CONTENTS - QUICK LINKS

HEALTHY EATING

Before & After Pregnancy & Early Years

The information contained in this booklet is provided for general purposes and is not intended as medical advice. The author and publisher are not responsible for any specific health needs that may require medical attention. If you have any underlying health problems, or are taking prescribed medications, you should inform your GP that you may follow the information in this booklet.

CONTENTS

back to top

Introduction

It may happen to 640,000 women in the UK every year, and to 136 million women globally, but every time is a wonder. Just think about it – creating and growing another human being inside you then giving birth to him or her. It's still wonderful and awesome when I think about the enormity of it.

However although it may be an everyday miracle, it's not something to be taken for granted. Proper care and nutrition is essential for the best possible outcome in pregnancy.

What you eat before and during your pregnancy is the most important determinant of not only your health, but that of your unborn child, and even your children's children, as research is telling us.

From conception to the months following birth your baby is totally dependent on you to provide the nutrients required for their optimal growth and development. A child who is born strong and healthy will have fewer illnesses throughout their life than one who is not.

The first 1,000 days of a child's development – from conception to the age of two – is a critical period for their growth and development. And during the period, from weaning – at around 6 months, to starting school at 4+, is a wonderful time to introduce a wide array of flavours and tastes to establish a love of good food. This booklet is designed to help you with this new and exciting time in your life. It's packed with up-to-date nutrition information to help you face the challenges ahead with confidence.

Includes Info on:

- Food groups and nutrients
- Nutritional needs pre and postnatally
- How nutrition affects fertility
- The nutritional needs of infants and under fives
- Latest research on the benefits of breastfeeding
- How to encourage children to love healthy foods and snacks
- How to encourage fussy eaters
- Healthy swaps
- Preventing childhood obesity

The longest section in this booklet is the Nutrition 101 chapter. This is deliberate because I want to give you a concise and straightforward overview of basic nutrition. This is important because once you understand the basics, you will be better able to apply them and make wiser choices, whether it's in preparing meals for you, your partner or your baby. With a basic, sound knowledge you're less likely to be taken in by fad diets, or too-good-to-be true viral trends.

Before and after pregnancy can be a time when you feel taken over by events and the unique circumstances happening in your life. This booklet is intended to help give you a sense of control over your food and drink choices that will nourish both you and your baby.

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1. Pre and Postnatal Nutrition

Science is now telling us that many influences on children's health are set before pregnancy, so it's important that all women of child-bearing age are in the best of health. And the emphasis is on all women, because nearly 50% of pregnancies are unplanned, and many nutrients are required in the early stages of fetal development, before we even know we're pregnant.

Often we put more thought and effort into planning an event like a party or a wedding than we do into planning a pregnancy. So how do we plan for a pregnancy? By getting our bodies into the best possible condition to support and nourish a new life. This is important for both the health of the mother and baby.

In the past it was believed that the fetus was a bit like a parasite, deriving the nutrients it needed from the mother's body tissues. However research presents a different picture and shows that if the mother's diet is deficient in nutrients, a state of competition for nutrients arises, and if the deficiencies are severe – the mother wins, and if the deficiencies are mild, the growing baby is given preference.

Either way it's a lose-lose situation when mother or baby lose out because nutrition is not optimal before conception and during pregnancy. A woman who is healthy at the time of conception is more likely to have a successful pregnancy

and a healthy child, and in many cases, dietary modifications in pregnancy can be too little, too late. Although all women of childbearing age should try to ensure that they are getting all of the nutrients to stay healthy in optimal quantities, those particularly at risk are: those following exclusion diets where they exclude whole food groups from their diets; women who are underweight or overweight/obese; smokers; adolescents; and mothers who have had multiple or close pregnancies (of less than 18 months gap).

But the good news is that eating a healthy diet is easy, you just need a little knowledge and the desire to let the food you eat be your key to a nourished, healthy body.

Can nutrition boost fertility ?

You might come across an article, blog or book claiming that you can eat a diet that can boost your fertility. It does make sense – optimum nutrition can help you become the healthiest you can be. However it's best to look at the evidence, and research has found that for women trying to become pregnant naturally, certain vitamins and nutrients were found to have positive effects on fertility. These were:

- folic acid
- vitamin B12
- omega-3 fatty acids found in oily fish

and there were also foods that had a detrimental effect:

Trans fats, which are found in the partially hydrogenated vegetable oils used in many fast food restaurants; and diets high in processed meats, sweets, and sweetened beverages were found to have a detrimental effect.
Studies have also shown:

Lower levels of fertility among men and women who regularly consume sugar-sweetened beverages, while drinking diet soda and fruit juice had no effect.

Women who consumed high amounts of fast food and ate little fruit took longer to become pregnant than those who consumed healthier diets.

Nutrition during Pregnancy

It is important to say that during pregnancy, the quality of food consumed is more important than the quantity. Medical advice states that daily calorie intake does not need to increase for the first six months of pregnancy, and it is only in the final trimester that the recommendation is daily food intake increases by 200 calories – but that is only if you are active (active is defined as someone who gets at least 150 minutes of physical activity per week, eg 5 × 30 minutes).

So think about a healthy, balanced diet, enjoying food, and rather than eating for two, eating for a very healthy one. The next section covers nutrition in more detail, however there are some foods that you should avoid during pregnancy:

- Unpasteurised milk and milk products
- Pâtés
- Mould-ripened cheeses with a white coating
- Soft blue cheeses
- Raw or soft eggs without the British Lion mark
- Duck, goose or quail eggs, unless thoroughly cooked
- Liver or liver products
- Game meats such as goose, partridge or pheasant
- Undercooked meat
- Unwashed fruit and vegetables
- Shark, marlin, swordfish and raw shellfish

(see p20 for other fish guidlines)

Alcohol

The latest guidance regarding alcohol is that if you're pregnant or planning to get pregnant, the safest approach is to not drink any alcohol at all. This is because alcohol has been shown to cause long-term harm to babies in pregnancy and there is no safe lower limit.

The guidance on caffeine is to have no more than 200mg per day.

That is the equivalent of 2 mugs of instant coffee, 1.5 mugs of filter coffee and 2.5 cups of tea.

Weight gain

There is no set guidance for the amount of weight gained during pregnancy. It varies for every woman however there is an average of between 10kg (22lb) and 12.5kg (28lb) for a single birth. It will be more if you're expecting more than one baby. Weight gain is made up of: increased blood volume; increased fluids; the placenta; amniotic fluid; your larger breasts; and of course, your baby.

There is no need to put too much focus on the weight you're gaining during pregnancy. Instead focus on nutrients derived from good, wholesome meals, and remember that you only need to increase intake in your third trimester if you're active.

Morning Sickness

Or pregnancy sickness (because it doesn't just occur in the morning), describes the nausea and vomiting that women often experience in the early stages of pregnancy. If severe it can leave you at risk of a deficiency of essential nutrients such as folate, and may cause weight loss in the early stages.

Although there are some studies into pregnancy nausea, most of these are looking into its causes, and not treatments. One study found that experiencing nausea and vomiting when pregnant was associated with a 50 to 75 per cent reduction in risk of losing a pregnancy. So that's positive.

Advice on how to relieve symptoms include:

- Staying hydrated by drinking plenty of water
- Get lots of fresh air and avoid the smells that often trigger the nausea
- Get plenty of rest
- Avoid greasy foods
- Avoid sugary foods and drinks

Ginger is thought to have anti-sickness properties and many have said it can relieve symptoms, however avoid ginger biscuits, which are high in sugar and can make things worse. Instead opt for fresh ginger, both in food, and infused in hot water or herbal teas.

2. Nutrition Basics

Nutrients are compounds found in food that are essential to a healthy body and a healthy life. They provide us with energy, they give us the building blocks for the body to repair and grow, and they include the substances necessary to regulate the many chemical processes that we need to stay alive. They are also vital for the formation of a new, healthy human, and his or her growth and development.

There are seven major nutrients:

- Carbohydrates
- Fats
- Protein
- Vitamins
- Minerals
- Antioxidants
- Water

Carbohydrates, fat and protein (and water) are macronutrients,meaning that the body requires them daily in tens of grams. Vitamins, minerals and antioxidants are micronutrients, meaning that they are required by the body in minute amounts – milligrams and micrograms.

Together, these nutrients are found in the wholesome, colourful, tasty foods that make up a balanced diet.

What is a balanced diet?

Simply, a diet that contains a variety of fresh foods from the main food groups:

- Fruit and vegetables
- Protein
- Carbohydrates (wholegrain and unprocessed)
- Fats
- Dairy and alternatives

Eating foods plentifully from these groups will provide all of the nutrients required for optimum health. Balanced diets consist of balanced meals, and a balanced meal consists of a portion of carbohydrate, protein, fat, and vegetables.

For example:

Breakfast – wholegrain (sourdough) toast (carbohydrate), poached egg (protein and fat) and avocado (vegetable and fat) Note: it's not necessary or convenient to have a portion of vegetables with breakfast, however a piece of fruit will suffice.

Lunch – chicken (protein), tortilla (carbohydrate) and red pepper (vegetable) wrap with a creamy tomato salsa (some fat)

Dinner – Grilled salmon (protein and fat) with broccoli and spring onion stir fry (vegetable and fat) served with basmati rice (carbohydrate)

If we consistently eat this way, interspersed with healthy snacks such as fruit (and the occasional treat at a party or celebration), we will be flush with the nutrients required to create a new person, and also breastfeed that new person while replenishing our bodies. It will also help us to foster that way of eating in baby as they grow.
Let's look in more detail at protein.

Protein

Protein is used very little for fuel – carbohydrates and fats are our main sources of fuel for energy. Protein is the body's chief building material. Our muscles, organs, bones, cartilage, skin, hair, nails, blood and antibodies are all made in part from protein, and a quality supply of protein is essential for the development of a baby in utero, healthy recovery after child-birth, and growth and development of babies and children.

Next to water, protein is the most plentiful substance in your body, and not consuming adequate amounts of it can lead to loss of skin and muscle tone, stretch marks, thinning hair, and weak nails. However, this can all be reversed once a plentiful supply of protein is added to the diet.

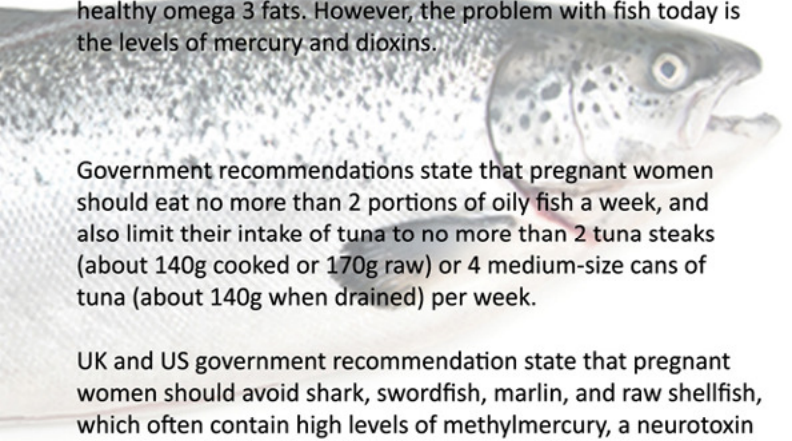
Protein is composed of 20 amino acids, all vital for healthy tissue. The human body can manufacture only 11 of these amino acids, and 9 are termed essential (or indispensable) amino acids and must be derived from food. We cannot build proteins without these essential amino acids.

The complete proteins that contain the 9 essential amino acids are mainly derived from animal foods: meat, poultry, fish, eggs, milk, dairy, and cheese. There is one plant-based food that gives us our essential amino acids – soy. Other plant foods give us some but not all of the essential amino acids; these are known as incomplete (or non-essential or indispensable) proteins, and include: beans, chickpeas and lentils, nuts, and in smaller amounts, grains and vegetables.

Quality protein

Quality protein is important, and by that I mean minimally processed protein foods – chicken breasts, thighs and legs instead of nuggets, cuts of meat instead of sausages and salami, fish fillets and whole fish instead of breaded fish. And not too much chicken, which are fed a diet high in grains that results in increasing the amount of pro-inflammatory omega 6 fats in their flesh.

Fish – especially oily fish like salmon, sardines, kippers (herring), and mackerel are a good source of protein because they contain healthy omega 3 fats. However, the problem with fish today is the levels of mercury and dioxins.



Government recommendations state that pregnant women should eat no more than 2 portions of oily fish a week, and also limit their intake of tuna to no more than 2 tuna steaks (about 140g cooked or 170g raw) or 4 medium-size cans of tuna (about 140g when drained) per week.

UK and US government recommendation state that pregnant women should avoid shark, swordfish, marlin, and raw shellfish, which often contain high levels of methylmercury, a neurotoxin that readily crosses the placenta. However US recommendations go further and also include mackerel for this reason.

And other studies have also shown high levels of mercury in fish, including tuna, and fish taken from polluted waters, like pike and bass, so should possibly be avoided.

Chemicals like dioxins and polychlorinated biphenyls (PCBs) have been found in sea bass, sea bream, turbot, halibut, and crab, so intake should be limited to two portions per week during pregnancy.

It seems like a bit of a minefield concerning fish, so in order to navigate it, I would simply recommend consuming smaller fish such as sardines, anchovies, and smaller herring, all of which are oily fish so contain healthy omega 3 fats, but are lower down in the food chain and less exposed to harmful toxins.

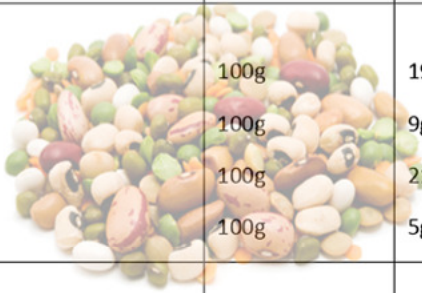
How much protein do we need?

We need approximately 0.8g of protein for each kg of bodyweight daily. Therefore a person weighing 60kg requires around 48g of protein daily. Final trimester pregnant women and nursing mothers require up to 40g more daily (this is approx. 160 calories).

Here is a guide to how much protein different foods yield so you know that you're getting your daily requirement:

Food	Serving size, raw	Grams of protein
Meat		
Bacon, lean	100g	22
Beef, lean	100g	22
Chicken, lean, skinless	100	23
Duck, lean, skinless	100g	23
Game, lean (rabbit, venison)	100g	22
Ham, lean	100g	20
Lamb, lean	100g	21

Offal – liver, kidney, heart, tongue	100g	19
Pork, lean	100g	24
Turkey, lean skinless	100g	21
Fish		
White and oily	100g	19
Tinned tuna	100g	28
Veg		
Chickpeas	100g	19g
Lentils	100g	9g
Beans	100g	21g
Peas	100g	5g
Shellfish		
Prawns	100g	18
Shrimps	100g	21
Crab	100g	19
Crayfish	100g	15
Mussels, lobster	100g	13
Squid	100g	15



Scallops	100g	17
Miscellaneous		
Egg, duck's	2	16
Egg, hen's	2 large/3 med	14
Milk, semi/skimmed/whole	280ml	3
Quorn	100g	15
Tofu	100g	13
Yogurt, low fat	150g	5

Carbohydrates

Carbohydrate foods – sugars and starches are the body's preferred form of energy and break down into glucose in the bloodstream, which is either stored in the muscles and liver or fat cells. So it's important to have an understanding of carbohydrate foods in order to properly manage weight gain and stay healthy.

Sugars and refined carbohydrates break down quickly, and wholegrain starches (which have more fibre) break down slower, providing fullness and more sustained energy over a longer period of time.

Sugars	Starches
Sugars break down very quickly into glucose in the bloodstream	Starchy carbs break down more slowly, providing a slow release of energy (unless they are refined)
They raise blood glucose levels very quickly causing the body to release insulin	This keeps you fuller, and more satiated
Insulin is released and removes glucose from the bloodstream and promotes storage in: • Muscles • Liver • Excess glucose is stored in the fat cells after being converted into fat (causing weight gain)	Insulin is released slowly so doesn't remove glucose from the bloodstream as quickly Glucose is stored in the muscles and liver, and depending on quantity consumed, excess glucose is less likely to be stored in fat cells

Insulin

Insulin is the hormone that allows the body to use glucose for energy. It is produced in the pancreas, and is released after a meal containing carbohydrate causes blood glucose levels to rise. Insulin receptors on cells in the body cause cells to absorb the glucose and use it for energy. Insulin is also the main fat storage hormone in the body, telling fat cells to store excess glucose as fat, and preventing stored fat from being broken down.

Cells can become resistant to insulin so that more and more needs to be produced to regulate blood sugar levels. This can cause the cells in the pancreas to burn out, and this situation of high blood sugar levels and insulin resistance can develop into the disease Type 2 diabetes.

In some people, the body attacks the cells in the pancreas that produce insulin so that it cannot be produced and this disease is Type 1 diabetes.

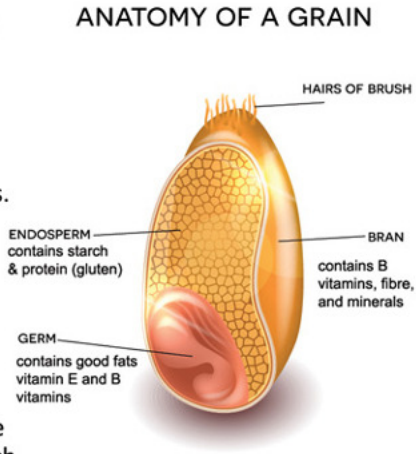
High blood sugar levels during pregnancy is a condition called gestational diabetes (GDM), and it typically develops between the 24th and 28th week of pregnancy. The exact cause is unknown though it is possibly linked to an increase in the hormones that increase insulin resistance during pregnancy. It can develop whether or not you had diabetes before your pregnancy, and it doesn't mean that you will have it afterward (but it does increase your risk).

It is important to manage GDM, which can be detected in a glucose challenge test, because if not it can raise your child's risk of developing diabetes and increase the risk of complications during pregnancy and delivery. Symptoms of GDM include: fatigue, blurred vision, excessive thirst, excessive need to urinate, and snoring. GDM can be managed in most cases with dietary modification, and knowledge of carbohydrate foods, and their effect on blood sugar levels is crucial.

What else causes high blood sugar levels other than sugar?

Refined grains such as white flour, white rice and refined cereals can cause blood sugar levels to rise quickly, and sometimes even faster than sugary foods. There are two main reasons for this:

1. Refined carbs have been stripped of almost all their nutrients, vitamins, minerals and fibre are all gone, making them 'empty' calories. For example, white flour constitutes the starchy part of the wheat grain (endosperm) and the protein part (gluten). The nutrients found in the bran and germ – which would slow down its conversion into glucose, are discarded.



2. Many refined carbs are processed into tiny particles. In fact grains of white flour are so small that they resemble dust, and this gives enzymes an abundance of surface area to work on when they break down in the digestive process, causing a rapid rise in blood glucose levels. If that white bread contained kibbled grains of wheat, or seeds, the body would have to work harder to break it down thus preventing a spike in blood glucose. So wholegrain and granary breads are healthier choices.

All of this adds up to give refined carbohydrates a high glycaemic index, which I will explain next.

Glycaemic Index

- The glycaemic index (GI) is a ranking of carbohydrate foods (and drinks) according to the rate which they break down into glucose in the bloodstream
- GI runs from 0–100 and uses glucose, which has a GI of 100, as the reference
- Carbohydrates with a low GI value – less than 55, are more slowly digested, absorbed and metabolised and cause a lower and slower rise in blood glucose and, consequently, insulin levels.
- Medium GI foods have a value of 55-69 and cause a slightly higher rise in blood glucose
- High GI foods have a value of 70 or more and cause dramatic rises in blood glucose
- Fat, protein and fibre in foods lowers the GI because they slow down the absorption of carbohydrate
- Not all low and medium GI foods are healthy – chocolate and French fries, for example, have low to medium GIs because of their high fat content
- Combining foods with different GIs, and always having some vegetables, protein and fibre with a meal, alters the overall GI of a meal
- Also, the amount of carbohydrate you eat has a bigger effect on blood glucose levels than GI alone. For example, pasta has a lower GI than watermelon, but pasta has more grams of carbohydrate than watermelon, so if you eat similar amounts of either of these two foods, the pasta will have more of an impact on your blood glucose levels.

Food	Glycaemic Index
Glucose	100
Rice cakes	89
Jacket potato (flesh only) (with skin will be lower because of fibre)	83
Potatoes, mashed	83
Rice Krispies	81
Cocopops	77
Weetabix	75
Shredded Wheat	75
Honey Nut Cornflakes	72
White bread	72
Wholemeal bread	72
New York bagel	72
Crumpets	69
Pitta bread	67
Instant oats (like Ready Brek)	66
New potatoes, boiled	63
Long grain rice, white	63
Naan	63
Cornflakes	62
Wholegrain bread, white	62
Muesli, no added sugar	60
Sourdough bread	53
Bananas	52
Orange juice	52
Porridge	51
Chapatis	50
Basmati rice, white	49
Pasta, plain, fresh	45

Dairy Milk chocolate	43
Oranges	42
Apple juice	40
Apples	38
Chickpeas	28
Lentils	26

Glycaemic load

Glycaemic load (GL) was created because the GI has its limitations. For example, let's look at watermelon. I have seen articles that tell you to eliminate this delicious fruit from your diet because of their high GI value of 72. However this is misleading. GI is based upon servings containing 50g of carbohydrate, but to get 50g of carbohydrate, you'd have to eat almost a whole watermelon!

GL takes into consideration a food's GI as well as the amount of carbohydrates per serving. A watermelon has only 10g of carbohydrate in a serving; therefore GL is worked out by taking the GI value (72) and multiplying it by the actual number of carbohydrates in a serving (10) therefore the glycaemic load is 0.72 x 10 = 7.2.

By contrast, a cup of cooked pasta has a GI of 71 and 40g of carbohydrates giving it a GL of 0.71 x 40 = 28. So GL varies with the serving size.

One last thing about Carbs: Resistant Starch

- Resistant starch is a form of starch found in carbohydrate foods that is more resistant to digestion than other starches.
- It is not digested in the small intestine like ordinary starch, therefore does not raise blood glucose levels (therefore the release of the fat-storing hormone insulin is minimised).
- Instead it is fermented in the large intestine by bacteria, which produce butyrate – a short-chain fatty acid (SCFA), which can be used for fuel.
- Butyrate promotes the metabolism of fatty tissue for energy. It has also been shown to enhance the immune system.
- Because it takes longer to break down in the body, it fills you up for longer and has a lower calorie count (carbs are 4 calories per gram, resistant starch is 2 calories per gram).
- Resistant starch is high in amylose starch (found in basmati rice, beans, chickpeas and lentils), which the body takes longer to break down than amylopectin starch (found in other varieties of rice such as long grain and risotto, wheat products like bread and pasta, and potatoes).
- Resistant starch has a low GI

To increase the amount of resistant starch in foods, pre-cook pasta, potatoes, rice and other starchy foods, refrigerate, and then eat the next day. Studies have shown that re-heating doesn't reverse the starches back from resistant to regular.

When you pre-cook pasta, boil for 2 minutes only, then drain immediately and refrigerate. When you re-heat in a sauce the pasta will soften to 'al dente'.

Fats

Fat has more than twice as much energy as carbohydrates, and because of this we are often told to regard carbohydrate as the primary source of energy and dramatically restrict fats or cut them out altogether. Nothing could be further from the truth.

Fat is more than a good energy provider. It also contains:

- Essential fats: used in the brain and nervous system, essential for focus, concentration, memory, and behaviour
- Sterols: precursors of a number of hormones (including the sex hormones)
- The ability to metabolise the fat-soluble vitamins A, D, E and K.

There are four kinds of fats:

- Saturated (not as bad as you've been led to believe)
- Monounsaturated (relatively stable, good to cook with)
- Polyunsaturated (highly unstable; omega 3 and omega 6 fats are essential fats, but never cook with them)
- Trans fats in the form of partially hydrogenated oils (avoid at all costs).

Saturated fats

Saturated fats can be distinguished as being solid at room temperature. Examples are meat fat, butter, lard, cream, coconut and palm oils. They have been much maligned in recent years as being 'artery-clogging' and responsible for heart disease. However, studies show that trans fats from

chemically processed polyunsaturated oils are more likely to cause arterial plaque and heart disease than saturated fats. Saturated fats provide the building blocks for cell membranes and hormones. Having some fats as part of a meal in the form of a rich sauce, or stir-fried vegetables, or kippers or salmon, slow down the absorption of the meal, giving us a more sustained release of energy. They also help maintain the body's supply of important fat-soluble vitamins A, D, E and K.

Saturated fats	Monounsaturated fats	Polyunsaturated fats	Trans fats
Solid at room temperature	Liquid at room temp but go cloudy if refrigerated or very cold	Liquid at room temperature	Solid at room temperature
Stable to cook with	Quite stable to cook with but never let oils get so hot that they smoke	Highly unstable, try not to use for cooking	Highly unstable when partially hydrogenated. Avoid
Examples: butter, lard, coconut oil, palm oil	Olive oil, rapeseed oil, ground nut oil, canola oil	Sunflower oil, soy bean oil, corn oil, sesame oil, flax seed oil, fish oils	Partially hydrogenated vegetable oils

Saturated fats are highly stable and their chemical structure does not change when they are heated. This is because all the carbon atom linkages are filled – or saturated – with hydrogen.

Our bodies can make saturated fat from carbohydrates, particularly when we consume a diet high in refined carbohydrates and sugar. Body fat does not come directly from dietary fats, it is predominantly from any excess sugars that have not been used for energy. The source of these excess sugars is any food containing carbohydrates, particularly refined sugar and refined grain products.

Some saturated fats have important antimicrobial properties, especially lauric acid which is found in coconut oil, and has antiviral, antibacterial and antifungal properties, and is particularly effective against the flu virus. This is because it ultimately breaks down into monolaurin, which can prevent viruses from replicating. It is an effective immune booster when taken orally or applied topically.

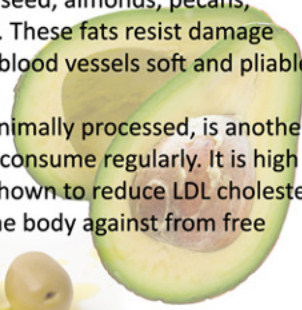
Monounsaturated fats

Monounsaturated fats such as olive oil, rapeseed oil, and ground nut oil are liquid at room temperature and become semi-solid if chilled. Like saturated fats, they are relatively stable, and do not go rancid easily hence can be used in cooking.

The monounsaturated fatty acid most commonly found in our food is oleic acid – the main component of olive oil, as

as well as the oils from camellia seed, almonds, pecans, cashews, peanuts and avocados. These fats resist damage from free radicals and keep our blood vessels soft and pliable.

Extra virgin olive oil, which is minimally processed, is another very healthy oil that you should consume regularly. It is high in antioxidants that have been shown to reduce LDL cholesterol (bad cholesterol), and protect the body against from free radical damage.



Polyunsaturated fats

Polyunsaturated fats such as sunflower oil and most vegetable oils are liquid at room temperature and only become firm if processed or put in a freezer. They have two or more pairs of double bonds and are highly unstable, which means that they can change in chemical structure when exposed to heat, light and oxygen. So we shouldn't cook with them!

The two polyunsaturated fatty acids found most frequently in our foods are linoleic acid (LA) with two double bonds (also called omega 6), and alpha-linolenic acid (ALA), with three double bonds (also called omega 3). Our bodies cannot make these fatty acids and hence they are called 'essential', and we must obtain them from the foods we eat.

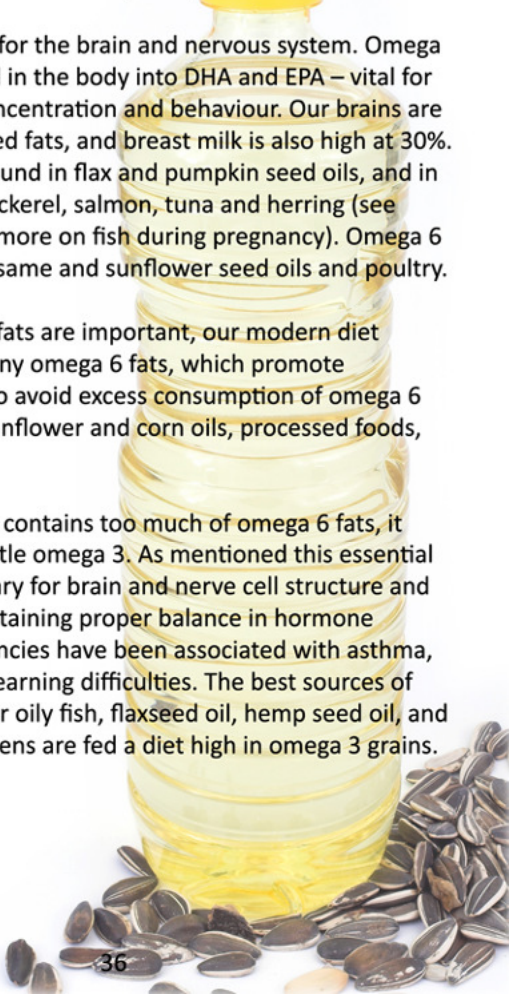
The double bonds makes polyunsaturated fats highly unstable and reactive. They go rancid easily, particularly omega 3 linolenic acid, and must never be heated or used in cooking. Yes, that sunflower oil that we've been encouraged to cook with because it contains polyunsaturated fats that are good

for your heart, are not good for us at all. They are only good for us when they are unrefined, cold-pressed and unheated.

These fats are vital for the brain and nervous system. Omega 3 oils are converted in the body into DHA and EPA – vital for memory, mood, concentration and behaviour. Our brains are 40% polyunsaturated fats, and breast milk is also high at 30%. Omega 3 fats are found in flax and pumpkin seed oils, and in oily fish such as mackerel, salmon, tuna and herring (see protein section for more on fish during pregnancy). Omega 6 fats are found in sesame and sunflower seed oils and poultry.

Although essential fats are important, our modern diet contains far too many omega 6 fats, which promote inflammation. Try to avoid excess consumption of omega 6 fats from refined sunflower and corn oils, processed foods, and chicken.

As the modern diet contains too much of omega 6 fats, it also contains too little omega 3. As mentioned this essential fatty acid is necessary for brain and nerve cell structure and function, and maintaining proper balance in hormone production. Deficiencies have been associated with asthma, heart disease and learning difficulties. The best sources of omega 3 are smaller oily fish, flaxseed oil, hemp seed oil, and some eggs where hens are fed a diet high in omega 3 grains.



Trans fats

Trans fats found in partially hydrogenated oils are polyunsaturated fats such as rapeseed or soy bean oils that are put through a process called hydrogenation or partial hydrogenation that makes them hard. They are used in processed foods as a cheap alternative to butter and cooking oils, because they increase shelf-life.

Our bodies treat Trans fats as toxic saturated fats. This particular man-made fat does not occur in nature, and our bodies have not developed any mechanisms for metabolising or storing them. It simply doesn't have the enzymes to break them down. As a result, once the Trans fats from your meal are digested and enter the bloodstream, they cause free radical damage and inflame blood vessel walls. This causes the release of LDL cholesterol, which tries to repair the damage, but ends us thickening the interior artery walls which can ultimately lead to atherosclerosis and heart disease. Trans fats also increase risk of developing cancer, type 2 diabetes, dementia, and other degenerative conditions.

Avoid them – and anything that says 'partially hydrogenated vegetable oil' on the label. This list includes most junk food, especially if it's from a High Street chicken or pizza shop, where they use partially hydrogenated vegetable oils for frying.

Micronutrients

There are several micronutrients – vitamins, minerals and phytochemicals (such as antioxidants), that are particularly important before and during pregnancy.

Folic Acid

Vitamin B9 – folate, or folic acid in its synthetic form, is a very important micronutrient in pregnancy. It has been found in studies to significantly reduce your baby's risk of developing neural tube defects such as spina bifida, and is essential even if there is no history of birth defects in your family.

The recommended amount of folic acid daily is 400 µg, and because it goes to work in the first few weeks of pregnancy, all women of child-bearing age should take a folic acid supplement containing this amount, as well as eating folate-rich foods. This is important, because half of pregnancies are unplanned.

UK RNI (Reference Nutrient Intake) of folate for pregnant women: 600 µg/day of which 400 µg/day as Folic Acid up to 4 weeks before conception and until week 12 of gestation

Foods that are high in folate

- Lentils
- Beans
- Asparagus
- Citrus fruits
- Green leafy vegetables
- Broccoli and Brussels sprouts

Other B vitamins

The other B vitamins are:
B1 – Thiamine
B2 – Riboflavin
B3 – Niacin
B5 – Pantothenic acid
B6 – Pyridoxine
B7 – Biotin
B12 – Cobalamin

And they are all important, but some of the main functions include:
Vitamin B1 important for foetal brain development
Vitamins B2 and **B3** are important in preventing pre-eclampsia, and low birthweight
Vitamins B6 and **B12** is important in preventing miscarriage and pre-eclampsia

Food sources are: fish, meat, poultry, eggs, legumes, vegetables, and nuts.

UK RNI for pregnant women:
Vitamin B1: 0.8 mg
Vitamin B2: 1.4 mg
Vitamin B3: 13 mg
Vitamin B6: 1.2 mg
Vitamin B12: 1.5 µg

Iron

Iron is vital for carrying oxygen around the body. If you have too little iron, your tissues are starved of oxygen, leaving you tired, mentally confused, and with an impaired immune system. Iron deficiency also reduces your ability to tolerate blood loss during labour. Vitamin C is important for iron absorption.

During pregnancy your developing baby, and your increasing blood supply will take a toll on your iron reserves. If you're low on iron, or are anaemic due to iron deficiency, your doctor may recommend iron supplements, which can sometimes lead to constipation, so it's important to eat lots of fruit and vegetables and to stay hydrated with glasses of water and herbal teas, to avoid this.

Foods that are high in iron

- Red meat
- Chicken livers
- Poultry
- Dark green leafy vegetables
- Tofu
- Blackstrap molasses
- Sardines

UK RNI of iron for pregnant women
14.8 mg/day
Although anaemia can also be caused by deficiencies in folate, vitamin B12 and vitamin A

Calcium

Calcium is vital for the preservation of bone density in pregnancy and postpartum. The needs of your developing baby peak during the third trimester – requiring up to 350mg per day, so it's important to ensure you're getting an adequate amount in your diet.

UK RNI of calcium for pregnant women:
700 mg/day
Increased requirement (1-2 g/day) for women at high risk of pre-eclampsia

Foods that are high in calcium

- Dairy products (there is 380mg calcium in a 300ml glass of milk)
- Fortified dairy alternatives
- Nuts
- Sardines
- Leafy green vegetables

Other minerals

Zinc facilitates conception, so is essential from before pregnancy. During pregnancy it helps to maintain normal tissue growth. Food sources of zinc include lean meats, turkey, beans and pulses.

Iodine is a component of the hormone thyroxine, which regulates metabolism. Food sources include milk, eggs, seafood and iodised salt

Other vitamins

Vitamin A is essential for the development and maintenance of your baby's immune system, vision, bones, and skin. However large doses of this vitamin can be harmful to your developing baby, so don't take supplements above 2,000 iu per day. Beta carotene is the plant form of vitamin A. Food sources of vitamin A or beta-carotene: eggs, orange or yellow vegetables and fruits, dark green leafy vegetables.

UK RNI of vitamin A for pregnant women
700 µg/day
preferably in beta-carotene form
AVOID vitamin A, cod liver oil or multivitamin supplements containing vitamin A; liver and liver products

Vitamin D helps form your baby's bones and prevents rickets – a disorder characterised by bone deformities. Sunlight is the best source of vitamin D, and food is a secondary source. Around 30 minutes of sun exposure is enough for light skins to derive a day's amount of vitamin D. Because of the melanin in darker skins, around 90 minutes of sun exposure is required. However in the darker months – from November to March, when sun exposure is

limited, a supplement is needed, especially for Black and Asian women. Around 30% of UK Women are deficient in vitamin D.

> UK RNI of Vitamin D for pregnant women 400IU/day (10 micrograms)
> 1000IU/day for women at risk of insufficiency (darker skins, obesity)
> Upper limit is 4000IU per day

Vitamin E has antioxidant properties that protects the body against damage, and helps form blood cells, muscle cells and other tissues.

Vitamin K aids in blood clotting and bone formation. Your baby is given a supplement of vitamin K soon after birth.

Vitamin C is required for proper growth and development of the fetus. It is essential for the formation and maintenance of the structural protein collagen, which is important for bones, teeth, skin, and other tissues. Vitamin C improves the absorption of iron, and like the B vitamins, it is water soluble and cannot be stored in the body like the fat soluble vitamins (A, D, E and K).

3. Breastfeeding – what you must know

The old adage is true - breast really is best, and endless research studies have shown that it offers health benefits to infants that last throughout childhood and even into adulthood. Formula may be presented as an equal alternative that provides all the critical nutrients, but there is one important nutrient that formula feed does not provide, and which the manufacturers would rather you didn't know about.

But before I tell you about that, here are the established benefits of breastfeeding.

For Mum:

- Reduced risk of breast and ovarian cancers, hypertension (high blood pressure), type 2 diabetes and even heart disease – breastfeeding releases more HDL (good) cholesterol and other factors that prevent against heart disease
- Helps to shrink the uterus after birth and studies have shown that breastfeeding mums regain their pre-pregnancy shape faster

For Baby:

- Breast milk contains lactose, protein and fat, providing the macronutrients that the baby needs
- It contains an antibody called IgA, which enhances their immature immune systems, particularly protecting against gastrointestinal infections and other infections

- Breastmilk is more easily digestible, leading to fewer gastric problems like diarrhoea and constipation
- Children who had been exclusively breastfed for 6 months were shown to have higher intelligence
- Consuming breast milk exclusively in the first 6 months reduces the risk of your child becoming obese in childhood, adolescence and even adulthood, according to studies

That last point about obesity brings me to what I mentioned that the formula manufacturers would rather you didn't know about – the hormone leptin.

Leptin is called the satiety hormone. It is produced by your body's fat cells and signals fullness, telling your brain that you're satisfied. When leptin is working properly, it will send signals to your brain to stop feeling hungry, stop eating, stop storing fat and start burning excess fat.

Leptin is found in breastmilk and when your baby has had enough, he or she will turn away and reject more food because they are satisfied.

Formula feed does not contain leptin, because unlike other nutrients that have a synthetic form – e.g. the synthetic form of folate is folic acid, there is no approved synthetic form of leptin allowed in baby formula. Manufacturers have been trying for years – in fact it's like the Holy Grail to them, but no safe synthetic form has been approved.

That it the reason that a baby will carry on feeding formula milk until they bring milk up, signifying that they've had

enough. And they often feed too much before reaching this point, which may develop a habit of feeding when full. Leptin works naturally to help your baby realise the feeling of fullness and respond to it. A very important physiological mechanism.

Some women are unable to exclusively breastfeed for reasons such as a low supply of breast milk, surgery, or other reasons that make nursing difficult. If you are one of them, please seek help from your health visitor or healthcare provider who can offer you assistance and advice.

back to top

4. Introducing Solids
• From 6 months

Weaning, or complementary feeding, occurs when solid foods are introduced because your baby's need for energy and nutrients starts to exceed what you provide from breast-feeding or formula. UK guidance on introduction of solid foods recommends that they are introduced at around six months old. And it is recommended to carry on breastfeeding along side an increasingly varied diet when you introduce your baby to solid foods.

There are some exceptions to six months for weaning, such as where a healthcare professional may advise a baby is introduced to solid foods slightly earlier because he or she has a higher risk of allergies or has colic. But this is no earlier than four months of age.

Veg before fruit

Weaning is a wonderful opportunity to introduce a variety of tastes, textures and colours to your baby. And it's a golden opportunity to foster a lifelong love of vegetables. Research has shown that offering a variety of different foods at weaning can influence acceptance of these foods well into childhood and even adulthood. Babies have an innate preference for sweet foods so resist giving them sweet purees and choose more herbaceous and earthy tastes like broccoli and other green vegetables.

There are two basic approaches to weaning: the traditional method, where you spoon-feed soft foods such as purees to start with, and the baby-led method where baby feeds him or herself with soft finger-foods.

With the traditional method you can start with smooth fruit and vegetable purees, then introduce mashed and finely chopped foods, before introducing soft finger foods at around seven months.

Make your own

Tins and jars of baby food never taste quite the same as fresh food, so it's a good idea to make your own purees. You can make a batch at the time and freeze them in ice cube trays or small bags. The advantage is that you save money, because this way works out far cheaper than buying ready-meals, saves you time if you make a batch at once, and your baby is more likely to develop a varied palate as they try and accept a variety of tastes and flavours.

With baby-led weaning your baby will feed him or herself a variety of foods such as: slightly cooked apple slices; ripe avocado, banana or pear; soft beans, peas; hummus; mashed fish, mashed potato.

There are advantages for each method. With traditional spoon-fed weaning: it's less messy; you know exactly how much baby has eaten; it's easier to pre-prepare and store; and is more portable.

With baby led weaning: it can be messy and there might be more food thrown away; you might not know exactly how much they have eaten, and you need to be careful that they don't stuff too much in their mouths. However there are advantages – you can give baby what you prepare for yourself and others so you can all eat together, you don't have to feed baby, and they can become more adventurous with their tastes.

Either way, with both methods of feeding it is important that your baby has a balanced diet derived from each of the five food groups, and you add flavour with herbs, spices, and garlic, but not chilli until later and no added sugar and salt.

Also no honey until the age of one because honey contains bacteria that can produce toxins in baby's intestines that can make them very ill.

Now is the time to offer your baby a wide variety of foods. S/he will favour the foods she was exposed to in the womb, another reason to eat as healthily as possible during pregnancy, but she will also develop a fondness of foods that she is exposed to. Food preference is dictated by taste, so expose her taste buds to lots of flavours and she is more likely to continue to enjoy them as she grows.

Allergies

Although guidelines recommend weaning at 6 months, some babies may benefit from complementary foods introduced before 6 months – those at risk of iron depletion, and those at higher risk of allergy.

Research has found that introduction of peanut and egg containing foods to infants who are at risk, when they were aged between 4 and 6 months, was helpful in preventing the development of an allergy to these foods. The LEAP (Learning Early about Peanut Allergies) study found that early introduction of peanuts (between 4-11 months) significantly decreased the risk of peanut allergy among children at high risk.

Guidelines also recommend that certain foods such as peanuts, are not avoided during pregnancy.

It is important to speak to your health visitor or healthcare provider if you're worried about your baby and allergies, and/or if you're considering introducing solids before 6 months.

back to top

5. Eating well for 1-5 Year Olds

• Developing a healthy relationship with food

Every day your child needs to be eating a varied and balanced diet.

Starchy carbohydrates provide energy, nutrients and fibre. They can be fillingso be sure to leave room forvegetables and protein foods.

Do not give wholegrain foods to under 2s because they are so filling. After age 2 you can gradually include wholegrain foods.

Your child needs at least one to two portion of protein foods daily. Don't give whole nuts to children under 5 because the can be a choking hazard.

Your child needs good fats found in olive oil and oily fish, which contains omega 3 fats, however It is recommended that boys have no more than 4 portions of oily fish a week, and girls no more than 2 portions a week (see more about this in resources)

Vitamins & minerals

Give your child lots of fruit and vegetables.They provide vitamins, minerals and antioxidants, vital for their growth and development. Introduce as many as possible.

Milk is important because it provides some carbohydrate and protein as well as calcium for strong bones and teeth.

Calcium

Give whole milk to children. Try to give your child at least 350ml (12oz) of milk a day, or 2 servings of foods made from milk, such as cheese, or plain yogurt or fromage frais with added fruit to sweeten.

Examples of balanced meals:

Iron

Iron is essential for your child's physical and mental development, and can come from animal and plant sources. Animal sources are easier for the body to absorb, and come from meat, canned sardines, mackerel. Plant sources include: dark green vegetables, beans, peas and lentils, apricots, and fortified breads and cereals.

As mentioned, now is a golden opportunity to introduce lots of food experiences with your child so that they develop not just a love of good food, but a healthy relationship with it too.

Here are some tips on how to instil in your child a love and appreciation of good food:

1. Train the taste buds and refine the palate.
You can do this in a variety of ways including introducing a wide variety of tastes. Use herbs and spices. Don't just focus on sweet and savoury, think about: sweet and bitter – e.g. dark chocolate; sweet and sour – e.g. tart cherries; naturally salty (but not added salt) – e.g. olives, some cheeses; bitter – e.g. lemons; and umami – e.g. meaty.

Try to avoid foods containing the chemical flavour enhancer monosodium glutamate (MSG) found in fast food like nuggets, fries and coated chicken. This is because it is such a strong flavour that it can overwhelm your child's juvenile taste buds. Infants and the very young have over double the amount of taste buds as adults, so eating is a very intense experiencealready. Add to that the over-stimulation of eating foods with MSG, and you will find that when you offer the more natural flavours such as from vegetables, they may reject them, craving the umami taste of nuggets, fries, and coated chicken.

MSG is also found in some crisps and snacks, ready meals and some Chinese food, so don't introduce these foods until after the age of 5 if possible.

2. Define the eating points.
Have set times for meals and snacks. This reinforces our greatest determinant for behaviour – habit. Your child gets into the habit of eating breakfast, lunch and dinner, and some fruit in between. It helps instil self-control. Having these 5 set eating points will deter them from eating for other reasons, such as boredom, playing on the tablet, or watching a film.

3. Help them to recognise hunger.
This is related to the above point, and deters against eating for reasons other than hunger. It's okay for your child to be hungry. When they recognise hunger they know that it's time to eat and will appreciate their food. But don't let them get really hungry because that's when we over-eat. If you're out, or busy and it might be a long gap between meals, have some fruit for a snack. Not biscuits, which are empty calories that will not tell the brain that you're getting some sustenance, so you can easily finish the whole packet without any feelings of satiety.

4. Teach them about the food groups.
Teaching your child about the food groups from an early age will help them to understand the different groups, and why each is important for healthy growth and development. So the next time they ask why they should eat vegetables, they will know it's because they contain vitamins and minerals to help them grow. This has been shown to be a good incentive to getting children to appreciate and eat a balanced diet (the

SMILE plate is a useful tool to teach children about food groups).

5. Let them participate.
As they get older, let your child participate in food preparation. Let them choose an unusual vegetable you might find in the supermarket. Try something new, let them guess what it is, where it's from and what food it's similar to. Watch MasterChef together.

6. Set an example.
Children are mimickers and they see and copy your words, expressions, and what you do. So if you tell them to drink water yet they only ever see you drinking coffee, they won't drink water. Practice what you preach, have a fruit bowl in the home and eat from it regularly, and they will be more inclined to copy your healthy habits (so it's a win-win!).

7. Eat together at a table if possible.
Eating together has so many benefits. It makes mealtimes into more of an occasion. Maybe try different themes (when you have the energy), such as a buffet dinner, or picnic theme. Or meals from other countries. Be imaginative and turn mealtimes into quality family time too.

8 .Don't have lots of sugary foods and drinks in the house. Buy them occasionally, but don't make a habit of having sugary biscuits, cakes, confectionery and sugary drinks in the house. Remember, t's a lot easier to say no once in the supermarket, than to say no constantly when they're in the kitchen cupboard.

back to top

6. Fussy Eaters
• How to encourage them

As well as letting them participate and teaching them about food groups as mentioned previously, you could also try:

1. Make mealtimes happy times.

Try to keep mealtimes as stress-free as possible. Your child will detect your stress and this can make the situation worse. It can become an attention issue and a battle of wills. Stay calm and be patient.

2. Set realistic expectations.

Accept that children will not always eat how much you want them to eat, so put slightly less on the plate than you would so that they can ask for seconds. And don't make them sit there until they finish their plate as pressurising children to eat can do more harm than good.

3. Variety is the spice of life.

Try the same foods prepared in different ways – e.g. roasted carrots, stir-fried carrots, raw carrots with dips. And try new foods. Don't get into the trap of knowing your child loves cucumber so you give them cucumber every day because you know it will be eaten. When you introduce a new food, research suggests that it takes up to 10 exposures to any given food to put it in the category of food a fussy child likes. So persevere.

4.Don't prepare separate meals

Getting into the habit of making separate meals for fussy eaters is time-consuming and not productive. It will show them that being fussy works. You can offer an alternative that doesn't have to be cooked – like cheese, crackers and salad, however make sure that the alternative is not a snack bar or something sweet.

5.Hiding doesn't always work.

Sometimes we can be tempted to 'hide' foods. For example shredding broccoli so that it disappears into a sauce, or pretending sweet potatoes are carrots. This can work when they're very young and it's a good way of ensuring they're getting all their nutrients. But as they grow older this can become problematic when they discover what they're eating and they feel deceived so it can become an issue of trust. Instead explain about the particular importance of that food to growth and development, and encourage them to try a similar food with similar benefits – e.g. kale if they don't like spinach.

6.Find someone they look up to.

I say this as a nutritionist who has worked with many children over the years and I've found that a child who will never eat a certain food at home, will undertake my challenge of trying that food if it's prepared in a certain way. For instance, they may love carrots but never eat spinach, so the challenge is to try a carrot and spinach stir-fry. Peer pressure also helps – often we're in a group setting and a child doesn't want to be the odd-one-out if everyone else is accepting a challenge. Maybe ask a favourite aunt or a friend to help out.

7. Make tasty veg.

If your child won't eat their vegetables, it may be that their taste buds are rejecting the slightly bitter taste of some vegetables like cabbage, Brussels sprouts and broccoli. Sensitivity to bitter compounds is higher in the young, so pair them up with a sweeter vegetable such as carrots or sweetcorn. And always make vegetables the star of the show. Never plain, steamed or boiled, but stir-fry with onions, garlic, herbs and spices. Research has shown that stir-frying vegetables is the healthiest way of preparing them, because it retains all the nutrients, unlike boiling or steaming, where they are lost in the water. So always tasty veg.

8. Don't worry.

Just to re-emphasise it, relax and try to ensure that mealtimes are enjoyable, positive experiences. Even the healthiest eater will have their moments and sometimes we need to relinquish some control and hand it over to your child so that mealtimes don't become a struggle or battle of wills. Eating is about nourishment and enjoyment, and almost everyone enjoys tasty foods, so be patient, and you will find the foods that they love.

7. Sugar

- Children's palates and the food industry
- The adiposity rebound – what you need to know

Many toddlers are consuming far too much sugar. There are no accurate figures, but a shocking survey in America showed that toddlers are consuming daily more than the recommended amount of sugar for adult women – consuming an average of over seven teaspoons of added sugar per day (the recommendation for adult women is six teaspoons per day).

UK children don't fare much better. By the age of 10, they have exceeded the maximum recommended sugar intake for an 18-year-old. I could give you a list of reasons why you shouldn't regularly give your toddlers and children sugar, but you probably know them already:

- Food and drinks that are high in added sugars are empty calories, energy dense, nutrient-less, and cause spikes in blood sugar
- Too many sugary foods and sweet drinks can make children feel full, causing them to forego healthy foods
- Regular exposure to sugar can lead to cavities, especially if children do not regularly brush their teeth properly
- Sugar is addictive and they can easily develop a sweet tooth

The last point is the one that I want to focus on because there is a connection between your child's palate; what is defined as 'sweet'; and the food industry.

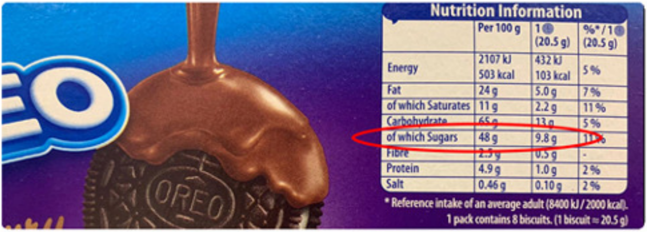
As mentioned, infants have over double the amount of taste buds as adults, and they are naturally inclined towards sweet foods. However what is sweet? It depends. What is sweet to me may be not sweet to you, and what is sweet to you may not be sweet enough for someone else. Sweetness is subjective. However the food industry try very hard to make sweetness objective. To establish a widely accepted level of sweetness that you find in many high-sugar foods like breakfast cereals and biscuits, especially those marketed at children.

Just look at the evidence – go into any supermarket and you will findthat many of these products have between 35-45g of sugar per 100g. So could it be that around 38% sugar is the 'bliss point' that is just enough sugar to get us coming back for more, but not too much sugar that it's sickly sweet.

The 'bliss point' of a food is the exact proportions of sugar, salt and fat that food companies research and use to get us hooked, and keep coming back for more.

So it's important that you don't let your child's tastes be formed by consumption of these very sweet products. Health conditions such as obesity are linked to poor food choice, which is dictated by taste preference which is set in childhood.

Sugar acts on the region of the brain that controls reward, craving and addiction, and a great deal of research is put into how to overstimulate the taste buds and the pleasure circuits in the brain that makes us crave sugary foods and keep coming back for more.


Nutrition Information
Per 100 g
1 (20.5 g)
%*/1 (20.5 g)
Energy 2107 kJ 503 kcal 432 kJ 103 kcal 5 %
Fat 24 g 5.0 g 7 %
of which Saturates 11 g 2.2 g 11 %
Carbohydrate 65 g 13 g 5 %
of which Sugars 48 g 9.8 g
Fibre
Protein 4.9 g 1.0 g 2 %
Salt 0.46 g 0.10 g 2 %
* Reference intake of an average adult (8400 kJ / 2000 kcal).
1 pack contains 8 biscuits. (1 biscuit = 20.5 g)


of an adult's reference intake
Typical values per 100g: Energy 2088kJ/499kcal
Typical values Per 100g Per biscuit RI %RI per biscuit
Energy 2088kJ 499kcal 77kcal 8400 2000 4%
Fat 24g 3.8g 70g 5%
of which saturates 14g 2.2g 20g 11%
Carbohydrate 63g 9.7g 260g 4%
of which sugars 41g 6.2g 90g 7%
flavoured cream filling
INGREDIENTS: Sugar,
Calcium Carbonate, Iron
Cocoa Powder,
Syrup, Partially Inverted
Powder (1%) (Cocoa
Powder), Raising Agents
Disodium Diphosphate,
Emulsifier: Soya Lecithin


Cookies containing chocolate chips.
INGREDIENTS
Wheat flour (with Calcium carbonate, Iron, Niacin and Thiamin), Chocolate chips (25%) (Sugar, Cocoa mass, Vegetable fats (Palm, Shea, Sal), Emulsifiers (Soya lecithin, E442, E476), Cocoa butter, Flavourings), Sugar, Palm oil, Whey or whey derivatives (Milk), Partially inverted sugar syrup, Raising agents (Sodium bicarbonate, Ammonium bicarbonate), Salt, Flavourings.
NUTRITION INFORMATION & RIs
Typical Values Per 100g
Energy 438 kJ 5% 8400 kJ
Energy 491 kcal 104 kcal 5% 2000 kcal
Fat 4.7g 7%
of which Saturates 11.3g 2.4g 12% 20g
Carbohydrate 13.9g 5% 260g
of which Sugars 34.4g 7.3g 8% 90g


CARBOHYDRATE
of which SUGARS 52.6g 6.4g
FIBRE 0.3g
PROTEIN 4.9g 0.6g
SALT 0.25g 0.03g
Typical number of cakes per pack: 10
SUITABLE FOR VEGETARIANS.
Gelling
Egg,
Colour
For alle
FOR BES
Each cake (12.2g) contains
Energy 195 kJ 46 kcal 2%
Fat 1.0g 1%
Saturates 0.5g 3%

And when sugar is combined with fat and salt, and sometimes flavour enhancers, it becomes almost impossible to resist. In fact one slogan of a crisp-like product was 'once you pop, you can't stop'. This could apply to dozens of foods.

And I haven't even mentioned advertising. Even if you gave your child a healthy eating message every day, you would be outnumbered by the exposure to adverts for high sugar, salt and fatty foods by at least 10 to one. Adverts are effective, otherwise they wouldn't commit the millions of pounds to producing them if they didn't increase sales. Try to restrict television viewing, and if possible lean your child's viewing towards non-commercial television and streaming.

Try not to give your child added sugar until they're over 4. They will get it, at birthday parties and when they visit grandma, but try not to give it at home.

And over the age of 4, keep an eye on labels so that they don't exceed the recommended daily limits.

When we're talking about the establishment of taste preferences of your toddler, when you involve the food industry in that process by giving your child sweet cereals, yogurts and biscuits, it's a David vs Goliath battle, only this time Goliath doesn't only win, he helps form David's preferences, and has a hold on them for the foreseeable future.

Sugar, salt and fat are ingredients that are very cheap, they make us hungrier, and they override the body's fragile controls on overeating, making us gain weight. But don't get me wrong, I love a chocolate cake as much as you do, however I have devised cake recipes that use a fraction of the sugar of most recipes, but are just as tasty to the palate. There are healthy alternatives to sugary foods in the next section, and keep a watch on my website: www.yinkahealth.com for the healthy pudding recipes.

How much sugar should my child have?	Daily recommended amount of sugar – Includes everything except fresh fruit (not juice), and vegetables and plain dairy milk
Under 4	There's no guideline limit for children under the age of 4 and it is recommended that they avoid added sugar in food and drinks
Age 4-6	No more than 19g
Age 7-10	No more than 24g
Age 11 and over	No more than 30g

Remember, that we do not need sugar; we can derive all of the nutrients we need from starchy carbohydrates. We don't need it, we want it. And sugar has its place in a balanced diet – as occasional treats and at celebrations and events. But what's important is that you set your child's sweetness set-point, not the food industry.

Reading labels

This is a prerequisite for feeding your baby and yourself the healthiest possible diet. Food manufacturers by law have to put on the label: the ingredients of their food; the proportion of the ingredients; and the nutritional breakdown.

So read the label to find out what's in the food, and how much sugar, salt and fat is in the product.

Label guide

Measures Per 100g	LOW A healthier choice	MEDIUM Okay most of the time	HIGH Only occasionally
Fat	3.0g or less	3.1g to 17.5g	More than 17.5g
Sugar	5g or less	5.1g to 20g	More than 20.5g
Salt	0.3g or less (0.1g sodium)	0.3g to 1.5g (0.1g to 0.6g)	More than 1.5g (more than 0.6g)

Preventing childhood obesity

Childhood overweight and obesity is increasing in prevalence. In the first year of school, at the age of 4 or 5, 23% of children are overweight and of these 10% are obese. By the time they reach Year 6, those overweight has risen to 35.1%, and of these 21% are obese. And these figures are going up every year. This is a concern because aside from the physical and social issues overweight and obesity contributes to, there is a very high chance that overweight children will become overweight and obese adolescents and adults.

The reasons that obesity occurs in children are complex, however there are 2 main identifiable factors:

1. Overfeeding in infancy and early childhood
2. Eating too many sugary foods and drinks and refined carbohydrate products like biscuits and snacks

Lack of physical activity may come into play later in life, but it's not really a factor in early childhood when a child has only just found their feet. There are genetic factors in a small minority of cases, however in preventing childhood obesity, the parents have control in a number of ways, which start before your baby is born:

1. When pregnant it is important to avoid consuming too many sugary foods and drinks and refined carbohydrates. Especially in the third trimester, because it is in the final trimester of pregnancy that baby's fat cells are generated (as well as the first year of infancy and up to adolescence).

2. If you can't breastfeed, don't over-feed your baby formula milk. And don't 'top up' when bottle feeding.

3. When introducing solid foods, avoid sugary foods and processed carbohydrates.

4. Keep to the 5 eating points – breakfast, lunch and dinner, and two healthy snacks such as fruit, in between.

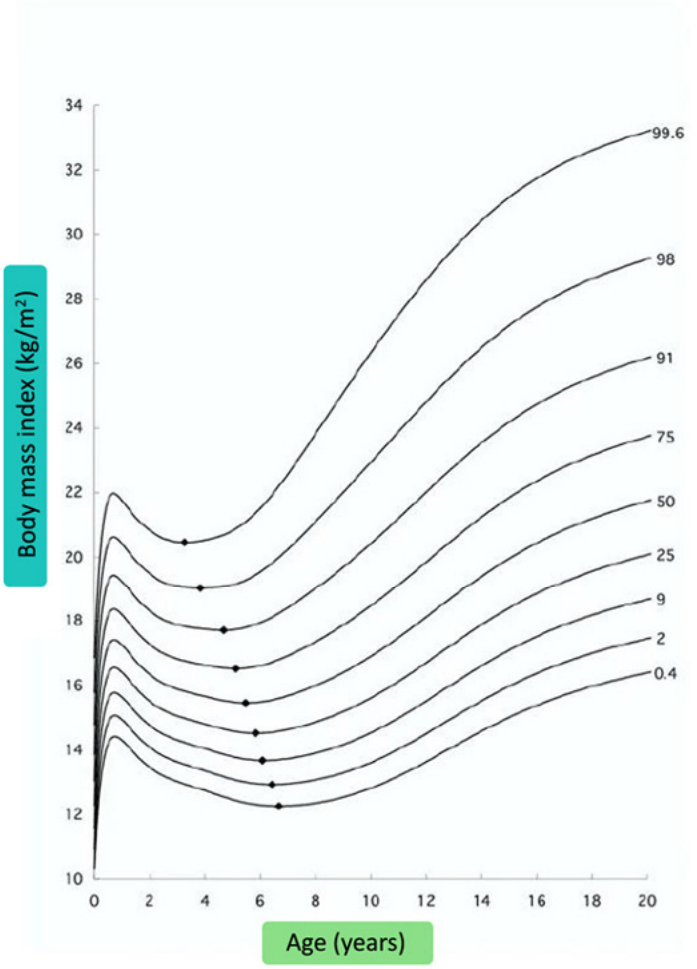
5. Provide high-quality food, limit television viewing, and model a healthy lifestyle.

The Adiposity Rebound

There is one last thing I'd like to explain regarding childhood obesity, and it's something that every parent should know about. It's called the adiposity rebound.

When your baby is born, their body mass index (BMI) will rise steadily. Your health visitor or doctor will weigh and measure your baby and record their weight. BMI peaks at 1 year old (see diagram) and then starts coming down as babies grow longer and become more active. It reaches a nadir (low point) – the adiposity rebound, then starts going up again. And this second rise in body mass index occurs between 3 and 7 years.

However an early adiposity rebound is known to be a risk factor for later obesity, and a later adiposity rebound indicates a propensity to maintain a healthy weight. So keep an eye on your child's measurements, and speak to your health visitor or doctor if you have any concerns.


Body mass index (kg/m²)
34
32
30
28
26
24
22
20
18
16
14
12
10
0
2
4
6
8
10
12
14
16
18
20
Age (years)
99.6
98
91
75
50
25
9
2
0.4

back to top

8. Healthy Alternatives and Healthy Treats

Enjoying a treat doesn't mean that it has to give you a rush of sugar to the head. Here are some healthy treat ideas that won't spike blood sugar and cause your child to crave more.

Instead of this	Try this
Fruit squash or cordial and fruit juices	Water with fruit. You can add slices of lemon or lime. Or something that they can eat afterwards such as watermelon, orange, or cucumber slices or frozen berries
Fizzy drinks	Sparkling water, well diluted with a high-juice content cordial
Sweetened milk and yogurt drinks	Plain milk (or alternatives) or diluted with plain milk (never neat). Homemade smoothies made with milk, and at least one portion of vegetables for two fruit. E.g. kiwi, banana and frozen spinach, or strawberry, mango and cooked beetroot (plain not pickled)
Flavoured yogurts or those with 'corners'	Plain yogurt with your own added fruit. And choose full-fat which is more creamy and satisfying

Sugary cereals and flavoured porridge	Look at the label and only choose cereals with less than 10g sugar per 100g (10% sugar). Only have plain porridge oats, made with milk to make it creamy. Add sliced or mashed banana or berries to sweeten
Biscuits and cereal bars	Look at the label and choose varieties with no more than 20g sugar per 100g (20% sugar)
Sweets	Dried fruit like raisins, sultanas, mango or pineapple slices with no added sugar are an alternative in terms of a chewy texture, but they are probably as high in sugar as sweets, and they can get stuck in children's teeth, risking cavities. They may be the lesser of the two evils but fresh fruit is always the better choice
White and milk chocolate	Your child will accept dark chocolate if you offer it before white or milk chocolate,
Canned fruit in syrup	Canned fruit in juice or water instead but fresh or frozen fruit is always better

Nutella and other chocolate spreads	Healthy Nut spread – mix together peanut or almond butter, cocoa powder, and a teaspoon of honey to make your own healthier version of a chocolaty, nutty spread.
Ice cream	Mix with fresh fruit to reduce the intensity of the sweetness

Should treats be used as rewards?

I'm not against using sweets as a reward for good behaviour or achievement. It emphasises the fact that sweet things are treats for special occasions and not every day snacks.

What about pudding?

Should you give your child a sweet or pudding after every meal? Some will say it's fine, because a sweet eaten in isolation will spike blood glucose levels whereas just after a healthy meal will not. However I would say it's best not to because it will become a strong habit, and produce a Pavlovian reaction in your child that their meal is not complete until they have had pudding, regardless of whether they're still hungry. Try to offer a pudding sometimes (with reduced sugar), and at other times offer plain yogurt with fruit, fresh fruit, or cheese and biscuits.

back to top

Resources

https://www.nhs.uk/conditions/baby/

Feeding oily fish to under 5s – https://www.nhs.uk/live-well/eat-well/fish-and-shellfish-nutrition/

SMILE nutrition plate for toddlers – https://www.smileplate.co.uk/

For healthy pudding recipes and other nutrition advice –

www.yinkahealth.com

back to top

References

- Evans EC. The FDA recommendations on fish intake during pregnancy. J Obstet Gynecol Neonatal Nurs. 2002;31(6):715-20. [PMID:12465868]
- Järup L. Hazards of heavy metal contamination. Br Med Bull. 2003;68:167-82. [PMID:14757716]
- Percentage of pregnancies unplanned - 45% of pregnancies and one third of births in England are unplanned or associated with feelings of ambivalence. PHE Health matters: reproductive health and pregnancy planning. 2018
- Morning sickness – American Medical Association and found that experiencing nausea and nausea with vomiting when pregnant was associated with a 50 to 75 per cent reduction in risk of losing a pregnancy.
- Fertility – Jorge Chavarro and Walter Willett "The Fertility Diet: Ground-breaking Research Reveals Natural Ways to Boost Ovulation and Improve Your Chances of Getting Pregnant."
- Weaning – Majority do not need complementary foods before 6 months as exclusive breastfeeding provides sufficient nutrients up to that age. Some individuals may benefit from complementary foods introduced before 6 months – if at risk of iron depletion, if at higher risk of allergy. • EFSA Journal (2019) Age to start complementary feeding of infants Timing of Allergenic Food Introduction to the Infant Diet. Systematic Review & Meta-analysis which informed the 2016 BSACI Guidelines for SACN/COT: Ierodiakonou D et al 2016 JAMA 2016;316(11):1181-1192.
- A long-term study has pointed to a link between breastfeeding and intelligence. The research in Brazil traced nearly 3,500 babies, from all walks of life, and found those who had been breastfed for longer went on to score higher on IQ tests as adults. Victora C et al, Association between breastfeeding and intelligence, educational attainment, and income at 30 years of age: a prospective birth cohort study from Brazil; The Lancet, Volume 3, ISSUE 4, e199-e205, April 01, 2015
- Babies have an innate preference for sweet foods over bitter or sour tastes - Early Flavour Learning and its Impact on Later Feeding Behaviour (2009), Beauchamp GK & Manella JA
- Diets high in fruit and vegetables are associated with reduced risk of obesity, cardiovascular disease, hypertension, stroke and some cancers. Critical review: vegetables and fruit in the prevention of chronic diseases (2012), Boeing H et al..
- Offering a variety of tastes, including more savoury and bitter flavours such as vegetables, can help to develop a child's taste preferences and may help to increase the acceptance of these foods later on in childhood and even through

to adulthood. Early Flavour Learning and its Impact on Later Feeding Behaviour (2009), Beauchamp GK & Manella JA; Effects of starting weaning exclusively with vegetables on vegetable intake at the age of 12 and 23 months (2014), Barends C et al; An exploratory trial of parental advice for increasing vegetable acceptance in infancy (2015), Fildes A et al.; Long-term consequences of early fruit and vegetable feeding practices in the United Kingdom (2010), Coulthard H et al.

- Food preferences may also be influenced by early life exposures, including the mother's diet during pregnancy, infant feeding practices, and foods consumed in early childhood.101112
- It can take around eight exposures before infants learn to accept a new taste fully Effects of repeated exposure on acceptance of initially disliked vegetables in 7-month old infants (2007), Maier A et al.
- Breastfeeding - The optimal duration of exclusive breastfeeding: report on an expert consultation (2001), World Health Organization
- Wedekind, Sophie I.S.; Shenker, Natalie S. 2021. "Antiviral Properties of Human Milk" Microorganisms 9, no. 4: 715. https://doi.org/10.3390/microorganisms 9040715
- Nehring et al Impacts of in utero and early infant taste experiences on later taste acceptance: a systematic review. J Nutr2015;145:1271-9. doi:10.3945/jn. 114.203976 pmid:25878207 Abstract/FREE Full TextGoogle Scholar
- Liem et al, Sweet and sour preferences during childhood: role of early experiences .Dev Psychobiol2002;41:388-95. doi:10.1002/dev.10067 pmid: 12430162
- CrossRefPubMedWeb of ScienceGoogle Scholar
- Di Santis et al, Do infants fed directly from the breast have improved appetite regulation and slower growth during early childhood compared with infants fed from a bottle?Int J Behav Nutr Phys Act2011;8:89. doi:10.1186/1479-5868-8-89 pmid:21849028
- CrossRefPubMedGoogle Scholar
- Toddlers in America are consuming an average of over seven teaspoons of added sugar per day — more than the recommended amount of six teaspoons for adult women. National Health and Nutrition Examination Survey research study between 2011 and 2014.
- Children in the UK exceed the maximum recommended sugar intake for an 18-year-old by the time they are 10. PHE National Diet and Nutrition Survey (NDNS) rolling programme for 2014 to 2015 and 2015 to 2016.
- The risk of maternal depletion and poor outcomes increases in early or closely spaced pregnancies June 2003 Journal of Nutrition 133(5 Suppl 2):1732S-1736S