

Subject: Human Chorionic Gonadotropin Testing

Guideline #: CG-LAB-27

Status: Reviewed

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Description

This document addresses laboratory testing of human chorionic gonadotropin (hCG) in urine or blood.

Clinical Indications

Medically Necessary:

Urine hCG testing is considered **medically necessary** for confirming the presence or absence of pregnancy.

Blood hCG testing is considered **medically necessary** for any of the following indications:

- A. Confirming presence or absence of pregnancy; **or**
- B. Screening pregnant individuals for fetal abnormalities; **or**
- C. Hypertensive disorders of pregnancy; **or**
- D. Gestational trophoblastic neoplasia or molar pregnancy; **or**
- E. Evaluation of germ cell tumors; **or**
- F. Testicular cancer or suspicious testicular mass; **or**
- G. Ovarian cancer; **or**
- H. Pelvic mass; **or**
- I. Mediastinal mass; **or**
- J. Retroperitoneal mass; **or**
- K. Thymomas or thymic cancer; **or**
- L. Cancer of unknown primary

Not Medically Necessary:

Urine or blood hCG testing is considered **not medically necessary** when the above criteria are not met.

Coding

The following codes for treatments and procedures applicable to this guideline are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When services are Medically Necessary:

CPT

84702 Gonadotropin, chorionic (hCG); quantitative

ICD-10 Diagnosis

C37	Malignant neoplasm of thymus
C38.1-C38.3	Malignant neoplasm of mediastinum
C38.8	Malignant neoplasm of overlapping sites of heart, mediastinum and pleura
C45.1	Mesothelioma of peritoneum
C48.0-C48.8	Malignant neoplasm of retroperitoneum and peritoneum
C56.1-C56.9	Malignant neoplasm of ovary
C57.4	Malignant neoplasm of uterine adnexa, unspecified
C58	Malignant neoplasm of placenta
C62.00-C62.92	Malignant neoplasm of testis
C75.3	Malignant neoplasm of pineal gland
C7A.091	Malignant carcinoid tumor of the thymus
C78.1	Secondary malignant neoplasm of mediastinum
C78.6	Secondary malignant neoplasm of retroperitoneum and peritoneum
C79.60-C79.63	Secondary malignant neoplasm of ovary
C79.82	Secondary malignant neoplasm of genital organs
C80.0-C80.1	Malignant neoplasm without specification of site
D15.0	Benign neoplasm of thymus
D39.2	Neoplasm of uncertain behavior of placenta
D49.59	Neoplasm of unspecified behavior of other genitourinary organ
J98.59	Other diseases of mediastinum, not elsewhere classified
N89.8	Other specified noninflammatory disorders of vagina
N94.89	Other specified conditions associated with female genital organs and menstrual cycle
O00.00-O00.91	Ectopic pregnancy
O01.0-O01.9	Hydatidiform mole
O02.0-O02.9	Other abnormal products of conception
O03.0	Genital tract and pelvic infection following incomplete spontaneous abortion
O03.37	Sepsis following incomplete spontaneous abortion
O03.5	Genital tract and pelvic infection following complete or unspecified spontaneous abortion
O03.87	Sepsis following complete or unspecified spontaneous abortion

O09.A0-O09.A3	Supervision of pregnancy with history of molar pregnancy
O11.1-O11.9	Pre-existing hypertension with pre-eclampsia
O13.1-O13.9	Gestational [pregnancy-induced] hypertension without significant proteinuria
O14.00-O14.95	Pre-eclampsia
O15.00-O15.9	Eclampsia
O16.1-O16.9	Unspecified maternal hypertension
O20.0	Threatened abortion
O44.20-O44.53	Partial placenta previa, low lying placenta without or with hemorrhage
Q53.13	Unilateral high scrotal testis
Q53.23	Bilateral high scrotal testes
R10.2	Pelvic and perineal pain
R19.00-R19.09	Intra-abdominal and pelvic swelling, mass and lump
R39.83-R39.84	Non-palpable testicle(s)
R93.5	Abnormal findings on diagnostic imaging of other abdominal regions, including retroperitoneum
R93.811-R93.89	Abnormal findings on diagnostic imaging of testis, other specified body structures
R97.8	Other abnormal tumor markers
Z03.71-Z03.79	Encounter for suspected maternal and fetal conditions ruled out
Z31.7	Encounter for precreative management and counseling for gestational carrier
Z32.00-Z32.02	Encounter for pregnancy test
Z34.00-Z34.93	Encounter for supervision of normal pregnancy
Z36.0-Z36.9	Encounter for antenatal screening of mother
Z83.438	Family history of other disorder of lipoprotein metabolism and other lipidemia
Z85.068-Z85.09	Personal history of malignant neoplasm of small intestine, pancreas, other digestive organs
Z85.238-Z85.29	Personal history of other malignant neoplasm of thymus, other respiratory and intrathoracic organs
Z85.43	Personal history of malignant neoplasm of ovary
Z85.47	Personal history of malignant neoplasm of testis
Z86.002	Personal history of in-situ neoplasm of other and unspecified genital organs

When services are Not Medically Necessary:

For the procedure code listed above for all other diagnoses not listed.

Discussion/General Information

Human chorionic gonadotropin (hCG) is a hormone made by the placenta during pregnancy. It signals the body to stop menstruation and promotes thickening of the uterine lining to support a growing embryo. During pregnancy, hCG can be found in the amniotic fluid and in the pregnant person's blood and urine. Part of the hCG molecule, the beta subunit (β -hCG), is degraded in the kidney to make a core fragment that can be measured by urine hCG tests such as a typical at-home pregnancy test.

Measuring hCG levels in blood or urine is done to identify a pregnancy and can also be useful to confirm pregnancy loss. hCG is first found in urine or blood around 11 days after conception. hCG levels are the highest toward the end of the first trimester (10 weeks of pregnancy), then decline for the rest of the pregnancy. hCG disappears after birth and is not normally detectable in a healthy non-pregnant person.

hCG testing may also be performed during pregnancy to detect fetal abnormalities. A 2020 committee opinion by the American College of Obstetricians and Gynecologists recommended testing pregnant persons in the first trimester of pregnancy (10 to 14 weeks of gestation) for hCG along with pregnancy associated plasma protein A, and alpha-fetoprotein (AFP). A risk estimate for common fetal chromosomal abnormalities (generally trisomies 13, 18, and 21) can be calculated using these test results along with other information known about the pregnant person such as age, history of aneuploidy, weight, race, and number of fetuses. hCG measurements may also be performed during the second trimester as part of a combined screening for chromosome abnormalities and neural tube defects. This screening includes testing parental serum levels of hCG, AFP, unconjugated estriol and/or inhibin-A.

Hypertensive disorders of pregnancy can lead to adverse outcomes for both the pregnant individual and the fetus. hCG levels, especially during the second trimester, are valuable clinical predictors of preeclampsia (Zhang, 2021). High hCG levels are associated with a high incidence of pregnancy complications including preeclampsia, placental abruption and prenatal death (Huang, 2022).

In addition to pregnancy, hCG may be produced in some disease conditions. Gestational trophoblastic disease (GTD) is a condition in which a tumor develops from abnormal tissue that forms after conception. The most common type of GTD is hydatidiform mole (HM), also called a molar pregnancy. HM is a benign premalignant disease. Malignant forms of GTD, known as gestational trophoblastic neoplasia, include invasive mole, choriocarcinoma, placental site trophoblastic tumor, and epithelioid trophoblastic tumor. hCG is a sensitive marker to indicate the presence or absence of these diseases before, during, and after treatment.

Elevated levels of hCG when a person is not pregnant may indicate the presence of extra-uterine cancers such as germ cell tumors. Germ cells normally form sperm or eggs. A germ cell tumor (GCT) arises from these reproductive cells. These occur most commonly in the testes or ovaries. GCTs account for approximately 95% of testicular cancers but they occasionally originate in extragonadal sites such as the mediastinum or retroperitoneum. GCTs can be benign or malignant. When GCTs involve the testes, they can be further divided into seminomas and nonseminomatous tumors (also known as nonseminomas). Seminomas are typically located in the testes while nonseminomas are cancerous tumors commonly found in the pineal gland in the brain, the mediastinum, or the abdomen. Elevation of hCG is found in approximately 14% of individuals with stage I seminomas before orchiectomy and in about half of individuals with metastatic seminomas. Approximately 40% to 60% of those with nonseminomas have an elevated blood hCG.

A 2010 guideline on Uses of Serum Tumor Markers in Adult Males with Germ Cell Tumors, by the American Society of Clinical Oncology (ASCO) provided recommendations on appropriate uses for serum markers of GCTs. The guideline recommends measuring 3 markers (hCG, AFP and lactate dehydrogenase [LDH]) before and after orchiectomy to stage patients with testicular nonseminomas, and before chemotherapy to stage those with extragonadal nonseminomas. They also recommended measuring hCG and AFP shortly before retroperitoneal lymph node dissection and at the start of each chemotherapy cycle for nonseminomas, and periodically to monitor for relapse. The guideline recommended measuring postorchiectomy hCG and LDH for individuals with seminoma who had elevated levels of these markers prior to orchiectomy. They also recommended measuring hCG and AFP to monitor for relapse in individuals treated for advanced seminoma.

In 2019 the American Urological Association (AUA) published guidelines for the Diagnosis and Treatment of Early Stage Testicular Cancer. These guidelines recommend testing for elevated hCG in individuals with a solid testicular mass that is suspicious for cancer. This testing should be done prior to any treatment, including orchiectomy (moderate recommendation, grade C).

According to NCCN's 2023 guideline for Testicular Cancer, hCG is the most commonly elevated serum tumor marker in testicular cancer. Elevated serum concentrations of hCG may be present with both seminomas and nonseminomas. NCCN states that hCG levels are critical for determining prognosis and assessing treatment outcomes in individuals with testicular GCTs. hCG should be measured before and after treatment and throughout the follow-up period. However, further workup should be considered before initiating treatment for mildly elevated hCG since other factors, including hypogonadism and marijuana use, can cause false positive results.

The NCCN 2023 guideline for Ovarian Cancer states that hCG, along with other tumor markers such as AFP and LDH, may provide important information in the preoperative workup. Ovarian germ cell tumors can cause high levels of hCG while other types of ovarian tumors do not. hCG, AFP, and LDH are markers for malignant germ cell tumors that can be helpful in diagnosis, preoperative planning, and post-treatment monitoring for recurrence.

A mass in the mediastinum often stems from the thymus gland, but could be a GCT. The 2023 NCCN guideline for Thymomas and Thymic Carcinomas recommends hCG testing in the initial evaluation of mediastinal masses in order to rule out a GCT.

Cancers of unknown primary are metastatic tumors whose primary site of origin cannot be determined during standard pretreatment evaluation. The NCCN 2023 guideline for Occult Primary (Cancer of Unknown Primary [CUP]) recommends measurement of hCG when there is a mediastinal or retroperitoneal mass as it may be suggestive of a primary GCT. Identification of a GCT is important as GCTs are effectively treated with combination chemotherapy, and appropriate therapy may lead to cure.

Definitions

Hydatidiform mole: A mass that forms in the uterus early in pregnancy made up of cells from an abnormally developed embryo and placenta.

Mediastinum: The central compartment of the thoracic cavity, especially that between the lungs.

Orchiectomy: Surgery to remove one or both of the testicles.

Peritoneum: The tissue that lines the abdominal wall and covers most of the organs in the abdomen.

Preeclampsia: A condition in pregnancy characterized by high blood pressure, fluid retention and proteinuria.

Retroperitoneum: The area in the back of the abdomen behind the peritoneum.

Trophoblastic: Pertaining to embryonic cells that facilitate attachment to the uterus and formation of the placenta.

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Peer Reviewed Publications:

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Government Agency, Medical Society, and Other Authoritative Publications:

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 - Gestational Trophoblastic Neoplasia (V1.2024). Revised October 27, 2023.
 - Occult Primary (Cancer of Unknown Primary [CUP]) (V1.2024). Revised September 6, 2023.
 - Ovarian Cancer including Fallopian Tube Cancer and Primary Peritoneal Cancer (V2. 2023). Revised June 2, 2023.
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Websites for Additional Information

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β-hCG

hCG

human chorionic gonadotropin

The use of specific product names is illustrative only. It is not intended to be a recommendation of one product over another, and is not intended to represent a complete listing of all products available.

History

Status	Date	Action
Reviewed	02/15/2024	Medical Policy & Technology Assessment Committee (MPTAC) review. Revised Description, References and Websites for Additional Information sections.
Reviewed	05/11/2023	MPTAC review. Replaced "serum" with "blood" in both MN and NMN statements. Updated Discussion/General Information, References, and Websites for Additional Information sections. Updated Coding section; added ICD-10 diagnosis range R19.00-R19.09.
New	02/16/2023	MPTAC review. Initial document development.

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