

**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 <sup>a)</sup>
Unclassified <sup>b)</sup>	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 <sup>c)</sup>	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 <sup>d)</sup>
Unclassified <sup>b)</sup>	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 <sup>e)</sup>

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.

<sup>a)</sup>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. <sup>b)</sup>Isolated macrocalcifications (entirely calcified nodule with posterior acoustic shadowing in which any soft-tissue component is not identified due to dense shadowing). <sup>c)</sup>Includes isolated macrocalcifications and isoechoic and hyperechoic nodules with suspicious US features (microcalcification, taller-than-wide shape, and irregular margin). <sup>d)</sup>Unless compressive. <sup>e)</sup>Not routinely indicated, but indicated for therapeutic aspiration of the cystic content and for diagnosis prior to ablation therapy or surgery.