

Subject: Non-Obstetric Gynecologic Duplex Ultrasonography of the Abdomen and Pelvis in the Outpatient Setting

Guideline #: CG-MED-84

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Description

This document addresses the use of duplex ultrasonography, in the outpatient, gynecologic setting, for the evaluation of conditions of the pelvis and surrounding tissues. A duplex ultrasound is a procedure used to visualize the pattern and direction of blood flow in arteries and veins via real-time images. This document does not address duplex ultrasonography for obstetric indications or infertility-related conditions and treatments.

Note: Please see the following related document(s) for additional information:

- [CG-MED-42 Maternity Ultrasound in the Outpatient Setting](#)
- [CG-MED-56 Non-Obstetrical Transvaginal Ultrasonography](#)

Clinical Indications

Medically Necessary:

Non-obstetric, gynecologic, duplex ultrasonography of the abdomen or pelvis, in the outpatient setting, is considered **medically necessary** when there is a documented health history and physical examination findings that indicate visualization of vascular characteristics is necessary, including but not limited to evaluation or suspicion of the following conditions:

1. Abnormal uterine bleeding; or
2. Endometrial polyps; or
3. Endometriomas; or
4. Neoplasm; or
5. Ovarian or adnexal cysts; or
6. Ovarian torsion; or
7. Pelvic congestion syndrome; or
8. Polycystic ovarian syndrome; or
9. Vascular diseases affecting the pelvic organs (for example, arteriovenous malformations and aneurysms).

Not Medically Necessary:

Non-obstetric, gynecologic, duplex ultrasonography of the abdomen or pelvis, in the outpatient setting, is **not medically necessary** when the criteria above are not met and for all other indications, including but not limited to:

1. Routine screening in asymptomatic individuals*;
2. Repeat evaluation in the absence of a change, or to assess a suspected change, in previously documented health exam findings.

*The term "individual" in this document refers to any person with female reproductive and genitourinary systems, regardless of gender identity.

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 may be Medically Necessary when criteria are met:

CPT

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| 93975 | Duplex scan of arterial inflow and venous outflow of abdominal, pelvic, scrotal contents and/or retroperitoneal organs; complete study |
| 93976 | Duplex scan of arterial inflow and venous outflow of abdominal, pelvic, scrotal contents and/or retroperitoneal organs; limited study |

ICD-10 Diagnosis

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| C51.0-C58 | Malignant neoplasms of the female genital organs |
| D07.0-D07.39 | Carcinoma in situ of endometrium, vulva, vagina, other and unspecified female genital organs |
| D26.0-D26.9 | Benign neoplasms of uterus |
| D27.0-D28.9 | Benign neoplasm of ovary, other and unspecified female genital organs |
| D39.0-D39.9 | Neoplasm of uncertain behavior of female genital organs |
| E28.2 | Polycystic ovarian syndrome |
| I72.8 | Aneurysm of other specified arteries [when specified as uterine or ovarian artery aneurysm] |
| I72.9 | Aneurysm of unspecified site [when specified as uterine or ovarian artery aneurysm] |
| N80.0-N80.9 | Endometriosis |
| N83.00-N83.299 | Ovarian cysts |
| N83.511-N83.53 | Torsion of ovary, ovarian pedicle and fallopian tube |
| N84.0 | Polyp of corpus uteri |
| N85.00-N85.02 | Endometrial hyperplasia |
| N91.0-N91.5 | Absent, scanty and rare menstruation |

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| N92.0-N92.6 | Excessive, frequent and irregular menstruation |
| N93.0-N93.9 | Other abnormal uterine and vaginal bleeding |
| N94.89 | Other specified conditions associated with female genital organs and menstrual cycle [pelvic congestion syndrome] |
| N99.3 | Prolapse of vaginal vault after hysterectomy |
| Q27.39 | Arteriovenous malformation, other site [when specified as an arteriovenous malformation affecting the pelvic organs] |

When services are Not Medically Necessary:

For the procedure and diagnosis codes listed above when criteria are not met, for situations designated in the Clinical Indications section as not medically necessary, or for the following diagnosis codes.

ICD-10 Diagnosis

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|-----------------|---|
| Z01.411-Z01.419 | Encounter for routine gynecological examination |
| Z12.73 | Screening for malignant neoplasm of ovary |

Discussion/General Information

Ultrasonography (ultrasound [US]) generates sound waves that produce images of internal structures of the body to evaluate their form and function. Pelvic US may be performed using a transabdominal or transvaginal approach. A specialized type of US, duplex ultrasonography, combines 2-dimensional real-time imaging with Doppler flow analysis to visualize tissue movement and strain, and is particularly useful in evaluating arteries and veins in order to determine the pattern and direction of blood flow. The American Institute of Ultrasound in Medicine (AIUM) advocates for pelvic US as the first choice imaging modality in evaluation of the uterus and ovaries; however pelvic US "should be performed only when there is a valid medical reason and the lowest possible ultrasonic exposure settings should be used to gain the necessary diagnostic information. In some cases, additional or specialized examinations [such as duplex scanning] may be necessary." While duplex ultrasound is relatively safe and readily available, its added value beyond a basic US is only realized in specific indications (AIUM, 2014).

In 2014, the AIUM in collaboration with the American College of Radiology (ACR), American College of Obstetricians and Gynecologists (ACOG), the Society of Pediatric Radiology (SPR), and the Society of Radiologists in Ultrasound (SRU) published a revised *Practice Parameter for the Performance of Ultrasound of the Female Pelvis* (AIUM, 2014). This practice parameter provides indications for pelvic ultrasonography. Non-obstetrical indications include, but are not limited to, evaluation of the following conditions: 1) pelvic pain, pelvic masses, or signs or symptoms of pelvic infection; 2) endocrine abnormalities (including polycystic ovaries); 3) amenorrhea, delayed menses, or dysmenorrhea (painful menses); 4) abnormal vaginal bleeding; 5) congenital uterine and lower genital tract anomalies; 6) postoperative pelvic surgery complications (such as excessive bleeding, pain, or signs of infection); or 7) incontinence or pelvic organ prolapse. Other recommendations for non-obstetrical US of the pelvis include: 1) follow-up of a previously detected abnormality; 2) further characterization of a pelvic abnormality noted on another imaging study; 3) guidance for interventional or surgical procedures; 4) localization of an intrauterine contraceptive device; 5) preoperative and postoperative evaluation of pelvic structures; and, 6) screening for malignancy in high-risk individuals. The guideline further states, "Spectral, color, and/or power Doppler ultrasound may be useful to evaluate the vascular characteristics of pelvic lesions." Thus, the aforementioned indications do not routinely necessitate the addition of Doppler flow analysis to adequately assess conditions of the female pelvis, unless further characterization of blood is required to evaluate signs or symptoms or aid in diagnosis of a condition.

In a prospective trial investigating 55 individuals diagnosed with polycystic ovarian syndrome (PCOS), and matched controls who did not have a diagnosis of PCOS, ovarian stromal artery pulsatility index (PI) was inversely correlated with the luteinizing hormone/follicle-stimulating hormone ratio. Authors concluded that the addition of Doppler analysis may provide additional information regarding the etiology of PCOS in affected individuals (Adali, 2009).

Aleem and colleagues conducted a prospective analysis of 20 individuals with suspected endometriosis. A total of 24 masses were identified, 16 of which were confirmed endometriomas. A total of 11 out of 16 (69%) of endometriomas showed flow by Doppler. The authors concluded that scattered vascularity, as seen by Doppler imaging, may help differentiate adnexal endometriomas from other lesions of dense vascular distribution, such as ovarian neoplasms or corpora lutea (Aleem, 1995). Another small, retrospective study, also found that blood flow characteristics, as seen by Doppler ultrasound, revealed vascularization of ovarian endometriomas was higher in individuals presenting with pelvic pain than in those who are asymptomatic (Alcazar, 2001).

In a prospective study of 84 individuals with confirmed adnexal masses, 44 were determined to be benign and 40 were malignant. Authors refer to Doppler as the mainstay in diagnosis of ovarian tumors and determined from this study, the specificity and sensitivity of Doppler in differentiating between malignant and benign ovarian tumors, was 84.1% and 97.5%, respectively (Shah, 2013).

The clinical utility of duplex ultrasonography of the abdomen or pelvis has been evaluated for a number of non-obstetric, gynecologic conditions, including, but not limited to assessing vascular characteristics associated with: endometrioses, uterine lesions and neoplasms, ovarian or adnexal cysts, ovarian torsion, pelvic congestion syndrome, PCOS, and vascular diseases affecting the uterus (for example, arteriovenous malformations and aneurysms) (Adali, 2009; Alcázar, 2001; Aleem, 1995; Bhosale, 2016; Expert Panel on Women's Imaging, 2019; He, 2020; Ludovisi, 2019; Shah, 2013; Steenbeek, 2018; Virgilio, 2019). While use of duplex ultrasonography in evaluating some of the aforementioned conditions is not routinely recommended (e.g., PCOS, ovarian torsion and endometriomas), studies have shown clinical utility in select cases where it may aid in differentiating between gynecologic conditions that present with distinct blood flow patterns.

Definitions

Doppler ultrasound: An exam that measures blood flow through your arteries and veins.

Transabdominal: Through or across the abdomen.

Transvaginal: Through the vagina.

References

Peer Reviewed Publications:

1. Adali E, Kolusari A, Adali F, et al. Doppler analysis of uterine perfusion and ovarian stromal blood flow in polycystic ovary syndrome. *Int J Gynaecol Obstet.* 2009; 105(2):154-157.
2. Alcázar JL. Transvaginal colour Doppler in patients with ovarian endometriomas and pelvic pain. *Hum Reprod.* 2001; 16(12):2672-2675.

3. Aleem F, Pennisi J, Zeitoun K, Predanic M. The role of color Doppler in diagnosis of endometriomas. *Ultrasound Obstet Gynecol*. 1995; 5(1):51-54.
4. Ludovisi M, Moro F, Pasciuto T, et al. Imaging in gynecological disease (15): clinical and ultrasound characteristics of uterine sarcoma. *Ultrasound Obstet Gynecol*. 2019; 54(5):676-687.
5. He M, Hu S, Luo H. Ultrasound diagnosis and clinicopathological traits of female genital system malignant lymphomas. *Medicine (Baltimore)*. 2020; 99(34):e21341.
6. Shah D, Shah S, Parikh J, et al. Doppler ultrasound: a good and reliable predictor of ovarian malignancy. *J Obstet Gynaecol India*. 2013; 63(3):186-189.
7. Steenbeek MP, van der Vleuten CJM, Schultze Kool LJ, Nieboer TE. Noninvasive diagnostic tools for pelvic congestion syndrome: a systematic review. *Acta Obstet Gynecol Scand*. 2018; 97(7):776-786.
8. Virgilio BA, De Blasis I, Sladkevicius P, et al. Imaging in gynecological disease (16): clinical and ultrasound characteristics of serous cystadenofibromas in adnexa. *Ultrasound Obstet Gynecol*. 2019; 54(6):823-830.

Government Agency, Medical Society, and Other Authoritative Publications:

1. American College of Radiology (ACR), American College of Obstetrics and Gynecology (ACOG), American Institute of Ultrasound in Medicine (AIUM), and Society of Pediatric Radiology (SPR). ACR–ACOG–AIUM–SRU practice parameter for the performance of ultrasound of the female pelvis. 2019. Available at: <https://www.acr.org/-/media/ACR/Files/Practice-Parameters/us-pelvis.pdf?la=en>. Accessed on October 08, 2023.
2. American College of Radiology (ACR), American College of Obstetrics and Gynecology (ACOG), American Institute of Ultrasound in Medicine (AIUM), and Society of Pediatric Radiology (SPR). ACR–AIUM–SPR–SRU practice parameter for the performance of an ultrasound examination of the abdomen and/or retroperitoneum. 2017. Available at: <https://www.acr.org/-/media/ACR/Files/Practice-Parameters/us-abd-retro.pdf?la=en>. Accessed on October 08, 2023.
3. Bhosale PR, Javitt MC, Atri M, et al. ACR Appropriateness Criteria® Acute pelvic pain in the reproductive age group. *Ultrasound Q*. 2016; 32(2):108-115.
4. Expert Panel on Women's Imaging: Atri M, Alabousi A, et al. ACR Appropriateness Criteria® Clinically suspected adnexal mass, no acute symptoms. *J Am Coll Radiol*. 2019; 16(5S):S77-S93.

History

| Status | Date | Action |
|----------|------------|--|
| Reviewed | 11/09/2023 | Medical Policy & Technology Assessment Committee (MPTAC) review. Updated References section. |
| Reviewed | 11/10/2022 | MPTAC review. Updated References section. |
| Reviewed | 11/11/2021 | MPTAC review. Updated References section. |
| Reviewed | 11/05/2020 | MPTAC review. Updated Background/Overview and References sections. Reformatted Coding section to include additional diagnosis codes. |
| Revised | 11/07/2019 | MPTAC review. Clarified MN statements. Updated Background/Overview, Coding and References sections. |
| New | 08/22/2019 | MPTAC review. Initial document development. |

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Alternatively, commercial or FEP plans or lines of business which determine there is not a need to adopt the guideline to review services generally across all providers delivering services to Plan's or line of business's members may instead use the clinical guideline for provider education and/or to review the medical necessity of services for any provider who has been notified that his/her/its claims will be reviewed for medical necessity due to billing practices or claims that are not consistent with other providers, in terms of frequency or in some other manner.

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