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Sonographic Thyroid Volume Percentile Curves from Birth to 18 Years: A Large Clinical Cohort Study

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Abstract

Purpose:

Reliable interpretation of pediatric thyroid ultrasound requires age-appropriate reference values. This study aimed to provide updated sonographic reference values for thyroid volume from birth to 18 years, based on a large, real-world clinical cohort.

Methods:

This retrospective cohort study included pediatric thyroid ultrasound examinations performed between January 2000 and December 2025 at a tertiary referral hospital. Examinations from both hospitalized and outpatient-referred children were included, and patients were not excluded on the basis of pre-existing conditions. Thyroid lobe dimensions were extracted from structured radiology reports, and lobar volumes were calculated as length × width × depth × 0.5. Total thyroid volume was defined as the sum of both lobes, excluding the isthmus. Age- and sex-specific percentile curves from the 3rd to 97th percentile were generated at 0.5-year intervals using Generalized Additive Models for Location, Scale, and Shape. Differences by sex and thyroid lobe side were assessed using age-specific modeled estimates.

Results:

A total of 9,912 thyroid lobe examinations were analyzed. Right thyroid lobe measurements were available for 2,349 males and 2,599 females, and left lobe measurements for 2,362 males and 2,602 females. Thyroid volume increased continuously from birth to 18 years in both sexes, with pubertal acceleration occurring earlier in girls than in boys. Mean total thyroid volume increased from 0.71 to 8.09 ml in boys and from 0.53 to 7.46 ml in girls. The steepest one-year increase occurred at 13–14 years in boys and at 11–12 years in girls. When aggregated across all ages, no overall difference in total thyroid volume was observed between boys and girls, despite the differing timing of pubertal growth acceleration. Right thyroid lobe volume exceeded left lobe volume in the majority of examinations in both sexes (66.5% in boys, 64.4% in girls), a pattern confirmed as statistically robust at both the patient and population level (all $p < 10^{-9}$). Median thyroid volumes were consistently higher than WHO reference values across all examined age groups.

Conclusion:

The derived percentile curves demonstrate continuous thyroid growth throughout

childhood and adolescence, earlier pubertal acceleration in girls, and a stable right-greater-than-left lobe asymmetry. Median thyroid volumes exceeded WHO reference values, indicating that older, population-based international standards may underestimate thyroid size when applied to contemporary clinical pediatric ultrasound cohorts.

What is Known – What is New

- Pediatric thyroid volume varies with age and pubertal development, but existing sonographic reference values are often limited to specific age groups and may not adequately reflect contemporary clinical populations.
- This study provides updated age- and sex-specific thyroid volume percentile curves from birth to 18 years based on 9,912 sonographic lobe measurements, demonstrating earlier pubertal growth acceleration in girls, consistent right-sided lobe predominance, and higher median thyroid volumes compared with WHO reference values.

Introduction

Ultrasonography remains the primary imaging technique to assess the pediatric thyroid, providing accurate assessment of gland size and structure and serving as an essential tool in conditions such as congenital hypothyroidism as well as autoimmune or infectious diseases (1). Another important indication is the evaluation of thyroid nodules, which are uncommon in children but have a malignancy rate of around 22–26 % (2,3) compared with approximately 5–10 % in adults (4,5) making ultrasound essential for distinguishing benign from malignant lesions.

Beyond these disease-specific indications, ultrasound plays a central role in the quantitative evaluation of thyroid size. This is particularly relevant in the context of goiter, where palpation offers limited diagnostic accuracy in regions with mild to moderate iodine deficiency, whereas ultrasound enables objective and reproducible measurement of thyroid volume (6). Accurate interpretation of thyroid volume, in turn, relies on age- and sex-specific reference values.

Early reference values published in 1993 from cohorts in Sweden and Germany (7) were criticized for being overly restrictive, and a decade later the WHO therefore published international reference values derived from iodine-sufficient schoolchildren aged 6–12 years from multiple regions worldwide (8). While these data provided an important global benchmark their generalizability across populations has also been questioned. Findings from the German KiGGS study (ages 6–17 years) demonstrated that the 97th percentile thyroid volumes were 33.4% higher in boys and 28.5% higher in girls compared with WHO norms, suggesting an underestimation of thyroid size in this cohort (9). Data from Japanese schoolchildren, on the other hand, showed 97th percentile values about 5–13% above WHO standards, yet with generally smaller thyroid volumes compared to other iodine-sufficient populations (10). In contrast, a population-based study from Iranian schoolchildren aged 8–15 years in Isfahan reported both median and 95th percentile thyroid volumes below the WHO references (11). Experience from China illustrates that thyroid volume reference ranges may shift over time with changes in iodine nutrition (12), underscoring that normative values are not only region-specific but also temporally dynamic.

These temporal trends are partly influenced by anthropometric factors, including body surface area (13) and body mass index. Overweight children have been shown to

exhibit significantly larger thyroid volumes (14), and increasing rates of overweight and obesity (15) may partly account for secular trends in gland size.
Another determinant is the timing of maturation, as pubertal onset has shifted toward younger ages in many populations over recent decades (16,17), which has reshaped patterns of organ growth. Together with improvements in nutrition and shifts in body composition, this earlier pubertal onset implies that reference values derived from older cohorts may not fully reflect the characteristics of children today.
In addition to these influences, existing reference studies are limited in their age coverage: most have concentrated on school-aged children (18), while some have specifically addressed infants (19), leaving the intermediate age groups insufficiently represented.

Against this background of changing growth patterns and the limited availability of comprehensive data across all pediatric age groups, the present study aims to close that gap by providing updated clinical percentile curves covering the entire age range from birth to 18 years, based on a large, real-world clinical cohort spanning both hospitalized (inpatient) and outpatient-referred children — rather than a pre-selected, population-based sample.

Methods

Study design and data acquisition

This retrospective cohort study was approved by the Local Ethics Committee of the University Hospital Frankfurt (approval number 2024-1854_1) and was conducted in accordance with the Declaration of Helsinki and applicable institutional and national ethical standards. The requirement for informed consent was waived by the ethics committee due to the retrospective nature of the study.

Pediatric thyroid ultrasound examinations were conducted between January 2000 and December 2025 at University Hospital Frankfurt, a tertiary referral center serving patients from the Rhine-Main metropolitan area and surrounding regions.

Standardized Measurement Protocols

Ultrasound measurements were performed on Philips EPIQ Elite and Esaote MyLab Twice scanners equipped with pediatric presets, with all examinations conducted by three experienced senior pediatric radiologists. To guarantee consistency across the study period, standardized protocols in line with national and international recommendations were applied, ensuring high image quality, anatomical precision, and reproducibility.

As is typical for routine clinical ultrasound acquisition, each examination was performed and reported by a single radiologist; formal interrater reliability across the three radiologists was therefore not assessed.

Measurement procedures included:

- **Thyroid lobes:** Each lobe was measured in the longitudinal plane to obtain the maximum craniocaudal length, and in the transverse plane for width and depth.
- **Isthmus:** The anteroposterior thickness of the isthmus was determined in the transverse plane at the midline.
- **Thyroid volume:** Lobar and isthmus volumes were calculated using the following formula:

  $$\text{Volume} = \text{Length} \times \text{Width} \times \text{Depth} \times 0.5$$

  The total thyroid volume was derived as the sum of both lobes (without inclusion of the isthmus).

Inclusion and Exclusion Criteria

The inclusion criteria required patients to be between 0 and 18 years of age at the time of ultrasound, to have adequate image quality for reliable thyroid assessment, and to provide complete measurement data for at least one lobe. Examinations were not excluded on the basis of pre-existing conditions. When repeated scans were available, only those conducted at least twelve months apart were included to preserve statistical independence.

Statistical Analysis

Data Processing and Development of Percentile Curves:

Thyroid measurements were extracted from structured radiology reports. Patient age was calculated from examination and birth dates. Duplicates were removed, and extreme measurement errors were identified using Tukey's method (1.5 × IQR criterion) applied separately for each gender-age combination to exclude only technically implausible values while preserving population variability.

For each measurement, six candidate distributions were fitted by penalized maximum likelihood: Normal, Gamma, log-normal, Box-Cox Cole-Green, Box-Cox Power Exponential, and Box-Cox t. Model fit was compared using the Akaike Information Criterion. To avoid overparameterization, four-parameter distributions were selected only when they reduced the AIC by more than 5 units compared with the three-parameter Box-Cox Cole-Green reference model. Otherwise, the most parsimonious distribution with the lowest AIC was retained, following an approach consistent with the WHO Child Growth Standards.

Model adequacy was evaluated using normalized quantile residuals. For each model, residual mean, standard deviation, skewness, and kurtosis were compared with their expected values of 0, 1, 0, and 3, respectively. The Filliben Q-Q correlation coefficient was calculated, and the Shapiro-Wilk statistic was reported for models with fewer than 5,000 observations. Calibration of the fitted centiles was assessed by centile-coverage analysis, comparing the observed proportions of observations below P3, within P3-P10, P10-P50, P50-P90, P90-P97, and above P97 with the corresponding nominal proportions of 3%, 7%, 40%, 40%, 7%, and 3%. As GAMLSS models multiple distributional parameters rather than a single conditional mean, a conventional R-squared is not informative. We therefore report the pseudo-R-squared, defined as the proportional reduction in global deviance relative to an intercept-only model, together with residual and coverage diagnostics.

Evaluation of Group Differences:

Differences between male and female subjects were assessed using sex-specific modeled estimates. Left-right thyroid lobe asymmetry was evaluated within each sex

at two levels: at the patient level, using paired sign tests and Wilcoxon signed-rank tests on individual right and left lobe volumes, and at the population level, using the same tests applied to age-specific modeled estimates. Model estimation required at least 50 valid observations per group. Statistical significance was defined as $p < 0.05$.

Results

Study population

In total, measurements of the right thyroid lobe were available for 2349 males and 2599 females. For the left lobe, data comprised 2362 males and 2602 females. These counts reflect the number of examinations per lobe and do not necessarily correspond to unique individuals, as in some cases both lobes were assessed.

Age-Related Growth Patterns

Thyroid volume (Tvol) increased steadily from birth through late adolescence in both sexes (Figures 1 and 2). In boys, mean total Tvol rose from 0.71 ml at birth to 8.09 ml at 18 years (+7.38 ml overall; ≈0.41 ml/year on average). In girls, Tvol increased from 0.53 ml to 7.46 ml (+6.93 ml overall; ≈0.38 ml/year). Growth was gradual during early childhood and accelerated around school age and adolescence (supplementary tables 1-4).

Fig. 1: Age-specific percentile curves for left thyroid lobe volume in girls and boys

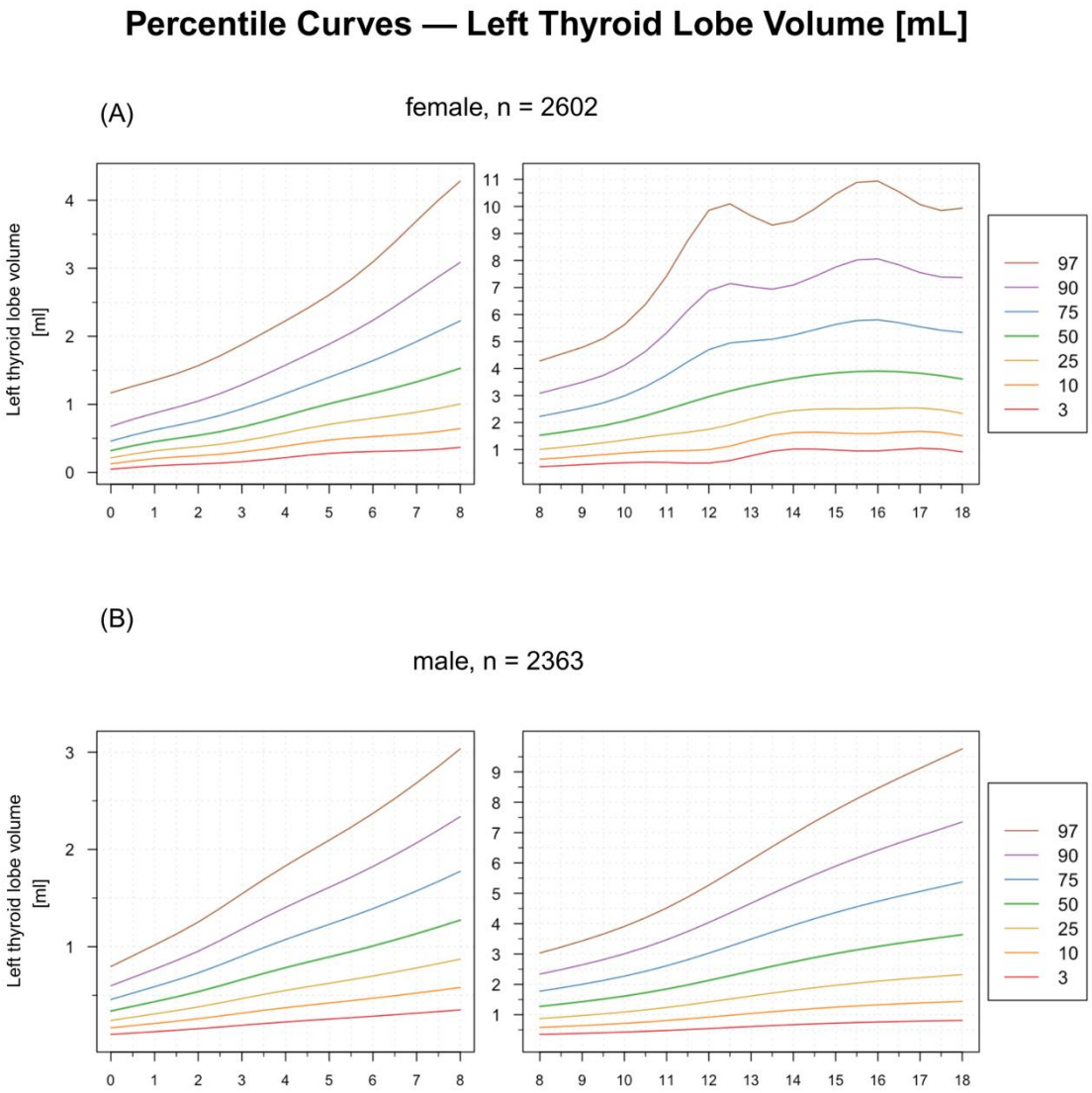


Fig. 1: *Age-specific percentile curves (P3, P10, P25, P50, P75, P90, and P97) for left thyroid lobe volume in females (A) and males (B) from birth to 18 years. Thyroid lobe volume is expressed in milliliters (mL). Percentile curves were derived using generalized additive models for location, scale, and shape (GAMLSS).*

Fig. 2: Age-specific percentile curves for right thyroid lobe volume in females and males

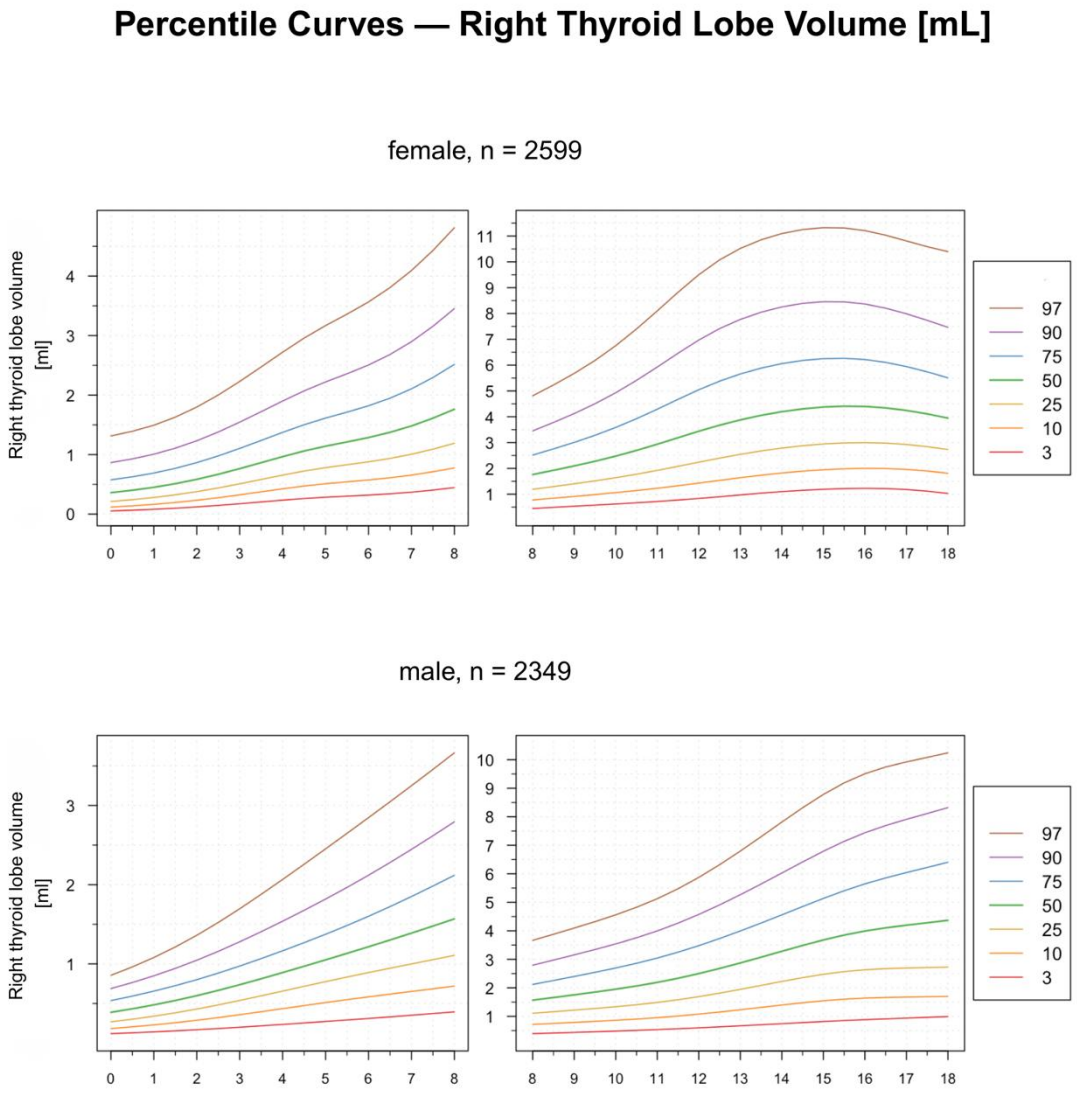


Fig. 2: *Age-specific percentile curves (P3, P10, P25, P25, P50, P75, P90, and P97) for right thyroid lobe volume in females (A) and males (B) from birth to 18 years. Thyroid lobe volume is expressed in milliliters (mL). Across all ages and percentiles, right thyroid lobe volumes were consistently larger than left lobe volumes.*

Sex differences

The steepest one-year increment occurred at 13–14 years in boys (+0.73 ml) and earlier, at 11–12 years in girls (+0.99 ml). Accordingly, while both sexes experienced acceleration during puberty, the timing of peak growth differed: girls reached their maximum annual gain earlier, whereas boys peaked later and continued to accrue thyroid volume further into adolescence.

When aggregated across ages, mean total Tvol did not differ significantly between boys and girls ($p = 0.28$).

Lateral Asymmetry

A right-greater-than-left thyroid lobe volume asymmetry was observed at the patient level in the majority of examinations in both sexes: right lobe volume exceeded left lobe volume in 66.5% of examinations in boys (1,732/2,603) and 64.4% in girls (1,907/2,961), compared with 25.4% and 28.6% showing the reverse pattern, respectively (remainder equal). This asymmetry was statistically robust in both sexes (sign test and Wilcoxon signed-rank test, both $p < 10^{-90}$), with a mean right-left difference of 0.37 mL in boys and 0.44 mL in girls. Consistent with this patient-level pattern, age-specific modeled estimates likewise showed right lobe volume exceeding left lobe volume across nearly the entire modeled age range: at every modeled age point from birth to 18 years in boys (37/37), and at 36 of 37 age points in girls, with right and left lobe volumes converging only in early infancy (age <1.5 years). In boys, modeled right lobe volume increased from 0.39 to 4.37 ml (+3.98 ml; ≈0.22 ml/year), while left lobe volume increased from 0.34 to 3.64 ml (+3.30 ml; ≈0.18 ml/year). The largest one-year gain occurred at 13.5–14.5 years for the right lobe (+0.41 ml) and at 12.5–13.5 years for the left lobe (+0.31 ml). In girls, right lobe volume increased from 0.36 to 3.95 ml (+3.59 ml; ≈0.20 ml/year), and left lobe volume from 0.32 to 3.61 ml (+3.29 ml; ≈0.18 ml/year). The steepest one-year increases in girls occurred at 11.0–12.0 years for both lobes (+0.50 ml right; +0.48 ml left).

Comparison of median thyroid volume (P50) by age with WHO and KiGGS reference data

Across all age groups, median thyroid volume (P50) values in the current study were consistently higher than the corresponding WHO reference values (8) in both boys and girls. Compared with KiGGS reference data (9), P50 values from the current study were similar in boys across most age groups, whereas in girls, median thyroid volumes were systematically higher than KiGGS values from age 6 to 12 years (Table 1).

Table 1: Median thyroid volume (P50) by age and sex: comparison with WHO and KiGGS reference data

Boys			
Age	**WHO P50**	**KiGGS P50**	**Current study P50**
6	1.6	2	2.2
7	1.8	2.3	2.5
8	2.03	2.7	2.8
9	2.3	3.1	3.2
10	2.59	3.5	3.5
11	2.92	4.1	4
12	3.3	4.7	4.6
Girls			
Age	**WHO P50**	**KiGGS P50**	**Current study P50**
6	1.57	1.9	2.5
7	1.81	2.3	2.8
8	2.08	2.6	3.3
9	2.4	3.1	3.8
10	2.76	3.6	4.5
11	3.17	4.2	5.3
12	3.65	5.2	6.3

Table 1: *Median thyroid volume (50th percentile, P50) values are shown by age and sex for the current study and compared with corresponding reference values from the World Health Organization (WHO) and the recently published German KiGGS study. Thyroid volume is expressed in milliliters (mL) and represents total thyroid volume assessed by ultrasound.*

Discussion

In this retrospective study 9 912 thyroid lobe ultrasound examinations were evaluated to establish updated clinical percentile curves for thyroid volume from birth through 18 years. Unlike most previous reference reports, which included relatively small cohorts or were limited to selected age ranges, this dataset covers the entire pediatric age spectrum and provides nearly 10,000 lobe-specific measurements, ensuring a solid statistical foundation for deriving age- and sex-specific standards.

To our knowledge, it constitutes one of the largest single-center collections of pediatric thyroid ultrasound data available to date. The material originates from routine imaging in a major European urban hospital, ensuring that the cohort reflects a wide pediatric clinical population and supporting its applicability to comparable clinical environments in Central Europe. Growth modeling was performed using Generalized Additive Models for Location, Scale, and Shape (GAMLSS), an approach well suited to describe the non-linear course of thyroid development across childhood and adolescence, thereby enhancing the accuracy and clinical usefulness of the resulting reference charts.

The resulting reference data reveal characteristic growth trajectories and demographic patterns relevant for clinical use. No significant sex differences in organ sizes were identified, supporting the use of unified reference values for boys and girls in clinical settings. While this finding is consistent with several previous studies reporting minimal or no clinically relevant sex-based variation (20–23), other reports have reported sex-specific differences in thyroid volume, with inconsistent findings regarding whether Tvol is larger in girls (24) or boys (25).

A consistent asymmetry between the two thyroid lobes was observed, with the right lobe being larger than the left across the entire pediatric age range. This pattern has been well described in previous studies (26,27) and represents a normal anatomical variant rather than a pathological alteration.

In comparison with established reference data, median thyroid volume (P50) values observed in the current study were consistently higher than the corresponding WHO reference values across all examined age groups in both sexes. This finding is in line with previous reports from iodine-sufficient European populations (9,18,28)

suggesting that WHO reference charts may underestimate thyroid volume in contemporary European children and adolescents. The WHO references were derived from an international pediatric cohort with heterogeneous ethnic backgrounds and were established more than two decades ago, which may limit their applicability to present-day, iodine-replete populations.

When compared with the recently published German KiGGS reference data (9), median thyroid volumes in the current study showed a closer agreement in boys, with largely comparable P50 values across most age groups. In contrast, girls exhibited systematically higher median thyroid volumes than those reported in KiGGS from ages 6 to 12 years. This sex-specific divergence may reflect differences in pubertal timing, body composition, or secular trends in growth and thyroid development, particularly in females. Another potential explanation for the higher median thyroid volumes observed in the current study compared with WHO and KiGGS reference data may in part be attributable to the broader inclusion criteria of our cohort, as children with underlying medical conditions were not systematically excluded. Subclinical or chronic conditions, as well as medication use, may influence thyroid size even in the absence of overt thyroid disease and could therefore contribute to a modest upward shift in thyroid volume distributions at the population level. Conversely, it is worth noting that a "healthy" population-based baseline is itself not necessarily the most appropriate benchmark (29) for interpreting thyroid ultrasound findings in everyday clinical practice, where thyroid volume is typically assessed precisely because a clinical indication exists. Reference values derived from rigorously screened, disease-free populations such as WHO/ICCIDD or KiGGS may therefore systematically underrepresent the range of thyroid volumes encountered in real-world clinical cohorts, regardless of the direction or magnitude of any single deviation.

At the same time, several methodological aspects of the present study should be considered when interpreting these results. Several methodological aspects should be considered when interpreting the present findings.

First, this was a retrospective analysis of clinically indicated ultrasound examinations performed at a tertiary referral hospital. The cohort may therefore be subject to

selection bias, and the lack of standardized examination indications may have introduced clinical heterogeneity.

Patients were not excluded on the basis of pre-existing conditions or underlying thyroid-related pathology. This approach reflects the spectrum of children encountered in routine tertiary-care practice, but it also means that the derived curves should be interpreted as clinical sonographic reference percentiles rather than normative values from a strictly healthy population. In particular, thyroid enlargement related to autoimmune thyroid disease, iodine status, nodular disease, endocrine disorders, or other clinical conditions may have influenced the upper percentile range.

Second, thyroid function tests and thyroid autoantibody status were not consistently available. It therefore remains uncertain whether all children were euthyroid at the time of examination or free from subclinical thyroid disease. Similarly, anthropometric data such as height, weight, and body surface area were unavailable. As thyroid volume is influenced not only by age but also by body size and pubertal development, age-based reference values may be less precise in children with atypical growth patterns, obesity, growth restriction, or chronic disease.

Furthermore, ultrasound is inherently operator-dependent. Although examinations were performed by experienced pediatric radiologists, thyroid volume measurements may be affected by probe positioning, neck extension, patient cooperation, and subtle differences in measurement technique. Formal interobserver and intraobserver reproducibility assessments were not available for this retrospective dataset. In addition, the long study period from 2000 to 2025 may have introduced heterogeneity related to changes in ultrasound technology, image resolution, reporting structures, clinical indications, and institutional workflows.

Repeated examinations were restricted to scans performed at least twelve months apart to reduce short-term duplication; however, within-patient correlation cannot be fully excluded. As patient-level clustering was not modeled, variance estimates and percentile uncertainty may have been affected.

Finally, the dataset originates from a single tertiary-care center in Germany, which may limit generalizability to other healthcare settings or populations with different

ethnic, sociodemographic, nutritional, or iodine-status profiles. External validation in independent and more diverse pediatric cohorts is therefore needed to confirm the applicability of these percentile curves and to define their role in clinical decision-making.

Conclusion

This study provides comprehensive, age- and sex-specific sonographic percentile curves for thyroid volume across the entire pediatric age range from birth through 18 years, derived from a large, real-world clinical European cohort. Using robust growth modeling, we characterize continuous thyroid growth with pubertal acceleration in both sexes, an earlier growth peak in girls than in boys, and a consistent right-greater-than-left lobe asymmetry from early childhood onward.

Median thyroid volumes were systematically higher than both WHO/ICCIDD and KiGGS reference values, with the divergence from KiGGS most pronounced in girls between 6 and 12 years. This pattern underscores that reference standards derived from healthy, population-based samples — however methodologically rigorous — may not fully capture the range of thyroid volumes encountered in everyday clinical practice, where ultrasound is performed on children with a specific clinical indication and where underlying subclinical conditions are not systematically excluded.

Taken together, these findings highlight the need for updated, clinically derived thyroid percentile curves that reflect the populations in which thyroid ultrasound is actually used. Applying outdated or non-representative reference standards risks misclassifying normal variation — including normal lateral asymmetry — as pathological, with direct consequences for individual diagnostic work-up and population-level goiter surveillance alike.

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Supplementary Material

Supplementary Table S1. Left thyroid lobe volume in girls (Part 1 of 2)

Age-specific modeled sonographic volume (mL), 0–18 years, at 0.5-year intervals.

Age (years)	Mean	P3	P10	P20	P30	P40	P50
0.0	0.32	0.07	0.13	0.19	0.24	0.28	0.32
0.5	0.38	0.08	0.16	0.23	0.28	0.33	0.38
1.0	0.43	0.09	0.18	0.26	0.32	0.37	0.43
1.5	0.48	0.10	0.20	0.28	0.35	0.42	0.48
2.0	0.53	0.11	0.22	0.31	0.39	0.46	0.53
2.5	0.59	0.13	0.24	0.35	0.43	0.51	0.59
3.0	0.66	0.15	0.28	0.39	0.48	0.57	0.66
3.5	0.74	0.17	0.31	0.44	0.54	0.64	0.74
4.0	0.83	0.19	0.35	0.49	0.60	0.71	0.83
4.5	0.92	0.21	0.39	0.54	0.67	0.79	0.92
5.0	1.00	0.23	0.42	0.59	0.73	0.86	1.00
5.5	1.09	0.26	0.46	0.65	0.80	0.94	1.09
6.0	1.18	0.28	0.50	0.70	0.86	1.02	1.18
6.5	1.28	0.30	0.54	0.75	0.93	1.10	1.28
7.0	1.37	0.33	0.58	0.81	1.00	1.18	1.37
7.5	1.48	0.36	0.63	0.87	1.07	1.27	1.48
8.0	1.58	0.39	0.68	0.94	1.15	1.36	1.58
8.5	1.70	0.42	0.73	1.01	1.24	1.46	1.70
9.0	1.84	0.46	0.79	1.08	1.33	1.58	1.84
9.5	1.99	0.50	0.86	1.18	1.45	1.71	1.99
10.0	2.17	0.55	0.93	1.28	1.58	1.86	2.17
10.5	2.37	0.61	1.02	1.40	1.72	2.04	2.37
11.0	2.59	0.67	1.12	1.53	1.88	2.22	2.59
11.5	2.81	0.74	1.22	1.66	2.04	2.41	2.81
12.0	3.02	0.80	1.32	1.79	2.20	2.60	3.02
12.5	3.22	0.86	1.41	1.91	2.34	2.76	3.22
13.0	3.39	0.92	1.49	2.02	2.47	2.91	3.39
13.5	3.54	0.97	1.56	2.11	2.58	3.04	3.54
14.0	3.66	1.01	1.62	2.19	2.67	3.15	3.66
14.5	3.76	1.05	1.67	2.25	2.74	3.23	3.76
15.0	3.84	1.09	1.71	2.30	2.80	3.30	3.84
15.5	3.90	1.11	1.75	2.34	2.85	3.35	3.90
16.0	3.94	1.14	1.77	2.37	2.88	3.39	3.94
16.5	3.96	1.16	1.80	2.39	2.90	3.41	3.96
17.0	3.99	1.18	1.82	2.41	2.92	3.44	3.99
17.5	4.01	1.20	1.83	2.43	2.94	3.45	4.01
18.0	4.03	1.22	1.85	2.45	2.96	3.47	4.03

P = percentile. P3–P97 and P10–P90 represent percentile intervals in the clinical cohort, not healthy-population normal ranges.

Supplementary Table S1. Left thyroid lobe volume in girls (Part 2 of 2)
Age-specific modeled sonographic volume (mL), 0–18 years, at 0.5-year intervals.

Age (years)	P60	P70	P80	P90	P97	P3–P97	P10–P90
0.0	0.37	0.43	0.52	0.69	1.08	0.07–1.08	0.13–0.69
0.5	0.44	0.51	0.61	0.81	1.27	0.08–1.27	0.16–0.81
1.0	0.50	0.58	0.70	0.92	1.44	0.09–1.44	0.18–0.92
1.5	0.55	0.65	0.78	1.02	1.60	0.10–1.60	0.20–1.02
2.0	0.61	0.71	0.86	1.13	1.76	0.11–1.76	0.22–1.13
2.5	0.68	0.79	0.95	1.25	1.95	0.13–1.95	0.24–1.25
3.0	0.76	0.88	1.06	1.40	2.18	0.15–2.18	0.28–1.40
3.5	0.85	1.00	1.20	1.58	2.46	0.17–2.46	0.31–1.58
4.0	0.96	1.12	1.34	1.77	2.76	0.19–2.76	0.35–1.77
4.5	1.06	1.24	1.49	1.97	3.06	0.21–3.06	0.39–1.97
5.0	1.16	1.36	1.64	2.16	3.36	0.23–3.36	0.42–2.16
5.5	1.26	1.48	1.78	2.36	3.66	0.26–3.66	0.46–2.36
6.0	1.37	1.60	1.94	2.56	3.98	0.28–3.98	0.50–2.56
6.5	1.48	1.73	2.09	2.77	4.30	0.30–4.30	0.54–2.77
7.0	1.59	1.86	2.25	2.98	4.64	0.33–4.64	0.58–2.98
7.5	1.71	2.01	2.43	3.21	5.00	0.36–5.00	0.63–3.21
8.0	1.84	2.16	2.61	3.46	5.38	0.39–5.38	0.68–3.46
8.5	1.98	2.32	2.81	3.72	5.80	0.42–5.80	0.73–3.72
9.0	2.13	2.50	3.03	4.02	6.27	0.46–6.27	0.79–4.02
9.5	2.31	2.72	3.29	4.37	6.81	0.50–6.81	0.86–4.37
10.0	2.52	2.96	3.59	4.78	7.44	0.55–7.44	0.93–4.78
10.5	2.76	3.24	3.93	5.23	8.16	0.61–8.16	1.02–5.23
11.0	3.01	3.54	4.30	5.72	8.92	0.67–8.92	1.12–5.72
11.5	3.27	3.84	4.67	6.22	9.70	0.74–9.70	1.22–6.22
12.0	3.52	4.14	5.03	6.70	10.44	0.80–10.44	1.32–6.70
12.5	3.74	4.40	5.35	7.13	11.12	0.86–11.12	1.41–7.13
13.0	3.94	4.64	5.64	7.52	11.72	0.92–11.72	1.49–7.52
13.5	4.12	4.84	5.89	7.85	12.23	0.97–12.23	1.56–7.85
14.0	4.26	5.01	6.09	8.12	12.65	1.01–12.65	1.62–8.12
14.5	4.37	5.15	6.26	8.34	12.99	1.05–12.99	1.67–8.34
15.0	4.46	5.25	6.38	8.51	13.24	1.09–13.24	1.71–8.51
15.5	4.53	5.32	6.47	8.62	13.42	1.11–13.42	1.75–8.62
16.0	4.57	5.38	6.53	8.71	13.54	1.14–13.54	1.77–8.71
16.5	4.60	5.41	6.58	8.76	13.62	1.16–13.62	1.80–8.76
17.0	4.63	5.44	6.61	8.80	13.67	1.18–13.67	1.82–8.80
17.5	4.65	5.47	6.64	8.84	13.72	1.20–13.72	1.83–8.84
18.0	4.67	5.49	6.67	8.88	13.77	1.22–13.77	1.85–8.88

P = percentile. P3–P97 and P10–P90 represent percentile intervals in the clinical cohort, not healthy-population normal ranges.

Supplementary Table S2. Left thyroid lobe volume in boys (Part 1 of 2)

Age-specific modeled sonographic volume (mL), 0–18 years, at 0.5-year intervals.

Age (years)	Mean	P3	P10	P20	P30	P40	P50
0.0	0.35	0.10	0.17	0.22	0.27	0.31	0.35
0.5	0.40	0.12	0.20	0.26	0.31	0.36	0.40
1.0	0.46	0.14	0.22	0.30	0.35	0.41	0.46
1.5	0.52	0.15	0.25	0.34	0.40	0.46	0.52
2.0	0.58	0.17	0.28	0.37	0.45	0.51	0.58
2.5	0.65	0.19	0.31	0.41	0.50	0.57	0.65
3.0	0.71	0.21	0.34	0.45	0.54	0.63	0.71
3.5	0.77	0.22	0.37	0.49	0.59	0.68	0.77
4.0	0.83	0.24	0.40	0.53	0.63	0.73	0.83
4.5	0.89	0.26	0.42	0.57	0.68	0.78	0.89
5.0	0.95	0.27	0.45	0.60	0.72	0.83	0.95
5.5	1.00	0.29	0.48	0.64	0.76	0.88	1.00
6.0	1.06	0.30	0.50	0.67	0.81	0.93	1.06
6.5	1.13	0.32	0.53	0.71	0.85	0.99	1.13
7.0	1.19	0.34	0.56	0.75	0.90	1.05	1.19
7.5	1.26	0.36	0.59	0.80	0.96	1.11	1.26
8.0	1.34	0.38	0.63	0.84	1.01	1.18	1.34
8.5	1.42	0.40	0.67	0.89	1.08	1.25	1.42
9.0	1.51	0.42	0.71	0.95	1.14	1.33	1.51
9.5	1.61	0.45	0.75	1.01	1.21	1.41	1.61
10.0	1.72	0.48	0.80	1.07	1.29	1.50	1.72
10.5	1.83	0.51	0.84	1.14	1.37	1.60	1.83
11.0	1.95	0.54	0.90	1.21	1.46	1.70	1.95
11.5	2.07	0.57	0.95	1.28	1.55	1.81	2.07
12.0	2.20	0.61	1.01	1.36	1.65	1.92	2.20
12.5	2.34	0.64	1.07	1.45	1.75	2.04	2.34
13.0	2.48	0.68	1.13	1.53	1.85	2.16	2.48
13.5	2.63	0.72	1.20	1.62	1.96	2.29	2.63
14.0	2.77	0.75	1.26	1.70	2.07	2.41	2.77
14.5	2.92	0.79	1.32	1.79	2.17	2.54	2.92
15.0	3.06	0.83	1.38	1.87	2.28	2.66	3.06
15.5	3.21	0.87	1.44	1.96	2.38	2.78	3.21
16.0	3.35	0.90	1.50	2.04	2.48	2.91	3.35
16.5	3.49	0.94	1.56	2.12	2.58	3.02	3.49
17.0	3.63	0.97	1.62	2.20	2.68	3.14	3.63
17.5	3.76	1.00	1.68	2.28	2.78	3.26	3.76
18.0	3.89	1.04	1.73	2.35	2.87	3.37	3.89

P = percentile. P3–P97 and P10–P90 represent percentile intervals in the clinical cohort, not healthy-population normal ranges.

Supplementary Table S2. Left thyroid lobe volume in boys (Part 2 of 2)

Age-specific modeled sonographic volume (mL), 0–18 years, at 0.5-year intervals.

Age (years)	P60	P70	P80	P90	P97	P3–P97	P10–P90
0.0	0.39	0.44	0.51	0.63	0.86	0.10–0.86	0.17–0.63
0.5	0.45	0.51	0.60	0.74	1.01	0.12–1.01	0.20–0.74
1.0	0.52	0.59	0.68	0.85	1.16	0.14–1.16	0.22–0.85
1.5	0.59	0.67	0.77	0.96	1.32	0.15–1.32	0.25–0.96
2.0	0.66	0.75	0.87	1.08	1.48	0.17–1.48	0.28–1.08
2.5	0.73	0.83	0.96	1.20	1.65	0.19–1.65	0.31–1.20
3.0	0.80	0.91	1.06	1.32	1.82	0.21–1.82	0.34–1.32
3.5	0.87	0.99	1.15	1.44	1.99	0.22–1.99	0.37–1.44
4.0	0.94	1.07	1.25	1.55	2.16	0.24–2.16	0.40–1.55
4.5	1.01	1.15	1.34	1.67	2.32	0.26–2.32	0.42–1.67
5.0	1.07	1.22	1.43	1.78	2.49	0.27–2.49	0.45–1.78
5.5	1.14	1.30	1.52	1.90	2.66	0.29–2.66	0.48–1.90
6.0	1.21	1.38	1.61	2.02	2.83	0.30–2.83	0.50–2.02
6.5	1.28	1.46	1.71	2.14	3.01	0.32–3.01	0.53–2.14
7.0	1.35	1.55	1.81	2.28	3.21	0.34–3.21	0.56–2.28
7.5	1.44	1.64	1.93	2.42	3.42	0.36–3.42	0.59–2.42
8.0	1.52	1.75	2.05	2.58	3.65	0.38–3.65	0.63–2.58
8.5	1.62	1.86	2.18	2.75	3.90	0.40–3.90	0.67–2.75
9.0	1.72	1.98	2.33	2.94	4.18	0.42–4.18	0.71–2.94
9.5	1.84	2.11	2.48	3.14	4.47	0.45–4.47	0.75–3.14
10.0	1.96	2.25	2.65	3.35	4.79	0.48–4.79	0.80–3.35
10.5	2.08	2.40	2.82	3.58	5.13	0.51–5.13	0.84–3.58
11.0	2.22	2.55	3.01	3.83	5.49	0.54–5.49	0.90–3.83
11.5	2.37	2.72	3.22	4.09	5.89	0.57–5.89	0.95–4.09
12.0	2.52	2.90	3.43	4.37	6.30	0.61–6.30	1.01–4.37
12.5	2.68	3.09	3.66	4.66	6.74	0.64–6.74	1.07–4.66
13.0	2.84	3.28	3.89	4.97	7.20	0.68–7.20	1.13–4.97
13.5	3.01	3.48	4.12	5.28	7.67	0.72–7.67	1.20–5.28
14.0	3.18	3.68	4.36	5.59	8.15	0.75–8.15	1.26–5.59
14.5	3.35	3.87	4.60	5.91	8.63	0.79–8.63	1.32–5.91
15.0	3.52	4.07	4.84	6.23	9.12	0.83–9.12	1.38–6.23
15.5	3.68	4.27	5.08	6.55	9.61	0.87–9.61	1.44–6.55
16.0	3.85	4.46	5.32	6.86	10.10	0.90–10.10	1.50–6.86
16.5	4.01	4.66	5.56	7.18	10.60	0.94–10.60	1.56–7.18
17.0	4.17	4.85	5.79	7.49	11.09	0.97–11.09	1.62–7.49
17.5	4.33	5.04	6.03	7.81	11.59	1.00–11.59	1.68–7.81
18.0	4.49	5.22	6.25	8.12	12.08	1.04–12.08	1.73–8.12

P = percentile. P3–P97 and P10–P90 represent percentile intervals in the clinical cohort, not healthy-population normal ranges.

Supplementary Table S3. Right thyroid lobe volume in girls (Part 1 of 2)

Age-specific modeled sonographic volume (mL), 0–18 years, at 0.5-year intervals.

Age (years)	Mean	P3	P10	P20	P30	P40	P50
0.0	0.32	0.06	0.12	0.18	0.23	0.27	0.32
0.5	0.38	0.07	0.15	0.22	0.27	0.33	0.38
1.0	0.45	0.09	0.18	0.26	0.32	0.39	0.45
1.5	0.53	0.10	0.21	0.30	0.38	0.45	0.53
2.0	0.62	0.12	0.25	0.35	0.44	0.53	0.62
2.5	0.71	0.15	0.28	0.41	0.51	0.61	0.71
3.0	0.80	0.17	0.32	0.46	0.58	0.69	0.80
3.5	0.89	0.19	0.36	0.52	0.65	0.77	0.89
4.0	0.99	0.22	0.41	0.57	0.71	0.85	0.99
4.5	1.07	0.24	0.45	0.63	0.78	0.92	1.07
5.0	1.16	0.27	0.48	0.68	0.84	0.99	1.16
5.5	1.24	0.29	0.52	0.73	0.90	1.06	1.24
6.0	1.32	0.32	0.56	0.78	0.96	1.14	1.32
6.5	1.42	0.35	0.61	0.84	1.04	1.22	1.42
7.0	1.53	0.38	0.66	0.91	1.12	1.32	1.53
7.5	1.66	0.42	0.72	0.99	1.22	1.43	1.66
8.0	1.81	0.46	0.79	1.08	1.33	1.56	1.81
8.5	1.98	0.52	0.87	1.19	1.45	1.71	1.98
9.0	2.16	0.57	0.96	1.30	1.59	1.87	2.16
9.5	2.36	0.64	1.06	1.43	1.74	2.04	2.36
10.0	2.58	0.71	1.16	1.57	1.91	2.24	2.58
10.5	2.82	0.78	1.28	1.72	2.08	2.44	2.82
11.0	3.06	0.86	1.39	1.87	2.27	2.65	3.06
11.5	3.31	0.95	1.51	2.02	2.45	2.86	3.31
12.0	3.53	1.03	1.63	2.17	2.62	3.06	3.53
12.5	3.74	1.10	1.73	2.30	2.78	3.24	3.74
13.0	3.92	1.17	1.83	2.42	2.91	3.40	3.92
13.5	4.07	1.23	1.91	2.52	3.03	3.53	4.07
14.0	4.20	1.28	1.98	2.60	3.13	3.65	4.20
14.5	4.30	1.33	2.04	2.68	3.21	3.74	4.30
15.0	4.38	1.37	2.09	2.73	3.28	3.81	4.38
15.5	4.44	1.41	2.13	2.78	3.33	3.87	4.44
16.0	4.49	1.44	2.17	2.82	3.37	3.91	4.49
16.5	4.53	1.47	2.19	2.85	3.40	3.94	4.53
17.0	4.56	1.50	2.22	2.87	3.43	3.97	4.56
17.5	4.59	1.52	2.25	2.90	3.45	4.00	4.59
18.0	4.61	1.55	2.27	2.92	3.48	4.03	4.61

P = percentile. P3–P97 and P10–P90 represent percentile intervals in the clinical cohort, not healthy-population normal ranges.

Supplementary Table S3. Right thyroid lobe volume in girls (Part 2 of 2)

Age-specific modeled sonographic volume (mL), 0–18 years, at 0.5-year intervals.

Age (years)	P60	P70	P80	P90	P97	P3–P97	P10–P90
0.0	0.37	0.44	0.53	0.70	1.09	0.06–1.09	0.12–0.70
0.5	0.44	0.52	0.63	0.84	1.30	0.07–1.30	0.15–0.84
1.0	0.53	0.62	0.75	0.99	1.53	0.09–1.53	0.18–0.99
1.5	0.62	0.73	0.88	1.16	1.80	0.10–1.80	0.21–1.16
2.0	0.72	0.84	1.02	1.35	2.09	0.12–2.09	0.25–1.35
2.5	0.82	0.96	1.17	1.54	2.39	0.15–2.39	0.28–1.54
3.0	0.93	1.09	1.32	1.74	2.70	0.17–2.70	0.32–1.74
3.5	1.04	1.22	1.47	1.95	3.02	0.19–3.02	0.36–1.95
4.0	1.14	1.34	1.62	2.14	3.33	0.22–3.33	0.41–2.14
4.5	1.25	1.46	1.76	2.33	3.62	0.24–3.62	0.45–2.33
5.0	1.34	1.57	1.90	2.51	3.90	0.27–3.90	0.48–2.51
5.5	1.44	1.68	2.03	2.68	4.17	0.29–4.17	0.52–2.68
6.0	1.54	1.80	2.17	2.87	4.46	0.32–4.46	0.56–2.87
6.5	1.65	1.93	2.33	3.08	4.79	0.35–4.79	0.61–3.08
7.0	1.77	2.08	2.51	3.31	5.16	0.38–5.16	0.66–3.31
7.5	1.92	2.25	2.72	3.59	5.59	0.42–5.59	0.72–3.59
8.0	2.09	2.45	2.96	3.91	6.09	0.46–6.09	0.79–3.91
8.5	2.29	2.67	3.23	4.27	6.65	0.52–6.65	0.87–4.27
9.0	2.50	2.92	3.52	4.66	7.27	0.57–7.27	0.96–4.66
9.5	2.73	3.19	3.85	5.10	7.95	0.64–7.95	1.06–5.10
10.0	2.99	3.49	4.21	5.57	8.69	0.71–8.69	1.16–5.57
10.5	3.26	3.81	4.59	6.08	9.48	0.78–9.48	1.28–6.08
11.0	3.54	4.13	4.98	6.60	10.30	0.86–10.30	1.39–6.60
11.5	3.81	4.45	5.37	7.11	11.11	0.95–11.11	1.51–7.11
12.0	4.07	4.75	5.73	7.59	11.87	1.03–11.87	1.63–7.59
12.5	4.31	5.03	6.06	8.03	12.57	1.10–12.57	1.73–8.03
13.0	4.51	5.27	6.35	8.41	13.17	1.17–13.17	1.83–8.41
13.5	4.69	5.47	6.59	8.73	13.69	1.23–13.69	1.91–8.73
14.0	4.83	5.64	6.80	9.00	14.12	1.28–14.12	1.98–9.00
14.5	4.95	5.77	6.96	9.21	14.46	1.33–14.46	2.04–9.21
15.0	5.04	5.87	7.08	9.38	14.74	1.37–14.74	2.09–9.38
15.5	5.11	5.95	7.18	9.51	14.95	1.41–14.95	2.13–9.51
16.0	5.16	6.01	7.25	9.60	15.11	1.44–15.11	2.17–9.60
16.5	5.20	6.06	7.30	9.68	15.24	1.47–15.24	2.19–9.68
17.0	5.24	6.10	7.35	9.74	15.35	1.50–15.35	2.22–9.74
17.5	5.27	6.13	7.39	9.79	15.45	1.52–15.45	2.25–9.79
18.0	5.30	6.16	7.42	9.84	15.55	1.55–15.55	2.27–9.84

P = percentile. P3–P97 and P10–P90 represent percentile intervals in the clinical cohort, not healthy-population normal ranges.

Supplementary Table S4. Right thyroid lobe volume in boys (Part 1 of 2)

Age-specific modeled sonographic volume (mL), 0–18 years, at 0.5-year intervals.

Age (years)	Mean	P3	P10	P20	P30	P40	P50
0.0	0.38	0.11	0.19	0.25	0.30	0.34	0.38
0.5	0.44	0.12	0.22	0.29	0.34	0.39	0.44
1.0	0.51	0.14	0.25	0.33	0.39	0.45	0.51
1.5	0.57	0.16	0.28	0.37	0.44	0.51	0.57
2.0	0.64	0.18	0.31	0.42	0.50	0.57	0.64
2.5	0.71	0.20	0.35	0.46	0.55	0.63	0.71
3.0	0.79	0.22	0.38	0.51	0.61	0.70	0.79
3.5	0.86	0.24	0.42	0.56	0.67	0.77	0.86
4.0	0.94	0.26	0.46	0.61	0.73	0.83	0.94
4.5	1.02	0.29	0.49	0.66	0.79	0.90	1.02
5.0	1.10	0.31	0.53	0.71	0.85	0.97	1.10
5.5	1.18	0.33	0.57	0.76	0.91	1.04	1.18
6.0	1.26	0.35	0.61	0.81	0.97	1.12	1.26
6.5	1.35	0.38	0.65	0.87	1.04	1.19	1.35
7.0	1.44	0.40	0.69	0.93	1.11	1.27	1.44
7.5	1.53	0.43	0.74	0.99	1.18	1.36	1.53
8.0	1.64	0.46	0.79	1.05	1.26	1.45	1.64
8.5	1.74	0.49	0.84	1.12	1.34	1.54	1.74
9.0	1.86	0.52	0.89	1.19	1.43	1.64	1.86
9.5	1.98	0.56	0.95	1.27	1.52	1.75	1.98
10.0	2.11	0.59	1.01	1.35	1.62	1.86	2.11
10.5	2.25	0.63	1.07	1.44	1.72	1.98	2.25
11.0	2.39	0.67	1.14	1.53	1.83	2.11	2.39
11.5	2.54	0.71	1.21	1.62	1.94	2.24	2.54
12.0	2.70	0.76	1.29	1.72	2.06	2.38	2.70
12.5	2.87	0.80	1.36	1.82	2.19	2.52	2.87
13.0	3.04	0.85	1.44	1.93	2.31	2.67	3.04
13.5	3.21	0.90	1.52	2.04	2.44	2.82	3.21
14.0	3.38	0.95	1.60	2.14	2.57	2.97	3.38
14.5	3.55	1.00	1.68	2.25	2.70	3.12	3.55
15.0	3.71	1.04	1.76	2.35	2.82	3.26	3.71
15.5	3.88	1.09	1.83	2.45	2.95	3.41	3.88
16.0	4.04	1.13	1.90	2.55	3.06	3.54	4.04
16.5	4.19	1.18	1.98	2.65	3.18	3.68	4.19
17.0	4.35	1.22	2.05	2.74	3.30	3.82	4.35
17.5	4.50	1.26	2.12	2.84	3.41	3.95	4.50
18.0	4.65	1.31	2.19	2.93	3.52	4.08	4.65

P = percentile. P3–P97 and P10–P90 represent percentile intervals in the clinical cohort, not healthy-population normal ranges.

Supplementary Table S4. Right thyroid lobe volume in boys (Part 2 of 2)

Age-specific modeled sonographic volume (mL), 0–18 years, at 0.5-year intervals.

Age (years)	P60	P70	P80	P90	P97	P3–P97	P10–P90
0.0	0.43	0.49	0.56	0.69	0.95	0.11–0.95	0.19–0.69
0.5	0.50	0.56	0.65	0.80	1.10	0.12–1.10	0.22–0.80
1.0	0.57	0.64	0.74	0.91	1.26	0.14–1.26	0.25–0.91
1.5	0.64	0.73	0.84	1.03	1.43	0.16–1.43	0.28–1.03
2.0	0.72	0.81	0.94	1.16	1.61	0.18–1.61	0.31–1.16
2.5	0.80	0.91	1.05	1.29	1.80	0.20–1.80	0.35–1.29
3.0	0.89	1.00	1.16	1.43	1.99	0.22–1.99	0.38–1.43
3.5	0.97	1.10	1.27	1.57	2.19	0.24–2.19	0.42–1.57
4.0	1.06	1.20	1.39	1.72	2.40	0.26–2.40	0.46–1.72
4.5	1.15	1.30	1.51	1.87	2.60	0.29–2.60	0.49–1.87
5.0	1.24	1.40	1.62	2.01	2.82	0.31–2.82	0.53–2.01
5.5	1.33	1.51	1.75	2.17	3.03	0.33–3.03	0.57–2.17
6.0	1.42	1.61	1.87	2.32	3.26	0.35–3.26	0.61–2.32
6.5	1.52	1.72	2.00	2.49	3.49	0.38–3.49	0.65–2.49
7.0	1.62	1.84	2.14	2.66	3.74	0.40–3.74	0.69–2.66
7.5	1.73	1.96	2.28	2.84	4.00	0.43–4.00	0.74–2.84
8.0	1.85	2.10	2.44	3.04	4.28	0.46–4.28	0.79–3.04
8.5	1.97	2.24	2.60	3.25	4.58	0.49–4.58	0.84–3.25
9.0	2.10	2.39	2.78	3.47	4.90	0.52–4.90	0.89–3.47
9.5	2.24	2.54	2.96	3.70	5.24	0.56–5.24	0.95–3.70
10.0	2.38	2.71	3.16	3.95	5.60	0.59–5.60	1.01–3.95
10.5	2.54	2.89	3.37	4.22	5.98	0.63–5.98	1.07–4.22
11.0	2.70	3.08	3.59	4.50	6.39	0.67–6.39	1.14–4.50
11.5	2.87	3.28	3.82	4.80	6.82	0.71–6.82	1.21–4.80
12.0	3.06	3.48	4.07	5.11	7.27	0.76–7.27	1.29–5.11
12.5	3.24	3.70	4.32	5.43	7.75	0.80–7.75	1.36–5.43
13.0	3.44	3.92	4.59	5.77	8.24	0.85–8.24	1.44–5.77
13.5	3.63	4.15	4.85	6.11	8.74	0.90–8.74	1.52–6.11
14.0	3.83	4.37	5.12	6.45	9.24	0.95–9.24	1.60–6.45
14.5	4.02	4.59	5.38	6.79	9.74	1.00–9.74	1.68–6.79
15.0	4.21	4.81	5.64	7.12	10.24	1.04–10.24	1.76–7.12
15.5	4.40	5.03	5.90	7.46	10.73	1.09–10.73	1.83–7.46
16.0	4.58	5.24	6.16	7.78	11.22	1.13–11.22	1.90–7.78
16.5	4.76	5.45	6.41	8.11	11.71	1.18–11.71	1.98–8.11
17.0	4.94	5.66	6.65	8.43	12.19	1.22–12.19	2.05–8.43
17.5	5.12	5.87	6.90	8.75	12.68	1.26–12.68	2.12–8.75
18.0	5.29	6.07	7.14	9.06	13.15	1.31–13.15	2.19–9.06

P = percentile. P3–P97 and P10–P90 represent percentile intervals in the clinical cohort, not healthy-population normal ranges.