

Supplementary Table 2. Biopsy size thresholds and malignancy risk according to categories in the five risk stratification systems

| Risk stratification system | Benign nodules (n=3,277) | Malignant nodules (n=549) | Total (n=3,826) | Calculated risk of malignancy (%) | Suggested risk of malignancy (%) | Size thresholds for biopsy (cm) |
|----------------------------|--------------------------|---------------------------|-----------------|-----------------------------------|----------------------------------|---------------------------------|
| AAACE/ACE/AME | | | | | | |
| High-risk | 862 | 417 | 1,279 (33.4) | 32.6 [30.0–35.2] | 50–90 | ≥1.0 |
| Intermediate-risk | 2,291 | 121 | 2,412 (63.0) | 5.0 [4.1–5.9] | 5–15 | >2.0 |
| Low-risk | 98 | 2 | 100 (2.6) | 2.0 [0.0–4.7] | 1 | Not indicated ^{a)} |
| Unclassified ^{b)} | 26 | 9 | 35 (0.9) | 25.7 [11.2–40.2] | – | – |
| ACR TI-RADS | | | | | | |
| Highly suspicious | 273 | 345 | 618 (16.2) | 55.8 [51.9–59.7] | >20 | ≥1.0 |
| Moderately suspicious | 1,100 | 160 | 1,260 (32.9) | 12.7 [10.9–14.5] | 5–20 | ≥1.5 |
| Mildly suspicious | 904 | 24 | 928 (24.3) | 2.6 [1.6–3.6] | 5 | ≥2.5 |
| Not suspicious | 941 | 20 | 961 (25.1) | 2.1 [1.2–3.0] | <2 | Not indicated |
| Benign | 59 | 0 | 59 (1.5) | 0.0 | <2 | Not indicated |
| ATA | | | | | | |
| High suspicion | 288 | 347 | 635 (16.6) | 54.6 [50.8–58.5] | >70–90 | ≥1.0 |
| Intermediate suspicion | 406 | 83 | 489 (12.8) | 17.0 [13.6–20.3] | 10–20 | ≥1.0 |
| Low suspicion | 926 | 24 | 950 (24.8) | 2.5 [1.5–3.5] | 5–10 | ≥1.5 |
| Very low suspicion | 1,041 | 24 | 1,065 (27.8) | 2.3 [1.4–3.1] | <3 | Consider FNA at ≥2.0 cm |
| Benign | 16 | 0 | 16 (0.4) | 0.0 | <1 | Not indicated |
| Unclassified ^{c)} | 600 | 71 | 671 (17.5) | 10.6 [8.3–12.9] | – | – |
| EU-TIRADS | | | | | | |
| High-risk | 880 | 420 | 1,300 (34.0) | 32.3 [29.8–34.8] | 26–87 | >1.0 |
| Intermediate-risk | 1,051 | 73 | 1,124 (29.4) | 6.5 [5.1–7.9] | 6–27 | >1.5 |
| Low-risk | 1,296 | 47 | 1,343 (35.1) | 3.5 [2.5–4.5] | 2–4 | >2.0 |
| Benign | 24 | 0 | 24 (0.6) | 0.0 | 0 | Not indicated ^{d)} |
| Unclassified ^{b)} | 26 | 9 | 35 (0.9) | 25.7 [11.2–40.2] | – | – |
| K-TIRADS | | | | | | |
| High suspicion | 167 | 325 | 492 (12.9) | 66.1 [61.9–70.2] | >60 | ≥1.0 |
| Intermediate suspicion | 1,133 | 176 | 1,309 (34.2) | 13.4 [11.6–15.3] | 15–50 | ≥1.0 |
| Low suspicion | 1,881 | 46 | 1,927 (50.4) | 2.4 [1.7–3.1] | 3–15 | ≥1.5 |
| Benign | 96 | 2 | 98 (2.6) | 2.0 [0.0–4.8] | <3 | Not indicated ^{e)} |

Values in parentheses are percentages; values in square brackets are 95% confidence intervals.

AAACE/ACE/AME, American Association of Clinical Endocrinologists/American College of Endocrinology/Associazione Medici Endocrinologi Medical Guidelines; ACR TI-RADS, American College of Radiology Thyroid Imaging Reporting and Data System; ATA, American Thyroid Association Management Guideline; FNA, fine-needle aspiration; EU-TIRADS, European Thyroid Imaging Reporting and Data System; K-TIRADS, Korean Thyroid Imaging Reporting and Data System.

^{a)}Not routinely indicated, but indicated only when >2 cm and increasing in size or associated with a risk history and before thyroid surgery or minimally invasive ablation therapy. ^{b)}Isolated macrocalcifications (entirely calcified nodule with posterior acoustic shadowing in which any soft-tissue component is not identified due to dense shadowing). ^{c)}Includes isolated macrocalcifications and isoechoic and hyperechoic nodules with suspicious US features (microcalcification, taller-than-wide shape, and irregular margin). ^{d)}Unless compressive. ^{e)}Not routinely indicated, but indicated for therapeutic aspiration of the cystic content and for diagnosis prior to ablation therapy or surgery.