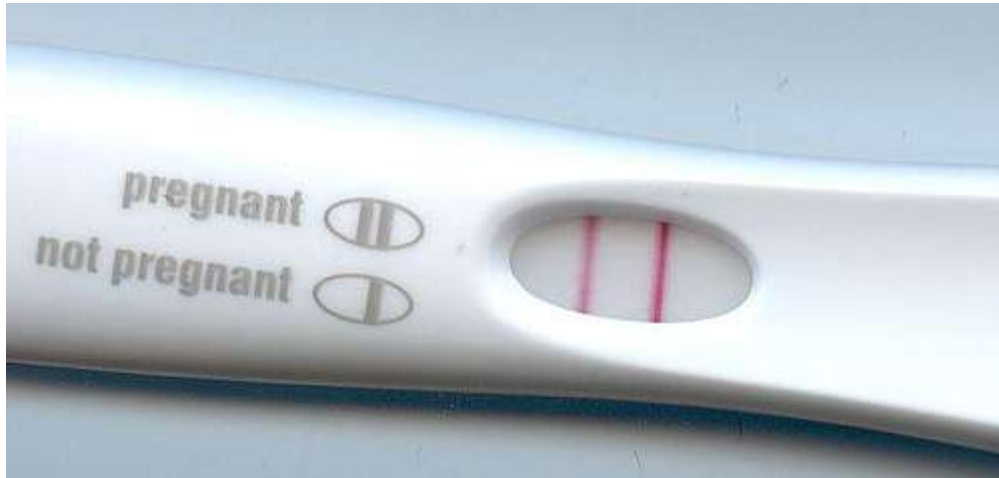


HUMAN CHORIONIC GONADOTROPIN (HCG)



Patient: What is HCG?

Doctor: HCG is commonly known as pregnancy test.

Patient: Oh. What is being tested?

Doctor: Human chorionic gonadotropin (HCG) is a hormone produced in the placenta of a pregnant woman. A pregnancy test is a specific blood or urine test that can detect hCG and confirm pregnancy. This hormone can be detected 10 days after a missed menstrual period, the time period when the fertilized egg is implanted in the woman's uterus. With some methods, hCG can be detected even earlier, at one week after conception.

During the early weeks of pregnancy, HCG is important in maintaining function of the corpus luteum. Production of hCG increases steadily during the first trimester (8–10 weeks) of a normal pregnancy, peaking around the 10th week after the last menstrual cycle. Levels then fall slowly during the remainder of the pregnancy. hCG is no longer detectable within a few weeks after delivery. hCG is also produced by some germ cell tumors and increased levels are seen in gestational trophoblastic disease.

Patient: How is it used?

Doctor: Qualitative HCG testing detects the presence of HCG and is routinely used to confirm pregnancy.

Quantitative HCG testing, often called beta HCG, measures the amount of hCG present in the blood. It may be ordered to help diagnose an ectopic pregnancy, to help diagnose and monitor a pregnancy that may be failing, and/or to monitor a woman after a miscarriage.

A quantitative HCG test may also be ordered to help diagnose gestational trophoblastic disease or germ cell tumors of the testes or ovary. It may be ordered at regular intervals to monitor the effectiveness of treatment for these conditions and to detect tumor recurrence.

Patient: When is it ordered?

Doctor: A qualitative urine or blood hCG test is ordered as early as 10 days after a missed menstrual period when a woman wishes to confirm whether or not she is pregnant (some methods can detect hCG even earlier, at one week after conception).

Several quantitative blood HCG tests may be ordered over several days to rule out an ectopic pregnancy or to monitor a woman after a miscarriage.

Patient: How is the sample collected for testing?

Doctor: hCG is commonly detected in urine. The preferred specimen is a random urine sample collected first thing in the morning. HCG can also be measured in blood drawn from a vein in the arm.

Patient: Are there any test preparations needed?

Doctor: No test preparation is needed. However, do not drink large amounts of fluid before collecting a urine sample for a pregnancy test. This is because overly dilute urine may result in a false negative.

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Patient: What does the result mean?

Doctor: In non-pregnant women, HCG levels are normally undetectable. During early pregnancy, the hCG level in the blood doubles every two to three days. Ectopic pregnancies usually have a longer doubling time. Those with failing pregnancies will also frequently have a longer doubling time or may even show falling HCG concentrations. HCG concentrations will drop rapidly following a miscarriage. If hCG does not fall to undetectable levels, it may indicate remaining hCG-producing tissue that will need to be removed.

During treatment for gestational trophoblastic disease or a germ cell tumor, a falling hCG level generally indicates that the condition is responding to treatment, while rising levels may indicate that it is not responding to therapy. An increased HCG level after treatment may indicate a recurrence of disease.

Patient: Are there any test preparations needed?

Doctor: No test preparation is needed. However, do not drink large amounts of fluid before collecting a urine sample for a pregnancy test. This is because overly dilute urine may result in a false negative.

QUESTIONS:

1. **When is a blood HCG test ordered instead of a urine HCG?**
2. **What is an ectopic pregnancy?**
3. **What is gestational trophoblastic disease?**