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Growth reference for Saudi preschool children: LMS parameters and percentiles

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BACKGROUND: Previous growth charts for Saudi children have not included detailed tables and parameters needed for research and incorporation in electronic records.
OBJECTIVES: The objective of this report is to publish the L, M, and S parameters and percentiles as well as the corresponding growth charts for Saudi preschool children.
DESIGN: Community-based survey and measurement of growth parameters in a sample selected by a multistage probability procedure.
SETTING: A stratified listing of the Saudi population.
SUBJECTS AND METHODS: Raw data from the previous nationally-representative sample were reanalyzed using the Lambda-Mu-Sigma (LMS) methodology to calculate the L, M, and S parameters of percentiles (from 3rd to 97th) for weight, length/height, head circumference, and body mass index-for-age, and weight-for-length/height for boys and girls from birth to 60 months.
MAIN OUTCOME MEASURES: Length or height and weight of Saudi preschool children.
RESULTS: There were 15 601 Saudi children younger than 60 months of age, 7896 (50.6 %) were boys. The LMS parameters for weight for age from birth to 60 months (5 years) are reported for the 3rd, 5th, 10th, 25th, 50th, 75th, 90th, 95th, and 97th percentiles as well as the corresponding graphs. Similarly, the LMS parameters for length/height-for-age, head circumference-for-age, weight-for-length/height and body mass index-for-age (BMI) are shown with the corresponding graphs for boys and girls.
CONCLUSION: Using the data in this report, clinicians and researchers can assess the growth of Saudi preschool children.
LIMITATIONS: The report does not reflect interregional variations in growth.

The use of growth charts is one of the ways to assess nutrition and growth in children and adolescents.[1] Although the CDC 2000 reference growth charts for children in the United States are commonly used, the recently developed World Health Organization (WHO) Child Growth Standards and Reference have been developed and recommended as international growth charts.[2,3] However, many countries continue to use their own local charts.[4,5] In Saudi Arabia, following a few attempts to develop national growth charts,[6-8] nationally representative growth charts have been recommended for use in hospitals and clinics in Saudi Arabia.[9] The current trend of using electronic medical records in Saudi Arabia requires calculation of additional variables, not available in previous analyses. These include the L, M, and S parameters percentiles and tables, which are useful to calculate other parameters including z-scores. We report the percentile tables for the L, M, and S parameters and the corresponding growth charts for preschool Saudi children. A similar analysis for older children from 5 to 18 years will be reported later.

SUBJECTS AND METHODS

The methodology of sampling, data collection and analysis have been reported.[9] Briefly, the study sample was selected by multistage probability sampling procedure from a stratified listing based on the population census. Accordingly, the sample was representative of all the socioeconomic strata of each of the 13 regions

of Saudi Arabia. Data collection was made by house-to-house visits where a survey questionnaire, clinical examination and body measurements were completed by primary care physicians and nurses. Data were analyzed after "cleaning" using new statistical methods.[10-12] The length of children younger than 3 years of age was measured in a supine position and the height was taken for children older than 3 years of age. Therefore, the terminology length/height is used to cover the age range from birth to 60 months. The weight is expressed in kilograms (kg) and length/height in centimeter (cm). As in previous analyses, the age was converted to Gregorian to facilitate comparison with growth charts of other populations.

Statistical methods

To calculate the percentiles of weight, height, body mass index and head circumference in boys and girls from birth to 60 months, the Lambda-Mu-Sigma (LMS) method was applied to synthesize the changing distribution of these anthropometric measurements during growth as a function of age. The LMS parameters are the median (M), the generalized coefficient of variation (S), and the power in the Box-Cox transformation (L). The LMS method corrects for skewness, represented by the Box-Cox transformation (lambda), to adjust the distribution of anthropometric data to a normal distribution by minimizing the effects of asymmetry.[10] The LMS method is used to model the data, smooth the model parameters, and then estimate smoothed percentiles from the model parameters. The LMS method models the entire distribution taking into account degree of skewness (L), central tendency (M), and dispersion (S). The L M and S parameters are estimated and then smoothed. The parameters L, M and S were calculated according to the method of maximum penalized likelihood.[10] Percentiles for all the anthropometric measures were estimated from those values applying the following formula:[13]

$$P = M\,[1 + LSZ]\,1/L,\ L \neq 0$$

Where the L, M, and S are the values from the appropriate table corresponding to the age in months of the child. Z is the z-score that corresponds to the percentile. Z-scores correspond exactly to percentiles, e.g., z-scores of -1.881, -1.645, -1.282, -0.674, 0, 0.674, 1.036, 1.282, 1.645, and 1.881 correspond to the 3rd, 5th, 10th, 25th, 50th, 75th, 85th, 90th, 95th, and 97th percentiles, respectively. Any desired percentile or z-score can be calculated from the smoothed L, M and S parameters.

For our data, we have calculated the 3rd, 5th, 10th, 25th, 50th, 75th, 90th, 95th and the 97th percentiles for weight for age, height for age, head circumference-for-age, weight for length/height, and added the 85th percentile for body mass index-for-age, commonly used to define overweight. Data processing was performed using the LMS Chart Maker Light 2.1 (Medical Research Council, London, UK). The goodness of fit of our all LMS models was assessed using the Q-test.

RESULTS

There were 15601 Saudi children younger than 60 months (5 years) of age and 7896 (50.6%) were boys. The exact age at the time of growth measurement was calculated based on the date of birth in the birth certificate or family card subsequently converted to Gregorian dates. Only healthy children as determined by history and clinical examination performed by physicians were included.

Figure 1, 2, 3, 4, and 5 show the growth curves by for percentile (3rd , 5th, 10th, 25th, 50th, 75th, 90th, 95th, and 97th percentiles) for weight-for-age, length/height-for-age, head circumference-for-age, weight-for-length/height, and body mass index (BMI) for age for boys. **Tables 1, 2, 3, 4, and 5** show the corresponding L M S parameters by percentile for weight-for-age, length/height-for-age, head circumference-for-age, weight-for-length/height, and BMI for age for boys. The same data for girls are shown in **Figures 6, 7, 8, 9, and 10** with the corresponding tabular data in **Tables 6, 7, 8, 9, and 10**.

DISCUSSION

The development of a growth reference for children and adolescents is essential to monitor growth. Growth references have been developed for almost all developed countries,[2,4,5] and some developing countries.[14-17] For many years, many countries used the US National Center for Health Statistics (NCHS) growth charts adopted by the WHO, not because of accuracy, but because of the unavailability of alternatives as evidenced by the recent revised growth charts that are more representative of US children (the CDC 2000 growth charts for USA children).[2] Probably the most important milestone in the development of growth charts was the creation of the WHO Child Growth Standard as a result of a multicenter, multinational survey.[3] Many physicians in Saudi Arabia use the US reference and some use the WHO Standards. This practice was acceptable when no nationally representative growth charts for Saudi

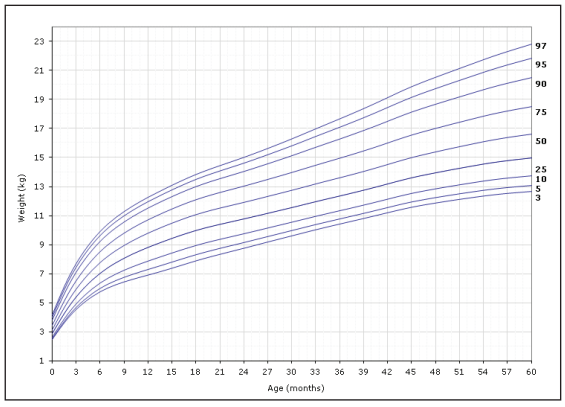

Figure 1. Weight-for-age, boys 0 to 60 months.

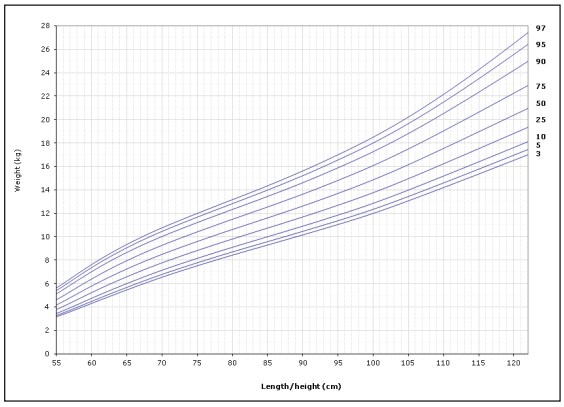

Figure 4. Weight-for-length/height, boys 0 to 60 months.

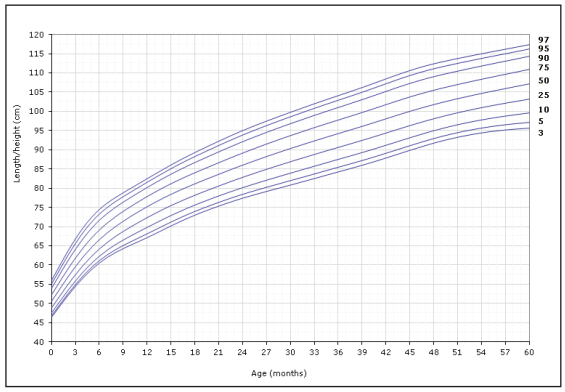

Figure 2. Length/height-for-age, boys 0 to 60 months.

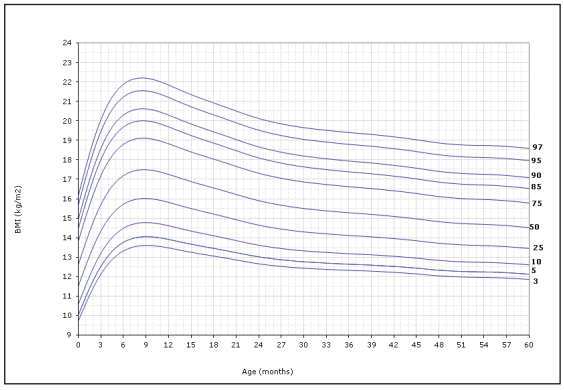

Figure 5. Body mass index-for-age, boys 0 to 60 months.

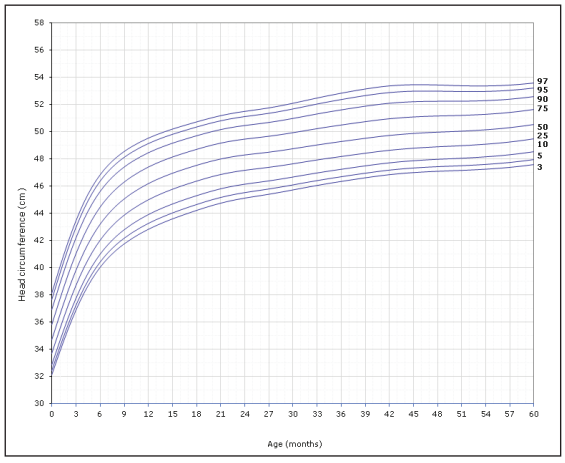

Figure 3. Head circumference-for-age, boys 0 to 60 months.

children and adolescents were available. However, previous studies have shown clear differences in growth between Saudi and American children.[6-8] More recently, we have reported a nationally-representative growth reference for Saudi children that was recommended both by the Saudi Pediatric Association and the Saudi Council for Health Services, to be used instead of charts of other populations.[9] As a result, we demonstrated that the use of CDC 2000 and the WHO standards to assess and follow the growth of Saudi children in clinics is not appropriate because of overdiagnosis of undernutrition, stunting and short stature potentially resulting in unnecessary referral and investigation.[18,19] Therefore, there is little or no justification for the continued use of growth charts of other populations to assess the growth of Saudi children. Nevertheless, the WHO Child Growth Standards are probably the best reference to assess the nutritional status not in clinics and hospitals, but at the population level. A limitation of our study is that The report does not reflect interregional variations in growth.

Data on L, M, and S parameters, percentile tables, and corresponding growth charts for Saudi children have not been previously reported. This information is essential to health authorities and researchers in this era of conversion from traditional to electronic medical records. The availability of the L, M, and S parameters is essential to incorporate the Saudi growth charts in elec-

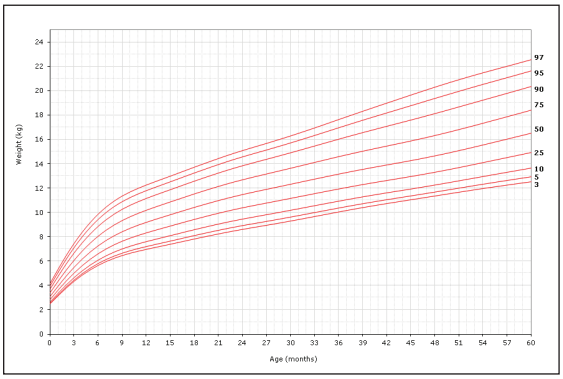

Figure 6. Weight-for-age, girls 0 to 60 months.

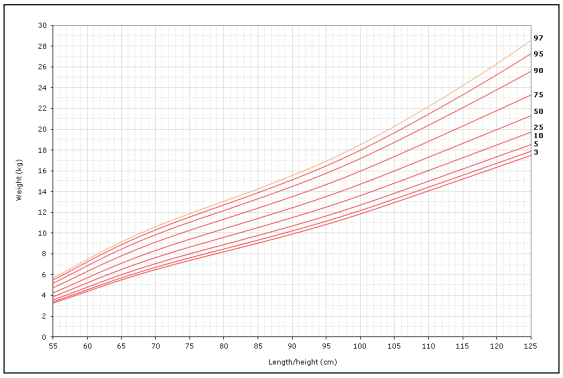

Figure 9. Weight-for-length/height, girls 0 to 60 months.

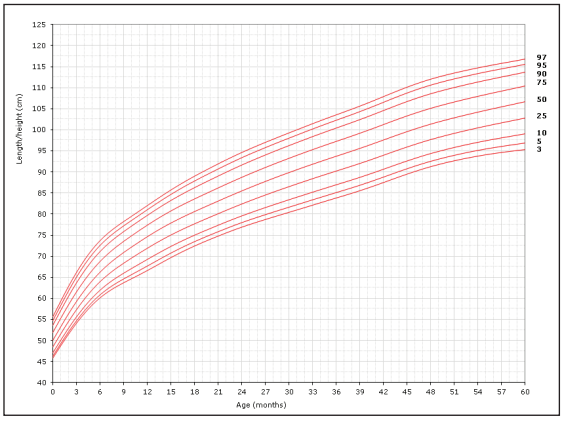

Figure 7. Length/height-for-age, girls 0 to 60 months.

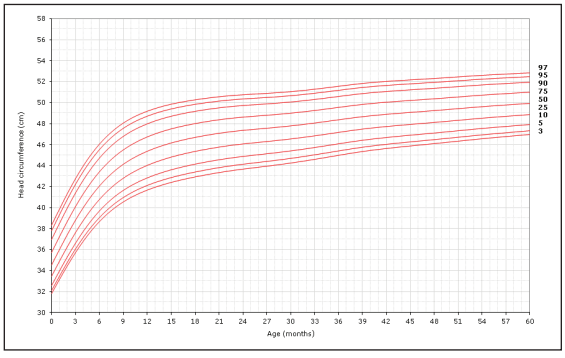

Figure 8. Head circumference-for-age, girls 0 to 60 months.

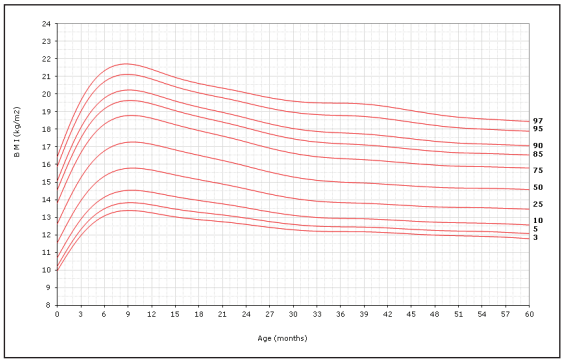

Figure 10. Body mass index-for-age, girls 0 to 60 months.

tronic medical records and enable researchers to calculate the z-scores of growth parameters. In addition, body mass index tables and graphs for Saudi preschool children have not been reported before. The BMI can now be used to screen Saudi children from birth to 60 months of age for overweight and obesity as well as thinness. This report provides clinicians and researchers with the L, M, and S parameters by percentiles that are needed for assessing the growth of Saudi preschool children.

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Growth reference for Saudi preschool children: LMS parameters and percentiles [TABLES 1 TO 10]

Shaik SA, ElMouzan MI, AlSalloum AA, AlHerbish AS. Growth reference for Saudi preschool children: LMS parameters and percentiles. Ann Saudi Med 2016; 36(1): 2-6. DOI: 10.5144/0256-4947.2016.2

Table 1. L, M, and S parameters and percentiles for weight (kg) for age: boys 0 to 60 months

Age (m)	L	M	S	3rd	5th	10th	25th	50th	75th	90th	95th	97th
0	-0.4720694	3.147095	0.1389603	2.459683	2.533042	2.652456	2.871306	3.147095	3.463723	3.790501	4.008216	4.159607
1	-0.243237	4.176147	0.1397221	3.237035	3.339298	3.504745	3.804604	4.176147	4.59389	5.015167	5.290354	5.479162
2	-1.77E-02	5.12747	0.140446	3.939589	4.071734	4.284093	4.664413	5.12747	5.637389	6.140387	6.463027	6.681751
3	0.2018186	5.942932	0.1411113	4.524147	4.685547	4.94303	5.398377	5.942932	6.530465	7.098063	7.456138	7.696302
4	0.4126544	6.637647	0.1417001	5.004926	5.195008	5.495872	6.020959	6.637647	7.289947	7.907971	8.292034	8.547205
5	0.613355	7.242529	0.1422046	5.407765	5.62649	5.9698	6.560834	7.242529	7.94999	8.608312	9.011912	9.277837
6	0.8027659	7.76878	0.1426231	5.74328	5.990615	6.375417	7.028673	7.76878	8.523076	9.213455	9.631606	9.905107
7	0.9794207	8.217348	0.1429559	6.014665	6.290182	6.714907	7.425824	8.217348	9.010447	9.725495	10.15395	10.4324
8	1.141048	8.602978	0.1432025	6.235794	6.538936	7.001904	7.766119	8.602978	9.428488	10.16282	10.5987	10.88041
9	1.284757	8.943767	0.1433605	6.423349	6.753385	7.252828	8.066394	8.943767	9.797243	10.54763	10.98946	11.27371
10	1.4073	9.252262	0.1434253	6.590413	6.946034	7.479629	8.338455	9.252262	10.13064	10.89541	11.34275	11.62945
11	1.50576	9.533834	0.1433937	6.745118	7.124025	7.688389	8.587591	9.533834	10.43472	11.21308	11.66602	11.95546
12	1.577266	9.791095	0.1432646	6.893828	7.292484	7.88293	8.816573	9.791095	10.71251	11.50424	11.9633	12.25605
13	1.620357	10.0307	0.1430392	7.044845	7.458843	8.069897	9.031685	10.0307	10.97139	11.77709	12.24326	12.54018
14	1.637432	10.25982	0.1427357	7.20368	7.628633	8.255047	9.239317	10.25982	11.21929	12.04008	12.5146	12.8167
15	1.632593	10.47884	0.1423813	7.368913	7.800806	8.437817	9.439492	10.47884	11.45663	12.2935	12.77746	13.08563

16	1.609559	10.68653	0.1419995	7.537497	7.972825	8.616246	9.630789	10.68653	11.68211	12.5358	13.03008	13.34504
17	1.571617	10.88285	0.1416107	7.707049	8.142952	8.789308	9.812871	10.88285	11.89573	12.76684	13.27221	13.5946
18	1.521697	11.0635	0.1412328	7.872153	8.30625	8.952527	9.981544	11.0635	12.09279	12.98149	13.49839	13.82862
19	1.462331	11.22666	0.1408804	8.029345	8.459778	9.10352	10.13489	11.22666	12.27134	13.17751	13.70622	14.04458
20	1.395415	11.37503	0.1405639	8.178851	8.604329	9.243753	10.27512	11.37503	12.43433	13.35803	13.89886	14.24567
21	1.322469	11.51265	0.1402884	8.322306	8.742032	9.375978	10.40574	11.51265	12.5862	13.52771	14.08112	14.43678
22	1.244739	11.64491	0.1400554	8.462691	8.876316	9.504203	10.53151	11.64491	12.73281	13.69278	14.25943	14.62449
23	1.163248	11.77525	0.1398664	8.601828	9.009295	9.630937	10.65545	11.77525	12.87789	13.85724	14.43792	14.813
24	1.078723	11.90677	0.1397207	8.741606	9.14307	9.758567	10.78035	11.90677	13.02484	14.0247	14.62038	15.0062
25	0.9915715	12.04159	0.1396132	8.883509	9.279221	9.888816	10.90812	12.04159	13.17595	14.19762	14.80935	15.20674
26	0.9024228	12.17954	0.1395382	9.027297	9.417541	10.02152	11.03864	12.17954	13.33098	14.37571	15.00453	15.4143
27	0.812551	12.3183	0.1394954	9.170727	9.555828	10.15452	11.16972	12.3183	13.48733	14.55605	15.20282	15.62565
28	0.722931	12.45702	0.1394861	9.31279	9.693124	10.28692	11.30054	12.45702	13.64407	14.73758	15.40303	15.83952
29	0.6342878	12.59662	0.1395109	9.453928	9.829933	10.41932	11.43186	12.59662	13.80217	14.92127	15.60615	16.05692
30	0.5472555	12.73835	0.1395699	9.594921	9.967095	10.55268	11.56481	12.73835	13.96299	15.10855	15.81363	16.27931
31	0.4624805	12.88261	0.1396633	9.735921	10.10479	10.68722	11.6997	12.88261	14.12696	15.29982	16.02582	16.50701
32	0.3805447	13.02915	0.1397898	9.876638	10.24273	10.82266	11.83628	13.02915	14.29378	15.49465	16.24223	16.73946
33	0.3019424	13.17526	0.1399466	10.01498	10.37873	10.95672	11.97208	13.17526	14.46039	15.68967	16.45922	16.97286
34	0.2270883	13.31817	0.1401287	10.14885	10.51063	11.08711	12.10459	13.31817	14.62372	15.88136	16.67301	17.20323
35	0.1561717	13.45833	0.1403313	10.27866	10.63883	11.21422	12.23425	13.45833	14.78418	16.07011	16.88389	17.43079
36	8.92E-02	13.59834	0.1405534	10.40648	10.76543	11.34025	12.36343	13.59834	14.94461	16.25893	17.09499	17.65873

37	0.0263559	13.74069	0.1407959	10.53417	10.89237	11.46723	12.49435	13.74069	15.10775	16.45074	17.30934	17.89013
38	-3.23E-02	13.88631	0.1410598	10.66246	11.02037	11.59592	12.62786	13.88631	15.27463	16.64664	17.528	18.12606
39	-8.66E-02	14.03564	0.1413438	10.79167	11.14977	11.72668	12.76435	14.03564	15.44569	16.84703	17.75135	18.36681
40	-0.1363783	14.18867	0.1416474	10.92178	11.28054	11.85946	12.90379	14.18867	15.62092	17.05182	17.97918	18.61212
41	-0.1817196	14.34732	0.1419759	11.05422	11.41414	11.99581	13.04788	14.34732	15.80249	17.2634	18.21404	18.86459
42	-0.2226177	14.51024	0.1423352	11.18781	11.54937	12.13448	13.19532	14.51024	15.98896	17.48024	18.45429	19.12251
43	-0.2591004	14.67397	0.1427303	11.3198	11.68339	12.27251	13.34293	14.67397	16.17661	17.69829	18.69563	19.38141
44	-0.2911989	14.83294	0.1431654	11.44578	11.81166	12.40513	13.48556	14.83294	16.35931	17.91086	18.93098	19.6339
45	-0.3190717	14.9825	0.1436432	11.56213	11.93044	12.52842	13.61898	14.9825	16.532	18.1124	19.15445	19.87387
46	-0.3430268	15.12047	0.1441638	11.66725	12.03805	12.64061	13.74121	15.12047	16.69226	18.30029	19.3633	20.09844
47	-0.3636157	15.24953	0.1447265	11.76338	12.13676	12.744	13.8547	15.24953	16.84307	18.47786	19.56107	20.31136
48	-0.3814763	15.37428	0.1453281	11.85435	12.23048	12.84262	13.96372	15.37428	16.98955	18.6508	19.75389	20.51905
49	-0.3971446	15.49698	0.1459659	11.94214	12.32118	12.93847	14.07033	15.49698	17.13416	18.8219	19.94479	20.72474
50	-0.4110417	15.61677	0.1466403	12.02621	12.40828	13.03089	14.1738	15.61677	17.27602	18.99028	20.13296	20.92764
51	-0.4236667	15.73361	0.1473539	12.10667	12.49185	13.11992	14.27409	15.73361	17.41516	19.15615	20.31872	21.12822
52	-0.4355592	15.84894	0.1481071	12.1848	12.57318	13.20683	14.37252	15.84894	17.55323	19.32146	20.50432	21.32894
53	-0.4470907	15.96419	0.1488992	12.26185	12.65351	13.29291	14.47042	15.96419	17.69184	19.48811	20.69188	21.5321
54	-0.4584882	16.07607	0.1497291	12.33542	12.73034	13.37547	14.56482	16.07607	17.82737	19.65218	20.87731	21.7335
55	-0.4699686	16.18052	0.1505947	12.40252	12.80058	13.45122	14.6521	16.18052	17.95533	19.80875	21.05545	21.92784
56	-0.4817454	16.27605	0.151493	12.46219	12.86318	13.51903	14.73093	16.27605	18.07402	19.95598	21.22439	22.11316
57	-0.4940707	16.36333	0.1524194	12.51516	12.91886	13.57961	14.80201	16.36333	18.18416	20.09469	21.38505	22.29049

58	-0.5072025	16.44382	0.1533666	12.56284	12.96905	13.63436	14.86676	16.44382	18.28729	20.22658	21.53927	22.46178
59	-0.5213145	16.51961	0.154328	12.60708	13.0156	13.68519	14.92715	16.51961	18.38567	20.35412	21.68971	22.62984
60	-0.5363294	16.59282	0.1552981	12.64959	13.06028	13.73393	14.98515	16.59282	18.48158	20.47975	21.83891	22.7973

Table 2. L, M, and S parameters and percentiles for length/height (cm) for age: boys 0 to 60 months

Age (m)	L	M	S	3rd	5th	10th	25th	50th	75th	90th	95th	97th
0	-2.10129	50.56043	4.92E-02	46.46093	46.91938	47.65359	48.96424	50.56043	52.3299	54.09861	55.25021	56.04015
1	-2.265826	53.72101	5.08E-02	49.27234	49.76551	50.5575	51.97818	53.72101	55.67044	57.63873	58.93158	59.82383
2	-2.37484	56.77852	5.21E-02	51.98659	52.51431	53.36351	54.89244	56.77852	58.90283	61.06461	62.49444	63.48606
3	-2.386791	59.6358	5.32E-02	54.51447	55.07685	55.98265	57.61605	59.6358	61.91733	64.24683	65.79209	66.86596
4	-2.2686	62.24357	5.40E-02	56.80726	57.40561	58.36867	60.10313	62.24357	64.65515	67.10982	68.73351	69.85957
5	-1.993207	64.57757	5.44E-02	58.83437	59.47197	60.49548	62.33006	64.57757	67.08649	69.6132	71.26875	72.40922
6	-1.517103	66.63235	5.45E-02	60.57384	61.25787	62.35014	64.28961	66.63235	69.20258	71.74128	73.37689	74.49061
7	-0.8599619	68.4252	0.0544365	62.02989	62.77024	63.94291	65.99586	68.4252	71.0263	73.52936	75.1072	76.16604
8	-0.122899	70.00534	5.43E-02	63.25323	64.05875	65.32171	67.49496	70.00534	72.62106	75.0694	76.5789	77.57748
9	0.5928668	71.42953	5.41E-02	64.31213	65.18827	66.54677	68.84216	71.42953	74.05563	76.45212	77.90115	78.84812
10	1.208031	72.7522	5.40E-02	65.28197	66.22851	67.68051	70.09244	72.7522	75.39187	77.75131	79.15622	80.06583
11	1.670416	74.00793	5.39E-02	66.22234	67.23188	68.76682	71.2817	74.00793	76.66842	79.01107	80.39101	81.27874
12	1.941494	75.20693	5.39E-02	67.17747	68.23347	69.83009	72.42393	75.20693	77.89619	80.24395	81.61855	82.49969
13	2.006302	76.34641	5.39E-02	68.17375	69.25226	70.88067	73.52074	76.34641	79.07056	81.44402	82.83173	83.72054
14	1.909457	77.42347	5.38E-02	69.19448	70.27475	71.90925	74.56754	77.42347	80.18665	82.60155	84.01652	84.92395
15	1.712727	78.43739	5.37E-02	70.20771	71.27696	72.90143	75.55981	78.43739	81.24162	83.70776	85.15915	86.09235

16	1.465425	79.39315	5.36E-02	71.19154	72.24384	73.85039	76.49924	79.39315	82.23876	84.76124	86.25423	87.2174
17	1.215923	80.30221	5.35E-02	72.13105	73.16668	74.7552	77.39347	80.30221	83.18836	85.76761	87.30318	88.2973
18	1.00309	81.1735	5.34E-02	73.01445	74.03813	75.61431	78.24781	81.1735	84.09886	86.73151	88.30693	89.33001
19	0.8359149	82.0172	5.34E-02	73.84204	74.8598	76.43139	79.06928	82.0172	84.9826	87.66617	89.27867	90.32846
20	0.7079906	82.84536	5.36E-02	74.62514	75.64252	77.2169	79.86864	82.84536	85.85364	88.58779	90.23598	91.31112
21	0.6155956	83.66409	5.37E-02	75.37412	76.39578	77.97926	80.65295	83.66409	86.71747	89.50144	91.18367	92.2826
22	0.5604849	84.47366	5.40E-02	76.09379	77.12388	78.72192	81.42426	84.47366	87.57224	90.40291	92.11585	93.23586
23	0.5483808	85.26893	5.42E-02	76.77861	77.82161	79.44005	82.17792	85.26893	88.41139	91.28355	93.02224	94.15932
24	0.5801857	86.04656	5.45E-02	77.42435	78.48497	80.12996	82.91055	86.04656	89.2313	92.1391	93.89799	95.04774
25	0.650763	86.8065	0.0547227	78.03446	79.11691	80.79385	83.62321	86.8065	90.03109	92.96827	94.74174	95.89975
26	0.7501682	87.55042	5.50E-02	78.61505	79.7227	81.4358	84.31846	87.55042	90.81246	93.77368	95.55714	96.71985
27	0.8594704	88.27994	5.52E-02	79.17742	80.3116	82.06241	84.99965	88.27994	91.57745	94.55966	96.35077	97.51649
28	0.9572632	88.99493	5.54E-02	79.73518	80.89438	82.68069	85.66923	88.99493	92.32596	95.32839	97.12717	98.29612
29	1.037631	89.69332	5.56E-02	80.28991	81.47172	83.29022	86.32555	89.69332	93.05634	96.07925	97.88662	99.05971
30	1.09876	90.37688	5.58E-02	80.84355	82.04533	83.89246	86.97002	90.37688	93.77109	96.81563	98.63313	99.81171
31	1.138442	91.04941	5.59E-02	81.40125	82.61993	84.49163	87.60647	91.04941	94.47441	97.54237	99.37202	100.5578
32	1.154353	91.71189	5.60E-02	81.96662	83.19857	85.09007	88.23633	91.71189	95.16724	98.26065	100.1047	101.2995
33	1.151339	92.36406	5.61E-02	82.53871	83.78062	85.68748	88.85959	92.36406	95.84852	98.96831	100.8283	102.0334
34	1.138636	93.00664	5.61E-02	83.1153	84.36475	86.28366	89.47701	93.00664	96.51778	99.66283	101.5384	102.7539
35	1.124733	93.64156	5.61E-02	83.69099	84.94704	86.87661	90.08901	93.64156	97.17738	100.346	102.2364	103.4617
36	1.114651	94.27061	5.61E-02	84.26119	85.52403	87.4644	90.69575	94.27061	97.83	101.0209	102.925	104.1594

37	1.105456	94.89699	5.61E-02	84.82814	86.09789	88.04922	91.29971	94.89699	98.47995	101.693	103.6107	104.8542
38	1.087223	95.52625	5.61E-02	85.40166	86.67728	88.63829	91.90668	95.52625	99.1339	102.3711	104.3042	105.5579
39	1.052716	96.16346	5.61E-02	85.99236	87.27163	89.23954	92.52275	96.16346	99.79691	103.0612	105.0121	106.2781
40	0.9991627	96.8102	5.60E-02	86.60583	87.88588	89.85695	93.1506	96.8102	100.4699	103.7639	105.7352	107.0155
41	0.9290915	97.46687	5.60E-02	87.24108	88.51942	90.49036	93.7905	97.46687	101.1531	104.479	106.473	107.7694
42	0.8496999	98.12937	5.59E-02	87.89156	89.16648	91.13496	94.43847	98.12937	101.8413	105.1996	107.2172	108.5305
43	0.7658156	98.79044	5.58E-02	88.55228	89.82214	91.78571	95.08876	98.79044	102.5249	105.9135	107.9537	109.2836
44	0.6808339	99.4417	5.56E-02	89.21736	90.48046	92.43644	95.73442	99.4417	103.1936	106.6082	108.6685	110.0133
45	0.6025665	100.0764	5.53E-02	89.87883	91.13413	93.08055	96.36931	100.0764	103.8388	107.2722	109.3481	110.7047
46	0.5393616	100.6901	5.50E-02	90.5284	91.77582	93.71195	96.98866	100.6901	104.4552	107.8984	109.9835	111.3475
47	0.4987937	101.2795	5.45E-02	91.15652	92.39712	94.32384	97.58777	101.2795	105.0399	108.4832	110.5705	111.9367
48	0.4895232	101.8408	5.41E-02	91.75114	92.98739	94.90751	98.16066	101.8408	105.5901	109.0238	111.1056	112.4683
49	0.5139129	102.374	5.36E-02	92.30433	93.53974	95.45764	98.70458	102.374	106.1086	109.5254	111.5954	112.9498
50	0.5644345	102.8828	5.32E-02	92.81378	94.05209	95.97281	99.21992	102.8828	106.6033	110.001	112.0566	113.4004
51	0.6380228	103.3712	0.052873	93.2784	94.52386	96.45328	99.70863	103.3712	107.0814	110.461	112.5016	113.8341
52	0.7336839	103.842	0.0526452	93.69787	94.9551	96.89969	100.1723	103.842	107.5467	110.9103	112.9364	114.2575
53	0.8502052	104.2984	5.25E-02	94.07491	95.34867	97.31502	100.614	104.2984	108.0025	111.3526	113.3648	114.6745
54	0.9888283	104.7412	5.25E-02	94.41025	95.70557	97.70049	101.0349	104.7412	108.4489	111.7871	113.7855	115.0835
55	1.150493	105.1718	5.25E-02	94.70503	96.02727	98.05792	101.4371	105.1718	108.8867	112.2139	114.1981	115.4838
56	1.335084	105.5932	5.26E-02	94.96101	96.31598	98.38999	101.8234	105.5932	109.3184	112.6352	114.6046	115.8775
57	1.540845	106.006	5.28E-02	95.17577	96.56998	98.6958	102.1938	106.006	109.7454	113.053	115.0076	116.2674

58	1.763586	106.414	5.31E-02	95.35296	96.79315	98.97934	102.5524	106.414	110.1715	113.4715	115.4118	116.6586
59	1.995635	106.8219	0.0533653	95.50311	96.99517	99.24899	102.9054	106.8219	110.6003	113.8944	115.8211	117.0555
60	2.22783	107.2314	5.37E-02	95.63829	97.18641	99.51269	103.2574	107.2314	111.0324	114.3217	116.2358	117.4585

Table 3. L, M, and S parameters and percentiles for head circumference (cm) for age: boys 0 to 60 months.

Age (m)	L	M	S	3rd	5th	10th	25th	50th	75th	90th	95th	97th
0	-2.257671	34.70079	4.50E-02	32.11331	32.40393	32.8687	33.69633	34.70079	35.80985	36.91381	37.63012	38.12035
1	-2.037097	36.53206	4.45E-02	33.81544	34.12293	34.61347	35.48323	36.53206	37.68109	38.81498	39.54525	40.04248
2	-1.805035	38.25885	0.0439623	35.42113	35.74493	36.26014	37.16952	38.25885	39.44274	40.60089	41.34127	41.84286
3	-1.551965	39.80833	4.34E-02	36.86194	37.20107	37.73916	38.68426	39.80833	41.01969	42.19402	42.93905	43.44123
4	-1.270857	41.14749	4.29E-02	38.1064	38.45979	39.01874	39.99517	41.14749	42.37807	43.55965	44.30337	44.80204
5	-0.9632826	42.27169	4.23E-02	39.15009	39.51661	40.09434	41.0976	42.27169	43.51349	44.69399	45.43102	45.92258
6	-0.6349689	43.19625	4.18E-02	40.00755	40.38611	40.98058	42.00637	43.19625	44.44224	45.61474	46.34083	46.82256
7	-0.293523	43.94557	4.12E-02	40.70197	41.09149	41.70076	42.74514	43.94557	45.18996	46.34919	47.06138	47.5315
8	4.95E-02	44.55607	4.07E-02	41.26802	41.66747	42.28974	43.34927	44.55607	45.79476	46.93754	47.63436	48.09215
9	0.3803295	45.06388	4.01E-02	41.74032	42.14862	42.78214	43.85383	45.06388	46.29441	47.41954	48.10091	48.54665
10	0.686585	45.49584	3.96E-02	42.1448	42.56075	43.20374	44.28486	45.49584	46.717	47.82472	48.49152	48.92611
11	0.9587952	45.86969	3.91E-02	42.49876	42.92105	43.57162	44.6596	45.86969	47.08111	48.17252	48.82618	49.25087
12	1.190907	46.19546	3.87E-02	42.81204	43.23921	43.8954	44.98772	46.19546	47.3972	48.47384	49.11599	49.53216
13	1.379811	46.47982	3.82E-02	43.09108	43.52162	44.18143	45.27568	46.47982	47.67223	48.73582	49.36813	49.77713
14	1.525233	46.73185	0.037802	43.34407	43.77654	44.43812	45.53221	46.73185	47.91553	48.9679	49.59204	49.99518
15	1.62778	46.95858	3.74E-02	43.57714	44.01022	44.67189	45.76402	46.95858	48.13437	49.17739	49.795	50.19353

16	1.688837	47.16539	3.71E-02	43.79484	44.22731	44.88761	45.97627	47.16539	48.33421	49.36977	49.98241	50.37753
17	1.710789	47.35796	3.67E-02	44.0019	44.43274	45.09041	46.1744	47.35796	48.52086	49.55082	50.15998	50.55279
18	1.695824	47.53992	3.64E-02	44.20115	44.62947	45.28347	46.36186	47.53992	48.698	49.72417	50.33129	50.72286
19	1.646329	47.71169	3.62E-02	44.39247	44.81752	45.46696	46.539	47.71169	48.86605	49.89013	50.49654	50.88786
20	1.565903	47.86945	3.59E-02	44.57175	44.99288	45.63702	46.70203	47.86945	49.02097	50.04444	50.65131	51.04323
21	1.458943	48.00896	3.57E-02	44.73453	45.15122	45.78941	46.84681	48.00896	49.15833	50.18235	50.79062	51.18387
22	1.32998	48.12736	3.55E-02	44.87767	45.28951	45.92125	46.97053	48.12736	49.27508	50.30058	50.911	51.30614
23	1.181292	48.22566	3.53E-02	45.00176	45.40843	46.03334	47.07413	48.22566	49.37223	50.40005	51.01335	51.41093
24	1.014017	48.30654	3.52E-02	45.10906	45.51034	46.12815	47.16021	48.30654	49.45249	50.48356	51.10047	51.50106
25	0.8283504	48.37608	3.51E-02	45.20514	45.60089	46.21142	47.23468	48.37608	49.52212	50.5575	51.17888	51.58313
26	0.6244437	48.4424	3.50E-02	45.29749	45.68765	46.29088	47.30547	48.4424	49.58945	50.63043	51.25729	51.66594
27	0.4032236	48.51225	3.49E-02	45.39234	45.77694	46.37296	47.37915	48.51225	49.66137	50.70938	51.34282	51.75671
28	0.1668892	48.5889	3.48E-02	45.49264	45.87179	46.46075	47.45895	48.5889	49.74117	50.79764	51.43878	51.85876
29	-8.06E-02	48.67299	0.0347803	45.5988	45.97268	46.55486	47.54552	48.67299	49.82941	50.89564	51.54551	51.97235
30	-0.3341185	48.76301	3.48E-02	45.70924	46.07807	46.65379	47.63742	48.76301	49.92437	51.00139	51.66081	52.09516
31	-0.5885084	48.85564	0.0347511	45.8207	46.18476	46.75439	47.73146	48.85564	50.02247	51.11098	51.78051	52.22283
32	-0.8395363	48.94877	3.48E-02	45.93116	46.29075	46.85467	47.82566	48.94877	50.12138	51.22175	51.90176	52.35234
33	-1.082859	49.0402	3.48E-02	46.03859	46.39401	46.9526	47.91793	49.0402	50.21863	51.33091	52.02146	52.4804
34	-1.313986	49.12773	3.48E-02	46.14094	46.49251	47.04617	48.00624	49.12773	50.31177	51.43558	52.13644	52.60359
35	-1.530048	49.21129	3.48E-02	46.23814	46.5862	47.13533	48.09053	49.21129	50.40058	51.53532	52.24604	52.72108
36	-1.728654	49.29287	3.48E-02	46.33211	46.67701	47.22205	48.17281	49.29287	50.48696	51.63187	52.35182	52.83431

37	-1.906703	49.3737	3.48E-02	46.42402	46.76613	47.30754	48.25434	49.3737	50.57204	51.72608	52.45443	52.94371
38	-2.060411	49.45293	3.47E-02	46.51305	46.85276	47.39104	48.33432	49.45293	50.65475	51.81654	52.5521	53.04727
39	-2.187088	49.53061	3.47E-02	46.59928	46.937	47.47263	48.41287	49.53061	50.73499	51.90287	52.64422	53.14417
40	-2.283951	49.60655	3.46E-02	46.68256	47.01869	47.55219	48.48985	49.60655	50.81241	51.98447	52.72993	53.2333
41	-2.347113	49.67839	3.46E-02	46.76058	47.09555	47.62743	48.56297	49.67839	50.88445	52.05839	52.80595	53.31116
42	-2.371746	49.74288	3.45E-02	46.83012	47.16439	47.69522	48.6291	49.74288	50.94763	52.12076	52.86807	53.37323
43	-2.355124	49.79902	3.44E-02	46.89017	47.22421	47.75457	48.68726	49.79902	51.00082	52.17027	52.9148	53.41789
44	-2.299296	49.84828	3.42E-02	46.94225	47.27651	47.80693	48.73889	49.84828	51.0456	52.2087	52.94812	53.44727
45	-2.207465	49.89029	3.41E-02	46.98619	47.32108	47.85205	48.78365	49.89029	51.08172	52.23605	52.96827	53.46183
46	-2.084899	49.92589	3.39E-02	47.02296	47.35882	47.89075	48.82229	49.92589	51.11026	52.25387	52.97725	53.46392
47	-1.937053	49.95722	3.37E-02	47.05467	47.3918	47.92507	48.85685	49.95722	51.13371	52.2652	52.97855	53.45744
48	-1.768603	49.98489	3.36E-02	47.08195	47.42062	47.95554	48.88786	49.98489	51.1529	52.2713	52.97384	53.44433
49	-1.583715	50.00873	0.0333638	47.1047	47.44514	47.98198	48.91508	50.00873	51.16787	52.27256	52.96381	53.42556
50	-1.386978	50.03133	3.32E-02	47.12545	47.46785	48.00687	48.941	50.03133	51.18149	52.27224	52.95207	53.40501
51	-1.182461	50.05632	3.30E-02	47.14761	47.49217	48.03362	48.96909	50.05632	51.19765	52.27465	52.94322	53.38751
52	-0.973416	50.08593	3.28E-02	47.17331	47.52021	48.06433	49.00148	50.08593	51.21878	52.28249	52.94019	53.37613
53	-0.7624592	50.12079	3.26E-02	47.2032	47.5526	48.09961	49.03877	50.12079	51.24561	52.2966	52.94392	53.37191
54	-0.5518538	50.15989	3.25E-02	47.23647	47.58849	48.13856	49.07998	50.15989	51.27712	52.31604	52.95351	53.37398
55	-0.3430789	50.20412	3.23E-02	47.27403	47.62878	48.18206	49.12599	50.20412	51.31428	52.34182	52.97002	53.38342
56	-0.1377046	50.25581	3.22E-02	47.31812	47.67571	48.23235	49.17906	50.25581	51.35945	52.3764	52.99594	53.40277
57	6.28E-02	50.31604	3.20E-02	47.36996	47.73046	48.2906	49.24032	50.31604	51.41376	52.4209	53.03245	53.43318

58	0.2575816	50.3853	0.0318868	47.43018	47.79365	48.35735	49.31026	50.3853	51.47763	52.47571	53.07985	53.47495
59	0.4468933	50.46309	3.18E-02	47.49849	47.86495	48.43227	49.38851	50.46309	51.55049	52.54015	53.13741	53.52728
60	0.6329499	50.54625	3.16E-02	47.57188	47.94136	48.51235	49.47197	50.54625	51.62897	52.61064	53.20137	53.5863

Table 4. L, M, and S parameters and percentiles for weight (kg) for length/height(cm): boys 0 to 60 months.

Length/height	L	M	S	3rd	5th	10th	25th	50th	75th	90th	95th	97th
55	-0.1600882	4.17039	0.1553799	3.134288	3.246321	3.428045	3.758714	4.17039	4.635299	5.105814	5.413859	5.625466
56	-3.49E-02	4.481163	0.1559384	3.347071	3.471296	3.671988	4.034556	4.481163	4.979128	5.476279	5.798118	6.01756
57	7.47E-02	4.806469	0.155934	3.573069	3.709832	3.929922	4.324825	4.806469	5.337342	5.861023	6.196761	6.424238
58	0.1689286	5.136801	0.1554208	3.806279	3.955479	4.194704	4.621233	5.136801	5.699297	6.248446	6.59762	6.832952
59	0.2491175	5.465156	0.1544679	4.042327	4.203503	4.461059	4.917645	5.465156	6.057217	6.630133	6.991903	7.234657
60	0.3165111	5.787066	0.1531474	4.27849	4.450918	4.725618	5.21012	5.787066	6.406219	7.000888	7.374234	7.623849
61	0.3718814	6.099837	0.1515274	4.513209	4.695964	4.986344	5.496247	6.099837	6.743447	7.357798	7.741683	7.997591
62	0.4153289	6.402017	0.1496771	4.745691	4.937698	5.242096	5.774662	6.402017	7.06752	7.699644	8.093166	8.354895
63	0.4470271	6.693578	0.1476617	4.975936	5.176048	5.492735	6.045215	6.693578	7.378655	8.026955	8.42942	8.696636
64	0.4673859	6.975386	0.1455332	5.204419	5.41149	5.738768	6.308538	6.975386	7.678031	8.341228	8.752148	9.024655
65	0.4778304	7.248506	0.1433381	5.431362	5.644345	5.980672	6.565383	7.248506	7.967006	8.644051	9.063044	9.340701
66	0.4803089	7.513828	0.1411166	5.656616	5.874612	6.218668	6.816315	7.513828	8.246717	8.936695	9.363415	9.646083
67	0.47766	7.771465	0.138904	5.879145	6.101448	6.452189	7.061152	7.771465	8.517408	9.219369	9.653368	9.940811
68	0.4729766	8.021442	0.136728	6.097787	6.323907	6.680584	7.299639	8.021442	8.7792	9.492092	9.932779	10.22463
69	0.468624	8.263862	0.134613	6.311595	6.54122	6.903337	7.531609	8.263862	9.032314	9.755065	10.20177	10.49757

70	0.4640717	8.498915	0.1325928	6.520223	6.753086	7.120227	7.757011	8.498915	9.277247	10.00911	10.46137	10.76083
71	0.4587368	8.727262	0.1306953	6.723729	6.959615	7.331458	7.97624	8.727262	9.514991	10.25558	10.71319	11.01617
72	0.4525343	8.949825	0.1289334	6.922452	7.16121	7.537535	8.189987	8.949825	9.746718	10.49588	10.95879	11.26528
73	0.445814	9.167773	0.1273079	7.116997	7.358549	7.739251	8.399228	9.167773	9.973779	10.73152	11.19975	11.50978
74	0.4385943	9.382442	0.1258105	7.308341	7.552654	7.937694	8.605166	9.382442	10.19765	10.96411	11.43777	11.75141
75	0.4306853	9.59481	0.1244225	7.497422	7.744464	8.133806	8.808758	9.59481	10.41933	11.19469	11.67391	11.99128
76	0.4216655	9.80504	0.1231228	7.684673	7.934373	8.327924	9.010248	9.80504	10.63894	11.42333	11.90825	12.22943
77	0.4116049	10.013	0.1219024	7.870016	8.122297	8.519955	9.209531	10.013	10.8563	11.64983	12.14054	12.46563
78	0.4004248	10.21869	0.120771	8.053205	8.308016	8.709721	9.406501	10.21869	11.07152	11.87441	12.3711	12.70023
79	0.3882626	10.42203	0.119739	8.233883	8.491208	8.896955	9.600989	10.42203	11.28466	12.09723	12.60014	12.93348
80	0.3750334	10.6232	0.1188151	8.411933	8.671784	9.081616	9.793039	10.6232	11.496	12.31871	12.82817	13.16597
81	0.3603671	10.82251	0.1180085	8.587424	8.849832	9.263824	9.982851	10.82251	11.70602	12.53951	13.05599	13.39857
82	0.3437487	11.02064	0.1173195	8.760907	9.025903	9.444142	10.17103	11.02064	11.91555	12.76063	13.2847	13.63249
83	0.3246102	11.21828	0.1167415	8.933077	9.200675	9.623228	10.35822	11.21828	12.12533	12.98293	13.51528	13.86878
84	0.3025268	11.4159	0.1162614	9.104557	9.374743	9.801638	10.54492	11.4159	12.33583	13.20693	13.74827	14.108
85	0.2771594	11.61411	0.1158596	9.276223	9.548946	9.980155	10.73185	11.61411	12.54764	13.43316	13.98423	14.35074
86	0.248644	11.81333	0.115518	9.44867	9.723865	10.15933	10.91948	11.81333	12.76107	13.6619	14.22337	14.59718
87	0.218793	12.01385	0.1152316	9.621753	9.899446	10.33924	11.10804	12.01385	12.97636	13.89321	14.46562	14.84712
88	0.1896434	12.21605	0.1149988	9.795282	10.07562	10.51997	11.29781	12.21605	13.19386	14.12726	14.71097	15.10041
89	0.1625203	12.42039	0.1148217	9.96922	10.25243	10.70168	11.48913	12.42039	13.41404	14.36446	14.95975	15.35731
90	0.1376438	12.62744	0.1147066	10.14382	10.43018	10.88474	11.68246	12.62744	13.63761	14.60563	15.21283	15.61872

91	0.1148545	12.83771	0.1146558	10.31942	10.60921	11.06952	11.87823	12.83771	13.86517	14.85146	15.47097	15.88545
92	9.38E-02	13.05142	0.1146671	10.49626	10.78975	11.25624	12.07664	13.05142	14.09696	15.10226	15.73453	16.15789
93	7.44E-02	13.26828	0.11473	10.67433	10.97176	11.44478	12.2775	13.26828	14.33262	15.35759	16.00302	16.43553
94	5.67E-02	13.48771	0.1148284	10.85338	11.15496	11.63482	12.48038	13.48771	14.57138	15.61648	16.27533	16.71716
95	4.07E-02	13.70918	0.1149456	11.03332	11.3392	11.82616	12.68492	13.70918	14.81253	15.87801	16.55041	17.00163
96	2.56E-02	13.93287	0.115069	11.21474	11.52502	12.0192	12.89141	13.93287	15.05616	16.14226	16.82837	17.28909
97	9.59E-03	14.15972	0.1151879	11.39906	11.71373	12.21515	13.10088	14.15972	15.30325	16.41041	17.11057	17.58104
98	-8.98E-03	14.39103	0.1152882	11.58815	11.9071	12.41562	13.31474	14.39103	15.55517	16.68402	17.39876	17.87941
99	-3.14E-02	14.62794	0.1153688	11.78331	12.10637	12.62179	13.53411	14.62794	15.81318	16.9646	17.69471	18.18616
100	-5.78E-02	14.87064	0.1154428	11.98452	12.31153	12.83366	13.75907	14.87064	16.07764	17.25273	17.99915	18.50214
101	-8.75E-02	15.11883	0.1155243	12.19107	12.52195	13.0507	13.9892	15.11883	16.34836	17.54833	18.31205	18.82735
102	-0.1198175	15.37233	0.1156239	12.40239	12.7371	13.27246	14.22419	15.37233	16.62525	17.85133	18.63336	19.16177
103	-0.1541407	15.63109	0.1157498	12.61812	12.95667	13.4987	14.4639	15.63109	16.90835	18.16186	18.96326	19.50557
104	-0.1899061	15.89491	0.1159138	12.83763	13.1801	13.72894	14.70799	15.89491	17.19757	18.47991	19.30178	19.85886
105	-0.2265982	16.16343	0.1161236	13.06033	13.40681	13.96267	14.95603	16.16343	17.49262	18.80527	19.64877	20.22149
106	-0.263854	16.43609	0.1163835	13.28551	13.63614	14.19923	15.2074	16.43609	17.79297	19.13741	20.0037	20.59294
107	-0.3015362	16.71204	0.1166987	13.51231	13.8672	14.43777	15.46125	16.71204	18.0978	19.47559	20.36588	20.97258
108	-0.3397124	16.99047	0.1170683	13.74008	14.09935	14.67759	15.71683	16.99047	18.40629	19.81898	20.73452	21.35965
109	-0.3788607	17.27085	0.1174891	13.96859	14.33229	14.91831	15.97366	17.27085	18.71788	20.16712	21.10927	21.75391
110	-0.4197028	17.55278	0.1179572	14.19782	14.56594	15.15978	16.23146	17.55278	19.0322	20.51978	21.49008	22.15546
111	-0.4626779	17.8359	0.1184675	14.42773	14.8002	15.40182	16.48993	17.8359	19.34884	20.87665	21.87677	22.56425

112	-0.5080999	18.11982	0.1190087	14.65841	15.03511	15.64437	16.74886	18.11982	19.66734	21.23723	22.2689	22.97992
113	-0.5562662	18.40433	0.1195685	14.89008	15.27085	15.88753	17.00819	18.40433	19.98733	21.60115	22.66614	23.40223
114	-0.60694	18.68935	0.1201385	15.12285	15.50751	16.13136	17.26794	18.68935	20.30864	21.96814	23.06823	23.83092
115	-0.6594775	18.97479	0.1207124	15.35662	15.745	16.3758	17.52806	18.97479	20.63107	22.33787	23.47473	24.26551
116	-0.7130179	19.26061	0.1212835	15.59124	15.98323	16.62082	17.78854	19.26061	20.95441	22.70988	23.88502	24.70524
117	-0.7666429	19.54665	0.1218472	15.82642	16.22195	16.86622	18.04926	19.54665	21.27839	23.08365	24.29832	25.14917
118	-0.820156	19.83283	0.1224057	16.06197	16.46099	17.11185	18.3101	19.83283	21.60292	23.45909	24.71458	25.59728
119	-0.8735929	20.11914	0.122961	16.29784	16.70029	17.35767	18.57102	20.11914	21.92802	23.83631	25.13401	26.04988
120	-0.9269697	20.40556	0.1235147	16.53399	16.93983	17.60364	18.83201	20.40556	22.25373	24.21539	25.5568	26.50724
121	-0.9803044	20.69206	0.1240676	16.77038	17.17955	17.84974	19.09303	20.69206	22.58001	24.59641	25.98308	26.96962
122	-1.033613	20.97862	0.1246206	17.00696	17.41943	18.09591	19.35404	20.97862	22.90687	24.97939	26.413	27.43727

Table 5. L, M, and S parameters and percentiles for Body mass index(kg/m^2) for age: boys 0 to 60 months.

Age (m)	L	M	S	3rd	5th	10th	25th	50th	75th	85th	90th	95th	97th
0	0.192783	12.61227	0.1353413	9.714925	10.04561	10.57251	11.50258	12.61227	13.80682	14.4845	14.95851	15.68402	16.17021
1	0.2076191	13.77891	0.1347058	10.62149	10.98257	11.55753	12.57127	13.77891	15.0767	15.81198	16.32586	17.11175	17.63798
2	0.2223667	14.83773	0.1340681	11.44638	11.83499	12.45335	13.54238	14.83773	16.22744	17.01376	17.56288	18.40199	18.96342
3	0.2364019	15.71517	0.1334285	12.13293	12.54419	13.19818	14.3487	15.71517	17.17884	18.00598	18.58317	19.46451	20.05374
4	0.2487435	16.3913	0.1327891	12.66582	13.09427	13.77517	14.97187	16.3913	17.90952	18.76652	19.36415	20.27609	20.88537
5	0.2586033	16.87935	0.1321536	13.05524	13.49567	14.19527	15.4238	16.87935	18.43435	19.31129	19.92248	20.8546	21.47701
6	0.2654513	17.20685	0.1315251	13.32231	13.77021	14.48138	15.72943	17.20685	18.78373	19.67239	20.29149	21.23526	21.86519
7	0.26895	17.40269	0.1309059	13.48917	13.94077	14.65761	15.91504	17.40269	18.98952	19.88336	20.5059	21.45466	22.08775

8	0.2689774	17.49531	0.1302979	13.57757	14.02983	14.74764	16.00647	17.49531	19.08294	19.97703	20.59967	21.54845	22.18148
9	0.2654265	17.51049	0.1297032	13.60721	14.05782	14.77299	16.02717	17.51049	19.09227	19.98309	20.60347	21.54883	22.1796
10	0.2582964	17.46771	0.1291237	13.5929	14.04008	14.74988	15.99485	17.46771	19.03885	19.92392	20.5404	21.48	22.10704
11	0.2476986	17.38295	0.1285613	13.54678	13.9892	14.6916	15.92407	17.38295	18.94017	19.81786	20.4294	21.36176	21.98418
12	0.2339209	17.27117	0.1280175	13.48015	13.91693	14.61059	15.82844	17.27117	18.81256	19.68197	20.28801	21.21242	21.82982
13	0.2172026	17.14657	0.1274926	13.40384	13.8345	14.51874	15.72092	17.14657	18.67149	19.53241	20.13288	21.04934	21.66179
14	0.1976206	17.02106	0.1269869	13.32703	13.75143	14.42606	15.61242	17.02106	18.5299	19.38272	19.97795	20.88707	21.49504
15	0.1752919	16.90058	0.1265012	13.25429	13.67244	14.33755	15.50836	16.90058	18.39428	19.23966	19.83018	20.73284	21.33701
16	0.1503883	16.78654	0.1260362	13.1866	13.59859	14.25434	15.41004	16.78654	18.26614	19.10479	19.69114	20.58829	21.18934
17	0.1231497	16.6778	0.1255928	13.12292	13.52883	14.1754	15.31637	16.6778	18.14419	18.97675	19.55943	20.4519	21.05045
18	9.39E-02	16.57054	0.1251715	13.06012	13.45998	14.09743	15.22385	16.57054	18.02429	18.85116	19.4305	20.31887	20.91535
19	6.31E-02	16.46166	0.1247723	12.99557	13.38938	14.01769	15.12959	16.46166	17.90302	18.7244	19.30058	20.18518	20.77987
20	3.10E-02	16.34951	0.1243947	12.92785	13.31558	13.93473	15.03206	16.34951	17.77853	18.59453	19.16763	20.04865	20.6417
21	-1.95E-03	16.23492	0.1240376	12.85752	13.23919	13.84922	14.93204	16.23492	17.65173	18.46242	19.03253	19.91013	20.50168
22	-3.56E-02	16.1216	0.1236997	12.78746	13.16321	13.7643	14.83292	16.1216	17.52657	18.33222	18.89952	19.77401	20.36429
23	-6.97E-02	16.01391	0.1233796	12.72112	13.09119	13.68371	14.73875	16.01391	17.4078	18.20882	18.77364	19.64552	20.23488
24	-0.1040465	15.91552	0.1230761	12.66139	13.0261	13.61057	14.65289	15.91552	17.29935	18.09632	18.65905	19.52897	20.11787
25	-0.1382521	15.82807	0.1227872	12.60959	12.96932	13.54631	14.57688	15.82807	17.20296	17.99652	18.55761	19.42625	20.01515
26	-0.1719209	15.75086	0.1225109	12.56511	12.92023	13.49032	14.51008	15.75086	17.11781	17.9085	18.46832	19.33623	19.9255
27	-0.2043853	15.68105	0.1222459	12.52557	12.87643	13.44012	14.44988	15.68105	17.04077	17.82892	18.38767	19.25514	19.84495
28	-0.2351382	15.61735	0.1219911	12.48987	12.83679	13.39457	14.39508	15.61735	16.9704	17.75622	18.31401	19.18115	19.77155

29	-0.2641733	15.56095	0.1217462	12.459	12.80233	13.35473	14.34679	15.56095	16.90797	17.69173	18.24873	19.11572	19.70677
30	-0.2915956	15.51178	0.1215107	12.43302	12.77308	13.32057	14.30495	15.51178	16.8534	17.6354	18.19175	19.05878	19.65059
31	-0.3174745	15.46821	0.121284	12.41069	12.74775	13.29075	14.2681	15.46821	16.80493	17.58536	18.14118	19.00835	19.60096
32	-0.3418985	15.4295	0.1210652	12.39151	12.72582	13.26468	14.23556	15.4295	16.76176	17.54078	18.09615	18.96356	19.55697
33	-0.3650223	15.39375	0.1208534	12.37403	12.70577	13.24078	14.2056	15.39375	16.7218	17.49949	18.05444	18.92207	19.51625
34	-0.386978	15.35862	0.1206477	12.35646	12.68576	13.21707	14.17608	15.35862	16.68252	17.45885	18.01333	18.88105	19.47589
35	-0.4079465	15.32435	0.1204476	12.33907	12.66603	13.19382	14.14724	15.32435	16.64418	17.41915	17.97312	18.84085	19.43627
36	-0.4281434	15.29299	0.1202528	12.32359	12.64835	13.17282	14.12098	15.29299	16.60901	17.38273	17.93626	18.80407	19.4001
37	-0.4477185	15.26513	0.1200639	12.31053	12.63324	13.1546	14.09785	15.26513	16.57768	17.3503	17.90349	18.77152	19.36824
38	-0.4666997	15.23815	0.1198822	12.2978	12.61853	13.1369	14.07544	15.23815	16.54737	17.31894	17.8718	18.74005	19.33744
39	-0.4851107	15.20887	0.1197088	12.28279	12.60156	13.11697	14.05078	15.20887	16.51461	17.28502	17.83746	18.70577	19.30372
40	-0.5029641	15.17566	0.1195445	12.26419	12.58098	13.09337	14.02236	15.17566	16.47765	17.24671	17.7986	18.66672	19.26505
41	-0.5202864	15.14001	0.1193899	12.2432	12.55802	13.06741	13.99157	15.14001	16.43813	17.20575	17.75699	18.62477	19.22335
42	-0.5371398	15.10295	0.1192451	12.22066	12.53355	13.03998	13.95935	15.10295	16.39717	17.16329	17.71385	18.58122	19.17999
43	-0.5536314	15.06455	0.1191105	12.19667	12.50764	13.01115	13.92577	15.06455	16.35485	17.11946	17.6693	18.53621	19.13514
44	-0.5698797	15.02332	0.1189864	12.17003	12.47908	12.97963	13.88945	15.02332	16.30956	17.07256	17.62162	18.48795	19.08695
45	-0.5860267	14.97784	0.118873	12.13965	12.44672	12.94424	13.84909	14.97784	16.25979	17.02103	17.56921	18.43479	19.03375
46	-0.6021943	14.92789	0.1187701	12.10537	12.4104	12.90478	13.8045	14.92789	16.20528	16.96462	17.5118	18.37648	18.9753
47	-0.6184945	14.87728	0.1186775	12.07031	12.37331	12.86459	13.75919	14.87728	16.15018	16.90766	17.4539	18.31774	18.91648
48	-0.6350722	14.83239	0.1185945	12.0397	12.34081	12.82918	13.71908	14.83239	16.10141	16.85742	17.40299	18.26648	18.86548
49	-0.6520406	14.79557	0.1185205	12.01552	12.31491	12.80066	13.68638	14.79557	16.06154	16.81658	17.36187	18.22563	18.82534

50	-0.6694623	14.76501	0.1184545	11.99631	12.29411	12.77746	13.65939	14.76501	16.02857	16.78307	17.32838	18.19294	18.79376
51	-0.6873888	14.73953	0.118396	11.98116	12.27747	12.75859	13.63706	14.73953	16.00122	16.75553	17.30115	18.16698	18.76926
52	-0.7058672	14.71992	0.118344	11.97075	12.26568	12.74475	13.62011	14.71992	15.98036	16.73487	17.28111	18.14873	18.75285
53	-0.7248959	14.70623	0.118298	11.96513	12.25879	12.736	13.60861	14.70623	15.96601	16.72113	17.26829	18.13822	18.74459
54	-0.7444255	14.69438	0.1182575	11.96099	12.25341	12.72881	13.59877	14.69438	15.95376	16.70967	17.2579	18.13042	18.73924
55	-0.7644027	14.67892	0.1182221	11.95389	12.245	12.71846	13.58557	14.67892	15.93767	16.69427	17.24351	18.11856	18.72983
56	-0.7847828	14.657	0.1181912	11.94149	12.23116	12.70248	13.56636	14.657	15.91464	16.67166	17.22174	18.09907	18.71264
57	-0.8055605	14.62997	0.1181638	11.92491	12.21303	12.68205	13.54241	14.62997	15.88613	16.64337	17.19415	18.07359	18.68937
58	-0.8267326	14.59857	0.1181388	11.90476	12.19125	12.65781	13.51439	14.59857	15.85291	16.6102	17.16158	18.04298	18.66089
59	-0.8482496	14.5631	0.1181153	11.88129	12.16607	12.63005	13.4826	14.5631	15.8153	16.57247	17.12434	18.00756	18.62751
60	-0.8699912	14.52402	0.1180924	11.85486	12.13786	12.59915	13.44746	14.52402	15.7738	16.53068	17.08293	17.96781	18.58973

Table 6. L, M, and S parameters and percentiles for weight (kg) for age: girls 0 to 60 months

Age (m)	L	M	S	3rd	5th	10th	25th	50th	75th	90th	95th	97th
0	-1.279791	3.086626	0.1317898	2.488774	2.54915	2.648968	2.837406	3.086626	3.392086	3.733604	3.978784	4.158854
1	-1.173744	3.943229	0.1347234	3.158731	3.238239	3.36957	3.617044	3.943229	4.340936	4.782399	5.096995	5.326705
2	-1.069749	4.755405	0.1375007	3.784707	3.883482	4.046474	4.352962	4.755405	5.243316	5.780787	6.160874	6.436761
3	-0.9710239	5.497105	0.1400316	4.347939	4.46538	4.658958	5.022135	5.497105	6.069566	6.695313	7.134466	7.451378
4	-0.8777268	6.162355	0.1422787	4.845731	4.980906	5.203448	5.619944	6.162355	6.812156	7.516937	8.007849	8.360119
5	-0.7867554	6.749956	0.1442222	5.278665	5.430495	5.68011	6.146006	6.749956	7.468815	8.242191	8.776751	9.158168
6	-0.6957475	7.26359	0.1458619	5.650826	5.818223	6.092993	6.604246	7.26359	8.042868	8.874022	9.443916	9.848178
7	-0.6022482	7.709012	0.1472072	5.967474	6.149447	6.447581	7.000318	7.709012	8.540096	9.418243	10.01524	10.43615

8	-0.5032343	8.092723	0.1482503	6.234151	6.429879	6.749828	7.340496	8.092723	8.967098	9.881476	10.49738	10.92881
9	-0.39992	8.422654	0.1490023	6.457896	6.666652	7.007009	7.632318	8.422654	9.332482	10.27346	10.90118	11.33793
10	-0.2963157	8.708815	0.1494989	6.647627	6.868722	7.228171	7.885119	8.708815	9.647592	10.6077	11.24202	11.68049
11	-0.1971679	8.962192	0.1497848	6.813093	7.045843	7.423133	8.10904	8.962192	9.92506	10.8993	11.53717	11.97541
12	-0.1070564	9.19271	0.1499082	6.963177	7.206851	7.600733	8.313183	9.19271	10.17642	11.16215	11.80237	12.23988
13	-2.92E-02	9.408478	0.1499144	7.10507	7.358884	7.768099	8.504918	9.408478	10.41114	11.40755	12.05032	12.48761
14	3.60E-02	9.616183	0.1498391	7.244118	7.507351	7.930795	8.690218	9.616183	10.6369	11.64425	12.29045	12.72848
15	8.94E-02	9.821157	0.1497101	7.384345	7.65637	8.093118	8.873796	9.821157	10.85976	11.87902	12.52993	12.96987
16	0.1317562	10.0258	0.1495531	7.527314	7.807569	8.256823	9.05768	10.0258	11.08252	12.11497	12.77196	13.21501
17	0.1645141	10.22882	0.1493924	7.67165	7.959576	8.420551	9.240548	10.22882	11.30389	12.35067	13.01498	13.46219
18	0.1889228	10.42725	0.1492413	7.81476	8.109758	8.581609	9.419591	10.42725	11.52063	12.58252	13.25508	13.70726
19	0.2059919	10.61957	0.1491107	7.955194	8.256661	8.738534	9.593331	10.61957	11.73111	12.80872	13.49027	13.9481
20	0.2167247	10.80638	0.1490089	8.093078	8.400479	8.891623	9.762228	10.80638	11.93604	13.02998	13.72126	14.18535
21	0.2220555	10.98723	0.1489395	8.227791	8.540625	9.040339	9.925803	10.98723	12.13492	13.2457	13.9473	14.41819
22	0.2231241	11.16122	0.1489019	8.358336	8.676143	9.183775	10.0832	11.16122	12.32672	13.45459	14.16691	14.64498
23	0.2214033	11.32632	0.1488871	8.482847	8.805197	9.320115	10.23254	11.32632	12.50904	13.65377	14.37683	14.86214
24	0.2171636	11.48232	0.1488906	8.601178	8.927639	9.44921	10.37368	11.48232	12.68162	13.84289	14.57665	15.06925
25	0.2093859	11.63046	0.1489092	8.714706	9.044793	9.572314	10.50781	11.63046	12.84589	14.02369	14.76836	15.26848
26	0.1963749	11.77341	0.1489368	8.826206	9.159355	9.692037	10.63748	11.77341	13.00485	14.19975	14.95601	15.46424
27	0.1766693	11.91375	0.1489696	8.938254	9.273847	9.810834	10.76513	11.91375	13.16143	14.37451	15.14349	15.6608
28	0.1501257	12.05319	0.149008	9.052221	9.389673	9.93017	10.89234	12.05319	13.31756	14.55021	15.33326	15.86075

29	0.1170727	12.19259	0.1490497	9.16868	9.507455	10.05073	11.01987	12.19259	13.47416	14.72783	15.52639	16.06524
30	7.80E-02	12.33273	0.1490922	9.2881	9.627723	10.17313	11.14843	12.33273	13.63208	14.90828	15.72381	16.27527
31	0.0336374	12.47371	0.1491407	9.410145	9.750227	10.29722	11.27805	12.47371	13.79142	15.09167	15.92565	16.49093
32	-1.50E-02	12.61489	0.1492009	9.533862	9.874091	10.42225	11.40805	12.61489	13.95152	15.27719	16.13102	16.71131
33	-0.0672961	12.75536	0.1492733	9.65831	9.998403	10.54731	11.53756	12.75536	14.11133	15.4637	16.33868	16.93513
34	-0.1232011	12.89472	0.1493561	9.783153	10.12284	10.6721	11.66624	12.89472	14.2704	15.65075	16.54827	17.16208
35	-0.1819437	13.03285	0.1494471	9.908027	10.24708	10.79637	11.79394	13.03285	14.42856	15.83803	16.75939	17.39172
36	-0.2418477	13.16895	0.1495364	10.03187	10.37018	10.9193	11.91993	13.16895	14.5847	16.02394	16.97	17.6217
37	-0.3020172	13.30218	0.1496221	10.15373	10.49122	11.04001	12.0434	13.30218	14.73781	16.20715	17.17853	17.85027
38	-0.3627037	13.43228	0.1497103	10.27337	10.60995	11.15827	12.16409	13.43228	14.88769	16.3876	17.38507	18.07761
39	-0.4234819	13.559	0.1498126	10.39024	10.72587	11.27361	12.28164	13.559	15.03414	16.56511	17.58944	18.30359
40	-0.4834462	13.68221	0.1499415	10.50368	10.83839	11.38558	12.39579	13.68221	15.17708	16.73955	17.79142	18.5279
41	-0.5415437	13.80245	0.1501044	10.61361	10.94754	11.49433	12.5069	13.80245	15.31712	16.9114	17.99131	18.75068
42	-0.5964828	13.92101	0.150301	10.7206	11.05397	11.6007	12.61605	13.92101	15.45559	17.08176	18.18992	18.97246
43	-0.6468045	14.0392	0.1505266	10.82523	11.15841	11.70557	12.72437	14.0392	15.59373	17.25153	18.38769	19.19323
44	-0.6915084	14.15852	0.1507723	10.92852	11.26192	11.81012	12.83324	14.15852	15.73305	17.42188	18.58536	19.41335
45	-0.7297994	14.28032	0.1510355	11.03127	11.36539	11.91536	12.94383	14.28032	15.87491	17.59394	18.78371	19.63322
46	-0.7606013	14.40573	0.1513085	11.13414	11.46956	12.02213	13.05717	14.40573	16.02037	17.76834	18.98281	19.85238
47	-0.782704	14.53556	0.1515813	11.23748	11.57484	12.13098	13.17397	14.53556	16.17006	17.9451	19.18197	20.06943
48	-0.7951096	14.67022	0.1518495	11.34127	11.68131	12.24209	13.29457	14.67022	16.32426	18.124	19.38031	20.28288
49	-0.7974164	14.80983	0.1521214	11.44525	11.78874	12.35531	13.41896	14.80983	16.48312	18.30503	19.57756	20.49218

50	-0.7894232	14.95436	0.1524037	11.54907	11.89684	12.47041	13.54702	14.95436	16.64665	18.48807	19.77344	20.69685
51	-0.7713825	15.10352	0.1526981	11.65239	12.00527	12.58708	13.67844	15.10352	16.81452	18.67277	19.96756	20.89651
52	-0.7443526	15.25649	0.1530079	11.7547	12.11348	12.70469	13.81251	15.25649	16.98595	18.85858	20.1597	21.09127
53	-0.7091072	15.41218	0.1533342	11.8552	12.22064	12.82237	13.94823	15.41218	17.15979	19.04446	20.34905	21.28057
54	-0.6665497	15.57012	0.1536748	11.95365	12.32648	12.93979	14.08521	15.57012	17.33556	19.23012	20.53564	21.46477
55	-0.6181112	15.72976	0.1540295	12.04997	12.43086	13.05672	14.22304	15.72976	17.5128	19.41552	20.71997	21.64495
56	-0.5656241	15.89036	0.1544021	12.14402	12.53352	13.17273	14.36108	15.89036	17.69086	19.60064	20.90278	21.82253
57	-0.5111258	16.05172	0.1547944	12.2363	12.63486	13.28804	14.49929	16.05172	17.8698	19.78623	21.08563	21.99984
58	-0.4562123	16.21362	0.1552021	12.32728	12.73521	13.40282	14.63758	16.21362	18.04947	19.9726	21.26936	22.17819
59	-0.401644	16.37565	0.1556221	12.41701	12.83455	13.51693	14.77567	16.37565	18.22944	20.15948	21.45392	22.35773
60	-0.3476215	16.53768	0.1560493	12.50552	12.93292	13.63038	14.91351	16.53768	18.40954	20.34668	21.63909	22.53823

Table 7. L, M, and S parameters and percentiles for length/height (cm) for age: girls 0 to 60 months.

Age (m)	L	M	S	3rd	5th	10th	25th	50th	75th	90th	95th	97th
0	-1.79696	50.05623	5.05E-02	45.85006	46.32385	47.08092	48.42694	50.05623	51.84872	53.62516	54.77315	55.55653
1	-1.842832	53.27436	5.13E-02	48.74808	49.25639	50.06941	51.51734	53.27436	55.2132	57.14097	58.39024	59.24436
2	-1.845567	56.38081	5.20E-02	51.53411	52.07761	52.94731	54.49747	56.38081	58.462	60.53452	61.87936	62.79962
3	-1.775015	59.2659	5.26E-02	54.10344	54.68305	55.61021	57.26163	59.2659	61.47777	63.67705	65.10221	66.07652
4	-1.609874	61.88437	5.31E-02	56.41	57.02762	58.01406	59.76633	61.88437	64.21018	66.50998	67.99314	69.00376
5	-1.33159	64.21529	5.35E-02	58.4281	59.08714	60.13661	61.99107	64.21529	66.63494	69.00314	70.51718	71.54276
6	-0.9020513	66.25065	5.38E-02	60.13552	60.84292	61.96365	63.92651	66.25065	68.74095	71.13932	72.6522	73.66788
7	-0.3320158	68.00546	5.40E-02	61.53858	62.30359	63.50653	65.58656	68.00546	70.54465	72.93909	74.42406	75.41006

8	0.2951314	69.53802	0.054174	62.70368	63.53384	64.82722	67.02967	69.53802	72.11181	74.48507	75.9314	76.88123
9	0.8924165	70.91734	5.43E-02	63.71672	64.61543	66.00188	68.32556	70.91734	73.51936	75.86977	77.28016	78.1976
10	1.390615	72.21104	5.44E-02	64.66755	65.63213	67.10667	69.54282	72.21104	74.8413	77.17808	78.56339	79.45796
11	1.745711	73.45828	5.45E-02	65.61935	66.64018	68.18967	70.72186	73.45828	76.1207	78.45892	79.83369	80.71712
12	1.926729	74.66323	5.45E-02	66.60333	67.66315	69.26563	71.86928	74.66323	77.36349	79.72119	81.10176	81.98679
13	1.923373	75.81322	5.46E-02	67.625	68.70153	70.32938	72.97448	75.81322	78.55703	80.95297	82.35602	83.2555
14	1.779328	76.89892	5.46E-02	68.65907	69.73411	71.36467	74.0264	76.89892	79.69013	82.13869	83.57719	84.50114
15	1.553151	77.91551	5.46E-02	69.67156	70.73454	72.35427	75.01701	77.91551	80.75555	83.2652	84.74727	85.70213
16	1.291233	78.86737	5.46E-02	70.64204	71.68867	73.29165	75.94768	78.86737	81.75591	84.33047	85.86033	86.84962
17	1.038952	79.76918	5.46E-02	71.56141	72.59298	74.18029	76.82968	79.76918	82.70447	85.34284	86.92028	87.94412
18	0.8323192	80.63163	5.46E-02	72.42302	73.44459	75.02227	77.67093	80.63163	83.61068	86.30724	87.92783	88.98299
19	0.677285	81.46793	5.46E-02	73.23576	74.25287	75.82784	78.48323	81.46793	84.48833	87.23696	88.89543	89.97787
20	0.5652145	82.29455	5.47E-02	74.01799	75.03531	76.61356	79.28259	82.29455	85.35522	88.15138	89.84348	90.94987
21	0.4909775	83.11864	5.48E-02	74.77894	75.80051	77.38735	80.07624	83.11864	86.2188	89.05846	90.7803	91.9075
22	0.4552794	83.93867	5.49E-02	75.51776	76.54758	78.14816	80.86298	83.93867	87.07701	89.95534	91.70232	92.84667
23	0.4626844	84.74525	5.50E-02	76.22408	77.26645	78.88639	81.63358	84.74525	87.91955	90.83021	92.59651	93.7534
24	0.5131091	85.53254	5.51E-02	76.89206	77.95141	79.59639	82.38239	85.53254	88.74022	91.67637	93.45579	94.62032
25	0.6007795	86.30013	5.52E-02	77.52351	78.60384	80.279	83.1095	86.30013	89.53856	92.49384	94.28073	95.44849
26	0.7153659	87.05051	5.53E-02	78.12475	79.22929	80.93869	83.81803	87.05051	90.31754	93.28704	95.07717	96.24492
27	0.8377262	87.78608	5.55E-02	78.70674	79.83681	81.58199	84.51162	87.78608	91.08048	94.06219	95.85402	97.02061
28	0.9463854	88.50621	5.56E-02	79.28027	80.43462	82.21382	85.19138	88.50621	91.82771	94.8227	96.61752	97.78409

29	1.03548	89.20699	5.57E-02	79.8457	81.0221	82.83234	85.85406	89.20699	92.55545	95.5655	97.36527	98.53348
30	1.103297	89.89073	5.58E-02	80.40686	81.60268	83.44048	86.50211	89.89073	93.26621	96.29348	98.10047	99.27214
31	1.147754	90.56293	5.59E-02	80.9708	82.18297	84.04433	87.14112	90.56293	93.96575	97.01287	98.82969	100.0069
32	1.166705	91.22433	5.59E-02	81.54047	82.7654	84.64569	87.77219	91.22433	94.65484	97.72475	99.55427	100.7394
33	1.165316	91.87347	5.60E-02	82.11288	83.34744	85.24255	88.39381	91.87347	95.33147	98.42612	100.2705	101.4652
34	1.153208	92.51047	5.60E-02	82.6838	83.92596	85.83319	89.00573	92.51047	95.99497	99.11463	100.9744	102.1794
35	1.139321	93.13738	5.60E-02	83.25002	84.49899	86.41716	89.60922	93.13738	96.64701	99.79066	101.6654	102.8803
36	1.129097	93.75609	0.056007	83.80973	85.06551	86.99451	90.20557	93.75609	97.28933	100.4552	102.3437	103.5678
37	1.119866	94.37095	5.60E-02	84.36799	85.63033	87.56974	90.79903	94.37095	97.92673	101.1138	103.0154	104.2481
38	1.101783	94.99052	5.60E-02	84.93785	86.20531	88.15326	91.39851	94.99052	98.56876	101.778	103.6937	104.9358
39	1.067672	95.62286	0.0559065	85.53097	86.80121	88.75469	92.01241	95.62286	99.22411	102.4578	104.3897	105.643
40	1.014811	96.27083	5.58E-02	86.15189	87.42221	89.37772	92.64388	96.27083	99.89575	103.1566	105.1074	106.374
41	0.9456667	96.93585	5.58E-02	86.80039	88.06848	90.02303	93.29412	96.93585	100.585	103.8756	105.8476	107.1293
42	0.867392	97.61244	5.57E-02	87.46763	88.73209	90.68378	93.95741	97.61244	101.2857	104.607	106.6014	107.8992
43	0.7847034	98.29029	5.55E-02	88.14233	89.40221	91.34966	94.62374	98.29029	101.9865	105.3381	107.355	108.6693
44	0.7007817	98.95751	5.54E-02	88.8125	90.06705	92.00909	95.28164	98.95751	102.6747	106.0551	108.0938	109.4239
45	0.6232255	99.605	5.52E-02	89.46603	90.71537	92.65184	95.92187	99.605	103.3402	106.746	108.8042	110.1487
46	0.5601411	100.2275	5.50E-02	90.09361	91.33878	93.27077	96.53866	100.2275	103.977	107.4033	109.4772	110.8334
47	0.5189113	100.8213	5.48E-02	90.68732	91.93026	93.86005	97.12767	100.8213	104.5812	108.0218	110.1064	111.4705
48	0.5080876	101.3813	0.0545803	91.23702	92.48074	94.41202	97.6829	101.3813	105.1474	108.5947	110.6839	112.0512
49	0.530116	101.9085	5.44E-02	91.74052	92.9885	94.92564	98.20433	101.9085	105.677	109.1237	111.2113	112.577

50	0.5777184	102.4086	5.41E-02	92.20461	93.45982	95.40659	98.6973	102.4086	106.1776	109.6189	111.7005	113.0612
51	0.6479912	102.8883	5.40E-02	92.63491	93.90031	95.86056	99.16772	102.8883	106.6568	110.0892	112.1616	113.5148
52	0.7400159	103.351	5.38E-02	93.03386	94.31255	96.2903	99.61869	103.351	107.1186	110.5394	112.5998	113.9433
53	0.8526757	103.8008	5.37E-02	93.40502	94.7002	96.69962	100.0541	103.8008	107.5675	110.9743	113.0206	114.3524
54	0.9871423	104.2379	5.35E-02	93.7474	95.06261	97.08823	100.4742	104.2379	108.0034	111.3939	113.4236	114.742
55	1.144285	104.6635	5.35E-02	94.06098	95.40015	97.45692	100.8799	104.6635	108.4274	111.799	113.8098	115.1129
56	1.32395	105.0806	0.0533862	94.34782	95.71522	97.80848	101.2743	105.0806	108.8428	112.1931	114.1827	115.4688
57	1.524281	105.4892	5.33E-02	94.60734	96.00745	98.14269	101.6574	105.4892	109.2494	112.5765	114.5432	115.811
58	1.741061	105.8937	5.33E-02	94.84512	96.28233	98.46478	102.0338	105.8937	109.6521	112.9549	114.8976	116.1464
59	1.96665	106.3005	5.33E-02	95.07124	96.54913	98.78298	102.4105	106.3005	110.0575	113.336	115.2549	116.4847
60	2.191978	106.7113	5.33E-02	95.29372	96.81459	99.10227	102.7904	106.7113	110.4677	113.7228	115.6189	116.8306

Table 8. L, M, and S parameters and percentiles for head circumference (cm) for age: girls 0 to 60 months

Age (m)	L	M	S	3rd	5th	10th	25th	50th	75th	90th	95th	97th
0	-2.503701	34.52737	4.88E-02	31.7873	32.09011	32.57684	33.45146	34.52737	35.7352	36.96	37.7677	38.32674
1	-2.225385	36.02257	4.85E-02	33.15373	33.47381	33.98678	34.90368	36.02257	37.26606	38.51265	39.32639	39.8856
2	-1.946316	37.46288	4.81E-02	34.46878	34.80608	35.345	36.30311	37.46288	38.73907	40.00431	40.82231	41.3807
3	-1.666529	38.80659	4.77E-02	35.69413	36.0482	36.61217	37.60931	38.80659	40.11121	41.39082	42.21054	42.76662
4	-1.387063	40.02756	4.73E-02	36.80594	37.17606	37.76372	38.79696	40.02756	41.35563	42.64481	43.4635	44.01566
5	-1.109778	41.11152	4.69E-02	37.79148	38.1767	38.78634	39.85223	41.11152	42.45782	43.75177	44.56677	45.11346
6	-0.8365179	42.05598	4.65E-02	38.64886	39.04809	39.67783	40.7727	42.05598	43.41544	44.70971	45.51867	46.05856
7	-0.5688999	42.8661	4.62E-02	39.38322	39.79531	40.44321	41.56338	42.8661	44.23405	45.52475	46.32568	46.85773

8	-0.3078383	43.55234	4.58E-02	40.00447	40.42829	41.09243	42.23438	43.55234	44.92461	46.20845	46.99977	47.5232
9	-5.48E-02	44.12904	4.54E-02	40.52617	40.96059	41.63915	42.79959	44.12904	45.50211	46.77648	47.55709	48.0714
10	0.1881263	44.61362	4.50E-02	40.96476	41.40873	42.09998	43.27593	44.61362	45.98469	47.24776	48.01702	48.52204
11	0.4193889	45.02317	4.46E-02	41.33632	41.78881	42.49116	43.67995	45.02317	46.39008	47.64067	48.39836	48.89414
12	0.6376524	45.37192	4.42E-02	41.6542	42.11424	42.82619	44.02544	45.37192	46.73304	47.9705	48.71666	49.20347
13	0.8415571	45.6717	4.39E-02	41.92958	42.39622	43.11634	44.32389	45.6717	47.02584	48.24993	48.98486	49.46309
14	1.030705	45.93101	4.35E-02	42.17039	42.6427	43.36964	44.58351	45.93101	47.27729	48.48799	49.2121	49.68218
15	1.20485	46.15697	4.31E-02	42.38326	42.86034	43.59282	44.81118	46.15697	47.49477	48.69225	49.40602	49.86843
16	1.363833	46.35577	4.27E-02	42.57391	43.05487	43.79167	45.01289	46.35577	47.68465	48.86925	49.57321	50.02844
17	1.50768	46.53181	4.23E-02	42.74633	43.23035	43.9703	45.19286	46.53181	47.85147	49.02361	49.71831	50.16685
18	1.636287	46.68925	4.20E-02	42.90436	43.3906	44.13261	45.35511	46.68925	47.99957	49.15973	49.84576	50.2881
19	1.749494	46.83193	4.16E-02	43.05145	43.53912	44.28215	45.50331	46.83193	48.13288	49.28163	49.9596	50.39623
20	1.847589	46.96207	4.13E-02	43.18953	43.67789	44.42095	45.63961	46.96207	48.2537	49.39163	50.06213	50.49353
21	1.931128	47.08033	0.0408943	43.31905	43.80736	44.54952	45.7646	47.08033	48.36269	49.49035	50.15392	50.58051
22	2.00085	47.18586	4.05E-02	43.43901	43.9266	44.66696	45.8774	47.18586	48.45897	49.57684	50.23393	50.6561
23	2.057523	47.2778	4.02E-02	43.54843	44.03461	44.77234	45.97716	47.2778	48.54165	49.65012	50.30115	50.71922
24	2.10149	47.3577	3.99E-02	43.64854	44.13272	44.86703	46.06534	47.3577	48.61234	49.71181	50.35717	50.77145
25	2.132824	47.42918	3.95E-02	43.74251	44.22414	44.95436	46.14542	47.42918	48.67474	49.76569	50.40582	50.81665
26	2.151776	47.49645	3.92E-02	43.83404	44.31267	45.03823	46.22145	47.49645	48.7332	49.81619	50.45154	50.85927
27	2.158819	47.56337	3.89E-02	43.92651	44.40174	45.12219	46.29716	47.56337	48.79167	49.86732	50.49838	50.90337
28	2.154635	47.63264	3.85E-02	44.02217	44.49371	45.20871	46.37515	47.63264	48.85291	49.92187	50.54914	50.95174

29	2.140106	47.70589	3.82E-02	44.12231	44.58993	45.29922	46.45697	47.70589	48.9186	49.98149	50.60545	51.00601
30	2.116251	47.78452	3.79E-02	44.22797	44.69151	45.39494	46.54394	47.78452	48.99015	50.04761	50.66869	51.06754
31	2.084149	47.86946	3.76E-02	44.33978	44.79914	45.49664	46.63695	47.86946	49.06849	50.12113	50.73978	51.13721
32	2.044935	47.96051	0.0373559	44.45732	44.91246	45.60402	46.73575	47.96051	49.15342	50.20178	50.81839	51.21468
33	1.999784	48.05689	3.71E-02	44.57967	45.03061	45.71627	46.83958	48.05689	49.24413	50.28872	50.90361	51.299
34	1.949959	48.15741	0.036812	44.70553	45.1523	45.83214	46.94724	48.15741	49.33935	50.3806	50.99407	51.38875
35	1.896819	48.26078	3.66E-02	44.83353	45.27621	45.95036	47.05748	48.26078	49.43777	50.476	51.08828	51.48241
36	1.84183	48.36522	3.63E-02	44.96187	45.40056	46.06916	47.16852	48.36522	49.5375	50.57297	51.1842	51.57788
37	1.786574	48.46861	3.61E-02	45.08842	45.52324	46.18647	47.27831	48.46861	49.63635	50.66917	51.27942	51.6727
38	1.732738	48.56807	3.58E-02	45.21039	45.64148	46.29951	47.38403	48.56807	49.73132	50.76149	51.37074	51.76358
39	1.682087	48.65997	3.56E-02	45.32427	45.75177	46.40477	47.48215	48.65997	49.81866	50.84601	51.45412	51.84642
40	1.635708	48.74256	3.54E-02	45.42837	45.85243	46.50056	47.57095	48.74256	49.89653	50.92082	51.52759	51.91922
41	1.593709	48.81722	3.51E-02	45.52401	45.94477	46.58822	47.65179	48.81722	49.96635	50.98735	51.59261	51.98343
42	1.556129	48.88592	3.49E-02	45.61307	46.03068	46.66964	47.72661	48.88592	50.03013	51.04765	51.65123	52.04112
43	1.52294	48.94985	3.47E-02	45.69672	46.11134	46.74601	47.79657	48.94985	50.08908	51.10297	51.70473	52.09357
44	1.493929	49.01028	3.45E-02	45.77621	46.188	46.81855	47.86293	49.01028	50.1445	51.15461	51.75443	52.14214
45	1.46865	49.06872	3.43E-02	45.85305	46.26214	46.88877	47.92719	49.06872	50.19793	51.20418	51.80196	52.18845
46	1.446665	49.12607	3.41E-02	45.92818	46.33471	46.95758	47.99023	49.12607	50.25029	51.25261	51.84828	52.23349
47	1.427601	49.18317	3.39E-02	46.00247	46.40655	47.02582	48.0529	49.18317	50.30243	51.30077	51.89428	52.27817
48	1.411117	49.2413	3.37E-02	46.07722	46.47895	47.09477	48.11647	49.2413	50.35566	51.35001	51.94132	52.32385
49	1.396857	49.302	3.35E-02	46.15394	46.55344	47.16596	48.18247	49.302	50.41153	51.40191	51.99101	52.37217

50	1.384654	49.36485	3.33E-02	46.23233	46.62969	47.23902	48.2505	49.36485	50.46961	51.45603	52.04289	52.42266
51	1.374441	49.42837	3.31E-02	46.31104	46.70633	47.31256	48.31913	49.42837	50.52837	51.51078	52.09538	52.47371
52	1.365843	49.49183	3.29E-02	46.38944	46.78271	47.38592	48.38765	49.49183	50.58706	51.56543	52.14771	52.52459
53	1.358476	49.55444	3.28E-02	46.46687	46.85816	47.45838	48.45532	49.55444	50.64488	51.61917	52.19909	52.57448
54	1.352016	49.6149	3.26E-02	46.54219	46.9315	47.52874	48.52088	49.6149	50.7005	51.67062	52.24813	52.62199
55	1.346175	49.67169	0.032376	46.61403	47.00134	47.59558	48.58284	49.67169	50.75233	51.71818	52.29322	52.66549
56	1.340603	49.72526	3.22E-02	46.68288	47.06817	47.65936	48.64169	49.72526	50.80085	51.76232	52.33482	52.70547
57	1.335177	49.77718	0.0319982	46.75022	47.13348	47.7216	48.69894	49.77718	50.84766	51.8047	52.37462	52.74363
58	1.329885	49.82841	3.18E-02	46.81693	47.19815	47.78319	48.75552	49.82841	50.89373	51.8463	52.41362	52.78097
59	1.324733	49.87906	3.16E-02	46.88313	47.2623	47.84424	48.81155	49.87906	50.93919	51.88725	52.45194	52.81762
60	1.319751	49.9299	3.14E-02	46.94954	47.32667	47.90552	48.8678	49.9299	50.98484	51.92837	52.49042	52.8544

Table 9. L, M, and S parameters and percentiles for weight (kg) for length/height (cm): girls 0 to 60 months

Length/ht (cm)	L	M	S	3rd	5th	10th	25th	50th	75th	90th	95th	97th
55	-0.2884934	4.262201	0.1463141	3.270611	3.377405	3.550799	3.866993	4.262201	4.711024	5.168369	5.469646	5.677499
56	-0.2479972	4.537708	0.1453321	3.483189	3.597322	3.782347	4.118832	4.537708	5.011114	5.491004	5.805763	6.022289
57	-0.2097751	4.823532	0.1443236	3.704359	3.826065	4.023073	4.380409	4.823532	5.322052	5.824938	6.153447	6.378826
58	-0.173664	5.115376	0.1432929	3.93088	4.060277	4.269433	4.647845	5.115376	5.63908	6.164951	6.507181	6.74139
59	-0.1395242	5.409643	0.142244	4.160036	4.297143	4.518453	4.91788	5.409643	5.958229	6.506714	6.862404	7.105263
60	-0.1072307	5.70342	0.1411812	4.389624	4.534378	4.767718	5.187872	5.70342	6.276301	6.846757	7.215479	7.466693
61	-7.67E-02	5.994351	0.140108	4.617854	4.770126	5.015267	5.455678	5.994351	6.590723	7.182307	7.563508	7.822704
62	-4.78E-02	6.280791	0.1390289	4.843474	5.003085	5.25972	5.719789	6.280791	6.899716	7.511475	7.904541	8.171306

63	-2.05E-02	6.561486	0.1379487	5.0655	5.232236	5.500004	5.979045	6.561486	7.201944	7.832855	8.237136	8.511036
64	5.23E-03	6.835534	0.1368732	5.283195	5.456817	5.735323	6.232594	6.835534	7.496467	8.145489	8.560328	8.840926
65	2.95E-02	7.10252	0.1358083	5.496188	5.676446	5.965279	6.480024	7.10252	7.782887	8.449013	8.873785	9.160669
66	5.23E-02	7.362306	0.1347597	5.704317	5.890957	6.189703	6.721171	7.362306	8.061115	8.743403	9.177532	9.470326
67	7.36E-02	7.614999	0.1337324	5.907608	6.100378	6.40863	6.956095	7.614999	8.331329	9.028927	9.471899	9.770272
68	9.33E-02	7.860802	0.1327307	6.106156	6.304809	6.622173	7.184941	7.860802	8.593812	9.305957	9.757324	10.06099
69	0.1114229	8.099893	0.1317592	6.300024	6.50432	6.830418	7.407831	8.099893	8.848818	9.574834	10.03421	10.34293
70	0.1280502	8.332456	0.1308216	6.489272	6.698982	7.033453	7.624891	8.332456	9.096605	9.835896	10.30294	10.61651
71	0.1431241	8.558799	0.1299206	6.674077	6.888981	7.231482	7.836369	8.558799	9.33756	10.08962	10.56406	10.8823
72	0.1566052	8.779374	0.1290575	6.854743	7.074634	7.424844	8.042648	8.779374	9.572219	10.33662	10.81824	11.14104
73	0.1685008	8.994642	0.1282327	7.031585	7.256267	7.613888	8.244126	8.994642	9.801119	10.57753	11.06616	11.39343
74	0.1788545	9.205198	0.1274461	7.205025	7.434321	7.799086	8.441328	9.205198	10.02493	10.81308	11.30861	11.64029
75	0.1877174	9.411796	0.126697	7.375611	7.609366	7.981042	8.634925	9.411796	10.2445	11.04422	11.54658	11.88265
76	0.1949868	9.615366	0.1259861	7.544055	7.782135	8.160525	8.825756	9.615366	10.46088	11.2721	11.7813	12.1218
77	0.200539	9.816813	0.1253135	7.711061	7.953347	8.338287	9.014635	9.816813	10.67507	11.49786	12.014	12.35901
78	0.2042664	10.01698	0.1246792	7.877287	8.123679	8.515032	9.202324	10.01698	10.88801	11.72253	12.24578	12.59544
79	0.2060711	10.21644	0.1240825	8.043194	8.293602	8.691246	9.389347	10.21644	11.10036	11.94684	12.47742	12.83189
80	0.2058675	10.41561	0.1235224	8.209122	8.463456	8.867281	9.576077	10.41561	11.31256	12.1713	12.70947	13.06897
81	0.2035548	10.61476	0.1229972	8.375317	8.633491	9.043386	9.762771	10.61476	11.52493	12.39628	12.94232	13.30708
82	0.1990158	10.81412	0.1225054	8.541998	8.80392	9.219771	9.949643	10.81412	11.73774	12.62207	13.17631	13.54657
83	0.1921251	11.01384	0.1220458	8.709328	8.9749	9.39659	10.13684	11.01384	11.95115	12.84889	13.41168	13.78772

84	0.1827456	11.21413	0.1216173	8.877491	9.146611	9.574016	10.32454	11.21413	12.16539	13.077	13.64874	14.03087
85	0.1707334	11.41516	0.1212184	9.046698	9.319259	9.752244	10.51293	11.41516	12.38068	13.30667	13.88779	14.27634
86	0.1559446	11.61719	0.1208475	9.217196	9.493082	9.931512	10.70224	11.61719	12.5973	13.53823	14.1292	14.52454
87	0.1382712	11.82043	0.1205036	9.389194	9.668291	10.11202	10.89267	11.82043	12.81549	13.77197	14.3733	14.77583
88	0.1176589	12.02514	0.1201856	9.56294	9.845129	10.29402	11.08449	12.02514	13.03554	14.00823	14.62048	15.03063
89	9.42E-02	12.23163	0.1198934	9.738623	10.0238	10.47773	11.27794	12.23163	13.25779	14.24738	14.87113	15.28936
90	6.82E-02	12.44021	0.1196276	9.916465	10.20454	10.66341	11.47332	12.44021	13.48261	14.48984	15.12571	15.5525
91	3.96E-02	12.65121	0.1193883	10.09666	10.38757	10.85131	11.6709	12.65121	13.71035	14.736	15.38465	15.82049
92	8.68E-03	12.86495	0.1191758	10.27941	10.5731	11.04166	11.87096	12.86495	13.94138	14.98628	15.64837	16.09379
93	-2.44E-02	13.08179	0.11899	10.46498	10.76141	11.23476	12.07386	13.08179	14.17611	15.24113	15.91738	16.37295
94	-5.95E-02	13.3021	0.1188309	10.65362	10.95276	11.4309	12.27988	13.3021	14.41493	15.501	16.19217	16.65847
95	-0.0966624	13.52617	0.1186987	10.84553	11.14737	11.63032	12.48932	13.52617	14.65819	15.7663	16.47319	16.95086
96	-0.1356916	13.75433	0.1185935	11.04096	11.3455	11.83328	12.70244	13.75433	14.90625	16.03744	16.76093	17.25063
97	-0.1765921	13.98691	0.1185151	11.24018	11.54742	12.04006	12.91957	13.98691	15.15952	16.31491	17.0559	17.55836
98	-0.2193121	14.22415	0.1184632	11.44335	11.75331	12.25087	13.14092	14.22415	15.41825	16.599	17.35849	17.87447
99	-0.2637837	14.46604	0.1184366	11.65049	11.96318	12.4657	13.36647	14.46604	15.68244	16.88978	17.66877	18.19909
100	-0.3099257	14.71239	0.1184348	11.86142	12.17685	12.68438	13.59605	14.71239	15.9519	17.18704	17.98659	18.53208
101	-0.3576491	14.9628	0.118457	12.07582	12.39399	12.90656	13.8293	14.9628	16.22623	17.49041	18.31157	18.87311
102	-0.4068382	15.21671	0.1185032	12.29321	12.61412	13.13175	14.06567	15.21671	16.5048	17.79925	18.64313	19.2216
103	-0.4573509	15.47349	0.1185726	12.51305	12.83668	13.35938	14.30458	15.47349	16.78697	18.11288	18.98056	19.57688
104	-0.5090442	15.73259	0.1186641	12.73488	13.06123	13.58898	14.54554	15.73259	17.07215	18.43069	19.32327	19.93835

105	-0.561787	15.99353	0.1187764	12.95829	13.28733	13.82013	14.78808	15.99353	17.35979	18.75214	19.67072	20.30551
106	-0.615418	16.25583	0.1189084	13.18288	13.51458	14.05239	15.03176	16.25583	17.64939	19.07665	20.02234	20.67779
107	-0.6697763	16.51905	0.1190582	13.40827	13.74261	14.2854	15.2762	16.51905	17.94045	19.40373	20.37762	21.0547
108	-0.7247227	16.78292	0.1192235	13.63426	13.9712	14.51893	15.52114	16.78292	18.23267	19.73302	20.73621	21.4359
109	-0.7801247	17.04722	0.1194028	13.86066	14.20016	14.75279	15.76638	17.04722	18.5258	20.06427	21.09786	21.82116
110	-0.8358768	17.31181	0.1195948	14.08733	14.42938	14.98687	16.01181	17.31181	18.81967	20.39729	21.4624	22.21035
111	-0.8918821	17.57659	0.1197981	14.31421	14.65877	15.22108	16.25734	17.57659	19.11417	20.73197	21.82976	22.60342
112	-0.948072	17.84155	0.1200114	14.54128	14.88833	15.45541	16.50295	17.84155	19.40928	21.06829	22.19992	23.0004
113	-1.004397	18.10667	0.1202339	14.76854	15.11804	15.68987	16.74865	18.10667	19.70497	21.40626	22.57295	23.40141
114	-1.060809	18.37197	0.1204646	14.99598	15.34792	15.92445	16.99444	18.37197	20.00125	21.74588	22.94889	23.80655
115	-1.117284	18.63742	0.1207026	15.22362	15.57797	16.15917	17.24033	18.63742	20.29811	22.08718	23.32781	24.21596
116	-1.173814	18.90305	0.1209471	15.45146	15.8082	16.39403	17.48632	18.90305	20.59555	22.43018	23.70979	24.62978
117	-1.230392	19.16884	0.1211972	15.67953	16.03864	16.62905	17.73242	19.16884	20.89358	22.7749	24.09493	25.04819
118	-1.287003	19.4348	0.121452	15.90783	16.26928	16.86424	17.97863	19.4348	21.19216	23.12135	24.48328	25.47132
119	-1.343639	19.7009	0.1217111	16.13636	16.50011	17.09958	18.22494	19.7009	21.49129	23.46955	24.87492	25.89936
120	-1.400307	19.96714	0.1219739	16.36511	16.73115	17.33508	18.47136	19.96714	21.79096	23.81953	25.26999	26.33253
121	-1.457011	20.23352	0.1222401	16.5941	16.9624	17.57076	18.71789	20.23352	22.09119	24.17134	25.66861	26.7711
122	-1.513755	20.50007	0.1225094	16.82335	17.19388	17.80662	18.96454	20.50007	22.39199	24.52506	26.07095	27.21533
123	-1.570547	20.76678	0.1227814	17.05287	17.4256	18.04267	19.21132	20.76678	22.69337	24.88072	26.47716	27.66554

Table 10. L, M, and S parameters and percentiles for Body mass index (kg/m^2) for age: girls 0 to 60 months.

Age (m)	L	M	S	3rd	5th	10th	25th	50th	75th	85th	90th	95th	97th

0	-0.4290653	12.60431	0.1329378	9.939663	10.22702	10.69323	11.54272	12.60431	13.81112	14.52775	15.04361	15.85761	16.42036
1	-0.3458589	13.55883	0.1326732	10.67274	10.98635	11.49396	12.41503	13.55883	14.84909	15.61016	16.15565	17.01237	17.60176
2	-0.2590664	14.4504	0.1323513	11.35313	11.69242	12.24023	13.22976	14.4504	15.81629	16.61643	17.1874	18.0799	18.6909
3	-0.1675384	15.23088	0.1319324	11.94373	12.30699	12.89187	13.94324	15.23088	16.65952	17.49045	18.08068	18.99884	19.62429
4	-7.13E-02	15.87732	0.1314171	12.42706	12.81196	13.42981	14.53459	15.87732	17.35382	18.20621	18.80888	19.74178	20.3741
5	2.87E-02	16.38358	0.13083	12.79867	13.20262	13.84895	14.99811	16.38358	17.89303	18.75786	19.36646	20.30391	20.93617
6	0.1297354	16.75742	0.1301935	13.06583	13.48612	14.15629	15.34091	16.75742	18.28643	19.1559	19.76496	20.69868	21.32541
7	0.2289054	17.01358	0.1295466	13.24081	13.6748	14.36442	15.57627	17.01358	18.55107	19.41909	20.02448	20.94843	21.56584
8	0.3235968	17.16987	0.1289225	13.33827	13.78348	14.48849	15.72029	17.16987	18.70727	19.56941	20.16829	21.07854	21.68433
9	0.411696	17.24328	0.1283347	13.3725	13.82654	14.54318	15.78851	17.24328	18.77407	19.62725	20.21776	21.11199	21.70496
10	0.4911669	17.2506	0.127786	13.35774	13.81835	14.54315	15.79635	17.2506	18.77005	19.61234	20.19344	21.07062	21.65045
11	0.5588613	17.20836	0.1272795	13.30855	13.77346	14.50307	15.75911	17.20836	18.71355	19.54414	20.11566	20.97607	21.54335
12	0.6116836	17.13107	0.1268158	13.23783	13.70472	14.43587	15.69024	17.13107	18.62058	19.43963	20.00206	20.84707	21.4031
13	0.6467443	17.03177	0.1263857	13.1574	13.6239	14.35336	15.60193	17.03177	18.50534	19.31375	19.86812	20.69992	21.24655
14	0.6612759	16.92238	0.1259867	13.07781	13.54153	14.26618	15.50526	16.92238	18.3809	19.18025	19.7281	20.54966	21.08926
15	0.653456	16.81222	0.1256185	13.0069	13.46555	14.18247	15.40885	16.81222	18.25743	19.04983	19.59306	20.40789	20.9432
16	0.6243388	16.70627	0.1252878	12.94743	13.39909	14.10588	15.31707	16.70627	18.14029	18.92798	19.46853	20.28019	20.81394
17	0.5773425	16.60459	0.125005	12.89714	13.34043	14.03535	15.22964	16.60459	18.02944	18.81439	19.35399	20.16558	20.70019
18	0.5159847	16.50507	0.1247742	12.8523	13.28627	13.96815	15.14434	16.50507	17.92239	18.70622	19.24627	20.06038	20.59784
19	0.4433818	16.40689	0.1245953	12.81062	13.23472	13.90283	15.06023	16.40689	17.81805	18.60211	19.14378	19.96258	20.50458
20	0.3624861	16.31007	0.1244583	12.77093	13.18491	13.83894	14.97726	16.31007	17.71615	18.50147	19.04571	19.87094	20.41888

21	0.2763424	16.21228	0.1243501	12.73039	13.13425	13.77414	14.89327	16.21228	17.61384	18.40105	18.94843	19.78127	20.33613
22	0.1872552	16.11089	0.1242617	12.68622	13.08006	13.70588	14.80578	16.11089	17.508	18.29734	18.84815	19.68926	20.25165
23	9.67E-02	16.00386	0.1241857	12.63643	13.02041	13.6323	14.71294	16.00386	17.39625	18.1877	18.74202	19.59169	20.16197
24	5.48E-03	15.89138	0.1241153	12.58105	12.95538	13.55353	14.61492	15.89138	17.27866	18.07209	18.6299	19.4883	20.06673
25	-8.65E-02	15.77643	0.1240451	12.52262	12.88754	13.47222	14.51454	15.77643	17.15841	17.9538	18.51517	19.38259	19.96951
26	-0.1795667	15.66346	0.1239676	12.46497	12.82077	13.39235	14.41598	15.66346	17.04028	17.83781	18.40297	19.27996	19.87594
27	-0.273515	15.55574	0.1238819	12.41067	12.75774	13.3167	14.32223	15.55574	16.92779	17.72779	18.29707	19.18437	19.79009
28	-0.3676666	15.45438	0.123793	12.36036	12.69912	13.24606	14.23425	15.45438	16.82218	17.62504	18.19878	19.09715	19.71333
29	-0.4609407	15.36039	0.1237101	12.3144	12.64538	13.181	14.15284	15.36039	16.72459	17.53071	18.10928	19.01944	19.64676
30	-0.55182	15.27568	0.1236388	12.27393	12.59774	13.12292	14.07966	15.27568	16.6371	17.4469	18.03061	18.95322	19.59225
31	-0.6387666	15.20156	0.1235736	12.23984	12.55717	13.07288	14.01589	15.20156	16.56096	17.37474	17.9638	18.89921	19.55029
32	-0.7204627	15.13832	0.1235031	12.21243	12.52395	13.03119	13.9619	15.13832	16.49629	17.31416	17.90858	18.85675	19.51987
33	-0.7961434	15.08584	0.123414	12.19182	12.49821	12.99792	13.91765	15.08584	16.44275	17.26461	17.86422	18.82474	19.49958
34	-0.865136	15.04402	0.1232973	12.17808	12.47997	12.97307	13.88311	15.04402	16.40009	17.22569	17.83014	18.80228	19.48819
35	-0.926369	15.01228	0.1231457	12.17079	12.4688	12.95619	13.85781	15.01228	16.36752	17.19639	17.80513	18.78767	19.4836
36	-0.9782043	14.98808	0.1229469	12.16781	12.46256	12.94508	13.83942	14.98808	16.34201	17.17323	17.78531	18.77623	19.48039
37	-1.019769	14.96808	0.1226998	12.16636	12.45838	12.93682	13.82485	14.96808	16.31984	17.1522	17.76637	18.76304	19.47314
38	-1.050418	14.94987	0.1224117	12.1643	12.45412	12.92918	13.8118	14.94987	16.29845	17.13055	17.74542	18.74489	19.45829
39	-1.069097	14.93101	0.1220993	12.15917	12.4473	12.91971	13.79783	14.93101	16.27529	17.10564	17.71969	18.71872	19.43251
40	-1.075076	14.90889	0.1217751	12.14852	12.43547	12.90593	13.78041	14.90889	16.24766	17.07466	17.68626	18.68139	19.39247
41	-1.069481	14.88305	0.1214512	12.13208	12.41829	12.88743	13.75905	14.88305	16.21527	17.03753	17.64528	18.63349	19.33913

42	-1.054275	14.85504	0.1211356	12.11145	12.39733	12.86571	13.73522	14.85504	16.18005	16.99657	17.59943	18.57848	19.27662
43	-1.03128	14.82596	0.1208259	12.08803	12.37392	12.84202	13.71004	14.82596	16.1433	16.95335	17.55054	18.51873	19.20786
44	-1.002442	14.79632	0.1205135	12.06285	12.34898	12.81714	13.68411	14.79632	16.1056	16.90861	17.49957	18.45569	19.13472
45	-0.9698157	14.76716	0.120192	12.03735	12.32389	12.79235	13.65856	14.76716	16.06814	16.86378	17.44817	18.39154	19.0599
46	-0.9352537	14.73993	0.1198513	12.01334	12.30039	12.76927	13.63488	14.73993	16.03249	16.82063	17.39831	18.3287	18.9862
47	-0.9002036	14.71554	0.1194839	11.99206	12.27965	12.74901	13.61405	14.71554	15.99966	16.78027	17.35126	18.26873	18.91548
48	-0.8649045	14.69339	0.1190986	11.97291	12.26107	12.73093	13.59545	14.69339	15.9691	16.74224	17.30661	18.21134	18.84753
49	-0.8294557	14.67413	0.1187172	11.95603	12.24483	12.71529	13.57947	14.67413	15.94177	16.70771	17.26568	18.15814	18.78417
50	-0.7943793	14.65962	0.1183663	11.94256	12.23212	12.7034	13.56766	14.65962	15.92002	16.67936	17.23145	18.11256	18.7292
51	-0.7599886	14.6498	0.118071	11.93202	12.22251	12.69488	13.55975	14.6498	15.90409	16.65765	17.20451	18.07548	18.68368
52	-0.7264867	14.64376	0.117846	11.92342	12.21499	12.68872	13.55477	14.64376	15.89314	16.64178	17.18412	18.04622	18.64698
53	-0.6936028	14.63923	0.1177026	11.91461	12.2074	12.68276	13.55051	14.63923	15.88481	16.62933	17.1678	18.02217	18.6164
54	-0.6609257	14.63419	0.1176476	11.90367	12.19784	12.67506	13.54502	14.63419	15.87696	16.61804	17.15318	18.0008	18.58927
55	-0.6281618	14.62736	0.1176818	11.88947	12.18515	12.66447	13.5371	14.62736	15.86818	16.60641	17.13869	17.98039	18.56372
56	-0.5953535	14.61789	0.1178019	11.87135	12.16867	12.6503	13.52598	14.61789	15.85751	16.5934	17.12323	17.95971	18.53846
57	-0.5628178	14.60606	0.1179979	11.8498	12.14884	12.63294	13.51201	14.60606	15.84513	16.57915	17.1069	17.93883	18.51351
58	-0.5311292	14.59255	0.1182523	11.82586	12.12668	12.61334	13.49601	14.59255	15.83163	16.56418	17.09019	17.91819	18.48928
59	-0.5005544	14.5775	0.1185464	11.80007	12.10268	12.59192	13.47828	14.5775	15.81695	16.54833	17.07286	17.8974	18.4653
60	-0.471142	14.56099	0.1188623	11.77286	12.07723	12.56903	13.45905	14.56099	15.80096	16.53135	17.05455	17.87595	18.44093