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Human Chorionic Gonadotropin

Human chorionic gonadotropin (hCG) is a hormone produced by the placenta during pregnancy. It helps thicken your uterine lining to support a fetus and tells your body to stop menstruating. HCG levels rise after conception and continue to rise until about 10 weeks in pregnancy.

Overview

What is human chorionic gonadotropin?

Human chorionic gonadotropin (hCG) is a hormone the placenta makes during pregnancy. It's sometimes called the pregnancy hormone because it plays a special role in pregnancy, especially in the first trimester. HCG is also what pregnancy tests detect to confirm a pregnancy. A blood test or a urine test measures your hCG level.

HCG increases quickly (almost doubling every three days) for the first eight to 10 weeks of pregnancy. Healthcare providers sometimes look at how quickly your hCG levels rise in early pregnancy to confirm that the pregnancy is progressing.

High hCG levels in someone who isn't pregnant may be a sign of cancer. In rare cases, germ cell tumors or other cancer cells can cause your body to make hCG. For this reason, healthcare providers sometimes use an hCG test to help diagnose cancer, track cancer treatment or check for cancer recurrence.

Function

What does human chorionic gonadotropin do?

HCG is the first pregnancy hormone the placenta makes after conception. It plays an important role in telling the rest of your body that you're pregnant. It tells your body to stop menstruating, and then signals your body to produce hormones like progesterone and estrogen.

Progesterone and estrogen are two other hormones that are necessary for pregnancy and fetal development. Progesterone supports pregnancy by thickening your uterine lining and keeping your uterus relaxed. Estrogen helps with fetal organ development, increases blood flow to the placenta and helps prepare your body for labor.

You can think of hCG as the first hormone that supports early pregnancy — then it calls in the other hormones to help.

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When does my body make hCG?

Everyone has small amounts of hCG in their bodies (almost undetectable levels). But when you're pregnant, hCG levels rise quickly, and to levels that typically only exist in pregnancy. HCG peaks around 10 weeks of pregnancy, and then gradually falls until childbirth.

What level of hCG indicates pregnancy?

An hCG level above 25 milli-international units per milliliter (mIU/mL) usually means you're pregnant. But it's not a guarantee. Your provider may recommend checking your hCG level again in a few days to see if the level rises, which would confirm a pregnancy.

What are normal hCG levels by week in pregnancy?

This chart shows how your hCG levels rise quickly and steadily in the first trimester before falling:

Weeks since last menstrual period
3
hCG levels (mIU/mL) 5-50
4
hCG levels (mIU/mL) 5-426
5
hCG levels (mIU/mL) 18-7,340
6
hCG levels (mIU/mL) 1,080-56,500
7 to 8

Weeks since last menstrual period
hCG levels (mIU/mL) 7,650-229,000
9 to 12
hCG levels (mIU/mL) 25,700-288,000
13 to 16
hCG levels (mIU/mL) 13,300-254,000
17 to 24
hCG levels (mIU/mL) 4,060-165,400
25 to 40
hCG levels (mIU/mL) 3,640-117,000

These numbers are just a guide. Your levels may rise differently. It's not the number that matters as much as how the number changes. Your healthcare provider will let you know if your hCG levels need to be checked and what the test results mean for your pregnancy. Remember, healthy pregnancies may have lower-than-average hCG levels.

How often do you test in pregnancy?

HCG levels aren't routinely checked during pregnancy. Healthcare providers may check hCG levels in the first trimester if there's concern about the pregnancy progressing. If your hCG level is lower than average, your provider will test your hCG level again in a few days to see if it changes. Some providers measure hCG as part of prenatal genetic testing.

Conditions and Disorders

How do you test hCG levels?

A blood test or a urine test can measure hCG:

- **Blood tests.** Your healthcare provider takes a blood sample from your arm to see how much hCG is in your blood. A blood test can detect hCG earlier. It shows the amount of hCG with a number.
- **Urine tests.** A urine test uses a sample of your pee to see if hCG is present, but it doesn't show how high or low the level is. You typically must wait until a missed period to get an accurate result. You can do this type of test at home or at your provider's office.

You've taken an hCG test if you've used an at-home pregnancy test. These tests are positive if hCG is in your pee and negative if there isn't hCG in your pee.

Keep in mind, a low hCG level doesn't diagnose anything. It's a tool to detect potential issues. If your healthcare provider is concerned about your hCG level, they'll test your levels again in two or three days. Your healthcare provider can also use prenatal ultrasound to confirm the pregnancy or measure how far along in pregnancy you are.

What do low levels mean?

Low or declining hCG levels could mean any of the following have happened:

- Blighted ovum
- Miscarriage
- Ectopic pregnancy
- You don't know when you had your last period

If your hCG level is low for the gestational age of the pregnancy, your healthcare provider will recheck your hCG levels in two or three days or perform an ultrasound to confirm your pregnancy.

What do high levels mean?

High levels of hCG could mean:

- The pregnancy is further along than you think
- You're pregnant with twins, triplets or more
- Molar pregnancy or other gestational trophoblastic diseases (GTD)

In rare cases, certain types of cancer can also increase hCG levels in your blood.

When should I see my healthcare provider?

Most of the time, you're unaware of your hCG level unless you see test results in your online medical records. Healthcare providers typically check hCG early in pregnancy but don't continue to check it unless there's a reason to. Contact your provider if you have questions about your hCG test results.

Additional Common Questions

How is hCG used for fertility?

An hCG injection can help you ovulate if you're using IVF (in-vitro fertilization) or IUI (intrauterine insemination) to get pregnant. You may also need hCG injections after ovulation to help support implantation. If you have a history of infertility, your provider may monitor hCG levels earlier and more closely.

What does hCG do in males?

HCG helps treat conditions like:

- Low testosterone
- Male infertility
- Undescended testicles

A note from Cleveland Clinic

Human chorionic gonadotropin (hCG) is known as the pregnancy hormone. Its claim to fame is being the hormone that at-home pregnancy tests check for. Your body produces a lot of hCG during the first trimester to support your growing baby. Your hCG levels provide valuable insight into your pregnancy and may alert your obstetrician to potential issues. But if your pregnancy is going well, chances are you won't ever know your hCG levels. Contact your healthcare provider if you have questions about your hCG levels or what they mean.

Experts You Can Trust

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References

Cleveland Clinic's health articles are based on evidence-backed information and review by medical professionals to ensure accuracy, reliability and up-to-date clinical standards.

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