

TI-RADS

- One score is assigned from each of the following categories:
- **Composition:** (choose one)
 - cystic or completely cystic *: 0 points
 - spongiform *: 0 points
 - mixed cystic and solid: 1 point
 - solid or almost completely solid: 2 points
- **Echogenicity:** (choose one)
 - anechoic: 0 points
 - hyper- or isoechoic: 1 point
 - hypoechoic: 2 points
 - very hypoechoic: 3 points
- **Shape:** (choose one) (assessed on the transverse plane)
 - wider than tall: 0 points
 - taller than wide: 3 points
- **Margin:** (choose one)
 - smooth: 0 points
 - ill-defined: 0 points
 - lobulated/irregular: 2 points
 - extra-thyroidal extension: 3 points
- Any and all findings in the final category are also added to the other four scores.
- **Echogenic foci:** (choose one or more)
 - none: 0 points
 - large comet tail artifact: 0 points
 - macrocalcifications: 1 point
 - peripheral/rim calcifications: 2 points
 - punctate echogenic foci: 3 points

TI-RADS

- If multiple nodules are present only the four highest scoring nodules (not necessarily the largest) should be scored, reported, and followed up.
- * Predominantly cystic or spongiform nodules are inherently benign. If these features are present no further points will be added (automatically TR1)

Scoring and classification

- **TR1:** 0 points
 - benign
- **TR2:** 2 points
 - not suspicious
- **TR3:** 3 points
 - mildly suspicious
- **TR4:** 4-6 points
 - moderately suspicious
- **TR5:** ≥ 7 points
 - highly suspicious

Recommendations

- **TR1:** no FNA required
- **TR2:** no FNA required
- **TR3:** ≥ 1.5 cm follow up, ≥ 2.5 cm FNA
 - follow up: 1, 3 and 5 years
- **TR4:** ≥ 1.0 cm follow up, ≥ 1.5 cm FNA
 - follow up: 1, 2, 3 and 5 years
- **TR5:** ≥ 0.5 cm follow up, ≥ 1.0 cm FNA
 - annual follow up for up to 5 years

Recommendations

- Biopsy is recommended for suspicious lesions (TR3 - TR5) with the above size criteria.
- If there are multiple nodules, the two with the highest ACR TI-RADS grades should be sampled (rather than the two largest).
- Interval enlargement on follow up is felt to be significant if there is a increase of 20% and 2 mm in two dimensions, or a 50% increase in volume.
- If the ACR TI-RADS level increases between scans, an interval scan the following year is again recommended.

Risk of malignancy

- TR1: 0.3%
- TR2: 1.5%
- TR3: 4.8%
- TR4: 9.1%
- TR5: 35%

Practical points

- "Punctate echogenic foci" can encompass both microcalcifications and inspissated colloid, depending on technique and size of the colloid foci in a nodule.
- Unlike microcalcifications, foci of inspissated colloid are not associated with malignancy and they often appear differently to microcalcifications on closer inspection. Inspissated colloid is not a high risk feature.