



Qualitative human chorionic gonadotropin (hCG) home Pregnancy Test

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Introduction

Pregnancy is the period used to describe the duration in which a fetus grows inside a woman's uterus.

Aim

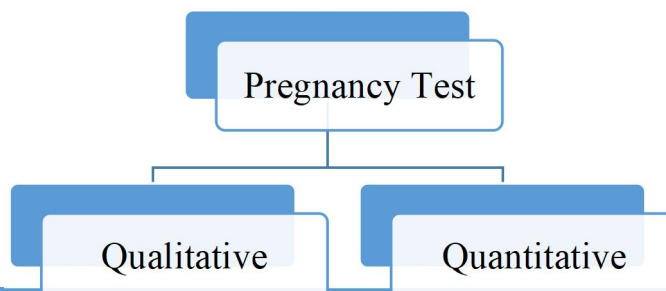
To notice human chorionic gonadotropin (hCG) in urine for the diagnosing of pregnancy.

Requirements

- Urine
- Pregnancy test cassette

Background Information

Human chorionic gonadotropin is a hormone produced by the placenta in short after implantation of the embryo into the uterine wall and purpose to maintain the pregnancy during the early state. Since hCG is present in the urine of pregnant women, it is an excellent marker for confirming pregnancy.

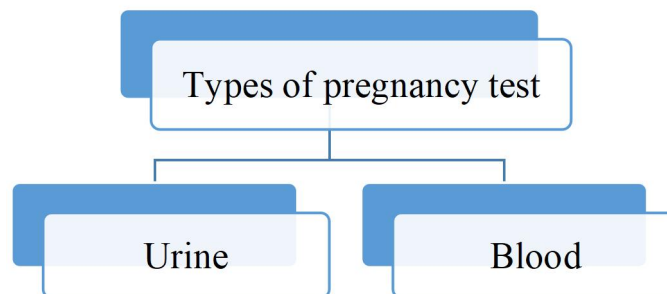


hCG

- Hormone
- Glycoprotein
- Composed of 2 subunits
- First hormonal signal from placenta to pregnant women
- Clinical tool of pregnancy observing

Principle

- It is created on the specimen migrating by capillary action along the membrane and encountering a monoclonal anti-hCG antibody.
- If the urine sample contains hCG, a complex is formed.
- Color change at the control line indicates that the test kit is working properly.



Procedure

Home pregnancy kits are easy to use. Always 100% follows the manufacturer's instructions.

Testing Environment

- A clear background is must to observe the result properly.

Specimen Collection and Preparation

- Collect at least one mL of urine in a clean, dry container with no preservatives.
- While specimens may be collected at any time of the day.
- The specimen of choice is the first morning sample as it has the highest concentration of hCG, is less likely to produce false negative results.

Specimen Storage

- Collected urine stored in the scientific manner.
- Stored specimen thawed and mixed properly before testing.
- If you want 100% accuracy in the result means use only fresh specimen.

Steps

- A sample is introduced to the pregnancy kit by briefly dipping the strip in urine or urine is applied to a specific location on the test cassette.
- Appearance of a coloured line or absence of coloured line.
- Results are rapid. Most of the kits take only a one minute to complete.
- The absence of the control line invalidates the test.

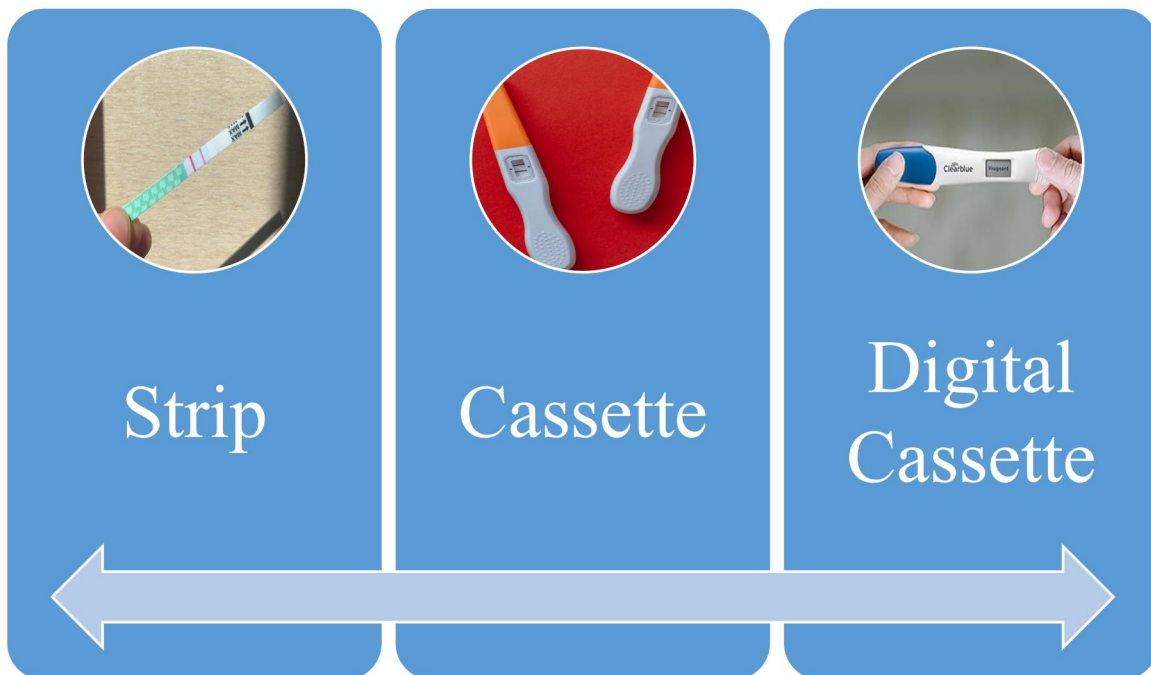


Fig: Pregnancy test kits

Merits

- Quick result.
- Inexpensive test kit.
- There is no need scientific knowledge to use.

Limitations

- Accuracy in user's hand.
- The hCG card test is a qualitative test, therefore we are unable to find out the quantitative value of sample.
- First morning specimen collection.

- Negative results may occur when the level of hCG are below the sensitivity level of the test.
- A number of conditions other than pregnancy, including trophoblastic disease and non-trophoblastic neoplasms cause elevated levels of hCG.

Results

Positive

Color change visible at both Control (C) line and Test (T) line, background remains colorless.

Negative

Color change visible only at Control (C) line and not at Test (T) line, background remains colorless.

Precautions

- 1) For single use only. Do not reuse.
- 2) Test kits are stored at room temperature and must be kept in their sealed pouch until testing.
- 3) Do not use freezer for storage.
- 4) Test kits should be kept away from direct sunlight, moisture and heat.
- 5) Test kits should not be used past the expiration date.
- 6) Various manufactures will require different amounts of urine sample and may require a different amount of time duration after starting the test to interpret the results. Always consult the specific package instructions for the test kit being used.
- 7) Dispose of all specimens and used cassettes as potentially biohazardous.

Table 1: Urine Collection

S.No	Name	Date of Wedding	Sample Collection	Native	Present Address
1	Mrs. XX	12-12-2022	12-12-2023	Tirunelveli - 01	Tuticorin - 05

Glossary

Urinalysis: Testing your urine

Amniocentesis: Examination amniotic fluid

Home Delivery: Delivery at home

Abbreviation

PU - Passed Urine

PG - Pregnant

HPT - Home Pregnancy Test

BMI - Body Mass Index

DOB - Date of Birth

UTI - Urinary tract infection

Reference

Fournier T. Human chorionic gonadotropin: Different glycoforms and biological activity depending on its source of production. *Ann Endocrinol (Paris)*. 2016 Jun;77(2):75-81.

Nwabuobi, C.; Arlier, S.; Schatz, F.; Guzeloglu-Kayisli, O.; Lockwood, C.J.; Kayisli, U.A. hCG: Biological Functions and Clinical Applications. *Int. J. Mol. Sci.* 2017, 18, 2037.