

Pregnancy and breast-feeding among women with Wilson's disease

Conception and contraception in chronic liver diseases in general and specifically in Wilson's disease

It is well known that patients with Wilson's disease often experience irregular menstrual cycles, such as missed periods, infrequent periods or irregular cycles. This can make conception difficult. Additionally, in non-treated Wilson's disease patients miscarriages have been observed. However, this normalises with therapy.

A good copper metabolism and a normalised liver function are the best basic preconditions if you want to become pregnant!

If you have questions concerning genetics or family-screening, you should talk to your gynecologist and take into account a genetic counselling and involve a Wilson expert.

Generally speaking, pregnancies in Wilson's disease patients undergoing therapy are normal!

Pregnancy prevention in Wilson's disease is possible through hormone-containing (non-copper) intrauterine devices, vaginal rings or the birth control pill, although the use of hormonal contraceptives with a high oestrogen content is not recommended, as these can disturb your liver function tests. If one starts with hormonal contraception ("the pill") or the preparation is changed, your liver function readings should be checked at short notice.

Problems and dangers for mother and child with chronic liver diseases in general and with Wilson's disease in particular

In reference to pregnancy, liver symptoms or severe neurologic symptoms are of particular importance. In rare cases, Wilson's disease patients with decompensated cirrhosis of the liver (i.e. abdominal fluid or jaundice), should be advised against pregnancy.

This should always be discussed with your personal Wilson's disease centre since general recommendations are not possible.

After birth, neurological and psychiatric patients in particular may have problems caring for their children. Unfortunately, sometimes a pregnancy also leads to irregular intake of tablets, often for fear of side effects and possible damage to the unborn child. This can have life-threatening consequences for the health of mother and child. Anti-copper drugs must not be stopped during conception, pregnancy or breastfeeding.

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Which medicine can be used during pregnancy?

All standard of care drugs (namely D-penicillamine, Trientine and Zinc salts) used to treat Wilson's disease can also be used during pregnancy. Discontinuation of the medication is dangerous because the mother's liver function can deteriorate severely and irreversible neurologic deterioration has been observed.

D-Penicillamine

D-Penicillamine has been in use for a very long time. Therefore, we have the most experience with it during pregnancy, as it was also used in the past for many other illnesses during pregnancy. Both in animal experiments and in humans, it has been described to have adverse effects on fertility, however, in humans - especially in Wilson's children - these have not been observed.

→ As a purely precautionary measure and to account for the copper need of the fetus, the dose should therefore be reduced to 600-900 mg if possible. In the later trimesters of pregnancy, the main aim is to prevent that a copper deficiency occurs in the child and to avoid wound-healing problems. After delivery, pre-conception doses should be restored.

Trientine

Animal studies have also described fertility-damaging effects when Trientine is taken. These experiments were also carried out with very high doses of the drug and here, too, it is debated whether the resulting low copper levels are not to blame for these malformations. Again, no negative effects have been documented in humans.

→ Under Trientine, the same recommendation as for D-Penicillamine applies in terms of a dose reduction to ideally 2-3 tablets or capsules per day. After delivery, pre-conception doses should be restored.

Zinc

Zinc has not been described to have any adverse effects on fertility in humans. No dose adjustments are required.

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Which medicine should be given during pregnancy?

If you become pregnant while taking D-Penicillamine or Trientine the child will not suffer! Even in pregnant women who do not have Wilson's disease, not every child is born healthy.

For pregnancies with zinc, there are also studies that show that pregnancies under this therapy are normal.

In principle, the therapy in progress at the start of the pregnancy should be continued. If you are pregnant, a change of medication should be avoided if possible!

All established therapies are safe for both mother and child!

For a long time, it was discussed among doctors whether, if possible, a woman should switch to zinc before pregnancy. This is certainly not absolutely necessary. However, the principle applies that Wilson's disease patients can become pregnant with their therapy if they are well adjusted. They should not necessarily attempt a change in therapy beforehand.

→ Liver function readings should be stable and a steady copper depletion should be achieved; in the initial copper depletion phase, soon after Wilson's disease is diagnosed, pregnancy should be avoided as far as possible.

It is important that your therapy is not interrupted during pregnancy!

Pregnancy in advanced liver cirrhosis

If you have a WD-related cirrhosis and large oesophageal varices, pregnancy should be followed in a highly experienced centre. When planning a pregnancy, a planned gastroscopy is advised to see, if there are any varices and how severe they are. The presence of large varices imply significant portal hypertension, which is a consequence of cirrhosis, and might be an additional risk factor for pregnancy outcomes.

In these cases, experts will have to take into account all individual aspects in advising how to proceed and especially which kind of parturition can be advised for mother's and child's best.

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Breastfeeding

Breastfeeding under drug therapy with D-Penicillamine, Trientine or zinc is possible in consultation with your doctor!

You should never stop your WD medication for breastfeeding, as medication withdrawal will put you at risk of acute hepatic and neurological deterioration.

As no solid data is available regarding drug passing into the mother's milk, a risk-benefit evaluation should be taken into account whenever a mother with Wilson's disease is willing to breastfeed her child. Generally speaking, doctors are more prone to advise against breastfeeding, despite the fact that some reports have shown normal copper levels in milk under medication. However, a mother always decides for herself whether she wants to breastfeed her child or not.

→ Many mothers with Wilson's disease breastfeed without side effects. Nevertheless, D-Penicillamine and Trientine may affect the child and may lead to copper deficiency which can cause disturbances of the child's blood panel. Thus, this should be checked by the paediatrician, and if this occurs, weaning should be advised.

Summary

- Fertility problems are observed in patients with Wilson's disease, mainly among non-controlled or non-diagnosed cases. If your disease is well controlled with therapy, fertility problems occur much less frequently.
- Pregnancy is possible with all established therapies.
- If your Wilson's disease is stable, your liver function is good, and you have no cirrhosis and portal hypertension, no extraordinarily high risks are to be expected in the case of pregnancy.
- Drug therapy must never be interrupted during pregnancy, as this could be a life-threatening risk both for the mother and the child.
- Contact with a Wilson's disease experienced centre is recommended, especially during pregnancy.
- Natural breastfeeding is feasible among patients with WD; however, a risk-benefit global assessment should be advisable.



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