



O-RADS US v2022

HOW TO REPORT: ESSENTIAL COMPONENTS and LEXICON DESCRIPTORS

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OVERVIEW

The following document represents the essential components and descriptors to be included in a pelvic US report utilizing O-RADS US v2022; this does not represent a structured report template. For an example of a report template, please refer to the website under O-RADS US > Implementation Tools > Report Template Sample. Excerpts from sample reports are provided at the end of this document demonstrating various options of how one may incorporate O-RADS US in the “Findings” and “Impression” sections of a pelvic US report.

Note, not all ovarian-adnexal findings warrant O-RADS US assessment (e.g., torsion of a normal ovary, pelvic inflammatory disease, ovarian hyperstimulation syndrome, ectopic pregnancy, or lesion clearly identified as uterine in origin, etc.). Findings for which O-RADS US should be considered include non-physiologic lesions, normal ovaries in high-risk patients undergoing ovarian cancer screening, and findings discovered on other imaging modalities for which ultrasound is requested for additional characterization.

When no observations or only physiologic cysts are seen in an ovary, this may be reported as “normal ovary” or “normal ovary, O-RADS 1”. Reporting and scoring physiologic cysts is optional and will vary based on practice patterns and indication for the exam.

When an ovary is not seen, O-RADS is “not applicable”. Scenarios when one may elect to report ovarian nonvisualization as O-RADS US 0 (technically inadequate) include when identification of the ovary is expected and required (e.g., high-risk patient for ovarian cancer screening, follow-up ultrasound for a lesion previously seen on US or another imaging modality, etc.).

In general, description of observations should be clear, succinct, and listed in order from most to least concerning in both the “FINDINGS” and “IMPRESSION” of the report. The essential components of lesion description in the “FINDINGS” section include: 1) location; 2) lexicon descriptors (including color score); 3) size; 4) ascites and peritoneal nodules (where present). While a more extensive lexicon is available, only those lexicon terms relevant for risk stratification are required and are included below (Tables 1-4).

When reporting the risk assessment category and color score, it is required to include the terminology associated with the numeric score or either alone with a glossary/legend included at the end of the report as the patient or provider may not be familiar with their intended meaning; including the numeric value for the color score is optional.

Helpful resources for determining the assessment categorization and management as well as the features to report include the ACR O-RADS US v2022 Assessment Category Tables and Algorithm which can be found at <https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/O-RADS>. The O-RADS US v2022 calculator is another useful resource and can be found on the ACR Guidance smartphone app (iPhone and Android).



ESSENTIAL COMPONENTS AND LEXICON DESCRIPTORS

I. INDICATION FOR EXAM:

a. Relevant clinical information and surgical history

- i. Symptoms, high-risk status, pregnancy, hormonal or infertility treatment, oncologic history, etc., as management may differ in these clinical scenarios.
- ii. Any relevant gynecologic surgeries/interventions
- iii. Known etiologies of ascites (when seen), such as cirrhosis, volume overload, etc.

b. Age and menopausal status

- i. LMP (if known) or menopausal status (menopause = amenorrhea ≥ 1 year)
 1. For management of hemorrhagic cysts, include years since menopause.

II. FINDINGS:

a. Location

- i. Laterality: right, left, midline, cul-de-sac, etc.
- ii. Relative to ovary: ovarian (within the ovary), adnexal (no ovarian tissue seen), or extraovarian (lesion separate from the ovary)

b. Lexicon Descriptors

- i. **Follicle, simple cyst, and corpus luteum:** When criteria are met, these observations may be reported by name; additional descriptors are optional, but not required. (Table 1)

Table 1: Physiologic and Simple Cyst Lexicon Descriptors

Observation	Lexicon Descriptors (<i>optional</i>)
Follicle*	<ul style="list-style-type: none"> • Unilocular, anechoic cyst with smooth inner walls, ≤ 3 cm
Corpus luteum* (typically, ≤ 3 cm)	<ul style="list-style-type: none"> • Thick-walled cyst with peripheral vascularity, \pm internal echoes, \pm crenulated inner walls • Solid-appearing hypoechoic lesion with peripheral vascularity
Simple Cyst (>3 cm premenopausal or any size postmenopausal)	<ul style="list-style-type: none"> • Unilocular, anechoic cyst with smooth inner walls,

*Premenopausal only

- ii. **Classic benign lesion:** Describe hemorrhagic cysts, dermoid cysts, endometriomas, paraovarian cysts, peritoneal inclusion cysts and hydrosalpinges with typical features using the following descriptors, where present. (Table 2)
 1. NOTE: In the "IMPRESSION", one may report using the name of the classic benign lesion without repeating the description.

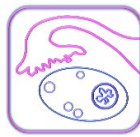


Table 2: Classic Benign Lesion Lexicon Descriptors

Classic Benign Lesion Name	Lexicon Descriptors <i>(closed bullets = required; open bullet = minimum of 1 required; ± = optional)</i>
Hemorrhagic cyst	<ul style="list-style-type: none"> • Unilocular cyst, no internal vascularity* <ul style="list-style-type: none"> ○ Reticular pattern ○ Retractable clot
Dermoid cyst	<ul style="list-style-type: none"> • Cystic lesion with ≤ 3 locules, no internal vascularity* <ul style="list-style-type: none"> ○ Hyperechoic component(s) (diffuse or regional) with shadowing ○ Hyperechoic lines and dots ○ Floating echogenic spherical structures
Endometrioma	<ul style="list-style-type: none"> • Cystic lesion with ≤ 3 locules, no internal vascularity*, homogenous low-level (or ground glass) echoes, smooth inner walls/septation(s) <ul style="list-style-type: none"> ± Peripheral punctate echogenic foci (<i>in wall</i>)
Paraovarian cyst	<ul style="list-style-type: none"> • Simple cyst separate from the ovary
Peritoneal inclusion cyst	<ul style="list-style-type: none"> • Fluid collection containing an ovary at the margin or suspended within that follows the contour of adjacent pelvic organs <ul style="list-style-type: none"> ± Septations (<i>representing adhesions</i>)
Hydrosalpinx	<ul style="list-style-type: none"> • Anechoic, fluid-filled tubular structure <ul style="list-style-type: none"> ± Incomplete septation(s) (<i>representing folds</i>) ± Endosalpingeal folds

* Note vascularity may be in surrounding ovarian parenchyma or in walls/intervening septation(s) of dermoid cysts and endometriomas

iii. **Lesion (not classic benign):** Lesions that do not meet criteria for a typical classic benign lesion should be reported using **both** the **lesion subcategory name** **and** **relevant lexicon descriptors**. (Table 3)

Table 3: Lesion Subcategories and Lexicon Descriptors

Lesion Subcategory	Lexicon Descriptors <i>(closed bullets = required; open bullets = choices)</i>
Uni/bi/multilocular cystic lesion without solid component <i>(Unilocular = no complete septations; bilocular = 1 complete septation; multilocular = ≥ 2 complete septations)</i>	<ul style="list-style-type: none"> • Inner wall/septations <ul style="list-style-type: none"> ○ Smooth ○ Irregular (<i>focal wall/septal thickening < 3 mm in ht.</i>) • Internal contents (<i>when unilocular and smooth</i>) <ul style="list-style-type: none"> ○ Anechoic (or simple fluid) ○ Non-simple <ul style="list-style-type: none"> ○ Internal echoes ○ Incomplete septation(s) • Color score 1 – 4 (<i>when multilocular and smooth</i>)
Uni/bi/multilocular cystic lesion with solid component(s) <i>(Solid components are ≥ 3 mm in height, project into cyst lumen and arise off a wall or septation)</i>	<ul style="list-style-type: none"> • Papillary projections (pps)* (<i>when unilocular; ≥ 3 mm in ht. and surrounded by fluid on 3 sides</i>) <ul style="list-style-type: none"> ○ None ○ < 4 ○ ≥ 4 • Color score 1 – 4 (<i>when bi- or multilocular</i>)



<p>Solid/solid-appearing lesion <i>(≥80% solid)</i></p>	<ul style="list-style-type: none"> • Outer contour <ul style="list-style-type: none"> ○ Smooth ○ Irregular • Color score 1 – 4 <i>(when smooth)</i> • Shadowing** <i>(when smooth and CS <4; must be broad or diffuse to qualify)</i> <ul style="list-style-type: none"> ○ Present ○ Absent
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- i. **Color score (CS):** Reporting the degree of internal vascularity, termed “color score” is required for some loculated cystic lesions and all solid lesions with a smooth outer contour. For clarity, options of reporting include numeric score with associated terminology or terminology alone. (Table 4)

Table 4: Color Score Lexicon Terminology

Color Score <i>(optional)</i>	Terminology <i>(required)</i>
1	No flow
2	Minimal flow
3	Moderate flow
4	Very strong flow

c. Size

- i. At a minimum, report the single largest diameter which is used for scoring. Reporting all 3 dimensions is strongly suggested if management includes the option of imaging follow-up.
1. Exception: If reporting a follicle or corpus luteum by name, size is not required.
- ii. When assessing interval change, report average linear dimension $([L+W+H]/3)$.

d. Ascites and peritoneal nodules:

i. Ascites:

1. Report as ascites when quantity of intraperitoneal fluid meets criteria as follows:
 1. Fluid extends beyond the uterine fundus and pouch of Douglas when the uterus is anteverted/anteflexed and anterior/superior to the uterus if retroverted/retroflexed.
2. Optional to report internal echoes
3. May include modifiers to describe degree of volume (e.g., mild, moderate, marked).

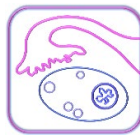
ii. Peritoneal nodules:

1. Soft tissue or cystic deposits along the peritoneal lining, often appreciated with concomitant ascites.

e. Optional:

i. O-RADS US Assessment Category (Table 5):

1. Optional to include in “FINDINGS”, however, required in “IMPRESSION”. Strongly consider reporting the O-RADS US category in the setting of multiple ipsilateral observations to help distinguish individual lesions.
2. For clarity, it is optional to report the assessment category as a numeric score (0-5) with associated terminology versus either alone with a glossary/legend at the end of the report. (Table 5)



III. IMPRESSION:

- a. A **brief summary** of each reported observation, from most to least concerning, with corresponding **assessment category** (Table 5) and **management recommendation** should be included. Note, in the setting of multiple lesions, separate recommendations need only be reported if management differs for each lesion.
- b. For clarity, it is optional to report the O-RADS US assessment category as a numeric score (0-5) with associated terminology versus either alone with a glossary/legend at the end of the report. (Table 5)
- c. **OPTIONAL:**
 1. **Risk of malignancy (ROM) percentage:** Optional to include and may depend upon the O-RADS category and patient access to their reports.
 2. **Reference link:** Optional to include the URL to the ACR O-RADS website (<https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/O-RADS>)

Table 5. O-RADS US v2022 Assessment Categories and ROM

O-RADS US Score (required)	Terminology (required)	ROM (optional)
0	Incomplete due to technical factors	N/A
1	Normal ovary	0
2	Almost certainly benign	<1%
3	Low risk	1 - <10%
4	Intermediate risk	10 - <50%
5	High risk	≥50%

SAMPLE REPORTS

The following are excerpts of sample wording that may be used within the “FINDINGS” and “IMPRESSION” sections of a pelvic ultrasound exam report utilizing O-RADS US v2022 to describe the adnexa and relevant features for scoring. Examples for single and multiple lesions are presented in prose and list formats to demonstrate different reporting styles.

Sample 1 (prose: physiologic cyst – corpus luteum)

Option 1

Findings: The right ovary measures 4.5 x 2.8 x 3.5 cm and contains a 2.5 cm thick-walled cyst with crenulated inner walls and peripheral vascularity representing a corpus luteum.

Impression: Right ovarian 2.5 cm corpus luteum, O-RADS 1. No additional or follow-up imaging is needed.

O-RADS 0 = Incomplete due to technical factors

O-RADS 1 = Normal ovary

O-RADS 2 = Almost certainly benign

O-RADS 3 = Low risk

O-RADS 4 = Intermediate risk

O-RADS 5 = High risk



Option 2

Findings: The right ovary measures 4.5 x 2.8 x 3.5 cm and contains a corpus luteum.

Impression: Normal right ovary.

Sample 2 (prose: single adnexal lesion – multiloculated cystic)

Findings: A normal appearing right ovary is not seen. Within the right adnexa, there is a 10.5 x 4.7 x 8.5 cm multilocular cyst with no solid component and smooth inner walls and septations. There is moderate flow (color score 3) on color Doppler imaging.

Impression: Right adnexal 10.5 cm multilocular cyst without solid component as described above, O-RADS 4, presumed ovarian. Recommend additional imaging with MRI. Patient may be managed by a gynecologist consulting with a gynecologic oncologist or solely by a gyn-oncologist.

- O-RADS 0 = Incomplete due to technical factors
- O-RADS 1 = Normal ovary
- O-RADS 2 = Almost certainly benign
- O-RADS 3 = Low risk
- O-RADS 4 = Intermediate risk
- O-RADS 5 = High risk

Reference: <https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/O-RADS>

Sample 3 (prose: single ovarian lesion – solid)

Findings: Within the left ovary, there is a solid lesion with an irregular outer contour measuring up to 4.3 cm. There is moderate ascites containing internal echoes.”

Impression: “Left ovarian 4.3 cm solid lesion with moderate ascites as described above, which is high risk. Referral to a gynecologic oncologist is recommended.

- O-RADS 0 = Incomplete due to technical factors
- O-RADS 1 = Normal ovary
- O-RADS 2 = Almost certainly benign
- O-RADS 3 = Low risk
- O-RADS 4 = Intermediate risk
- O-RADS 5 = High risk

Reference: <https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/O-RADS>



Sample 4 (prose: single extraovarian lesion – paraovarian cyst)

Findings: Separate from the right ovary, there is a 5.1 cm simple cyst.

Impression: Right 5.1 cm paraovarian cyst, almost certainly benign (O-RADS 2). No additional or follow-up imaging is needed.

Reference: <https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/O-RADS>

Sample 5 (list: single ovarian lesion – hemorrhagic cyst)

Findings:

Location: Right, intraovarian

Descriptors: Unilocular cyst, avascular, internal reticular pattern

Maximum size: 4.4 cm

Impression:

Right ovarian 4.4 cm hemorrhagic cyst, O-RADS 2. In this premenopausal woman, no additional or follow-up imaging is needed. Clinical management per gynecology as needed.

O-RADS 0 = Incomplete due to technical factors

O-RADS 1 = Normal ovary

O-RADS 2 = Almost certainly benign (<1% ROM)

O-RADS 3 = Low risk (1 - <10% ROM)

O-RADS 4 = Intermediate risk (10 - <50% ROM)

O-RADS 5 = High risk (≥50% ROM)

Reference: <https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/O-RADS>

Sample 6 (list: single ovarian lesion – unilocular cystic with solid components)

Findings:

Left adnexa:

Ovary: 8.0 x 5.0 x 4.8 cm. An observation is seen within the ovary as follows:

Size: 7.4 x 4.8 x 3.2 cm

Lesion type: Cystic

Locularity: Unilocular

Walls and septations: Smooth

Solid component: Yes

Number of projections: <4

Ascites: None

Peritoneal nodules: None



Impression: Left ovarian 7.3 cm unilocular cyst with less than 4 papillary projections representing an O-RADS 4 (intermediate risk) lesion. Additional imaging with MRI is recommended. Patient may be managed by a gynecologist consulting with a gynecologic-oncologist or solely by a gynecologic-oncologist.

Sample 7 (prose: ipsilateral ovarian and extraovarian lesions)

Findings:

The right ovary is normal in appearance and measure 4.1 x 2.1 x 3.4 cm. No adnexal lesions.

Within the left adnexa, there is a multilocular cyst without solid component measuring 7.6 x 5.4 x 4.3 cm. The inner wall and septations are smooth. Color Doppler imaging demonstrates minimal flow (color score 2). Adjacent to this, there is a 4.1 cm anechoic, fluid-filled tubular structure with endosalpingeal folds measuring up to 3.7 cm representing a hydrosalpinx.

Impression:

1. Left adnexal 7.6 cm multilocular cyst without solid component as described above, low risk (O-RADS 3). If not surgically excised, recommend follow-up US within 6 months. Clinical management per gynecology.
 2. Left 3.7 cm hydrosalpinx, almost certainly benign (O-RADS 2).
 3. Normal right ovary (O-RADS 1).
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Sample 8 (list: ipsilateral ovarian and extraovarian lesions)

Findings:

Right adnexa:

Ovary: 5.8 x 4.3 x 3.2 cm

Observation #1:

Size: 3.4 x 2.8 x 1.2 cm

Lesion type: Solid

Outer contour: Smooth

Shadowing: Present

Color score: 2 (minimal flow)

ORADS score: 3

Observation #2:

Size: 7.2x 1.7 x 3.4 cm

Lesion type: Extraovarian

Descriptors: anechoic, fluid-filled tubular-shaped, incomplete septations

O-RADS score: 2



Left adnexa:

Ovary: 3.2 x 2.8 x 1.7 cm. No ovarian or adnexal lesions.

O-RADS score: 1

Ascites: None

Peritoneal nodules: None

Impression:

1. Right ovarian 3.4 cm solid lesion consistent with an O-RADS 3 (low risk) lesion. If not surgically excised, consider follow-up ultrasound within 6 months. Clinical management by gynecologist is recommended.
2. Right hydrosalpinx consistent with an O-RADS 2 (almost certainly benign) lesion. No sonographic follow-up is needed.
3. Normal left ovary, O-RADS 1.

Sample 9 (prose: bilateral lesions – unilocular cystic with solid components and a simple cyst)

Findings:

The right ovary measures 7.2 x 4.2 x 5.5 cm. Within the right ovary, there is a unilocular cystic lesion with ≥ 4 papillary projections measuring 5.6 x 3.6 x 4.8 cm.

The left ovary measures 4.3 x 2.7 x 3.2 cm and contains a 2.8 cm simple cyst.

There is no free fluid within the pelvis.

Impression:

1. Right ovarian 5.6 cm unilocular cyst with solid components as described above, O-RADS 5. Referral to a gynecologic-oncologist is recommended.
2. Left 2.8 cm simple ovarian cyst, O-RADS 2. If decreased in size on follow-up (more than 10-15% average linear dimension), no further imaging is needed. If stable or increased (more than 10-15% average linear dimension), but remains simple, repeat US at 24 months from initial exam, then per gynecology.

O-RADS 0 = Incomplete due to technical factors

O-RADS 1 = Normal/physiologic ovary

O-RADS 2 = Almost certainly benign

O-RADS 3 = Low risk

O-RADS 4 = Intermediate risk

O-RADS 5 = High risk

Sample 10 (list: bilateral lesions – endometrioma and hydrosalpinx)

Observation #1:

Location: Right, intraovarian

Descriptors: Unilocular cyst, homogenous low-level echoes, no internal flow; typical endometrioma

Maximum size: 2.8 cm

O-RADS category: 2



Observation #2:

Location: Left, extraovarian

Descriptors: Anechoic, fluid-filled tubular structure, endosalpingeal folds; typical hydrosalpinx

Maximum size: 5.7 cm

O-RADS category: 2

Impression:

1. Right ovarian 2.8 cm endometrioma, O-RADS 2. If not surgically excised, recommend follow-up US examination in one year. If stable on follow-up, consider repeat US at 24 months from initial exam, then per gynecology.
2. Left hydrosalpinx measuring up to 5.7 cm, O-RADS 2.
3. Clinical management per gynecology.

O-RADS 0 = Incomplete due to technical factors

O-RADS 1 = Normal ovary co

O-RADS 2 = Almost certainly benign

O-RADS 3 = Low risk

O-RADS 4 = Intermediate risk

O-RADS 5 = High risk

Reference: <https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/O-RADS>