

Pediatric Reference Range Updates: ALT, T3, FT3, T4, FT4, Thyroglobulin, Thyroglobulin AB, TPO, TSH

April 13, 2026

On April 7, 2026, Pacific Diagnostic Laboratories (PDL) updated the pediatric reference ranges on the tests listed below. Enhancements were supported by literature review of external population studies and pediatrician resources.

PEDIATRIC REFERENCE RANGE UPDATE

- Alanine Aminotransferase (ALT)
- Triiodothyronine (T3), Free
- Triiodothyronine (T3), Total
- Thyroxine (T4), Free
- Thyroxine (T4), Total
- Thyroid Peroxidase (TPO) Antibodies
- Thyroid Stimulating Hormone (TSH)
- Thyroglobulin
- Thyroglobulin Antibody

Alanine Aminotransferase (ALT)					
Previous Ranges			REVISED April 7, 2026		
Sex	Age	RR (U/L)	Sex	Age	RR (U/L)
Female	0 – 1 Year (Y)	< 25	Female	0 – 18 Y	< 22
	1 – 13 Y	< 19	Male	0 – 18 Y	< 25
	13 – 19 Y	< 17			
Male	0 – 1 Y	< 25			
	1 – 13 Y	< 19			
	13 – 19 Y	< 18			

Triiodothyronine (T3), Free					
Sex	Age	RR (pg/mL)	Sex	Age	RR (pg/mL)
Female & Male	0 - 4 Days (D)	Not Established	Female & Male	0 - 6 D	1.73 – 6.30
	4 D – 2 Months (M)	2.00 – 5.20		> 6 D - ≤ 3 M	1.95 - 6.04
	2 M – 2 Y	1.50 – 6.40		> 3 - ≤ 12 M	2.15 – 5.83
	2 – 7 Y	2.00 - 6.00		> 1 - ≤ 6 Y	2.41 – 5.50
	7 – 12 Y	2.70 - 5.20		> 6 - ≤ 11 Y	2.53 – 5.22
	12 – 19 Y	2.30 – 5.00		> 11 - ≤ 17 Y	2.56 – 5.01

Triiodothyronine (T3), Total					
Sex	Age	RR (ng/dL)	Sex	Age	RR (ng/dL)
Female	0 – 1 Y	126 - 231	Female & Male	0 - 6 D	73 – 288
	1 – 12 Y	111 - 195		> 6 D - ≤ 3 M	80 – 275
	12 – 16 Y	87 - 177		> 3 - ≤ 12 M	86 – 265
	16 – 18 Y	81 - 155		> 1 - ≤ 6 Y	92 – 248
Male	0 – 1 Y	126 - 231		> 6 - ≤ 11 Y	93 – 231
	1 – 12 Y	111 - 195		> 11 - ≤ 17 Y	91 – 218
	12 – 16 Y	90 - 179			
	16 – 18 Y	81 - 155			

Thyroxine (T4), Free					
Sex	Age	RR (ng/dL)	Sex	Age	RR (ng/dL)
Female & Male	0 - 1 M	1.24 – 3.89	Female & Male	0 - 6 D	0.86 - 2.49
	1 M – 1 Y	1.09 – 1.71		> 6 D - ≤ 3 M	0.89 - 2.20
	1 – 19 Y	1.01 - 1.63		> 3 M - ≤ 12 M	0.92 – 1.99
		> 1 - ≤ 6 Y		0.96 - 1.77	
		> 6 - ≤ 11 Y		0.97 – 1.67	
				> 11 - ≤ 17 Y	0.98 – 1.63

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Thyroxine (T4), Total					
Previous Ranges			REVISED April 7, 2026		
Sex	Age	RR (ug/dL)	Sex	Age	RR (ug/dL)
Female & Male	All	4.7 – 13.3	Female & Male	0 - 6 D	5.04 – 18.50
				> 6 D - ≤ 3 M	5.41 – 17.00
				> 3 - ≤ 12 M	5.67 – 16.00
				> 1 - ≤ 6 Y	5.95 – 14.70
				> 6 - ≤ 11 Y	5.99 – 13.80
				> 11 - ≤ 17 Y	5.91 – 13.20
Thyroid Stimulating Hormone (TSH)					
Sex	Age	RR (uIU/mL)	Sex	Age	RR (uIU/mL)
Female & Male	0 - 1 M	1.03 – 27.20	Female & Male	0 - 6 D	0.70 – 15.20
	1 M – 1 Y	1.03 – 6.80		> 6 D - ≤ 3 M	0.72 – 11.00
	1 – 15 Y	1.12 – 5.01		> 3 - ≤ 12 M	0.73 – 8.35
	15 – 18 Y	0.68 – 4.09		> 1 - ≤ 6 Y	0.70 – 5.97
				> 6 - ≤ 11 Y	0.60 – 4.84
				> 11 - ≤ 17 Y	0.51 – 4.30
Thyroid Peroxidase Antibodies (TPO)					
Sex	Age	RR (IU/mL)	Sex	Age	RR (IU/mL)
Female & Male	All	< 60	Female & Male	0 - 6 D	0 - 117
				> 6 D - ≤ 3 M	0 – 47
				> 3 - ≤ 12 M	0 – 32
				> 1 - ≤ 6 Y	0 – 13
				> 6 - ≤ 11 Y	0 – 18
				> 11 - ≤ 17 Y	0 – 26
Thyroglobulin					
Sex	Age	RR (ng/mL)	Sex	Age	RR (ng/mL)
Female & Male	All	1.6 - 59.9	Female & Male	0 - 6 D	113 – 307
				>6 D - ≤ 3 M	91 – 228
				>3 M - ≤ 12 M	55 – 125
				>12 M - ≤ 6 Y	28 – 67
				>6 Y - ≤ 11 Y	16 – 43
				>11 - ≤ 17 Y	12 – 36
Thyroglobulin Antibody (Anti-Tg)					
Sex	Age	RR (IU/mL)	Sex	Age	RR (IU/mL)
Female & Male	All	< 60	Female & Male	0 - 6 D	0 – 134
				> 6 D - ≤ 3 M	0 – 146
				> 3 - ≤ 12 M	0 – 130
				> 1 - ≤ 6 Y	0 – 38
				> 6 - ≤ 11 Y	0 – 37
				> 11 - ≤ 17 Y	0 – 64