

Estimation of Axial Length

Precise measurement of axial length by ocular biometry is recommended for monitoring eye growth and myopia management; however, you can make an estimation of axial length using the table below if you have cycloplegic refractive error (SER, D) and average keratometry values for the child (K, mm).*

		Cycloplegic Spherical Equivalent Refractive Error (D)								
		-0.25	0.00	+0.25	+0.50	+0.75	+1.00	+1.25	+1.50	+1.75
Average Keratometry Reading (mm)	7.1	22.15	22.07	21.98	21.90	21.81	21.73	21.64	21.56	21.48
	7.2	22.37	22.28	22.20	22.11	22.02	21.94	21.85	21.77	21.69
	7.3	22.59	22.50	22.41	22.32	22.23	22.15	22.06	21.97	21.89
	7.4	22.80	22.71	22.62	22.53	22.44	22.35	22.26	22.18	22.09
	7.5	23.02	22.92	22.83	22.74	22.65	22.56	22.47	22.38	22.29
	7.6	23.23	23.13	23.04	22.95	22.85	22.76	22.67	22.58	22.49
	7.7	23.44	23.34	23.24	23.15	23.06	22.96	22.87	22.78	22.68
	7.8	23.65	23.55	23.45	23.35	23.26	23.16	23.07	22.97	22.88
	7.9	23.85	23.75	23.65	23.55	23.46	23.36	23.26	23.17	23.07
	8.0	24.06	23.95	23.85	23.75	23.65	23.55	23.46	23.36	23.26
	8.1	24.26	24.16	24.05	23.95	23.85	23.75	23.65	23.55	23.45
	8.2	24.46	24.35	24.25	24.15	24.04	23.94	23.84	23.74	23.64
	8.3	24.66	24.55	24.45	24.34	24.24	24.13	24.03	23.93	23.83
	8.4	24.86	24.75	24.64	24.53	24.43	24.32	24.22	24.12	24.01
	8.5	25.05	24.94	24.83	24.72	24.62	24.51	24.40	24.30	24.20
	8.6	25.25	25.14	25.02	24.91	24.81	24.70	24.59	24.48	24.38

Generated from Morgan et al. (2019) Estimation of ocular axial length from conventional optometric measures, *Contact Lens & Anterior Eye*, 43(1):18-20.

*The 95 % limits of agreement of using this formula to generate an estimate of axial length compared to 'real' axial length measures from the NICER study were -0.73 to +0.99 mm (an average of \pm 3.7 %).