



10  
STEPS  
FOR A

# Healthy Pregnancy

# 10 Steps for a Healthy Pregnancy - a rationale

It is now well accepted that what happens during the very early years of life, and even before birth, influences the later health of the child. For that reason, preconception and pregnancy present a critical 'window of opportunity' to improve the health of the next generation.

During pregnancy the maternal diet must provide sufficient nutrients to meet the mother's usual requirements as well as those of the growing fetus, but in everyday life it can be difficult for women to focus on their own eating habits. Often they may be very busy working or looking after their family and might not have spare time to take good care of themselves.

For around half of the UK adult population, diets are too high in saturated fats and sugar. For some it is also low in essential micronutrients such as iron, folate and iodine. Modern lifestyles tend to involve less physical exercise and exposure to sunshine than in the past. This contributes to obesity and vitamin D deficiency.

Women are more likely to adopt healthier behaviours if they receive advice from health or childcare professionals, particularly before conception. It is for these reasons that better nutrition guidance in preconception and pregnancy should be considered a public health priority.

All health and childcare professionals who come into contact with women at different stages of motherhood share a key role in advising women who may be pregnant or planning a pregnancy. In order to embrace this role they need to have clear and practical guidance.

As an independent expert group who work together on child nutrition issues, we set out to review the existing evidence to define what constitutes healthy eating and lifestyle in pregnancy. We then created the 'Ten Steps for a Healthy Pregnancy' – a summary of the evidence-base in the format of ten simple steps.

We thank many health and childcare professional bodies and expert medical reviewers who have helped in the development of this document and we will continue working with partners to ensure the widest dissemination to families.



**ATUL SINGHAL**

Chairman of the Infant & Toddler Forum

## How to use the Ten Steps for a Healthy Pregnancy

The Ten Steps will help equip health and childcare professionals to advise women regardless of their current lifestyle, by providing practical steps that all women can take. Following these ten steps will help women to achieve optimum health for themselves and their baby during pregnancy and beyond.

They are available online to download and can be ordered as a poster and flyer. Visit [www.infantandtoddlerforum.org](http://www.infantandtoddlerforum.org) to order or download your copy now.



# Take a daily supplement

**of 10µg vitamin D throughout pregnancy and 400µg folic acid up until at least the 12th week of pregnancy. Some women will be prescribed 5mg folic acid per day instead of 400µg**

All but two nutrients - **folate/folic acid** and **vitamin D** - can be consumed in sufficient quantities by eating a well-balanced, nutritious diet based on the five food groups in the Eatwell Plate. Dietary supplements of both folic acid and vitamin D are recommended during pregnancy by the National Institute for Health and Care Excellence (NICE) and the Scientific Advisory Committee on Nutrition (SACN).<sup>1,2,3,4</sup>

Some pregnant women are entitled to free vitamin tablets containing both these vitamins under the Healthy Start scheme ([www.healthystart.nhs.uk](http://www.healthystart.nhs.uk)).

For other women there are several over-the-counter supplements suitable for pregnancy that contain both these vitamins, with or without a wider range of other nutrients. Foods fortified with these nutrients are available as an alternative supplement. As they provide additional energy (calories) they need to be part of the meals and snacks consumed.

## Vitamin D

Supplementary vitamin D of 10µg per day is recommended throughout pregnancy and breastfeeding.<sup>1</sup> Maternal vitamin D deficiency increases the risk of vitamin D deficiency in the infant. Severe vitamin D deficiency in infants can cause hypocalcaemic seizures and cardiomyopathy in very young infants and rickets in older infants and toddlers.<sup>5</sup> Deficiency also affects growth and development and one study reported lower bone density at nine years.<sup>6</sup>

The latest National Diet and Nutrition survey reported that, depending on the season, 10 to 40 per cent of women of child bearing age had low vitamin D status, particularly in late winter and

early spring.<sup>7</sup> Non-caucasian pregnant women with darker skins are even more likely to have low levels of vitamin D.<sup>8</sup>

Increasing sun exposure on skin during the UK summer months – April to September – will increase vitamin D levels and stores. However, current lifestyles, use of sunscreen and modes of dress do not allow adequate vitamin D synthesis in all women. Oily fish is the only good dietary source of vitamin D, as the only other food sources (eggs, meat and some fortified foods) provide very small amounts.

## Folic acid

Supplementary folic acid is needed prior to conception and up until 12 weeks gestation to lower the infant's risk of neural tube defects such as spina bifida.<sup>9</sup> Low folate status in pregnant adolescents has also been found to increase the risk of having a small for gestational age baby.<sup>10</sup>

The Department of Health and NICE recommend a daily supplement of 400µg of folic acid to women pre-conceptually and until the 12th week of pregnancy. A higher dose of 5mg per day is prescribed for women whose infants are at higher risk of neural tube defects and these include mothers who:<sup>2</sup>

- have a neural tube defect or have a family history of neural tube defects
- have a partner who has a neural tube defect or has a family history of neural tube defects
- have had a previous baby with a neural tube defect
- have diabetes
- are obese



## 10µg

of vitamin D is recommended per day

## 400µg

of folic acid is recommended per day until the 12th week of pregnancy

# 2



## Keep physically active

**throughout pregnancy, aiming for at least 30 minutes of moderate intensity activity on 5 or more days per week**

Physical activity during pregnancy maintains fitness and may help prevent excess gestational weight gain<sup>11</sup> and the development of gestational diabetes.<sup>12,13</sup>

UK guidance on physical activity for adults is:<sup>14</sup>

- at least 2 1/2 hours of moderate intensity aerobic activity such as cycling, swimming, gardening, dancing or fast walking every week, **and**
- muscle-strengthening activities on 2 or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders and arms). Examples include yoga, pilates or carrying shopping home.

This guidance also applies to healthy pregnant women who should aim to do this for as long as is comfortable. Those who did not exercise before pregnancy can slowly build up to this level.

Women who are usually more active than this can maintain their level of activity during pregnancy as long as they continue to find the activity level comfortable.<sup>15</sup> During pregnancy women are likely to become fatigued more quickly.



**2.5 hrs**  
moderate intensity  
activity per week

### **NICE recommends:<sup>3</sup>**

Pregnant women should be informed that beginning or continuing a moderate course of exercise during pregnancy is not associated with adverse outcomes. Pregnant women should be informed of the potential dangers of certain activities during pregnancy, for example, contact sports, high-impact sports and vigorous racquet sports that may involve the risk of abdominal trauma, falls or excessive joint stress, and scuba diving, which may result in fetal birth defects and fetal decompression disease.



## A healthy weight gain

**during pregnancy depends on your pre-pregnancy weight and height. Expect to gain only 1-4 pounds (0.5-2kg) in the first trimester and the rest over the second and third trimesters**



\* BMI = weight in kg divided by the square of height in metres

$$\text{BMI} = \frac{\text{weight in kg}}{(\text{height in m})^2}$$

Excess or inadequate weight gain during pregnancy are associated with poor health outcomes for both mother and infant. Being overweight before pregnancy, or excess gestational weight gain, increases the risk of gestational diabetes, pre-eclampsia, caesarean section, macrosomia and stillbirth.<sup>11,16</sup> They are also associated with maternal postpartum weight retention in the short, intermediate, and long term<sup>17</sup> as well as with future development of obesity in children.<sup>18</sup> Glucose tolerance tests (GTT) are offered to women at increased risk of developing gestational diabetes, at around 28 weeks gestation.

Gaining too little weight during pregnancy in women of normal weight and those who are underweight, can result in infants being born with a low birth weight, which is associated with short and long-term health problems in the child.<sup>16</sup>

There are currently no UK evidence-based recommendations on appropriate weight gain during pregnancy but the American Institute of Medicine (IOM) recommends:<sup>19</sup>

Normally 0.5-2kg of weight is gained during the first trimester of pregnancy and the remainder of the recommended weight gain is expected during the second and third trimesters.

Although the IOM recommendations are based on observational data and some critics argue they may not suit all ethnic groups,<sup>20</sup> women who gain weight within the IOM ranges are more likely to have better maternal and infant outcomes than those who gain more or less weight.<sup>17,21,22</sup>

Guidance on appropriate gestational weight gain and weight monitoring during pregnancy is not standard policy in the UK but studies have shown it to be feasible and well accepted.<sup>23</sup> If introduced it could help prevent the poor health outcomes of excess gestational weight gain, particularly in those mothers who are overweight and obese.<sup>11</sup> In England in 2013 around 19 per cent of women of childbearing age were classed as obese and a further 29 per cent classed as overweight and would have been so at the start of a pregnancy.<sup>24</sup> NICE recommends that maternal obesity is best tackled before women become pregnant and a pregnant woman with a BMI over 30kg/m<sup>2</sup> should be referred to a dietitian for assessment and advice on healthy eating and exercise.<sup>2</sup> In some areas of the NHS overweight and obese pregnant women are being offered support through intensive healthy lifestyle programmes which have limited gestational weight gain and resulted in positive outcomes.<sup>21</sup> A Cochrane review showed similar outcomes<sup>11</sup> but two recent large randomised control trials only reported very modest overall outcomes.<sup>25,26</sup>

Pre-pregnancy weight	Appropriate weight gain during pregnancy	
	pounds	kg
Normal weight *BMI = 18.5-24.9	25-35	11.5-16
Overweight *BMI = 25-29.9	15-25	7-11.5
Obese *BMI greater than 30	11-20	5-9
Underweight *BMI less than 18.5	28-40	12.5-18

# 4

## Choose nutritious foods, not extra food

### Extra energy (e.g. half a sandwich each day) is only needed during the last trimester

Requirements for some micronutrients are higher during pregnancy than for non-pregnant women, but extra energy from food is not needed during the first two trimesters.

Energy requirements depend on a woman's size, weight and activity levels. If a woman had a BMI within the normal range (18.5-25kg/m<sup>2</sup>) and was maintaining her weight before pregnancy then her energy requirement during the first and second trimesters of pregnancy will remain about the same as before pregnancy. She should continue to eat the same size meals as she did before pregnancy and definitely **not** increase her food intake and 'eat for two'. This is because changes in metabolic rate and a reduction in physical activity during the first two trimesters accommodate the small amount of extra energy to support the growth of the fetus and to enable fat to be deposited in the mother's body for use during lactation. The Department of Health recommends an extra 200 kcals per day from food for the final three months only.<sup>1</sup>

#### Examples of food providing 200 kcals include:

- two slices of buttered bread
- a bowl of wholegrain breakfast cereal with milk
- a bowl of lentil and tomato soup and a bread roll
- 1/2 chicken and salad sandwich

A balanced diet with the recommended supplementation of vitamin D and folic acid will reduce the risk of nutrient deficiency and the associated poor health outcomes. However, most UK women of child bearing age would need to choose more nutritious food to meet the recommendations of higher intakes of key micronutrients during pregnancy. These are: thiamine, riboflavin, folate, vitamins A, C and D, calcium, phosphorus, magnesium, zinc, copper, selenium, iodine.<sup>27,28</sup> and the essential omega 3 fatty acids.<sup>29</sup>

The UK National Diet and Nutrition Survey reports that some UK women of childbearing age do not consume enough vitamins A and D, riboflavin, folate, iron, iodine, calcium, magnesium, potassium, zinc, and selenium to meet the recommendations<sup>7</sup> and therefore do not meet the higher recommendations for pregnancy.

Additionally, blood samples from the same survey showed that about 10 per cent of women are anaemic.



The Department of Health recommends an extra **200 kcals** per day for the final three months only

### Percentage of girls and women with low blood levels indicating iron deficiency anaemia<sup>7</sup>

Nutrient	Women 19-64 years	Teenage girls 11-18 years
Haemoglobin below 120g/L	9.9%	7.4%
Ferritin below 15 µg/L	15.5%	27.5%



## Balance your diet



Combine foods from all 5 food groups

### Base each meal on wholegrain starchy foods such as bread, rice, potatoes, pasta or breakfast cereals and include:

- 3 servings of milk, hard cheese or yogurt each day for calcium and iodine
- at least 1 vegetable and 1 fruit in both main meals and include fruit (fresh, canned or dried rather than juice) with breakfast
- meat, fish, eggs, nuts or pulses at 2-3 meals each day for iron

A nutritious diet during pregnancy is based on a combination of foods from all five food groups listed below, along with recommendations for the number of daily servings to ensure adequate nutrient intake.

This combination will provide all the nutrients required by pregnant women except for vitamin D and folate/folic acid which are required as supplements as discussed in step 1.

**Recommended portion sizes and sample menus** can be found in the Infant & Toddler Forum's Healthy Eating in Pregnancy Factsheet.<sup>30</sup> Some women may find different routines helpful, such as eating smaller meals often, to address heartburn and nausea at different stages in pregnancy.

**Whole fruits** are recommended in preference to fruit juices, which contain large amounts of the sugar fructose.

Food Groups	Recommendations
1. Bread, rice, potatoes, pasta and other starchy foods	<b>Base each meal and some snacks on these foods.</b> Using wholegrain varieties will increase fibre intake to address constipation in susceptible women. Other starchy foods include breakfast cereals, crackers, crispbread, quinoa, couscous, and flour based foods such as scones.
2. Fruit and vegetables	<b>Include one or more of these at each meal and aim for at least five portions per day.</b>
3. Milk, cheese and yoghurt	<b>Three portions of milk, cheese or yogurt per day where one serving is 200-250ml milk/yogurt or 30g cheese.</b> Use low fat varieties if overweight or obese prior to and during pregnancy.
4. Meat, fish, eggs, nuts and pulses	<b>Two servings a day or three for vegetarians.</b> Include two servings of fish per week, at least one of which should be oily fish (e.g. salmon, mackerel, trout, herring, sardines). Eat a food high in vitamin C at the same time as eggs, nuts and pulses to enhance iron absorption from these foods.
5. Foods high in fat and/or sugar	<b>Limit these to small quantities.</b> These should not be eaten in place of the other four food groups. Limit them to about two or three small portions per day if overweight.

**Iodine** in the UK diet comes mostly from cows' milk, cows' milk products and fish. Eggs provide small amounts. Non-dairy alternatives to milk such as milks based on soya, cereals or nuts contain only negligible amounts of iodine.

Women who do not eat fish and do not have three servings of cows' milk or cows' milk products such as, cheese or yogurt per day are unlikely to reach the WHO recommended intake of 250µg iodine per day.<sup>27,31</sup> The UK reference nutrient intakes (RNI) for pregnant women of 140µg/day of iodine has not been reviewed for many years and is now considered to be too low.<sup>32</sup> Between 10-22 per cent of girls and young women in the UK have daily iodine intakes below both these figures<sup>7</sup> and many meet the WHO definition of 'mild iodine deficiency'.<sup>33</sup> Maternal deficiency of iodine during pregnancy can damage a baby's brain development leading to permanent mental retardation.<sup>34</sup> Even minor levels of deficiency during pregnancy in the UK have been shown to reduce IQ levels in eight-year-old children.<sup>35</sup>

An over-the-counter supplement suitable for pregnant women providing 140-150mg/day is recommended for women who do not eat fish and have a low intake of dairy products.<sup>36</sup> Kelp and seaweed supplements should not be taken as these may contain very high levels of iodine which can cause thyroid problems.

## Iron

Deficiency of this essential mineral can cause anaemia, tiredness and fatigue in the mother and increase the risk of low birth weight and anaemia in the baby.<sup>37</sup> Around 10 per cent of women of childbearing age have low haemoglobin levels, indicating iron deficiency,<sup>7</sup> however women should now be screened for low iron levels early in pregnancy. NICE recommends iron supplements for women with haemoglobin levels below 110g/l in the first trimester of pregnancy and below 105g/l at 28 weeks gestation.<sup>3</sup>

## Vegetarians

Although many vegetarian women's diets are significantly better than those of non-vegetarian women, vegetarian mothers who are at particular risk of poor nutrition include:

- adolescents, who have decided to avoid meat and other animal foods without taking care to ensure alternative sources of the nutrients found in meat
- ethnic groups who are not able to access culturally familiar foods

Before and during pregnancy, vegetarian women need to plan their diets carefully to ensure adequate intakes of iron, iodine, omega 3 fats, riboflavin, calcium and vitamin B<sub>12</sub>. They can do this by:

- eating three servings per day of milk, cheese or yogurt
- eating three servings of fish, eggs, nuts and pulses per day to increase their iron intake and including a food high in vitamin C such as citrus fruit, kiwi fruit, tomatoes, pepper or potato at the same meal or snack
- including two servings of fish per week, at least one of which should be oily fish\*

*\* If fish is not eaten, a supplement suitable for pregnancy containing both omega 3 fats and iodine should be taken.<sup>30</sup> Foods fortified with these nutrients are available as an alternative supplement. As they provide additional energy (calories) they need to be part of the meals and snacks consumed.*

## Vegans

Pregnant women who follow a vegan diet normally avoid all sources of animal foods including milk and milk products, eggs, meat and fish. They need to ensure that they consume sufficient:

- iodine by taking an over-the-counter supplement suitable for pregnancy providing 140-150µg per day (not kelp or seaweed supplements)
- vitamin B<sub>12</sub> from good sources such as fortified yeast extracts, fortified soya milk, fortified textured soya protein and fortified cereals. If these are not included in the diet a vitamin B<sub>12</sub> supplement may be needed
- calcium from fortified soya milk each day or taking a calcium supplement
- iron from good sources such as nuts, pulses and fortified breakfast cereals at the same time as a food high in vitamin C
- omega 3 fats from walnuts and walnut or rapeseed oil on a daily basis or consider taking an omega 3 supplement







# Eat fish twice a week

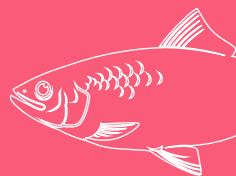
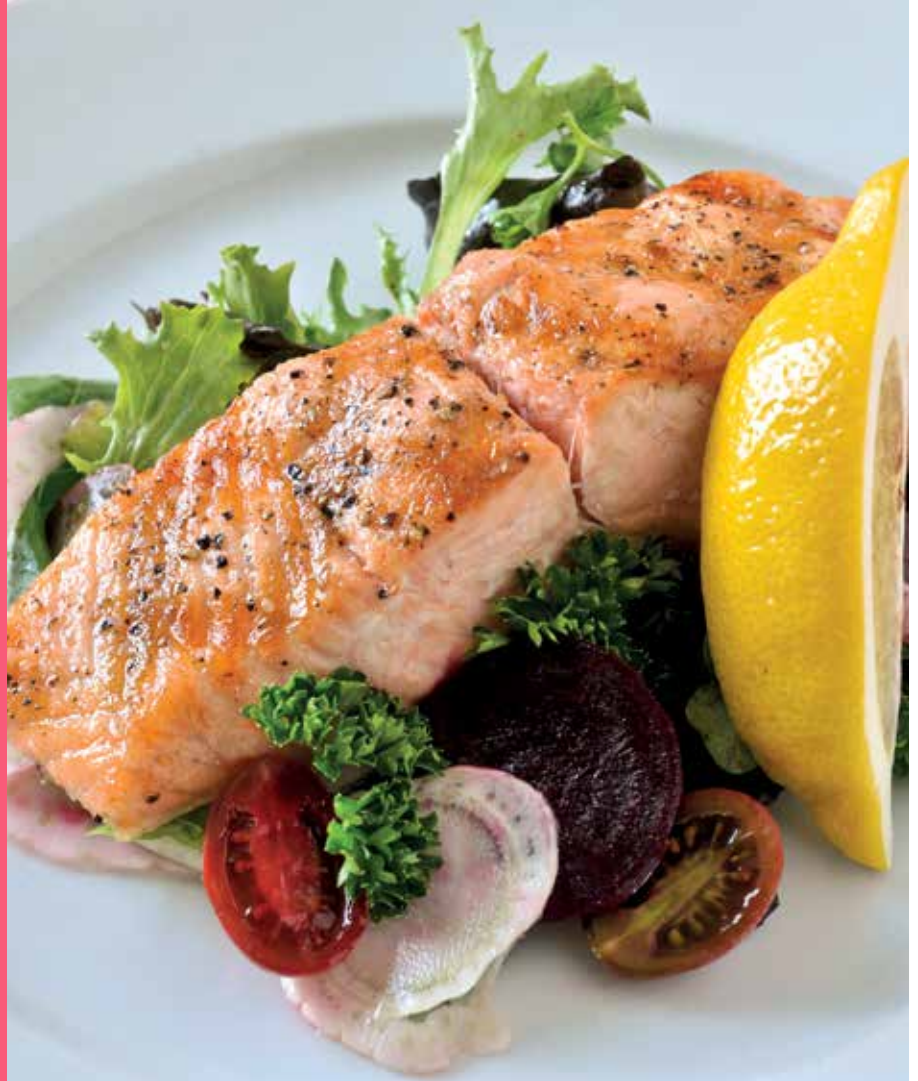
**with one or two servings as oily fish for omega 3 fats - if you don't eat fish take a daily supplement of 200mg DHA but avoid fish liver oil supplements**

The omega 3 fatty acids docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) are essential fatty acids that are critical for brain development and vision during fetal development.<sup>38</sup> They can be synthesised from other omega 3 fatty acids and are actively transported to the fetus across the placenta during the second half of gestation. Consuming these two fatty acids in their pre-formed state from fish and supplements may benefit fetal development.<sup>39</sup>

Fish considered safe to eat during pregnancy include thoroughly cooked shellfish and white fish such as cod, haddock and plaice. Sufficient amounts of omega 3 fats are provided when fish is eaten at least twice per week and one or two of these is oily fish such as salmon, mackerel, trout, herring, sardines.<sup>10</sup> To ensure an adequate intake in women who do not eat fish, several expert bodies such as the European Food Safety Authority recommend a supplement of 100-200mg DHA per day in addition to the 250mg EPA + DHA per day that is recommended for all adults.<sup>29,40,41</sup>

Better health outcomes from eating fish rather than taking omega 3 supplements have been reported.<sup>42</sup> Increasing intake of the omega 3 short chain fatty acid alpha linolenic acid (ALA) can be achieved by using walnut and rapeseed oils in food preparation. Olive and soya oils contain less omega 3. Use of oils with very low omega 3 and very high omega 6 content, such as sunflower, corn, cottonseed and safflower oils should be minimized.<sup>39</sup>

Suggestions that omega 3 supplementation during pregnancy reduces the incidence of preterm birth, remain unsubstantiated.<sup>43</sup>



Eat fish  
**TWICE**  
a week to ensure  
omega 3 fats





# Choose nutritious snacks

**such as fruit, nuts, yogurt, a sandwich or toast rather than food or drink high in sugar or fat**

To support the need for more nutrients during pregnancy, nutrient dense snacks are recommended in place of low nutrient density, high energy snacks such as crisps and similar packet snacks and chocolate bars. Recommended snacks include:

- Unsalted nuts with dried fruit
- Fresh fruit
- Vegetable sticks (e.g. carrot, cucumber, pepper, baby corn) and dips based on yogurt, cream cheese or hummus
- Wholegrain breakfast cereals with milk
- Cheese cubes and crackers or chapatti
- Sandwiches, bread rolls and pitta breads with fillings such as fish, egg, nut butters, cold meat along with salad or roasted vegetables
- French toast or toast with a range of spreads
- Slices of pizza with a plain dough base – not deep fried or pan fried
- Yogurt and fromage frais
- Crumpets, scones, currant buns, tea-cakes, scotch pancakes, fruit muffins
- Cakes and biscuits containing dried fruit, nuts or vegetables (e.g. fruit cake, carrot cake, date and walnut loaf)

Extra energy is only needed during the last trimester (e.g. an extra half a sandwich each day). Pregnant women should continue to eat the same size meals as before pregnancy and definitely not increase their food intake and 'eat for two'.



Nutrient dense  
snacks are  
recommended



# Have about 6-8 drinks

**(1½-2 litres) per day for good hydration - water is a good choice. Limit caffeine to 200mg per day (about 1 shot of espresso or 2 mugs of instant coffee or 2½ mugs of tea)**

Good hydration is important for maintaining maternal plasma osmolality and amniotic fluid volume. Fluid intake through drinks totalling 1½-2 litres per day is part of a well-balanced diet. Water is the best choice but all fluid counts.

Drinks that need to be limited are:

- **High sugar drinks** such as sweet drinks and fruit juices as these provide excess energy from their high sugar load
- **Caffeinated drinks** A limit of 200mg caffeine per day is currently recommended because high levels of caffeine may raise the risk of miscarriage or low birth weights.<sup>44</sup>
- **Herbal teas** Little information is known about the effects of herbal teas on the fetus and as a precautionary measure NHS Choices suggest limiting these to a maximum of four cups per day.



## The caffeine content of drinks and chocolate is:

1 shot of espresso coffee		140mg
1 mug of filter coffee		140mg
1 mug of instant coffee		100mg
1 cup of brewed coffee		100mg
1 mug of tea		75mg
1 cup of tea		50mg
1 cup/mug decaffeinated tea or coffee		about 10mg
1 can of cola		up to 40mg
1 can of energy drink		up to 80mg
50g bar of plain chocolate		up to 25mg
50g bar of milk chocolate		up to 10mg

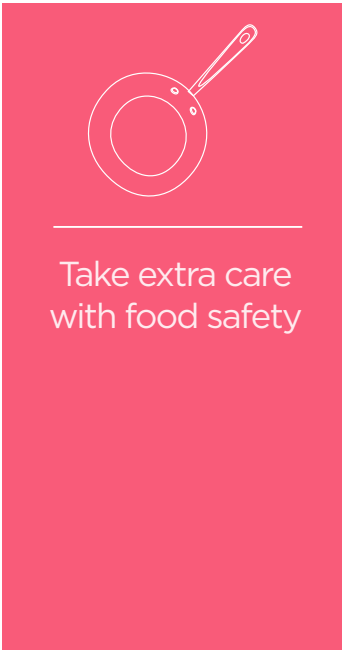
Certain cold and flu remedies also contain caffeine.



# Food safety

**Thoroughly cook meat, fish and eggs; wash all soil from vegetables and fruit and avoid vitamin A supplements, liver, liver pate, unpasteurised dairy products, soft and blue cheeses, swordfish, marlin and shark; limit tinned tuna to 4 small servings per week**

Extra care with food hygiene needs to be taken during pregnancy because certain food-borne illnesses can cause miscarriage, stillbirth, and abnormalities in the developing fetus or severe illness in the newborn. These are:



**Precautions to take**

- Avoid pâté and unpasteurised milk products
- Only eat soft cheeses if they have been cooked (e.g. blue-veined cheeses and soft cheeses with a white rind)
- Wash vegetables and salad thoroughly to remove any soil or dirt
- Only buy unwrapped foods (e.g. cooked meats and prepared salads) where scrupulous food handling guidelines have been followed as these foods can easily become contaminated
- Heat ready meals to piping hot right through; heat once only and discard the leftovers
- Cook eggs so that both the white and yolk are solid
- Thoroughly cook all meat
- Defrost poultry in the fridge and cook until piping hot right through
- Only buy raw shellfish (e.g. prawns, cockles and mussels) if they are packaged and stamped with a use-by date and cook them thoroughly
- Wash hands after handling raw meat, fish or shellfish
- Wash hands after touching cats
- Wear rubber gloves when emptying cat litter trays
- Wear gloves while gardening
- Don't help with lambing or milking ewes that have recently given birth

Food-borne illness	Foods/materials to avoid
<p><b>Listeriosis</b> A flu-like illness caused by the bacteria, listeria monocytogenes</p>	<p>Pâté: meat, fish or vegetable unless tinned or pasteurised Mould ripened soft cheese (e.g. brie, camembert, blue-veined cheese) Unpasteurised milk and milk products Ready meals especially those containing chicken that are not heated thoroughly before consumption</p>
<p><b>Salmonella</b> A bacteria which is the major cause of food poisoning in the UK</p>	<p>Raw or partially cooked eggs and foods containing them such as mayonnaise and mousse Undercooked poultry and other meat</p>
<p><b>Toxoplasmosis</b> A disease caused by the parasite toxoplasma gondii found in raw meat, soil and cat faeces</p>	<p>Raw or undercooked meat Unpasteurised milk and milk products Soil Cat litter trays</p>
<p><b>Campylobacter</b> A bacteria that commonly causes food poisoning in the UK</p>	<p>Undercooked poultry Unpasteurised milk and milk products Untreated water Soil Domestic pets</p>

# Food safety continued...

## Vitamin A

There are two dietary forms of vitamin A:

- retinol from animal sources (e.g. whole and semi-skimmed milk products)
- carotenoids from plant sources
  - particularly brightly coloured vegetables and fruit

Both forms are found in a healthy balanced diet and are important during pregnancy. However, high doses of retinol are associated with teratogenesis (malformations in the fetus).<sup>45</sup> To avoid high doses of retinol, pregnant women should eat a balanced diet but avoid:

- vitamin supplements containing retinol
- cod liver oil supplements and other fish oil supplements containing vitamin A
- liver and liver products such as liver pâté, as liver contains very high amounts of retinol

**Oily fish** should be eaten once or twice per week because this is a good source of omega 3 fats and iodine for both mother and her fetus. It should be limited to two servings per week because some of these fish contain dioxins and PCBs (polychlorinated biphenyls) that might affect the nervous systems of the fetus.<sup>46</sup>

**Swordfish, marlin and shark** should be avoided due to possible high mercury levels.<sup>46</sup>


For the same reason **tuna** should be limited to four medium sized cans a week (with a drained weight of about 140g per can) or fresh tuna to two steaks (weighing about 140g when cooked or 170g raw).<sup>46</sup>

## Foods considered safe to eat during pregnancy include:

- Cooked shellfish, including prawns that are part of a hot meal and have been cooked thoroughly
- Live or bio yogurt
- Probiotic drinks
- Fromage frais
- Crème fraîche
- Soured cream
- Spicy food
- Mayonnaise, ice cream and salad dressing made with pasteurised egg. Home-made versions may contain raw eggs and must be avoided
- Honey may be eaten during pregnancy, but is not suitable for infants until over 12 months of age
- Pasteurised cheeses including:
  - o hard cheese, such as cheddar and parmesan
  - o feta
  - o ricotta
  - o mascarpone
  - o cream cheese
  - o mozzarella
  - o cottage cheese
  - o paneer
  - o halloumi
  - o processed cheese, such as cheese spreads



# 10



## Seek support

### to stop smoking or misusing drugs or medication and avoid alcohol

**Smoking** during pregnancy increases the risk of miscarriage, stillbirth, premature birth, and sudden infant death syndrome.<sup>47</sup>

**Using recreational drugs and/or misusing medication** during pregnancy is associated with damage to the fetus and neonatal abstinence syndrome (NAS).<sup>48</sup>

**The safest approach in pregnancy is not to drink alcohol at all, as recommended by the Chief Medical Officer's guidelines.**<sup>49</sup> Alcohol in a mother's blood stream crosses the placenta into the blood stream of a fetus and results in nearly equal concentrations in the mother and fetus.

The evidence strongly supports avoidance of alcohol during the first trimester of pregnancy, as two units of alcohol per week during this trimester increases the risk of premature birth, and those drinking two or more units also have an increased risk of having a baby with a lower birth weight.<sup>50</sup>

Excess alcohol consumption during pregnancy (over 10 units per day) leads to fetal alcohol syndrome which includes diminished fetal growth, with intrauterine growth restriction and low birth weight babies who are often born with morphological abnormalities and impairment of the central nervous system leading to delayed neurodevelopment.<sup>51</sup>

Evidence of any harm from small amounts of alcohol during the

second and third trimesters is weak. NICE recommends that:<sup>3</sup> 'If women choose to drink alcohol during pregnancy they should be advised to drink no more than one to two UK units once or twice a week (one unit equals half a pint of ordinary strength lager or beer, or one shot [25 ml] of spirits). Although there is uncertainty regarding a safe level of alcohol consumption in pregnancy, at this low level there is no evidence of harm to the unborn baby. Women should be informed that getting drunk or binge drinking during pregnancy (defined as more than five standard drinks or 7.5 UK units on a single occasion) may be harmful to the unborn baby.'

Alcohol has a detrimental effect on the absorption and use of folate thus compounding the problem in women who do not take folic acid supplements.<sup>52</sup>

Units of alcohol	Alcoholic drinks
1	<ul style="list-style-type: none"> <li>• Half a pint of ordinary strength beer, lager or cider (3.5% alcohol by volume (ABV))</li> <li>• 125ml glass of wine (9% ABV)</li> <li>• 25ml measure of spirits (40% ABV)</li> </ul>
1.5	<ul style="list-style-type: none"> <li>• 125ml glass of wine (11% or 12% ABV)</li> <li>• One bottle of alcopops</li> </ul>
2	<ul style="list-style-type: none"> <li>• 175ml glass of wine (11% or 12% ABV)</li> </ul>

The Forum would like to thank the many health and childcare professional bodies and expert medical reviewers who have helped in the development of this document.

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The following organisations have pledged their support:



## Additional Resources:

**Tommys**

[www.tommys.org](http://www.tommys.org)

**Diabetes UK**

[www.diabetes.org.uk/gestational](http://www.diabetes.org.uk/gestational)

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