

O-RADS™ Ultrasound v2022 — Governing Concepts

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- 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 ≥1 year; (early = postmenopausal for <5 years, late = postmenopausal for ≥5 years). If uncertain or the uterus is absent, manage as per the postmenopausal status if age is >50; (early = >50 but <55, late = ≥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™ US v2022 — Assessment Categories

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O-RADS	Risk Category [IOTA Model]	Lexicon Descriptors		Management	
Score				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)			
	Almost Certainly Benign [<1%]	Simple cyst	≤3 cm	N/A (see follicle)	None
2			>3 cm to 5 cm	None	Follow-up US
			>5 cm but <10 cm	Follow-up US in 12 months*	in 12 months*
		Unilocular, smooth, non–simple cyst (internal echoes and/or	≤3 cm	None	Follow-up US in 12 months*
		incomplete septations) Bilocular, smooth cyst	>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: If not surgically excised, consider follow-up US within 6 months** If solid, may consider US specialist (if available) or MRI (with O-RADS MRI score)*** 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: US specialist (if available) MRI (with O-RADS MRI score)*** or Per gyn-oncologist protocol Clinical: Gynecologist with gyn-oncologist consultation or 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 inner walls/septation(s) for cystic lesions, and outer contour for solid lesions; irregular inner wall for cysts = <3 mm in height	Solid: excludes blood products and dermoid contents; solid lesion = ≥80% solid; solid component = protrudes ≥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 = ≥3 locules; bilocular smooth cysts have a lower risk of malignancy, regardless of size or CS

^{*}Shorter imaging follow-up may be considered in some scenarios (eg, clinical factors). If smaller (≥10–15% decrease in average linear dimension), no further surveillance. If stable, follow-up US at 24 months from initial exam. If enlarging (≥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.



O-RADS™ US v2022 — Classic Benign Lesions

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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	
Typical Hemorrhagic Cyst	Unilocular cyst, no internal vascularity*, and at least one of the following: Reticular pattern (fine, thin intersecting lines representing fibrin strands) Retractile clot (intracystic component with straight, concave, or angular margins)	Imaging: O Premenopausal: O S cm: None O S cm but <10 cm: Follow-up US in 2–3 months O Early postmenopausal (<5 years): O CHINGRAPH S CONTROLLING STATE OF THE	
Typical Dermoid Cyst	Cystic lesion with ≤3 locules, no internal vascularity*, <u>and at least one</u> of the following: Hyperechoic component(s) (diffuse or regional) with shadowing Hyperechoic lines and dots Floating echogenic spherical structures	Imaging: o ≤3 cm: May consider follow-up US in 12 months*** o >3 cm but <10 cm: If not surgically excised, follow-up US in 12 months*** Clinical: Gynecologist**	
Typical Endometrioma	Cystic lesion with ≤3 locules, no internal vascularity *, homogeneous low–level/ground glass echoes, and smooth inner walls/septation(s) ■ ± Peripheral punctate echogenic foci in wall	Imaging: Premenopausal: 10 cm: If not surgically excised, follow-up US in 12 months*** Postmenopausal: 10 cm and initial exam, options to confirm include Follow-up US in 2–3 months or US specialist (if available) or MRI (with O-RADS MRI score) Then, if not surgically excised, recommend follow-up US in 12 months*** Clinical: Gynecologist**	
Typical Paraovarian Cyst	Simple cyst separate from the ovary	Imaging: None Clinical: Gynecologist**	
Typical Peritoneal Inclusion Cyst	Fluid collection with ovary at margin or suspended within that conforms to adjacent pelvic organs • ± Septations (representing adhesions)	Imaging: None Clinical: Gynecologist**	
Typical Hydrosalpinx	Anechoic, fluid–filled tubular structure t Incomplete septation(s) (representing folds) Endosalpingeal folds (short, round projections around inner walls)		

^{*}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.