



**Thyroid dysfunction –
what every mother should know**

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Pregnancy and childbirth are very exciting times...

... where your body undergoes many physical and emotional changes. The birth of a baby can also be a very confusing time as you are faced with a large amount of information relating to the health of you and your child.

One condition that you should be aware of if you are planning a family is thyroid disease. Thyroid disease can occur both during and after pregnancy and can have serious consequences for both mother and baby if not treated appropriately.

This guide has been developed to provide you with all the important information you need to know about thyroid disease. Split into helpful sections, it contains specific information for couples planning a baby, as well as for women who are already pregnant and parents with young children. Each section contains a list of useful 'frequently asked questions' which can be used for quick reference. A helpful list of additional resources is also included.

What is the thyroid?

The thyroid is a butterfly-shaped gland that sits at the base of the neck, and controls metabolism.¹ It does this through the production of two hormones: thyroxine (also known as T4) and triiodothyronine (also known as T3).¹

The thyroid works in partnership with two different parts of the brain to make sure the correct amount of thyroid hormone circulates in the blood, these are the pituitary gland, which produces thyroid stimulating hormone (TSH), and the hypothalamus, which produces thyrotropin releasing hormone (TRH).² Problems occur when the thyroid gland does not supply the correct amount of hormones.

Thyroid disease is more common than most people realise, in fact, it is estimated that 4 in every 100 women will suffer from some form of thyroid problem caused by an autoimmune disease.³

There are two common forms of thyroid disease, which are associated with changes in thyroid hormone levels (also called thyroid dysfunction): an underactive thyroid or an overactive thyroid.



Underactive thyroid

If your thyroid is underactive, it produces too little thyroid hormone which results in a condition called hypothyroidism. People with hypothyroidism use energy more slowly and their metabolism also slows down.⁴

Key symptoms of hypothyroidism^{4,5,6}

- Fatigue, drowsiness and /or weakness
- Cold intolerance (not being able to tolerate the cold like those around you)
- Impaired memory
- Weight gain or increased difficulty losing weight (despite sensible diet and exercise)
- Depression
- Constipation
- Abnormal menstrual periods and /or fertility problems
- Joint or muscle pain
- Thin and brittle hair or fingernails and /or dry flaky skin

Overactive thyroid

If your thyroid is overactive, it releases too much thyroid hormone into the blood stream, resulting in a condition called hyperthyroidism. People with this condition have a much faster metabolism.⁷

Key symptoms of hyperthyroidism^{7,8}

- Weight loss (even when eating normally)
- Anxiety and irritability
- Very fast heart rate (often more than 100 beats per minute)
- Prominent, staring eyes (typical for Graves' disease)
- Trembling hands
- Feeling very weak
- Hair loss
- Frequent bowel movements
- Fast growing fingernails
- Thin and very smooth skin
- Sweating more than usual
- Abnormal menstrual periods

Who is at risk from thyroid dysfunction?

Thyroid disease is more common in women than men, and is even more common in pregnant women and new mothers which is why the information contained in this booklet is so important if you are thinking of starting a family or have young children. However, it is important to remember that thyroid problems also affect men, children and teenagers. Particular at risk groups include those that:⁴

- Have a family history of thyroiditis (inflammation of the thyroid gland)
- Suffer from type 1 diabetes or any other autoimmune disease
- Are over the age of 50, or are women of menopausal age
- Have had thyroid surgery
- Have Down's or Turner's syndrome
- Have had radioiodine treatment
- Have been exposed to x-ray or radiation treatments of the neck
- Are White or Asian; these populations are more at risk if compared to others

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Things to consider when you are planning for a baby

Thyroid hormones play an important role in helping to keep a woman's reproductive system functioning normally. Therefore, women who are having problems conceiving or have a family history of thyroid disease, should visit their doctor to have their thyroid checked. This is particularly important if they have endometriosis or polycystic ovary syndrome, as women with these conditions are more likely to also have problems with their thyroid.⁹

What is iodine deficiency?

Iodine is vital for the production of thyroid hormones, and as your body does not produce iodine, it must be consumed as part of a healthy diet. Iodine can commonly be found in sea fish, seafood, bread, cheese, cow's milk, eggs, yoghurt and seaweed.¹⁰ Even a mild iodine shortage during pregnancy can have effects on the delivery and

development of a baby, including hypothyroidism. Although you may not have been diagnosed with any form of thyroid disease prior to pregnancy, it is possible for some women to develop thyroid problems either during pregnancy or after giving birth due to changes in the thyroid gland and the level of thyroid hormone being produced during this time. It is therefore advisable that you visit your doctor and have your thyroid checked. This is even more important if you belong to a risk group or suffer from symptoms, which could be related to a thyroid disorder.

Therefore it is recommended that all pregnant and breast feeding women should take a nutritional supplement containing iodine every day.¹⁰

Women of childbearing age should have an average iodine intake of 150 micrograms per day, which should be increased to approximately 250 micrograms during pregnancy and breast-feeding.¹¹

Information for expectant mothers

Hypothyroidism

Approximately 5% of women develop hypothyroidism during pregnancy.¹² However, it can often go unnoticed as the symptoms can be similar to the changes in your body which naturally occur during pregnancy, such as putting on weight, feeling tired and swelling.

If left untreated, hypothyroidism in pregnancy can be potentially very dangerous. It can increase the risk of premature birth, as well as leaving the baby at risk of learning and development problems.

Hypothyroidism can be treated the same whether a woman is pregnant or not. Levothyroxine is a drug which is used to replace the missing thyroid hormone and is also recommended throughout pregnancy and while breast feeding.⁶ Treatment for hypothyroidism during pregnancy is extremely important as it protects both mother and baby from any potential future complications. Pregnant women with hypothyroidism will require a higher levothyroxine dosage before becoming pregnant and more frequent check-ups or monitoring during pregnancy to make sure their dose of levothyroxine is correct.

Hyperthyroidism

Hyperthyroidism amongst pregnant women is rare and in most cases is caused by Graves' disease.¹³ Graves' disease is an autoimmune disease which causes the thyroid gland to over produce hormones, resulting in hyperthyroidism. Failure to treat hyperthyroidism during pregnancy can increase the risk of still birth and premature birth, as well as increase the risk of child deformities and pre-eclampsia.¹³

Treatment for pregnant women with hyperthyroidism is different to those offered to other women, as some of the medications available can harm the unborn baby.

- Women with mild hyperthyroidism are closely monitored during their pregnancy, however, there is no call for treatment if both mother and baby are doing well.
- Women with **severe** hyperthyroidism will be treated with an anti-thyroid medication such as methimazole or propylthiouracil (PTU). PTU is usually the preferred treatment option during the first trimester of pregnancy.¹³

In some cases, pregnant women will have surgery to partially remove their thyroid gland if they are allergic to a medication or if they require such high doses that it could damage the baby.¹³



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Frequently Asked Questions

• Why am I at risk of developing thyroid disease if I am pregnant or a new mother?

Conditions such as hypothyroidism can occur during pregnancy as a result of changes in the thyroid gland and the level of hormones it produces. Iodine deficiency can also be a factor, as the need for iodine increases during pregnancy and breast feeding. Other causes include the autoimmune disease Hashimoto's thyroiditis which is caused by the immune system attacking and destroying the thyroid.¹⁴

• How often should I have my thyroid checked during pregnancy?

It is advisable that the thyroid function is checked at least once at the beginning of any pregnancy. In women who are already on treatment for a thyroid disorder, thyroid function tests should be conducted every 6–8 weeks during pregnancy to ensure the mother has a normal working thyroid gland.¹³

• If I am diagnosed with thyroid disease, will it harm my baby?

Your baby will only be at risk if thyroid dysfunction is not picked up and treated appropriately by your doctor. Therefore, it is important to have your thyroid checked regularly.

• Will my child develop hyper/hypothyroidism if I have thyroid disease?

Approximately half of children born to a parent with thyroid disease are at risk of developing the condition in later life. It is therefore extremely important that both parents and children are made aware of the signs and symptoms of thyroid disease and have their thyroid checked regularly.¹⁵

• Why is iodine intake so important?

Iodine is essential to make thyroid hormones which ensure that our bodies run properly. In the first 10–12 weeks of pregnancy the baby is completely dependent on the mother for the production of thyroid hormone. After this time the baby is able to produce thyroid hormone on its own. However, the unborn child remains dependent on the mother to keep her iodine levels adequate.¹³

• How much iodine should I be consuming every day?

Women of childbearing age should have an intake of 150 micrograms a day. This should increase to approximately 250 micrograms during pregnancy and breastfeeding.¹¹

Information for new mums

Congenital hypothyroidism

Congenital hypothyroidism is where a child is born with thyroid gland problems, meaning they are unable to produce enough thyroid hormone. Congenital hypothyroidism can be difficult to spot at birth as babies may not have any symptoms or may only display mild effects that often go unrecognised. In some rare cases, babies can be born without a thyroid gland which can often result in physical abnormalities including a large tongue.¹⁶

Typical symptoms of congenital hypothyroidism are:¹⁶

- Prolonged jaundice
- Excessive sleeping
- Poor feeding
- Poor muscle tone
- Thick, large tongue and hoarse cry
- Infrequent bowel movements and constipation
- Low body temperature

Babies should be screened for congenital hypothyroidism with the goal of starting appropriate

thyroid hormone replacement treatment as soon as possible. However screening methods are not done in all countries on a routine basis and methods may vary from country to country, but generally the preferred time for screening is a few days after the child has been born.¹⁶

Children with congenital hypothyroidism are treated with levothyroxine in the same way as adults.¹⁶ This treatment can ensure that the child continues to develop normally.

Postpartum thyroiditis (PPT)

New mothers who have not been previously diagnosed with thyroid disease can develop problems with their thyroid within the first year after they have given birth, this is called postpartum thyroiditis (PPT). PPT is the occurrence of either hypothyroidism or hyperthyroidism in the first year after a pregnancy but can also involve an episode of hyperthyroidism followed by hypothyroidism. PPT affects between 3.3–8.7% of women in Europe and there are several symptoms to look out for.¹¹



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Hypothyroidism symptoms in PPT

A large proportion of women who develop PPT (approximately 40–45%) will experience symptoms of hypothyroiditis. These include, fatigue, loss of concentration, poor memory, constipation and possible depression.¹¹

Hyperthyroidism symptoms in PPT

Hyperthyroidism in PPT usually occurs between one and six months after the baby is born, most commonly around three months and usually lasts between one and two months. Between 20%–30% of women who develop PPT have hyperthyroid symptoms. These include fatigue, palpitations, weight loss, heat intolerance, nervousness, anxiety and irritability.¹¹

How is PPT treated?

Since PPT generally is a transient condition, women who have hypothyroidism symptoms of PPT but are not suffering from them and are not planning another child, do not necessarily need treatment. However, they should be monitored between four and eight weeks after diagnosis. Women who find living with their symptoms difficult or are planning a subsequent pregnancy should be treated with levothyroxine.¹¹

New mothers with hyperthyroidism symptoms should consult their doctor for further treatment.

Follow up for women with PPT

Even though a diagnosis of thyroid problems may be scary, PPT is not necessarily a long term condition and the majority of women find their thyroid gland works normally by the end of the first year after the birth of their baby.¹¹ Should you experience any of the symptoms outlined in this booklet on a long term basis you should consult your doctor.



Frequently Asked Questions

• What symptoms might I see if my baby is born with congenital hypothyroidism?

Generally, symptoms of congenital hypothyroidism can include: prolonged jaundice, excessive sleeping, poor feeding, poor muscle tone, low or hoarse voice, infrequent bowel movements and low body temperature.¹⁶

• What do I do if I think my child is born with congenital hypothyroidism?

If you notice some of the symptoms mentioned above and you fear that your child is born with congenital hypothyroidism, talk through the situation with your doctor to establish the best course of action for your child.

• Do I need to continue having my thyroid checked after pregnancy?

Approximately 7% of all women develop problems with their thyroid up to one year after their baby is born, this is known as postpartum thyroiditis (PPT). Therefore, it is important for new mums to know about this condition and to have their thyroid checked if typical symptoms occur.¹⁴

• How is PPT treated?

If a woman has hypothyroidism but is not experiencing symptoms or planning another child it is not always necessary to treat the PPT, however they will require another check up between four and eight weeks after diagnosis. However, if a woman is experiencing the symptoms of PPT or is planning a subsequent pregnancy then they are usually treated with levothyroxine.¹¹

• Is PPT a permanent condition?

PPT is not necessarily a permanent condition, the majority of women find that their thyroid gland works as normal within a year of having their baby. However, in some cases women will develop permanent hypothyroidism which will then require long term treatment.¹¹

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Thyroid dysfunction in children

Thyroid problems in children can affect both physical and mental development which in turn can impact a child's social and learning skills. Therefore, it is vital that parents understand the signs and symptoms of thyroid dysfunction. It is important to remember that treatments are available and early intervention is essential to avoid long term issues.¹⁷

Children can be born without a properly working thyroid gland or they may develop problems with the functioning of their thyroid, like adults, as a result of any of the following: too little iodine in their diet, an autoimmune disease (such as Hashimoto's thyroiditis or Graves' disease) or injury to their thyroid gland.

Hypothyroidism symptoms in children

The most common cause of acquired hypothyroidism in children and teenagers is a condition called Hashimoto's thyroiditis where the body's immune system attacks the thyroid gland and interferes with the production of thyroid hormone.¹⁸ The signs of hypothyroidism in children can vary depending on their age when the problem starts.

- Babies may be jaundiced for longer than usual (see section on congenital hypothyroidism)¹⁷
- Older children may experience stunted growth in terms of their bones or teeth¹⁷
- Children of school age may experience learning difficulties and puberty may be delayed



How is hypothyroidism in children diagnosed?

Hypothyroidism in children is often identified through blood tests.¹⁷

How is hypothyroidism in children treated?

The goal of hypothyroidism treatment in children is to replace the missing thyroid hormone. Levothyroxine, the mainstay of treatment in adults, is also recommended for use in children. However, the dose is tailored to match the specific weight and needs of the child.¹⁷

Hyperthyroidism symptoms in children

The autoimmune disorder Graves' disease is responsible for almost all the cases of hyperthyroidism in children. However, Graves' disease tends to be more common in teenagers and generally affects more girls than boys.¹⁷

Graves' disease in children can often be difficult to identify because it develops slowly. However, there are common signs and symptoms to be aware of. These include: changes in behaviour and school performance, sleeplessness, restlessness, irritability and needing to get up in the night to go to the bathroom.¹⁷

Other common signs include an enlarged thyroid gland, trembling hands, and an increased appetite but combined with weight loss, diarrhoea and staring eyes.¹⁷

How is hyperthyroidism in children treated?

The goal of treatment in children with hyperthyroidism is to reduce the amount of thyroid hormone present in the blood stream. In children who experience side effects from anti-thyroid medications, surgery may be the preferred option.¹⁷ Treatment of hyperthyroidism in children is as effective as it is in adults. However, radioactive iodine therapy is unlikely to be used as the long term effects in children and teenagers are not known.

It is essential that children diagnosed with thyroid problems receive the support of their families to ensure they take their medication regularly and understand their condition. It is also recommended that your child's school is informed so that they are aware of the child's diagnosis and medication requirements.



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Frequently Asked Questions

• How often should I have my child's thyroid checked?

If your child has been diagnosed with a thyroid disorder, it is important to keep track of their thyroid hormone levels. Doctors will often recommend that a child has blood tests every three to six months in order to do this.¹⁸

• Why is it important to monitor my child's thyroid?

Failure to regularly monitor a child's thyroid function may result in either hypothyroidism or hyperthyroidism going unnoticed and untreated. This can have a serious effect on the development of your child.

• What effect will hyper/hypothyroidism have on my child's life/learning and development?

The presence of hypothyroidism in children can have a serious effect on learning ability if left unchecked.¹⁹ In children with hyperthyroidism, the symptoms of the condition such as sleeplessness and irritability may have a negative impact on your child's social development and learning.

• Are thyroid problems preventable?

It is difficult to prevent hyper - or hypothyroidism especially if you or your child has a condition that pre-disposes you to a thyroid disease. However, ensuring that you and your child have a diet with sufficient iodine will help preventing thyroid disorders related to iodine deficiency. For further information, consult your doctor.

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Your personal hyperthyroidism checklist

If you **AGREE** with 5 or more of these statements, **tell your doctor about your symptoms**. There is a possibility that you may be suffering from hyperthyroidism.

	Yes	No		Yes	No
I feel anxious and irritable a lot of the time	<input type="radio"/>	<input type="radio"/>	I have been sweating more than usual	<input type="radio"/>	<input type="radio"/>
My hands and fingers tremble slightly	<input type="radio"/>	<input type="radio"/>	I often feel weak	<input type="radio"/>	<input type="radio"/>
My skin and hair seem to be getting thinner, and my nails are growing faster than they used to	<input type="radio"/>	<input type="radio"/>	Everything in my body seems to have speeded up, including my bowel functions and metabolism, and my weight is going down despite increased appetite	<input type="radio"/>	<input type="radio"/>
My heart rate has become quite fast	<input type="radio"/>	<input type="radio"/>	My menstrual cycle has changed	<input type="radio"/>	<input type="radio"/>
My eyes appear to be staring, or bulging	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>

Your personal hypothyroidism checklist

If you answer 5 of these questions with **YES**, **tell your doctor about your symptoms**. There is a possibility that you may be suffering from hypothyroidism.

	Yes	No		Yes	No
I feel tired and sleepy most of the time, with little energy and stamina	<input type="radio"/>	<input type="radio"/>	I notice a lot of negative thought and feel depressed	<input type="radio"/>	<input type="radio"/>
My brain works less efficiently, my thinking is foggy, my concentration and memory are poor	<input type="radio"/>	<input type="radio"/>	My motions and reflexes have become slow	<input type="radio"/>	<input type="radio"/>
Everything in my body seems to have slowed down, including my bowel functions and my metabolism, and my weight is going up	<input type="radio"/>	<input type="radio"/>	I feel stiffness and aches in my muscles and bones as well as a numb feeling in my hands	<input type="radio"/>	<input type="radio"/>
My skin and my hair have become dry, pale and puffy, my nails are brittle	<input type="radio"/>	<input type="radio"/>	My blood pressure has gone up and my heart rate is slow	<input type="radio"/>	<input type="radio"/>
I feel cold most of the time (even when other people are feeling comfortable)	<input type="radio"/>	<input type="radio"/>	My cholesterol level has gone up	<input type="radio"/>	<input type="radio"/>

Useful resources

If you would like further information regarding thyroid dysfunction before, during or after pregnancy, please visit:

www.thyroidweek.com

Thyroid Federation International:

<http://www.thyroid-fed.org>

Endocrine Society Clinical Practice Guidelines:

<http://www.endo-society.org/guidelines/final/upload/Clinical-Guideline-Management-of-Thyroid-Dysfunction-during-Pregnancy-Postpartum.pdf>

The information in this Booklet is not intended as a substitute for informed medical advice. You must consult a suitable qualified healthcare professional on any problem or matter which is covered by any information in this booklet before taking any action.

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