

1. O-RADS Ultrasound (US) applies to the ovaries, lesions involving (or suspected to involve) the ovaries and/or fallopian tubes, and paraovarian cysts, when the intent is to stratify risk of malignancy. Scenarios when O-RADS does not apply include (but are not limited to): pelvic inflammatory disease, ectopic pregnancy, torsion of a normal ovary, and those lesions clearly identified as non-ovarian/non-tubal in origin (eg, an exophytic or broad ligament myoma). If the origin of a lesion is indeterminate, options include CT and MRI.
2. Most nonvisualized and all absent ovaries are classified as “O-RADS: not applicable”. When only one ovary is visualized, it may be assessed per lexicon descriptors to obtain an O-RADS score. An exam may be considered “O-RADS 0: technically inadequate” when ovarian visualization is expected based on the indication for the exam but is not seen.
3. In cases of multiple or bilateral lesions, each lesion should be separately characterized, and management driven by the lesion with the highest O-RADS score. Separate recommendations should be provided when management of one lesion is independent of the other.
4. When menopausal status is relevant for risk stratification or management, patient should be categorized as pre- or postmenopausal. The postmenopausal category is defined as amenorrhea  $\geq 1$  year; (early = postmenopausal for  $< 5$  years, late = postmenopausal for  $\geq 5$  years). If uncertain or the uterus is absent, manage as per the postmenopausal status if age is  $> 50$ ; (early =  $> 50$  but  $< 55$ , late =  $\geq 55$ ).
5. Some O-RADS US management recommendations include the involvement of a physician whose practice includes a focus on ultrasound assessment of adnexal lesions, denoted as an “ultrasound specialist”. While there are no mandated requirements or guidelines that define such a specialist, potential qualifications include sufficient experience with the appearance of adnexal pathology on US to improve the likelihood of correct diagnoses and participation in quality assurance activities related to adnexal imaging.
6. Imaging assessment of a lesion is generally based on transvaginal technique. Transabdominal imaging may add characterization and may suffice when transvaginal technique is not feasible or limited. When possible, orthogonal cine clips are strongly encouraged.
7. Single largest diameter of a lesion is used for risk stratification (scoring) and management. Reporting three dimensions is helpful to assess interval change, for which average linear dimension  $([L+W+H]/3)$  should be used.
8. Lexicon terminology and lesion characterization apply to most lesions regardless of risk or symptoms. When uncertain about feature selection, (eg, smooth versus irregular, color score, etc.) use the higher risk category to score the lesion.
9. Management recommendations should serve as guidance rather than requirements and are based on average risk and no acute symptoms. Individual case management may be modified by risk (eg, personal or family history of ovarian cancer, BRCA mutation, etc.), symptoms, other clinical factors, and professional judgement, regardless of the O-RADS score.

O-RADS Score	Risk Category [IOTA Model]	Lexicon Descriptors		Management	
				Pre-menopausal	Post-Menopausal
0	Incomplete Evaluation [N/A]	Lesion features relevant for risk stratification cannot be accurately characterized due to technical factors		Repeat US study or MRI	
1	Normal Ovary [N/A]	No ovarian lesion		None	
		Physiologic cyst: follicle (≤3 cm) or corpus luteum (typically ≤3 cm)			
2	Almost Certainly Benign [ $<1\%$ ]	Simple cyst	≤3 cm	N/A (see follicle)	None
			>3 cm to 5 cm	None	Follow-up US in 12 months*
			>5 cm but <10 cm	Follow-up US in 12 months*	
		Unilocular, smooth, non-simple cyst (internal echoes and/or incomplete septations) ----- Bilocular, smooth cyst	≤3 cm	None	Follow-up US in 12 months*
			>3 cm but <10 cm	Follow-up US in 6 months*	
		Typical benign ovarian lesion (see “Classic Benign Lesions” table)	<10 cm	See “Classic Benign Lesions” table for descriptors and management	
		Typical benign extraovarian lesion (see “Classic Benign Lesions” table)	Any size		
3	Low Risk [1 – <10%]	Typical benign ovarian lesion (see “Classic Benign Lesions” table), ≥10 cm		Imaging: <ul style="list-style-type: none"><li>If not surgically excised, consider follow-up US within 6 months**</li><li>If solid, may consider US specialist (if available) <u>or</u> MRI (with O-RADS MRI score)†</li></ul> Clinical: Gynecologist	
		Uni- or bilocular cyst, smooth, ≥10 cm			
		Unilocular cyst, irregular, any size			
		Multilocular cyst, smooth, <10 cm, CS <4			
		Solid lesion, ± shadowing, smooth, any size, CS = 1			
		Solid lesion, shadowing, smooth, any size, CS 2–3			
4	Intermediate Risk [10 – <50%]	Bilocular cyst without solid component(s)	Irregular, any size, any CS	Imaging: Options include: <ul style="list-style-type: none"><li>US specialist (if available) <u>or</u></li><li>MRI (with O–RADS MRI score)† <u>or</u></li><li>Per gyn–oncologist protocol</li></ul> Clinical: Gynecologist with gyn–oncologist consultation <u>or</u> solely by gyn–oncologist	
		Multilocular cyst without solid component(s)	Smooth, ≥10 cm, CS <4		
			Smooth, any size, CS 4		
			Irregular, any size, any CS		
		Unilocular cyst with solid component(s)	<4 pps or solid component(s) not considered a pp; any size		
		Bi- or multilocular cyst with solid component(s)	Any size, CS 1–2		
Solid lesion, non-shadowing	Smooth, any size, CS 2–3				
5	High Risk [≥50%]	Unilocular cyst, ≥4 pps, any size, any CS		Imaging: Per gyn-oncologist protocol Clinical: Gyn-oncologist	
		Bi- or multilocular cyst with solid component(s), any size, CS 3–4			
		Solid lesion, ± shadowing, smooth, any size, CS 4			
		Solid lesion, irregular, any size, any CS			
		Ascites and/or peritoneal nodules††			

# GLOSSARY

Smooth and irregular: refer to <b>inner</b> walls/septation(s) for <b>cystic</b> lesions, and <b>outer</b> contour for <b>solid</b> lesions; irregular inner wall for cysts = $<3$ mm in height	Solid: excludes blood products and dermoid contents; solid lesion = $\geq 80\%$ solid; solid component = protrudes $\geq 3$ mm (height) into cyst lumen off wall or septation
Shadowing: must be diffuse or broad to qualify; excludes refractive artifact	pp = papillary projection; subtype of solid component surrounded by fluid on 3 sides
CS = color score; degree of intralesional vascularity; 1 = none, 2 = minimal flow, 3 = moderate flow, 4 = very strong flow	Bilocular = 2 locules; multilocular = $\geq 3$ locules; bilocular smooth cysts have a lower risk of malignancy, regardless of size or CS
Postmenopausal = $\geq 1$ year amenorrhea (early: $<5$ yrs; late: $\geq 5$ yrs); if uncertain or uterus surgically absent, use age $>50$ years (early = $>50$ yrs but $<55$ yrs, late = $\geq 55$ yrs)	

\*Shorter imaging follow-up may be considered in some scenarios (eg, clinical factors). If smaller ( $\geq 10$ – $15\%$  decrease in average linear dimension), no further surveillance. If stable, follow-up US at 24 months from initial exam. If enlarging ( $\geq 10$ – $15\%$  increase in average linear dimension), consider follow-up US at 12 and 24 months from initial exam, then management per gynecology. For changing morphology, reassess using lexicon descriptors. **Clinical management with gynecology as needed.**

\*\*There is a paucity of evidence for defining the optimal duration or interval for imaging surveillance. Shorter follow-up may be considered in some scenarios (eg, clinical factors). If stable, follow-up at 12 and 24 months from initial exam, then as clinically indicated. For changing morphology, reassess using lexicon descriptors.

† MRI with contrast has higher specificity for solid lesions, and cystic lesions with solid component(s).

†† Not due to other malignant or non-malignant etiologies; specifically, must consider other etiologies of ascites in categories 1–2.

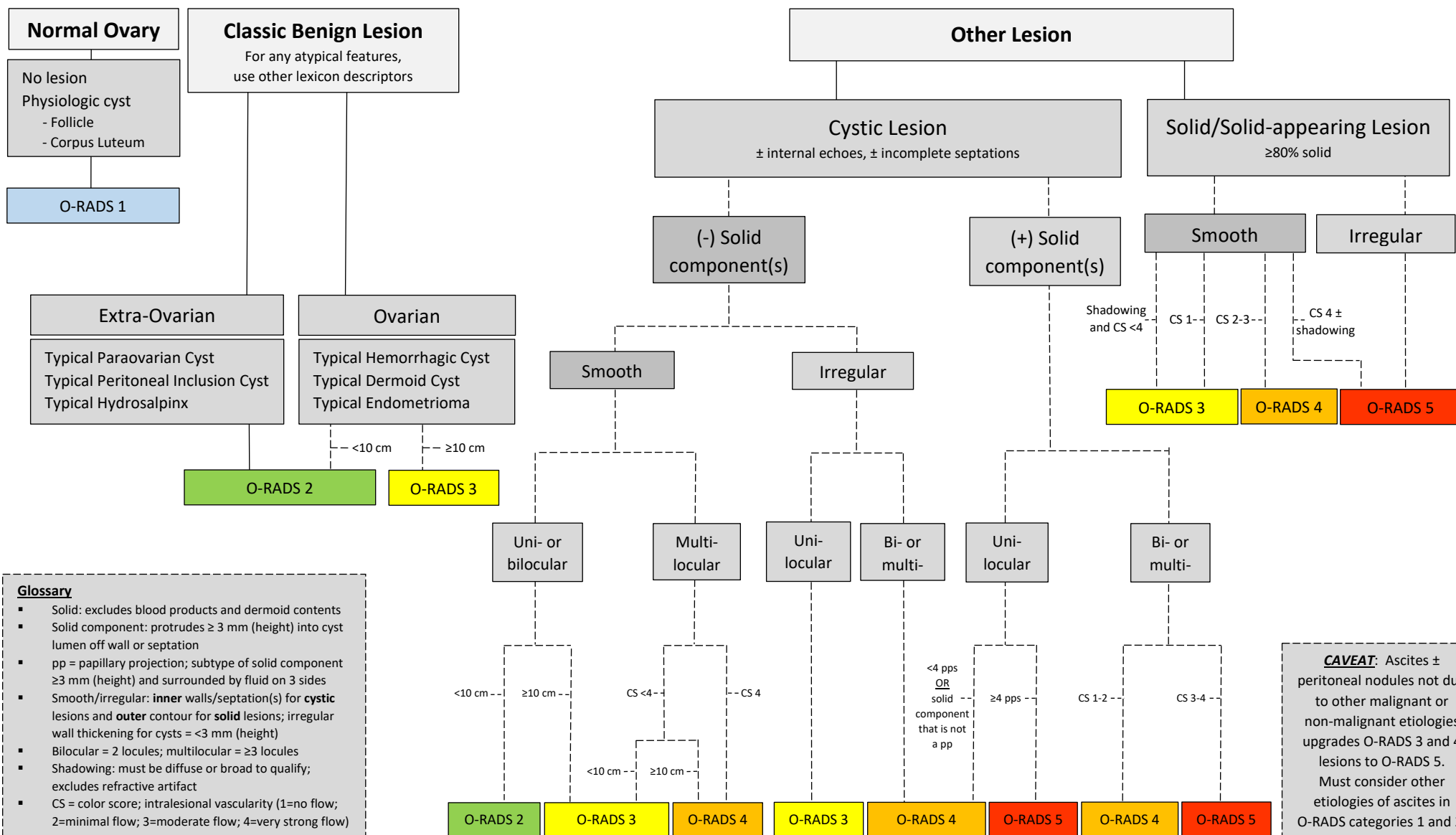
Lesion	Descriptors and Definitions For any atypical features on initial or follow-up exam, use other lexicon descriptors (eg, unilocular, multilocular, solid, etc.)	Management If sonographic features are only suggestive, and overall assessment is uncertain, consider follow-up US within 3 months
<b>Typical Hemorrhagic Cyst</b>	Unilocular cyst, <b>no internal vascularity*</b> , and <u>at least one</u> of the following: <ul style="list-style-type: none"> <li>Reticular pattern (fine, thin intersecting lines representing fibrin strands)</li> <li>Retractile clot (intracystic component with straight, concave, or angular margins)</li> </ul>	Imaging: <ul style="list-style-type: none"> <li>Premenopausal: <ul style="list-style-type: none"> <li>≤5 cm: None</li> <li>&gt;5 cm but &lt;10 cm: Follow-up US in 2–3 months</li> </ul> </li> <li>Early postmenopausal (&lt;5 years): <ul style="list-style-type: none"> <li>&lt;10 cm, options to confirm include: <ul style="list-style-type: none"> <li>Follow-up US in 2–3 months <u>or</u></li> <li>US specialist (if available) <u>or</u></li> <li>MRI (with O-RADS MRI score)</li> </ul> </li> </ul> </li> <li>Late postmenopausal (≥5 years): <ul style="list-style-type: none"> <li>Should not occur; recategorize using other lexicon descriptors.</li> </ul> </li> </ul> Clinical: Gynecologist**
<b>Typical Dermoid Cyst</b>	Cystic lesion with ≤3 locules, <b>no internal vascularity*</b> , and <u>at least one</u> of the following: <ul style="list-style-type: none"> <li>Hyperechoic component(s) (diffuse or regional) with shadowing</li> <li>Hyperechoic lines and dots</li> <li>Floating echogenic spherical structures</li> </ul>	Imaging: <ul style="list-style-type: none"> <li>≤3 cm: May consider follow-up US in 12 months†</li> <li>&gt;3 cm but &lt;10 cm: If not surgically excised, follow-up US in 12 months†</li> </ul> Clinical: Gynecologist**
<b>Typical Endometrioma</b>	Cystic lesion with ≤3 locules, <b>no internal vascularity*</b> , homogeneous low-level/ground glass echoes, and smooth inner walls/septation(s) <ul style="list-style-type: none"> <li>± Peripheral punctate echogenic foci in wall</li> </ul>	Imaging: <ul style="list-style-type: none"> <li>Premenopausal: <ul style="list-style-type: none"> <li>&lt;10 cm: If not surgically excised, follow-up US in 12 months†</li> </ul> </li> <li>Postmenopausal: <ul style="list-style-type: none"> <li>&lt;10 cm <u>and initial exam</u>, options to confirm include: <ul style="list-style-type: none"> <li>Follow-up US in 2–3 months <u>or</u></li> <li>US specialist (if available) <u>or</u></li> <li>MRI (with O-RADS MRI score)</li> </ul> </li> </ul> </li> </ul> Then, if not surgically excised, recommend follow-up US in 12 months† Clinical: Gynecologist**
<b>Typical Paraovarian Cyst</b>	Simple cyst separate from the ovary	Imaging: None Clinical: Gynecologist**
<b>Typical Peritoneal Inclusion Cyst</b>	Fluid collection with ovary at margin or suspended within that conforms to adjacent pelvic organs <ul style="list-style-type: none"> <li>± Septations (representing adhesions)</li> </ul>	Imaging: None Clinical: Gynecologist**
<b>Typical Hydrosalpinx</b>	Anechoic, fluid-filled tubular structure <ul style="list-style-type: none"> <li>± Incomplete septation(s) (representing folds)</li> <li>± Endosalpingeal folds (short, round projections around inner walls)</li> </ul>	

\*Excludes vascularity in walls or intervening septation(s)

\*\*As needed for management of clinical issues

† There is a paucity of evidence for defining the need, optimal duration or interval of timing for surveillance. If stable, consider US follow-up at 24 months from initial exam, then as clinically indicated. Specifically, evidence does support **an increased risk of malignancy in endometriomas following menopause and those present greater than 10 years.**

## O-RADS™ Ultrasound v2022 Assessment Categories





**O-RADS™ Ultrasound v2022 Lexicon Categories, Terms, and Definitions**  
Revised: January 2023

Term	Sub-term	Definition	Comments
<b>Major Categories of Imaging Findings</b>			
<b>Physiologic (consistent with normal physiology)</b>			
Follicle		Simple cyst (unilocular, anechoic, smooth) $\leq 3$ cm in premenopausal group	
Corpus Luteum (CL)		Thick-walled cyst <b>typically</b> $\leq 3$ cm, $\pm$ crenulated inner walls, $\pm$ internal echoes, with peripheral flow in premenopausal group	<ul style="list-style-type: none"> <li>- May be solid-appearing (no visible central fluid) with peripheral flow</li> <li>- No internal flow</li> </ul>
<b>Lesion (not physiologic)</b>			
Unilocular cyst	Without solid component(s)	Cystic lesion with a single locule (no complete septa)	<ul style="list-style-type: none"> <li>- <math>\pm</math> internal echoes, incomplete septa, wall irregularity <math>&lt; 3</math> mm in height</li> <li>- <b>Simple cyst:</b> anechoic and smooth inner walls</li> <li>- <b>Non-simple cyst:</b> smooth inner walls and internal echoes or incomplete septa</li> </ul>
	With solid component(s)	As above and includes solid tissue $\geq 3$ mm in height	
Bilocular cyst	Without solid component(s)	Cystic lesion with 2 locules (single complete septation)	$\pm$ internal echoes, incomplete septa, or wall/septal irregularity ( $< 3$ mm height)
	With solid component(s)	As above and includes solid tissue $\geq 3$ mm in height	
Multilocular cyst	Without solid component(s)	Cystic lesion with $\geq 3$ locules ( $\geq 2$ complete septations)	$\pm$ internal echoes, incomplete septa, or wall/septal irregularity ( $< 3$ mm in height)
	With solid component(s)	As above and includes solid tissue $\geq 3$ mm in height	
Solid ( $\geq 80\%$ )		Lesion with at least 80% solid tissue (based on echogenicity and echotexture)	<ul style="list-style-type: none"> <li>- <math>\pm</math> internal vascularity</li> <li>- May use term <b>solid-appearing</b> if no internal vascularity</li> </ul>
<b>Size</b>			
Maximum diameter		Largest diameter regardless of the plane in which it is obtained	Used for risk stratification
Average linear dimension		(Maximum length + height + width)/3	Used to assess interval change
<b>Solid or Solid-Appearing Lesions</b>			
<b>External Contour</b>			
Smooth		Uniform/even outer margin	
Irregular		Non-uniform/uneven outer margin	Includes lobulated
<b>Posterior Acoustic Features</b>			
Shadowing		<b>Broad or diffuse</b> hypoechogenicity posterior to a lesion due to sound attenuation	<ul style="list-style-type: none"> <li>- Associated with calcifications and fibromatous lesions</li> <li>- Relevant for solid smooth</li> <li>- <b>Differs from refractive artifact</b> due to differences in attenuation by adjacent tissues, typically seen as linear shadowing from within or at edge of a lesion</li> </ul>
<b>Cystic Lesions</b>			
<b>Inner Walls or Septations</b>			

Smooth		Uniform/even inner margin or septation	
Irregular		Non-uniform/uneven inner margin or septation	Focal wall or septal thickening < 3 mm in height
Calcifications		High-level echogenicity within wall associated with posterior shadowing	Risk assessment based upon smooth or irregular margin
<b>Internal Content</b>			
Hemorrhagic cyst descriptors	Unilocular, no internal vascularity		May have peripheral flow in wall or surrounding ovarian tissue
	Reticular pattern	Fine, thin, intersecting lines	Represents fibrin strands, not septations
	Retractile clot	Avascular component with echogenicity higher than adjacent fluid and angular, straight, or concave margins	
Dermoid cyst descriptors	≤ 3 locules, no internal vascularity		May have flow in walls or intervening septa
	Hyperechoic component (diffuse or regional) with shadowing	Focal hyperechoic component within cystic fluid, or completely hyperechoic lesion, with posterior acoustic shadowing	Represents fat, cartilage, bone
	Hyperechoic lines and dots	Bright, linear, and punctate echoes within cystic component	Represents coiled hair
	Floating echogenic spherical structures	Non-dependent, hyperechoic, round structures within cyst fluid ± posterior acoustic shadowing	Highly characteristic, albeit uncommon
Endometrioma descriptors	≤ 3 locules, no internal vascularity		May have flow in walls or intervening septa
	Homogeneous low-level internal echoes	Homogeneous and evenly dispersed echoes throughout entire cyst	Ground glass echoes = synonym
	Peripheral punctate echogenic foci	Punctate echogenic foci in cyst wall which typically do not shadow, however may demonstrate twinkling artifact	- Highly characteristic albeit uncommon - Represents hemosiderin byproducts
Septations	Complete	Linear tissue within cyst cavity extending from wall to wall in all planes	
	Incomplete	Linear tissue within cyst cavity not extending from wall to wall in all planes	
<b>Solid or Solid-Appearing Component</b>			
Solid component		Focal wall thickening or solid tissue arising from cyst wall/septation that protrudes into cyst cavity ≥ 3 mm in height	- Excludes blood products and dermoid cyst contents - May use term <b>solid-appearing</b> if no internal vascularity
Papillary projection		As above and surrounded by fluid on 3 sides	Number important for risk stratification (< 4 vs. ≥ 4)
<b>Vascularity</b>			
Color Score (CS)		Numeric overall subjective assessment of lesion vascularity on color or power Doppler  CS 1 = No flow CS 2 = Minimal flow CS 3 = Moderate flow CS 4 = Very strong flow	- Applies to some cystic and all solid smooth lesions - Does not include flow in surrounding ovarian parenchyma
Peripheral flow		Circumferential flow on color or power Doppler	Typical pattern with corpus luteum and hemorrhagic cyst
<b>General and Extra-Ovarian Findings</b>			
Cysts	Paraovarian cyst	Simple cyst separate from the adjacent ovary	- Includes paratubal cyst - Moves independent of ovary with transducer pressure
	Peritoneal inclusion cyst	Fluid collection with ovary at margin or suspended within that conforms to adjacent pelvic organs	- ± septations representing adhesions - Associated with prior surgery or inflammatory processes

Hydrosalpinx	Anechoic, fluid-filled tubular structure	Fluid-distended fallopian tube without internal echoes that has an elongated tubular shape	
	Incomplete septation(s)	Internal linear tissue that does not extend from wall to wall in all planes	Represents folds; may be better appreciated on cine clips
	Endosalpingeal folds	Short round projections around inner walls of fluid-filled tube often equidistantly spaced	Represents internal tubal infoldings seen in short axis
Peritoneal Fluid	Physiologic	Confined to pouch of Douglas and below uterine fundus when anteverted/anteflexed or between uterus and urinary bladder when retroverted/retroflexed	Considered non-pathologic
	Ascites	Fluid extends beyond pouch of Douglas or cul-de-sac and above uterine fundus when anteverted/anteflexed, and anterior/superior to uterus when retroverted/retroflexed	± internal echoes; more suspicious for malignancy if echoes present
Peritoneal nodules		Nodularity or focal thickening of the peritoneal lining or along the serosal surface of bowel	Associated with peritoneal carcinomatosis