

Pregnancy is a major life event and places many demands on a woman's body. The time before pregnancy, known as preconception, is, therefore, an ideal period to prepare for pregnancy and parenthood. Making changes to one's life at this time can help reduce problems during pregnancy and assist in recovery from birth. The preconception period is generally considered to be the three months prior to pregnancy.

Not all pregnancies are planned, however, and so some women do not get the opportunity to address their preconception health. These women can feel reassured that many of the changes detailed below will be beneficial at any stage of their pregnancy.

Men's preconception health is also very important as sperm production actually takes about three months. Diet, medications, smoking, recreational drugs, alcohol and environmental factors can all impact on sperm quantity and quality. Men should check with their doctor about what changes they need to make during the preconception period.

## Dietary changes

Establishing a well balanced diet is an important step in preconception health. Generally, women should aim to reduce their intake of processed and refined foods as these often contain high amounts of fat, sugar and salt while being low in nutrients. They can replace them instead with more whole foods such as whole grains and breads, fruit and vegetables, low fat dairy products and lean meat.

There are also a few specific dietary requirements that women need to consider:

### Fish

While women planning a pregnancy can include fish as a part of a healthy diet they do need to limit their intake of fish types that may have higher levels of mercury.

High levels of mercury can affect the unborn baby's nervous system. The guidelines for women planning a pregnancy are:

- 2-3 serves per week of any fish and seafood not listed below (1 serve equals 150g) **OR**
- 1 serve per week of orange roughy (sea perch) or catfish and **no** other fish that week (with no other fish to be consumed during that fortnight) **OR**
- 1 serve per fortnight of shark (flake) or billfish (swordfish/broadbill and marlin) and no other fish that fortnight.

If women are unsure of the variety of fish they are purchasing they should check with the retailer.

### Iron

During pregnancy, a woman's daily iron requirement is higher. Therefore, it is a good idea to ensure that iron levels are adequate when planning a pregnancy so that these levels can be more easily maintained during pregnancy. Women of reproductive age require

18 milligrams (mg) of iron a day which increases to 27mg/day during pregnancy. Red meat is the best source of iron but other sources include chicken, fish, leafy green vegetables, legumes and iron-enriched breakfast cereals.

### Calcium

Women do not actually require any additional dietary intake of calcium during pregnancy. Women should, however, ensure they get the recommended daily intake of calcium for their age; 1300 mg/day for 14-18 year olds or 1 000 mg/day for 19-50 year olds. A glass of milk or calcium fortified soy milk, a 200g tub of yoghurt, a 40g slice of cheese or a 90g can of salmon with bones each provides approximately 300 mg of calcium.

### Folate (folic acid)

Folate is a B-vitamin that is extremely important in the preconception period as it helps prevent neural tube birth defects such as spina bifida. Foods rich in folate include cereals, green leafy vegetables, legumes and fruit. Folate requirements are much higher during pregnancy so women are advised to take a 400 microgram (mcg) supplement of folic acid for at least one month prior to pregnancy and for the first three months after conception. This is in addition to consuming food folate from a varied diet. Women who have a family history of neural tube birth defects should discuss with their doctor their requirements as they require a higher level of supplementation. It is important to take folic acid supplements before conception as the neural tube is formed in the unborn child before most women are aware they are pregnant.

If women are obtaining their folic acid requirements through a multi-vitamin supplement they should ensure it is specifically designed for preconception and/or pregnancy as some other vitamins (e.g. Vitamin A) are dangerous in pregnancy if taken in high amounts.

## Exercise

Participating in regular exercise is important for all women. Being fit and active before pregnancy will help to manage the physical changes that pregnancy and motherhood bring. Women will be better able to carry the extra weight gained and may experience fewer symptoms such as sleeping difficulties, fatigue and backache. Even women who have been relatively inactive can start a low to moderate intensity exercise program, after seeking medical advice.

Women planning a pregnancy can check with their doctor to ensure there are no medical reasons why exercise should be limited or avoided. Women should inform any exercise instructor if they are pregnant or could be pregnant as some exercises may not be suitable or may need to be modified. In general, women should avoid scuba diving, parachuting, waterskiing, martial arts, gymnastics, horse riding and trampolining as well as becoming overheated during exercise. Activities that women find particularly beneficial include walking, swimming, yoga and pilates.

Women planning a pregnancy should also perform regular pelvic floor exercises. Pelvic floor exercises are designed to strengthen the muscles of the pelvic floor by actively tightening them and lifting them at intervals. Hormonal changes, the added weight of the baby during pregnancy and childbirth can all contribute to the weakening of the pelvic floor. Having a strong pelvic floor can provide protection against incontinence, a common problem for women following childbirth.

## Use of stimulants and medications

### Caffeine

Caffeine is a stimulant found in coffee, tea, cocoa, cola, energy drinks and chocolate. A light to moderate intake of caffeine does not appear to interfere with conception. However, high consumption of caffeine can have affect fertility and increase the risk of miscarriage. Women planning a pregnancy should, therefore, limit their daily amount of caffeine to:

- 2 cups of coffee, or
- 4 cups of tea, or
- 4 cups of cola drink, or
- Less than 1 cup of cola or energy drink that contains extra caffeine.

### Smoking

The impact of smoking on the unborn child is well documented, being linked to premature birth, low birth weight and miscarriage. It can also interfere with the ability to conceive, both naturally and through the use of assisted reproductive technologies like IVF. Quitting smoking, therefore, is an important step in preconception care. Ideally women should aim to quit several months before pregnancy, but stopping smoking at any time is still very beneficial. If women decide to quit before becoming pregnant they are able to use nicotine replacement therapy (these products are generally not recommended for use during pregnancy). Women can find support in quitting smoking by phoning Quitline on 137 848.

### Alcohol

Studies on the affect of moderate alcohol consumption on a woman's fertility have produced conflicting results. Further studies are needed to determine if alcohol consumption interferes with conception. The World Health Organization advises that pregnant women or women planning to become pregnant should abstain from drinking alcohol as "it is not known whether or not there is any safe level of alcohol consumption during pregnancy". The Australian guidelines (under review at the time of printing) advise that pregnant women or women planning a pregnancy may choose not to drink or should limit their alcohol intake to less than seven standard drinks a week, with no more than two standard drinks on any one day (spread over at least two hrs).

## Recreational drugs

The use of recreational drugs should be avoided when planning a pregnancy as they can be harmful to the unborn baby. Women who have a drug dependency and are concerned about the effects can seek help from a drug and alcohol information or counselling service.

## Medications

Women who take prescription medications, over the counter medications or complementary medicines should discuss with their doctor the wish to become pregnant. A doctor will re-evaluate a woman's current medications to ensure they are safe to take during pregnancy. Women may be required to switch to another medication or take a reduced dose. It is not advisable for women to simply stop taking their prescription medications without first consulting their doctor.

## Medical issues

### Existing medical conditions

Women with existing medical conditions (e.g. asthma, depression, epilepsy, diabetes, thyroid conditions, HIV) should discuss their plans to become pregnant with their doctor. They can advise on any special requirements for managing the condition during pregnancy and determine the safety of any current medications (see medications section above).

### Vaccinations

Some viral infections cause birth defects if contracted during pregnancy. Women planning to become pregnant should be tested to see if they have immunity for rubella (German measles). Most women have been vaccinated for rubella but in a small number of women this immunity can wear off. If women are found not to have immunity they can be vaccinated but should then wait at least one month before trying to conceive. Women should also have a flu vaccine which can be given any time in the preconception period or during pregnancy. Women who do not have a history of having had chicken pox may also consider having the chicken pox vaccine. As with rubella, this vaccine should be given at least one month before conception.

### Dental

Women who have not had regular dental check-ups should visit a dentist before they become pregnant. During pregnancy the rise in hormone levels increases blood flow to the gums which makes them more sensitive to existing gingivitis (inflammation caused most commonly by plaque build-up). Women may find their gums become swollen and bleed more easily. In addition, dentists are often reluctant to carry out certain procedures during pregnancy (e.g. X-rays, those involving anaesthetics) so having any problems addressed beforehand is preferable.

### Pap smears

All women who have ever had sex should have a Pap smear every two years, unless otherwise advised by their doctor. While it is safe to have a Pap smear during pregnancy, some women prefer to have their smear done before they become pregnant.

## Hazards

### Listeriosis

This infection is caused by the listeria bacteria which can be found in some foods. Listeriosis can have harmful effects on the unborn child. Women planning a pregnancy should take the same precautions as pregnant women to avoid the bacteria. Storing and preparing food correctly is very important. Hands should be washed before preparing food or serving food; raw foods should be stored in the bottom of the fridge; cold foods should be kept/served below 5°C and hot foods above 60°C; and leftover's should be used within a day of cooking or purchase.

There are particular foods that are more likely to carry the bacteria and so should be avoided, if possible. These include:

- Soft, semi soft and surface ripened cheeses e.g. brie, camembert, ricotta, feta, blue (safe if served hot)
- Soft serve ice-cream and drinks made with it (e.g. thick shakes)
- Pre-packaged, commercially prepared or smorgasbord salads (both vegetables and fruit)
- Pate
- Chilled seafood (e.g. oysters, prawns, sashimi, sushi) and smoked seafood (e.g. smoked salmon)
- Cold meats, including chicken, from delis, sandwich bars or in pre-packaged packets
- Unpasteurised dairy products (e.g. raw goats' milk).

### Toxoplasmosis

Toxoplasmosis is an infection caused by the parasite *Toxoplasma gondii*. Infection occurs from eating uncooked or undercooked meat or by ingesting soil or cat faeces containing the parasite. Many people have been infected with toxoplasmosis at some stage in their life and so will have immunity. If a woman *first* becomes infected with toxoplasmosis during pregnancy she can pass the infection on to her unborn child, causing miscarriage or birth defects. However, the risk of this occurring is actually very small. Taking a few simple precautions will reduce the risk for those who may not already have immunity. It is not necessary to get rid of the family cat or to completely avoid contact with it.

- Avoid eating uncooked or undercooked meat.
- Wash chopping boards used to cut up raw meat thoroughly before using them to prepare other foods.
- Getting someone else to change cat litter or wearing gloves if this is not possible.
- Wash hands thoroughly after handling soil, cat litter or raw meat.

### Heavy metals and chemicals

Heavy metals such as lead and mercury and industrial chemicals have been found to impact on a woman's fertility. Repeated exposure may reduce fertility and also increase the risk of miscarriage and birth defects. Women can take a number of precautions to limit their exposure.

- Women working in industries where they may be exposed to these hazards can ask their occupational health and safety representative or their doctor about the potential risks.
- Ensure that any workplace health and safety practices and procedures are followed.
- When using any chemical products (household cleaners, pesticides, fungicides, paints, varnishes, thinners) wear appropriate protective clothing (e.g. gloves, mask) and use exactly as directed.
- Wash hands thoroughly after using any chemical products and before eating or drinking.

- If renovating a house that was built before 1970, take into consideration the risk of exposure to lead through the disturbance of lead-based paint. Women planning a pregnancy are advised to leave the home wherever paint containing lead is disturbed and should not return until all dust and debris has been cleared away.

### Emotional wellbeing

While physical health is often the focus of preconception information, a woman's mental and emotional health is also very important. A person's ability to cope with the changes and adjustments associated with parenthood can be influenced by their emotional state. Women planning a pregnancy may wish to identify sources of stress in their lives so that efforts can be made to reduce them at this time. If possible, women should try and avoid the addition of other recognised sources of stress (e.g. major house renovations, moving house) to their lives.

If women have mental and emotional health issues (e.g. depression, anxiety) for which they are not receiving treatment they should seek professional help so that these problems can begin to be addressed. Similarly, if the decision to have children has raised unresolved issues from childhood or has caused relationship issues seeking professional help at this early stage is beneficial.

### Other

#### Weight

Being either overweight or underweight can affect a woman's fertility. Women who are overweight or obese can experience ovulation problems. Similarly, being below an ideal weight or having fat levels that are too low can result in irregular menstrual cycles. Maintaining a healthy weight, therefore, can help regulate menstrual and ovulatory cycles and consequently improve the chances of pregnancy. Being at an ideal weight before conception also allows women to better adjust to the weight gains associated with pregnancy.

#### Domestic violence

Women who are experiencing domestic violence should know that they have the right to feel safe and that whether they decide to leave or stay in a violent relationship, there is assistance available. Seeking help before becoming pregnant is best as research indicates that the violence can escalate in frequency and/or intensity during pregnancy. Women can contact the Women's Domestic Violence Crisis Service of Victoria on (03) 9373 0123, or Country toll free on 1800 015 188.

#### Acknowledgement

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A full list of references is available at:

[www.womhealth.org.au](http://www.womhealth.org.au)

For more preconception resources visit:

[www.med.monash.edu.au/](http://www.med.monash.edu.au/)

[general-practice/preconception/](http://general-practice/preconception/)