitamin C, vitamin D, folate (a B-vitamin), iron and zinc. The amount of vitamins and minerals should be between 25 and 30 percent of the recommended daily intake (see Table 3). Quantities of these nutrients can vary from day to day, but on average these should be the amounts contained in lunches over a given week.

Table 2. Recommended amount and distribution energy-providing nutrients in a reference portion

Nutrient	Grammes per reference portion	Amount of energy %
Protein	max 30 grammes	max 20 %
Fat	max 23 grammes	max 33 %
Saturated fat	max 8 grammes	max 11 %
Corbohydrates	min 72 grammes	min 47 %

Table 3. Recommended amount of certain nutrients per portion for a reference person (pupil in class 4–6)

Vitamin C	15 mg
Vitamin D	1.5 mikrogrammes
Folate	60 mikrogrammes
Iron	4 mg
Zinc	2.5 mg
Calcium	200 mg

Advice when planning school lunches

What should be included in the meal of the day?

The meal of the day should consist of

- cooked main dish
- bread and low-fat margarine
- mixed salad
- skimmed milk
- water

In addition, vegetables can also be included in the cooked main dish.

At least two dishes to choose from

It is good for pupils to be offered at least two different cooked dishes at lunchtime. Having a choice makes it more likely that all pupils will eat the school lunch. School lunches are also a way of extending pupils' food "repertoire" by giving them an opportunity to trying different foods, dishes and types of cuisine.

Serving soup approximately twice a month is about right. For soup to provide pupils with enough energy and nourishment it must be supplemented with either sandwiches or dessert.

Examples of how the guidelines can be applied to soup can be found on page 17.

A vegetarian dish can also be served about twice a month. In such a meal it is mainly pulses which replace meat, fish and eggs.

Examples of how the guidelines can be applied to vegetarian dishes can be found on page 16.

It is essential to provide adequate alternatives for those who, for ethical, medical, ethnic or religious reasons, cannot eat all the standard dishes. For pupils who only eat e.g. vegetarian food, Muslim food or who have to avoid certain foods because of allergies, comprehensive meal planning is required. These guidelines can serve as a basis, but do not provide enough information for detailed planning of such alternatives.

Other alternatives

Occasionally a well thought-out, filling salad, combined with bread and something to drink, can be another alternative to the two cooked dishes. This can be a way of attracting pupils who would otherwise not eat lunch, for example girls in the more senior years.

Examples of how the guidelines can be applied to salad-based meals can be found on page 18.

Porridge and yoghurt-based meals or sandwiches – instead of one of the cooked dishes – should not be served more than a few times each term. Sandwiches are an option mainly when it is not possible to eat lunch in the usual canteen. Such meals should be supplemented in various ways in order to provide enough energy and nourishment.

Examples of how the guidelines can be applied to porridge and yoghurt-based meals can be found on page 19.

The plate model – a guide to balanced meals

A decent lunch should have a good balance of different types of food. One way of getting the balance right is to use the plate model, which involves dividing foods into three groups:

- carbohydrates (potatoes, pasta, rice and bread),
- fruit and vegetables,
- high-protein foods (meat, fish, eggs, pulses, milk and dairy products).

Carbohydrates

A good-sized portion of a foodstuff rich in carbohydrates and fibre is the cornerstone of every meal. The food we eat in Sweden today often contains too few carbohydrates. A school lunch with too few carbohydrates is not as filling and provides less energy to get through afternoon activities.

Potatoes, pasta and rice

Pupils' consumption of potatoes, pasta, rice, barley, couscous, bulgur and millet should be encouraged as much as possible. Nutritionally speaking, these various alternatives are more or less on a par.

From an environmental point of view, potatoes and barley are at the top of the list, followed by pasta, bulgur and couscous, then millet and lastly rice.

Bread

Bread is another important source of carbohydrates and dietary fibre and should be part of every school lunch.

High-protein foods

A certain amount of protein is needed every day to build up the body's cells. The risk that there will be too little protein in our food to meet this need is minimal. The amount of protein in food is also relevant in terms of how satisfying a meal is. High-protein foods are also rich sources of minerals like iron, zinc and calcium. So every lunch – even one consisting of soup, a vegetarian meal or a salad buffet – should also include a portion of high-protein food. Varying the sources of protein is also a good idea, since each one provides a different range of minerals.

Meat, fish, eggs and pulses

Meat, fish, eggs and pulses are the most important sources of protein in school lunches. In addition, they contain significant amounts of iron, zinc and selenium. Meat is the most important source of easy-to-absorb iron. Fish provides selenium and Vitamin D. Pulses also contain a lot of iron, although it is not as easy for the body to assimilate it.

Milk and dairy products

Milk and dairy products provide valuable protein and are also an important source of calcium. They do contain a lot of saturated fat, but at the same time they are important for making food appetising. In order to avoid too much saturated fat, the amount of full-fat milk, cheese and other high-fat dairy products used in dishes should be limited.

If these guidelines are followed and pupils eat the recommended amounts of main dish, salad, bread and fat, they will get the calcium they need even without drinking milk with their food, mainly from the milk products used in the meals themselves. Since, however, not all pupils eat a full school lunch, both skimmed milk and water should be available each day to drink with the meal.

Fruit and vegetables – rich in vitamins, minerals and fibre

Vegetables, fruit and berries are an important source of various vitamins, minerals and dietary fibre. They also contain other substances which, for instance, serve as antioxidants in the body. Research is providing increasingly convincing evidence of the beneficial effects of eating plenty of vegetables and fruit. Offering a wide selection of salad and cooked dishes encourages people to eat more of these things.

Advice for a good school lunch

- **Lunch sittings**

  Lunch sittings should be organised in such a way that all pupils are able to eat their lunch in peace and quiet.

  Each class should be served lunch at the same time each day.

  Lunch should be served more or less in the middle of the pupils' working day, and at the very earliest at 11.00.

- **Canteen enviroment**

  Ensure that the school canteen provides a stimulating, pleasant environment in which to eat. This makes it more likely that pupils will get the food – and nourishment – they need.

- **Serving in the right order**

  One way of ensuring that pupils eat more vegetables is for them to start with salad. In some schools this has had the result that pupils eat more of the other foods on offer too, because the whole meal makes a more positive impression. Even when the food is distributed by catering staff it is better for the vegetables to be served first.

- **Food groups**

  Allow school staff, parents and pupils work together in a "food group" or "health group" so that they can all contribute to coming up with a decent school lunch for all pupils.

- **Evaluation**

  Allow school staff, parents and pupils work together in a "food group" or "health group" so that they can all contribute to coming up with a decent school lunch for all pupils.

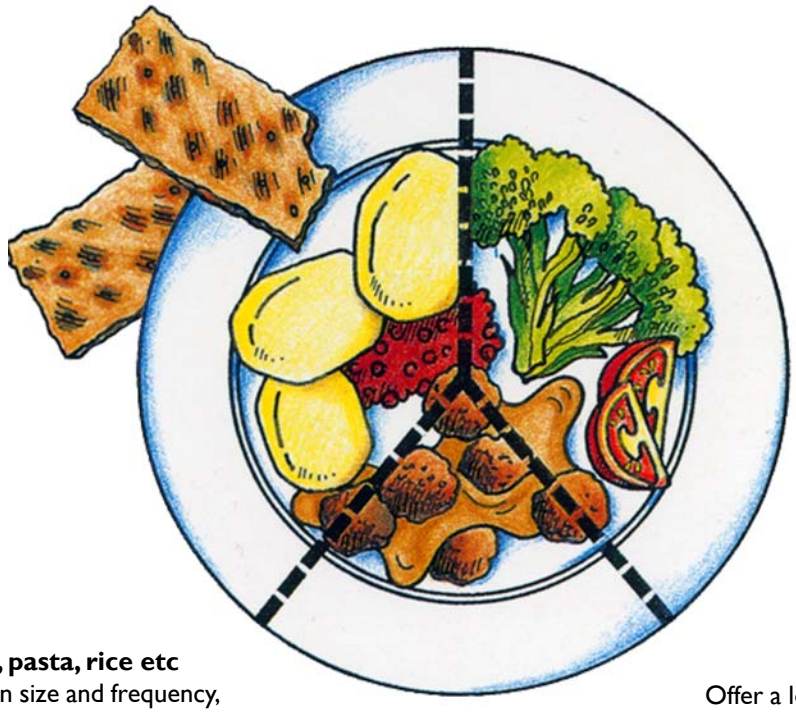
* On the Swedish Association of Local Authorities' website (www.svekom.se/skola/ksr/matund.pdf) there is a simple questionnaire that can be copied and used.

Planning a lunch using the plate model

The plate model should form the basis of every school lunch. This means that every day lunch should include a full portion from each of the three groups – carbohydrates, fruit and vegetables, protein – plus bread and low-fat margarine.

Bread
At least one slice, with 5 g of low-fat margarine

Fruit and vegetables
At least 100-125 g in form of salad or in the cooked dish



Potatoes, pasta, rice etc
For portion size and frequency, see Table 4

Dressing
Offer a low-fat alternative

Meat, fish, eggs, dairy products and pulses
For portion size and frequency, see Table 5

Guide to planning, purchasing and preparing school lunches

In order to use the following guide the number of reference portions must first be calculated using the factors 0.95 for 6-year olds and years 1–3, 1.1 for years 7–9 and 1.2 for upper secondary school pupils.

Potatoes, pasta och rice

The aim is for each pupil to eat at least one portion of this kind of food every time they have lunch. The table below indicates appropriate portion sizes and also how often the different alternatives can be served.

Table 4. Examples of portion sizes and frequencies (times per week) for different foods

Basic product	No. times/2 wks	No. times/8 wks	Portion size (pupils in years 4–6)
Potatoes	4.25	17	175 grammes
Pasta	2.5	10	80 grammes, uncooked
Rice	1.5	6	70 grammes, uncooked
Wheat flour*	0.5	2	60 grammes, 1 dl
Bread, pita bread style	0.25	1	80 grammes
Soup	1	4	at least 1/3 portion of potato, rice or pasta + supplement

* e.g. in pizza, pasties and pancakes

Dishes like black pudding, fish pudding, lasagne and beef casserole often contain too few carbohydrates, so it is good to supplement them with filling salads or extra bread.

Tips

to encourage pupils to eat a decent portion

Vary the potatoes

It is often difficult to get pupils to eat 175 grammes of potatoes if they are served boiled. Add variety with e.g. potato wedges or potato gratin.

Filling salads

Filling salads which contain e.g. potato, pasta, rice, couscous, lentils or beans as a base can be included as part of the salad buffet each day. A good way of increasing carbohydrate intake!

Filling soups

Soup is part of our culinary tradition. It should not, however, be served more than about twice a month. The reason for this is that many soups contain very little energy and carbohydrate.

Use the following rules of thumb to make the soup sufficiently filling:

- All soups should have potato, pasta, rice or dried pulses as their base, and this should make up at least one third of a portion (see Tables 4 and 5).
- Supplement the soup with dessert or soft bread with cold cuts, cheese etc.
- Include potatoes, pasta and rice or couscous-based salad in the salad

For examples of soup-based meals see page 17.

Different types of rice

Let pupils choose between different kind of rice, for example brown rice, jasmine rice, basmati rice and plain rice.

Feel free to vary the rice with barley, couscous, bulgur and millet.

Bread, low-fat margarine, cold cuts etc.

The aim is for each pupil to eat at least one, and preferably two, pieces of bread with lunch. An appetising range of both soft and hard breads can be a way of encouraging pupils to eat more bread. For the sake of the environment it is good for the bread to be produced as locally as possible.

The bread should be served with a 5 grammes portion of low-fat margarine. Soup should always be served with extra bread if there is no dessert, and often three slices of hard or soft bread with cold cuts, cheese etc. are needed to supplement the soup. Suitable things to put on the bread are e.g. meat paste, ham, hamburger meat, meat-balls, cheese spread, cheese and whey cheese. Meat should be included in order to increase iron intake.

For examples of soup-based meals see page 17.

Salad and fruit

The aim is for each pupil to eat 100–125 grammes of vegetables and fruit every lunch-time.

An appetising salad buffet, placed so that the children take salad before they have filled their plates with other food, can be a good way of encouraging them to eat plenty of greens. There should, therefore, always be a salad buffet – even with soup, pancakes or rice pudding. Advice on what should be in a good salad buffet can be found on page 15. Feel free to include chopped-up fruit in the salad buffet each day.

Serving fruit as a dessert after soup-based meals is also a good tip.

Salad dressings should contain a maximum of 15 percent fat. If various parts of the salad buffet (e.g. pizza salad, marinated beans, potato salad) already contain dressing, an even lower fat dressing should be used.

Following the seasons when choosing fruit and vegetables provides more variety and also makes meals better from an environmental point of view.

The Centre for Applied Nutrition has produced a seasonal list which shows which vegetables and types of fruit are the most environmentally friendly at different times of year. The list can be ordered from the Centre for Applied Nutrition, Tel. 08 – 517 780 50, Fax. 08 – 517 780 51.

Meat, fish, eggs, dairy products and pulses

Each day a total of one portion of the foodstuffs incicated in table 5 should included in the school lunch. In some cases various foodstuffs can be combined to make up one portion.

Table 5. Examples of vasic products, frequency and appropriate protion size

Basic product	No. times/2 wks	No. times/8 wks	Portion size (year 4–6)
Boneless meat/poultry[1]	2	8	100 grammes
Minced meat	2	8	80 grammes
Sausage, max 18 % fat[2]	max 1.5	max 6	100 gram
Black pudding/liver	min 0.5	min 2	150 grammes/100 grammes
Fish[3]	2	8	125 grammes
Dried pulses	min 0.5	min 2	60 grammes
Eggs	0.5	2	90 grammes (1.5 eggs)
Cheese/milk	1	4	50 grammes 17 % fat cheese *or* 2.5 dl mjölk 1.5 % fett

[1] The group meat and poultry also includes unprocessed cold cuts, e.g. ham.
[2] It is fine to replace sausage with meat or minced meat.
[3] Alternate between low-fat and fatty fish. As a rule of thumb – fatty fish every third time.

Portion size for ready-prepared food

Appropriate portion sizes when purchasing foodstuffs/ready-prepared dishes or having meals deliered are given on page 21.

Vegan food

A vegan diet is one that completely excludes foodstuffs of animal origin: meat, fish, eggs, milk and cheese, but usually also margarine etc. (which is milk protein-based). The National Food Administration cannot recommend this kind of diet, because it lacks certain vitamins (D and B_{12}) and often contains only small amounts of certain minerals (calcium, iron, zinc and selenium). It is, however, important that those pupils who nonetheless opt for a vegan diet eat in as balanced a way as possible. Otherwise, if they do take the school lunch, they will only eat certain things, which can lead to a very imbalanced, unsuitable diet.

On the National Food Administration's website (www.slv.se) you can find information on what you should bear in mind in terms of offering vegan food in schools. Above all, pulses in one form or other should be included in the cooked dish and/or the salad buffet.

Working together with these children's families is a good way of providing them with the help they need.

Drinks

Skimmed milk[1] and water should be served with school lunch. No other drinks are suitable to be served on a daily basis. Vitamin C-rich juice may occasionally be served.

Preparation

Recipe and preparation are essential factors in terms of how good a dish tastes, but also in terms of how much fat a meal contains. If school lunches are to comply with Swedish nutritional recommendations, fat and high-fat milk products must be used sparingly.

Fat

An average of one teaspoon of margarine per portion per day for food preparation is about right.

Milk and dairy products

To ensure that the amount of saturated fat does not exceed recommended levels, it is important to limit the use of higher fat milk products in food preparation. There are two ways of finding out how much can be used over a period of two weeks, while still sticking to the guidelines.

The first is to calculate the average nutritional value for all meals over a two-week period and compare this with the maximum values for fat and saturated fat given in Table 2.

The second is to follow the "potted guide" to milk and dairy products drawn up by Stockholm County Council's Centre for Applied Nutrition. This can be found on the relevant unit's homepage: www.sll.se/ctn, and can also be ordered there.

Coosing the right spread/milk

Serving higher fat margarine with bread instead of a low-fat alternative means an increase in the meal's overall fat content. If butter or butter-based margarine is used, saturated fat in particular goes up. This basically means that there is no scope for using extra milk products when preparing dishes, which in turn leads to food with a low calcium content.

If semi-skimmed milk is served instead of skimmed milk, this also increases the amount of saturated fat in a meal, which means fewer extra milk products can be used when preparing the actual meals.

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[1] The National Food Administration recommends Vitamin D-enriched milk.

Composition of the salad buffet

The salad buffet should contain

* **at least two items from the Vitamin C list**

cauliflower broccoli pepper mixed salad white cabbage	orange kiwi small citrus fruit

* **at least three items from the carbohydrate/ dietary fibre list**

beans lentils chickpeas carrots parsnip swede sweetcorn peas peas-sweetcorn-pepper American vegetable mix green beans	potato salad pasta salad rice salad salad with couscous or bulgur	pear kiwi apple

* **unlimited amount of garnish**

tomato[1]
lettuce – iceberg and head lettuce
cucumber
radish

The salad dressing should contain no more than 15 percent fat.

[1] Tomatoes cannot be regarded solely as a garnixh because they are an important source of the carotenoid lycopene, which is an antioxidant. On the other hand, they do not contain much Vitamin C.

Vegetarian meals

A vegetarian lunch should also contain a full portion from each of the three food groups in the plate model. For the carbohydrate and fruit and vegetable groups the same principles apply as for the general model on page 9. For the high-protein group, meat, fish and eggs are replaced by pulses and other vegetable protein sources. In order to meet the need for iron and other minerals, pulses should always be part of the meal in one form or other. See below for examples of what a vegetarian meal might consist of.

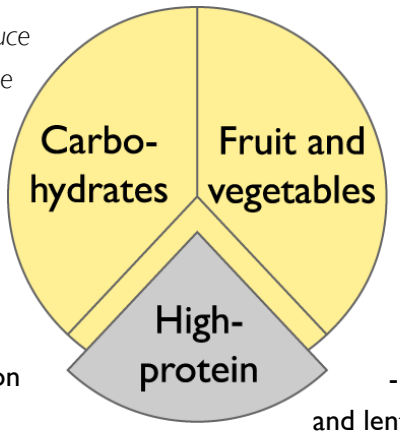
How often: once every two weeksin each case.

MEAL 1
- Vegetable burgers, 3
- Cottage cheese and sour cream sauce, 1 dl
- Boiled potatoes, 2–3
- Crisp bread, 1–2 pieces with low-fat margarine
- Mixed salad with ½ dl marinated pulses

The cottage cheese and sour cream sauce contributes about half, and the vegetable burgers and marinated pulses about a quarter each to a full portion from the high-protein group.

MEAL 2
- Chickpea casserole 2.5 dl
- Boiled rice, about 2.5 dl
- Crispbred, 1–2 pieces with low-fat margarine
- Mixed salad

The chickpea casserole provides about one portion from the high-protein group.



MEAL 3
- Ratatouille, 2 dl with one tablespoon of cheese
- Pasta, about 4 dl cooked
- Crispbred, 1–2 pieces with low-fat margarine
- Mixed salad with ½ dl marinated pulses
- Skimmed milk, 1 glass

The skimmed milk contributes about half, and the cheese and pulses about a quarter each to a full portion from the high-protein group.

MEAL 4
- Cabbage pie with rice and lentils (vegetarian version of the Swedish dish ”kålpudding”)
- Boilded potatoes, 2–3
- Crispbred, 1–2 pieces with low-fat margarine
- Mixed salad
- Skimmed milk, 1 glass

The lentins and skimmed milk contribute about ½ a portion each from the high-protein group.

Soup-based meals...

Soup-based meals, like any others, should include a full portion of each of the three groups in the plate model. Such meals are often low in energy, carbohydrates and protein, with the exception of soups containing pulses. For the soup to provide sufficient carbohydrates it needs to be supplemented with at least a third of a portion of potatoes, pasta or rice (see Table 4 on page 10). The soup should also always be accompanied by a dessert or extra bread with spread and cold cuts, cheese etc.. See below for examples of what a soup-based meal might consist of.

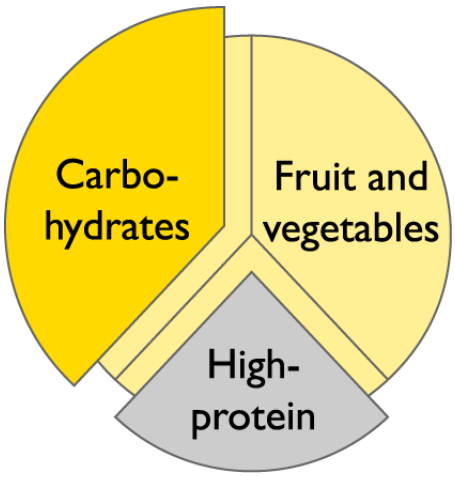
How often: once every 2 weeks maximum.

MEAL 1

- Lentil soup, 3 dl
- Soft/hard bread, 3 slices with low-fat margarine
- Enough cheese/whey cheese etc. for 2 slices of bread
- Mixed salad
- Possibly fruit

The lentils and bread contribute about half a portion each from the carbohydrates group.

The lentils contribute about three quarters and the cheese etc about a quarter of a protion from the high-protein group.



MEAL 2

- Minestrone soup, 3 dl with 1/3 portion extra pasta (see Table 4)
- Crisp bread, 1–2 pieces with low-fat margarine
- 2 pancakes with jam
- Mixed salad

The pasta in the soup contributes about a third and the flour in the pancakes about two thirds of a portion from the carbohydrates group.

The meat in the soup and the eggs and milk in the pancakes contribute about half a portion each from the high-protein sector.

...and salads

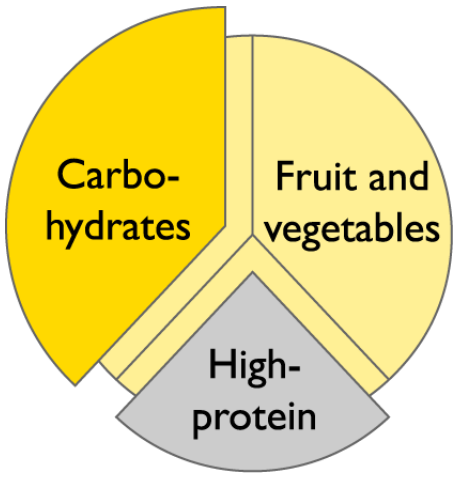
A filling salad, together with bread and something to drink, can occasionally be another alternative to the two cooked dishes. A salad should also contain a full portion from each of the three groups in the plate model. Plenty of bread and perhaps also a potato, pasta or rice-based salad are needed to cover the carbohydrates group. The high-protein group can be covered by, for example, marinated pulses, cottage cheese, tuna fish, ham or egg. See below for examples of how the standard salad buffet (page 15) can be supplemented.

How often: occasionally

SALAD 1

- Mixed salad
- Cottage cheese, ½ dl
- Marinated pulses, 1 dl
- Bread, 3 slices with low-fat margarine

Marinated pulses and bread contribute about half a portion each from the carbohydrates group. Cottage cheese and marinated pulses contribute about half a portion each from the high-protein sector.



SALAD 2

- Mixed salad
- Tuna fish, ½ dl
- Egg, ½–1
- Potato/pasta/rice-based salad, 3.5 dl
- Crisp bread, 1–2 pieces with low-fat margarine

Potato, pasta or rice salad and crispbread provide one portion from the carbohydrates group. Tuna fish and egg contribute about half a portion each from the high-protein group.

Porridge and yoghurt-based meals

Porridge and yoghurt-based meals, like all the others, should contain a whole portion of each of the three groups in the plate model. They should be supplemented with extra sandwiches and a salad buffet that includes fruit. In order to increase iron intake it is a good idea to serve cold cuts.

How often: a few times and each term at most.

PORRIDGE-BASED MEAL

- Rice pudding, 2 dl (the "porridge" component)
- Skimmed milk, 2 dl
- Bread, 3 slices with low-fat margarine
- Enough cold cuts etc for 2 slices of bread, e.g. meat paste, ham
- Mixed salad plus fruit

The rice pudding and the bread contribute about half a portion each from the carbohydrates group.

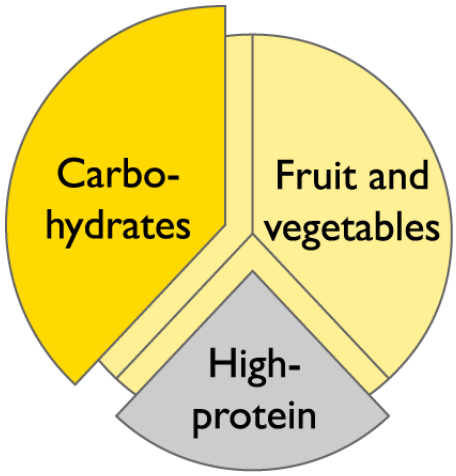
The milk in and alongside the pudding contributes about two thirds and the cold cuts about a third of a portion from the high-protein group.

YOGHURT-BASED MEAL

- Medium-fat yoghurt, 2 dl
- Müsli, 1 dl *or* Cornflakes, 2–3 dl
- Fruit/jam
- Bread, 3 slices with low-fat margarine
- Enough cold cuts etc for 3 slices of bread, e.g. ham, fish, eggs, cheese
- Mixed salad plus fruit

The müsli or Cornflakes and bread contribute about half a portion each from the carbohydrates group.

Medium-fat yoghurt and cold cuts contribute about half a portion each from the high-protein group.



Appropriate portions of ready-prepared food for pupils in years 4–6

This portions table can be used when buying industrially prepared products and when purchasing meals from contractors. The table also indicates what the portions represent in relation to Table 5. If, for example, lasagne is served (½ portion of minced meat), another 1 ½ portions of mince should be included in the menu over a two-week period in order to achieve the two portions recommended.

Dish	Portion, grammes	Amount of basic product[1]
Fish, boiled or baked	110	1portion of fish
Fish in breadcrumbs, fried	125	¾ portion of fish
Fish fingers/fish, fillets or nuggets in breadcrumbs	125	2/3 portion of fish
Fish gratin (without potato)	160	1 portion of fish
Fish pudding	250	1 portion of fish
Fish balls, salmon balls	130	½ portion of fish
Boneless meat/poultry	80	1 portion of meat
Mealballs, burgers, meatloaf	110	¾ portion of mince
Meat sauce	175	2/3 portion of mince
Meat/sausage/chicken casserole with vegetables	225	1 portion of meat/sausage
Chile con carne	200	½ portion of mince + ½ portion of pulses
”Pytt i panna” (mixture of diced meat, potato and onion – fried)	300	2/3 portion of meat
Lasagne	350	½ portion of meat + ¾ portion of milk/cheese
Macaroni cheese	350	½ portion of meet + ¼ portion of milk/cheese + 1/3 portion of egg
Ravioli	350	1/3 portion of mince
Pizza, pan pizza style	200*	¼ portion of meat + ¾ portion of cheese
Pasty	180*	1/3 portion of mince + ½ portion of cheese
Potato cakes	225	¼ portion of egg
Pancake, main course	200–250	1/3 portion of egg + ½ portion of milk
Pancake, dessert	120	
Soup	300	
Mashed potato	225	

[1] Content in relation to Table 5. * Only applies to low fat alternatives.

Keeping prepared food warm

When cooking and serving large quantities of food, products are often prepared long before they are eaten.

The temperature range where there is a danger of bacteria spreading is between 8ºC and 60ºC. Bacteria spread quickly at temperatures of between 20ºC and 40ºC. Dishes which are not heated sufficiently when being prepared or reheated, or which are kept warm or served at too low a temperature, can cause food poisoning due to the spread of bacteria.

The National Food Administration recommends that prepared food should be kept warm for a maximum of two hours so as not to jeopardise nutritional value, taste and hygiene. For potatoes the limit is one hour.

Prepared food should be kept warm in such a way that the temperature does not fall below 60ºC. A bain-marie (water bath) must, therefore, contain water that is considerably hotter so that the food itself can be kept at a minimum of 60ºC.

Prepared food which has been chilled and is then reheated and kept warm should be thoroughly reheated to at least 70ºC.

Things to bear in mind

- Allow pots and tins, covered with a tightly fitting lid, to stand in heated cupboards as long as possible before the food is served.
- Turn on the bain-marie in good time to make sure it is warm when the food is put in.
- Bear in mind that when served the food should preferably be 65–70ºC, because it soon cools when put on the plate. The food should be at least 50ºC when eaten.
- Avoid taking out too much food at any one time for serving. This particularly applies to fish dishes, sliced meat, meatballs etc., which cool very quickly.
- Place a lid on pots, tins, dishes etc. if there is a break in the serving of the food.
- When serving food in a dish or bowl, warm it before putting food in.
- Keeping food properly warm is particularly important if the products can easily be contaminated, e.g. sliced meat or chicken that is cut up after preparation.
- Do not keep food warm unnecessarily.

Food and the environment

More and more schools are choosing to buy organic food as a way of safeguarding the environment for generations to come. In organic farming no industrial fertilisers, GMOs (genetically modified organisms) or chemical pesticides are used, and only a small number of additives are authorised.

Studies show that there are no chemical pesticides present in organic products.

There is no evidence of any significant difference between conventionally and organically cultivated varieties in terms of vitamin and mineral content. The number of studies is, however, limited.

Whether you opt for organic food or not, the following choices are particularly positive from an environmental point of view:

- Locally produced bread
- Field grown, preferably locally produced vegetables
- A salad buffet with produce that is in season

Futher information

- A first step towards sustainable eating habits, Report no. 23, 1999, Centre for Applied Nutrition, Stockholm County Council
- Vår Föda ("Our Food" – the National Food Administration magazine). Issue no. 8/1995: Genetic engineering – threat or opportunity; issue no. 1/1998: Food and the environment
- The National Food Administration's website: www.slv.se
- The Centre for Applied Nutrition's website: www.sll.se/ctn

Different cultures – different eating habits

In today's schools there are a lot of pupils who have a different culinary tradition from us. For religious and cultural reasons they cannot always eat the food served at school.

Eating according to strict religious or cultural rules can limit one's choice considera bly. For this reason, most pupils adapt their diet so that they only avoid certain foods. A lot of Muslims and Jews in Sweden avoid pork and black pudding, for example, but are willing to eat meat from animals slaughtered "the Swedish way". There are also plenty of people who do not follow the rules dictated by their religion.

If a pupil or a pupil's parents have expressed a wish for a particular kind of food, it is important to respect that wish and, wherever possible, to find decent alternatives to the food the pupil cannot eat. At the same time, offering e.g. Halal meat on a permanent basis can be difficult. One way of solving the problem can be to replace meat with fish or vegetarian food some of the time.

Getting used to Swedish food

Particularly for newly arrived immigrants it can be hard to get used to certain typically Swedish dishes, which both taste and look different.

The combination of sweet and savoury in, for example, herring, brown beans and sweetened bread is something that many immigrants find it difficult to accept. Some immigrant children are not used to drinking milk and can feel unwell if they do because of lactose intolerance.

One good idea is to have days in the canteen with a specific theme, offering food from different countries. This gives both Swedish and immigrant children the chance to try a wider variety of foods.

Ytterligare exemplar av ”Riktlinjer för skolluncher - råd, tips och mängdtabeller” kan beställas gratis från:

Livsmedelsverkets kundtjänst, Box 622, 751 26 Uppsala,
tel: 018 - 17 55 06, fax: 018 - 17 55 11, e-post: kundtjanst@slv.se

LIVSMEDELS VERKET
Box 622
751 26 Uppsala

Samhällsmedicin
Centrum för tillämpad näringslära
Box 17533
118 91 Stockholm