

**Table 1** Age and Sex- Specific Reference percentiles for Total Body Bone Mineral Content for Black and Non-Black Children  
L, M, and S values to calculate Z-scores and Ht-Z prediction equations to calculate Height Adjusted Z-scores are also shown.

Total Body BMC, g																
Black Females								Black Males								
Age,y	L	S	M				Ht-Z Prediction	Equation	L	S	M				Ht-Z Prediction	Equation
	3 <sup>rd</sup>	10th	50th	90th	97th	3rd	10th		50th	90th	97th					
5	0.237	0.116	561	604	702	813	869	-0.688 + (Ht-Z * 0.823)	0.911	0.125	536	588	699	811	865	-0.544 + (Ht-Z * 0.515)
6	0.237	0.117	625	673	784	909	972	-0.320 + (Ht-Z * 0.587)	0.824	0.122	632	689	814	943	1004	-0.533 + (Ht-Z * 0.668)
7	0.237	0.119	695	749	874	1015	1087	0.001 + (Ht-Z * 0.517)	0.743	0.119	724	787	925	1068	1137	-0.472 + (Ht-Z * 0.607)
8	0.237	0.121	763	823	964	1122	1202	-0.013 + (Ht-Z * 0.528)	0.674	0.118	807	875	1026	1184	1260	-0.312 + (Ht-Z * 0.649)
9	0.237	0.123	840	907	1065	1243	1334	-0.111 + (Ht-Z * 0.489)	0.611	0.118	888	962	1127	1302	1388	-0.262 + (Ht-Z * 0.564)
10	0.237	0.126	939	1017	1199	1404	1509	-0.375 + (Ht-Z * 0.570)	0.546	0.121	970	1052	1237	1435	1533	-0.250 + (Ht-Z * 0.603)
11	0.237	0.129	1074	1166	1380	1622	1747	-0.456 + (Ht-Z * 0.725)	0.474	0.128	1053	1146	1358	1590	1705	-0.355 + (Ht-Z * 0.656)
12	0.237	0.131	1235	1342	1592	1876	2022	-0.402 + (Ht-Z * 0.795)	0.378	0.140	1153	1264	1523	1812	1958	-0.386 + (Ht-Z * 0.646)
13	0.237	0.130	1395	1515	1796	2116	2280	-0.185 + (Ht-Z * 0.778)	0.267	0.157	1284	1421	1747	2124	2321	-0.453 + (Ht-Z * 0.775)
14	0.237	0.129	1531	1662	1967	2313	2491	-0.028 + (Ht-Z * 0.727)	0.178	0.165	1469	1630	2023	2491	2739	-0.294 + (Ht-Z * 0.729)
15	0.237	0.128	1634	1772	2094	2460	2648	0.010 + (Ht-Z * 0.687)	0.128	0.160	1688	1864	2295	2811	3085	-0.168 + (Ht-Z * 0.725)
16	0.237	0.128	1705	1848	2183	2563	2758	-0.015 + (Ht-Z * 0.754)	0.086	0.148	1911	2093	2535	3061	3340	-0.072 + (Ht-Z * 0.688)
17	0.237	0.127	1753	1900	2244	2634	2833	-0.096 + (Ht-Z * 0.826)	0.040	0.138	2098	2281	2724	3248	3526	-0.048 + (Ht-Z * 0.712)
18	0.237	0.127	1788	1938	2288	2685	2888	-0.153 + (Ht-Z * 0.782)	0.002	0.131	2228	2411	2850	3370	3645	-0.016 + (Ht-Z * 0.792)
19	0.237	0.127	1817	1969	2324	2727	2933	-0.177 + (Ht-Z * 0.807)	-0.019	0.127	2295	2476	2913	3427	3700	-0.003 + (Ht-Z * 0.862)

<b>20</b>	0.237	0.127	1844	1998	2359	2767	2977	-0.200 + (Ht-Z * 0.884)	-0.030	0.125	2328	2509	2943	3455	3726	0.149 + (Ht-Z * 0.912)
<b>Non-Black Females</b>									<b>Non-Black Males</b>							
	<b>L</b>	<b>S</b>	<b>M</b>				<b>Ht-Z Prediction</b>		<b>L</b>	<b>S</b>	<b>M</b>				<b>Ht-Z Prediction</b>	
<b>Age,y</b>			<b>3<sup>rd</sup></b>	<b>10th</b>	<b>50th</b>	<b>90th</b>	<b>97th</b>	<b>Equation</b>			<b>3<sup>rd</sup></b>	<b>10th</b>	<b>50th</b>	<b>90th</b>	<b>97th</b>	<b>Equation</b>
<b>5</b>	0.167	0.133	477	518	616	728	787	-0.400 + (Ht-Z * 0.821)	-0.256	0.109	501	534	612	705	755	-0.058 + (Ht-Z * 0.873)
<b>6</b>	0.167	0.133	555	603	717	848	916	-0.081 + (Ht-Z * 0.652)	-0.256	0.110	601	640	734	847	908	0.008 + (Ht-Z * 0.580)
<b>7</b>	0.167	0.133	628	682	811	959	1036	0.063 + (Ht-Z * 0.645)	-0.256	0.111	685	730	840	971	1041	-0.058 + (Ht-Z * 0.697)
<b>8</b>	0.167	0.133	691	751	892	1056	1140	0.101 + (Ht-Z * 0.622)	-0.256	0.113	757	808	932	1079	1159	-0.064 + (Ht-Z * 0.735)
<b>9</b>	0.167	0.133	754	820	974	1152	1245	0.079 + (Ht-Z * 0.634)	-0.256	0.116	825	882	1020	1186	1276	-0.008 + (Ht-Z * 0.693)
<b>10</b>	0.167	0.133	832	904	1075	1271	1373	-0.052 + (Ht-Z * 0.712)	-0.256	0.119	891	954	1107	1293	1394	-0.044 + (Ht-Z * 0.748)
<b>11</b>	0.167	0.133	941	1022	1215	1437	1552	-0.156 + (Ht-Z * 0.816)	-0.256	0.123	964	1034	1207	1418	1533	-0.043 + (Ht-Z * 0.783)
<b>12</b>	0.167	0.133	1090	1184	1407	1664	1798	-0.154 + (Ht-Z * 0.931)	-0.256	0.131	1062	1144	1347	1598	1736	-0.134 + (Ht-Z * 0.823)
<b>13</b>	0.167	0.133	1257	1366	1623	1920	2075	-0.096 + (Ht-Z * 0.935)	-0.256	0.140	1195	1294	1542	1852	2025	-0.187 + (Ht-Z * 0.886)
<b>14</b>	0.167	0.133	1397	1517	1803	2133	2304	-0.086 + (Ht-Z * 0.832)	-0.256	0.147	1378	1498	1800	2181	2396	-0.154 + (Ht-Z * 0.911)
<b>15</b>	0.167	0.133	1493	1622	1928	2281	2464	-0.102 + (Ht-Z * 0.802)	-0.256	0.145	1601	1739	2085	2523	2768	-0.135 + (Ht-Z * 0.837)
<b>16</b>	0.167	0.133	1557	1691	2010	2378	2568	-0.130 + (Ht-Z * 0.813)	-0.256	0.140	1802	1951	2324	2791	3051	-0.101 + (Ht-Z * 0.755)
<b>17</b>	0.167	0.133	1596	1734	2061	2438	2633	-0.162 + (Ht-Z * 0.785)	-0.256	0.136	1942	2098	2487	2971	3239	-0.071 + (Ht-Z * 0.747)
<b>18</b>	0.167	0.133	1619	1759	2091	2473	2672	-0.148 + (Ht-Z * 0.786)	-0.256	0.134	2027	2187	2586	3081	3354	-0.077 + (Ht-Z * 0.782)
<b>19</b>	0.167	0.133	1632	1773	2108	2493	2693	-0.139 + (Ht-Z * 0.789)	-0.256	0.133	2078	2241	2647	3148	3425	-0.087 + (Ht-Z * 0.822)
<b>20</b>	0.167	0.133	1641	1783	2119	2506	2707	-0.118 + (Ht-Z * 0.738)	-0.256	0.132	2118	2283	2694	3201	3480	-0.080 + (Ht-Z * 0.816)

**Table 2** Age and Sex- Specific Reference percentiles for Total Body areal Bone Mineral Density for Black and Non-Black Children  
L, M, and S values to calculate Z-scores and Ht-Z prediction equations to calculate Height Adjusted Z-scores are also shown.

Total Body aBMD, g/cm <sup>2</sup>																
Black Females								Black Males								
Age,y	L	S	M					Ht-Z Prediction	L	S	M					Ht-Z Prediction
			3rd	10th	50th	90th	97th	Equation			3rd	10th	50th	90th	97th	Equation <sup>1</sup>
5	1.501	0.065	0.613	0.642	0.701	0.758	0.784	-0.108 + (Ht-Z * -0.171)	0.682	0.069	0.621	0.649	0.711	0.774	0.805	-0.263 + (Ht-Z * 0.040)
6	1.354	0.066	0.634	0.664	0.726	0.786	0.813	-0.185 + (Ht-Z * 0.420)	0.682	0.070	0.651	0.682	0.747	0.815	0.848	-0.222 + (Ht-Z * 0.097)
7	1.185	0.067	0.658	0.689	0.754	0.818	0.847	-0.189 + (Ht-Z * 0.436)	0.682	0.071	0.680	0.712	0.782	0.854	0.888	-0.351 + (Ht-Z * 0.348)
8	1.001	0.068	0.685	0.717	0.785	0.853	0.885	-0.014 + (Ht-Z * 0.391)	0.682	0.072	0.710	0.744	0.819	0.896	0.932	-0.231 + (Ht-Z * 0.357)
9	0.794	0.069	0.716	0.749	0.820	0.893	0.928	-0.008 + (Ht-Z * 0.412)	0.682	0.073	0.740	0.776	0.855	0.937	0.976	-0.166 + (Ht-Z * 0.249)
10	0.557	0.070	0.752	0.787	0.863	0.942	0.980	-0.133 + (Ht-Z * 0.291)	0.682	0.075	0.768	0.807	0.890	0.976	1.018	-0.167 + (Ht-Z * 0.234)
11	0.288	0.072	0.795	0.832	0.913	1.000	1.043	-0.230 + (Ht-Z * 0.381)	0.682	0.076	0.793	0.833	0.921	1.011	1.055	-0.184 + (Ht-Z * 0.188)
12	0.005	0.074	0.843	0.881	0.968	1.063	1.111	-0.153 + (Ht-Z * 0.377)	0.682	0.077	0.819	0.861	0.953	1.048	1.093	-0.117 + (Ht-Z * 0.100)
13	-0.269	0.075	0.888	0.928	1.020	1.124	1.178	-0.097 + (Ht-Z * 0.406)	0.682	0.078	0.851	0.896	0.993	1.094	1.143	-0.148 + (Ht-Z * 0.256)
14	-0.516	0.077	0.928	0.969	1.066	1.179	1.239	0.004 + (Ht-Z * 0.373)	0.682	0.080	0.894	0.942	1.048	1.157	1.209	-0.113 + (Ht-Z * 0.314)
15	-0.717	0.078	0.959	1.001	1.103	1.223	1.287	0.058 + (Ht-Z * 0.350)	0.682	0.082	0.944	0.996	1.110	1.228	1.285	-0.066 + (Ht-Z * 0.361)
16	-0.867	0.079	0.981	1.024	1.128	1.253	1.321	0.032 + (Ht-Z * 0.403)	0.682	0.084	0.989	1.045	1.169	1.296	1.357	0.018 + (Ht-Z * 0.286)
17	-0.969	0.079	0.996	1.039	1.144	1.273	1.344	-0.031 + (Ht-Z * 0.525)	0.682	0.085	1.027	1.087	1.217	1.353	1.418	0.004 + (Ht-Z * 0.337)
18	-1.041	0.080	1.006	1.049	1.156	1.288	1.361	-0.090 + (Ht-Z * 0.471)	0.682	0.086	1.051	1.113	1.249	1.390	1.457	0.043 + (Ht-Z * 0.416)
19	-1.103	0.080	1.014	1.058	1.166	1.300	1.374	-0.161 + (Ht-Z * 0.493)	0.682	0.087	1.063	1.126	1.265	1.408	1.477	0.078 + (Ht-Z * 0.440)
20	-1.165	0.080	1.023	1.067	1.176	1.312	1.389	-0.170 + (Ht-Z * 0.573)	0.682	0.087	1.069	1.133	1.272	1.417	1.487	0.233 + (Ht-Z * 0.504)
Non-Black Females								Non-Black Males								
Age,y	L	S	M					Ht-Z Prediction	L	S	M					Ht-Z Prediction
			3rd	10th	50th	90th	97th	Equation			3rd	10th	50th	90th	97th	Equation

5	-0.189	0.076	0.572	0.598	0.659	0.727	0.762	0.231 + (Ht-Z * 0.213)	-0.587	0.078	0.583	0.609	0.671	0.743	0.782	0.207 + (Ht-Z * 0.100)
6	-0.189	0.076	0.589	0.616	0.679	0.749	0.785	-0.073 + (Ht-Z * 0.456)	-0.587	0.075	0.608	0.635	0.697	0.769	0.807	-0.046 + (Ht-Z * 0.540)
7	-0.189	0.076	0.610	0.638	0.703	0.776	0.813	0.004 + (Ht-Z * 0.528)	-0.587	0.072	0.637	0.663	0.726	0.798	0.836	-0.061 + (Ht-Z * 0.407)
8	-0.189	0.076	0.636	0.665	0.732	0.808	0.847	0.147 + (Ht-Z * 0.538)	-0.587	0.070	0.670	0.697	0.761	0.834	0.872	-0.007 + (Ht-Z * 0.470)
9	-0.189	0.076	0.665	0.695	0.766	0.845	0.886	0.161 + (Ht-Z * 0.527)	-0.587	0.068	0.704	0.731	0.796	0.871	0.910	0.058 + (Ht-Z * 0.498)
10	-0.189	0.076	0.697	0.729	0.803	0.886	0.928	0.070 + (Ht-Z * 0.455)	-0.587	0.067	0.733	0.761	0.827	0.904	0.943	0.024 + (Ht-Z * 0.502)
11	-0.189	0.076	0.734	0.767	0.845	0.933	0.978	0.005 + (Ht-Z * 0.482)	-0.587	0.067	0.758	0.787	0.855	0.934	0.975	0.039 + (Ht-Z * 0.413)
12	-0.189	0.076	0.779	0.814	0.897	0.990	1.038	-0.007 + (Ht-Z * 0.547)	-0.587	0.068	0.784	0.815	0.886	0.969	1.012	-0.030 + (Ht-Z * 0.411)
13	-0.189	0.076	0.830	0.868	0.956	1.055	1.106	0.003 + (Ht-Z * 0.521)	-0.587	0.070	0.816	0.849	0.926	1.015	1.062	-0.075 + (Ht-Z * 0.437)
14	-0.189	0.076	0.874	0.915	1.008	1.112	1.165	-0.037 + (Ht-Z * 0.472)	-0.587	0.074	0.856	0.892	0.978	1.077	1.130	-0.055 + (Ht-Z * 0.506)
15	-0.189	0.076	0.906	0.948	1.044	1.153	1.208	-0.070 + (Ht-Z * 0.460)	-0.587	0.078	0.903	0.943	1.038	1.150	1.210	-0.079 + (Ht-Z * 0.461)
16	-0.189	0.076	0.928	0.971	1.069	1.180	1.237	-0.114 + (Ht-Z * 0.447)	-0.587	0.080	0.949	0.993	1.096	1.218	1.283	-0.055 + (Ht-Z * 0.389)
17	-0.189	0.076	0.942	0.985	1.086	1.198	1.256	-0.171 + (Ht-Z * 0.441)	-0.587	0.081	0.985	1.031	1.139	1.267	1.335	-0.039 + (Ht-Z * 0.371)
18	-0.189	0.076	0.951	0.995	1.096	1.210	1.268	-0.168 + (Ht-Z * 0.427)	-0.587	0.081	1.007	1.054	1.166	1.298	1.368	-0.075 + (Ht-Z * 0.427)
19	-0.189	0.076	0.957	1.001	1.102	1.217	1.275	-0.211 + (Ht-Z * 0.418)	-0.587	0.081	1.021	1.068	1.182	1.316	1.388	-0.092 + (Ht-Z * 0.468)
20	-0.189	0.076	0.961	1.005	1.107	1.222	1.280	-0.203 + (Ht-Z * 0.357)	-0.587	0.082	1.030	1.079	1.194	1.330	1.402	-0.113 + (Ht-Z * 0.472)

**Table 3** Age and Sex- Specific Reference percentiles for Total Body Less Head areal Bone Mineral Density for Black and Non-Black Children  
L, M, and S values to calculate Z-scores and Ht-Z prediction equations to calculate Height Adjusted Z-scores are also shown. This measure excludes the aBMD of the head from the total body measurement.

Total Body Less Head aBMD, g/cm <sup>2</sup>																
Black Females							Black Males									
Age,y	L	S	M			Ht-Z Prediction	Equation	L	S	M			Ht-Z Prediction	Equation		
	3rd	10th	50th	90th	97th	3rd		10th	50th	90th	97th					
5	0.985	0.079	0.473	0.499	0.556	0.612	0.639	0.258 + (Ht-Z * 0.143)	0.317	0.082	0.477	0.502	0.559	0.620	0.650	-0.036 + (Ht-Z * 0.396)
6	1.101	0.079	0.502	0.531	0.591	0.651	0.679	0.093 + (Ht-Z * 0.554)	0.317	0.083	0.512	0.539	0.601	0.668	0.701	-0.052 + (Ht-Z * 0.472)
7	1.231	0.079	0.536	0.566	0.631	0.694	0.723	0.110 + (Ht-Z * 0.568)	0.317	0.083	0.550	0.579	0.646	0.717	0.753	-0.197 + (Ht-Z * 0.607)
8	1.357	0.079	0.570	0.603	0.672	0.739	0.769	0.140 + (Ht-Z * 0.564)	0.317	0.082	0.591	0.623	0.693	0.768	0.805	-0.116 + (Ht-Z * 0.585)
9	1.454	0.078	0.606	0.642	0.716	0.786	0.818	0.053 + (Ht-Z * 0.558)	0.317	0.080	0.630	0.662	0.734	0.812	0.850	-0.130 + (Ht-Z * 0.522)
10	1.448	0.078	0.649	0.687	0.765	0.840	0.874	-0.148 + (Ht-Z * 0.501)	0.317	0.078	0.667	0.700	0.775	0.856	0.896	-0.226 + (Ht-Z * 0.614)
11	1.213	0.077	0.699	0.738	0.821	0.901	0.938	-0.318 + (Ht-Z * 0.639)	0.317	0.079	0.700	0.736	0.815	0.900	0.942	-0.278 + (Ht-Z * 0.524)
12	0.714	0.077	0.752	0.791	0.877	0.964	1.006	-0.196 + (Ht-Z * 0.650)	0.317	0.082	0.732	0.771	0.858	0.952	0.998	-0.277 + (Ht-Z * 0.415)
13	0.053	0.077	0.799	0.837	0.924	1.019	1.067	-0.139 + (Ht-Z * 0.638)	0.317	0.088	0.769	0.813	0.912	1.020	1.073	-0.373 + (Ht-Z * 0.569)
14	-0.630	0.078	0.835	0.872	0.960	1.064	1.120	-0.051 + (Ht-Z * 0.573)	0.317	0.094	0.813	0.862	0.975	1.097	1.158	-0.258 + (Ht-Z * 0.473)
15	-1.181	0.079	0.860	0.896	0.985	1.097	1.159	-0.028 + (Ht-Z * 0.557)	0.317	0.096	0.860	0.913	1.035	1.167	1.232	-0.207 + (Ht-Z * 0.492)
16	-1.536	0.079	0.875	0.910	1.000	1.117	1.185	-0.070 + (Ht-Z * 0.590)	0.317	0.093	0.908	0.962	1.086	1.221	1.288	-0.150 + (Ht-Z * 0.437)
17	-1.730	0.080	0.883	0.918	1.008	1.128	1.199	-0.168 + (Ht-Z * 0.740)	0.317	0.089	0.949	1.003	1.127	1.261	1.327	-0.169 + (Ht-Z * 0.481)
18	-1.832	0.080	0.887	0.922	1.013	1.134	1.207	-0.242 + (Ht-Z * 0.583)	0.317	0.087	0.974	1.029	1.152	1.284	1.350	-0.104 + (Ht-Z * 0.536)

<b>19</b>	-1.908	0.080	0.890	0.925	1.016	1.138	1.213	-0.279 + (Ht-Z * 0.617)	0.317	0.086	0.984	1.039	1.161	1.293	1.358	-0.140 + (Ht-Z * 0.651)
<b>20</b>	-1.989	0.080	0.893	0.928	1.019	1.143	1.219	-0.338 + (Ht-Z * 0.712)	0.317	0.085	0.986	1.041	1.163	1.295	1.360	0.044 + (Ht-Z * 0.607)
<b>Non-Black Females</b>									<b>Non-Black Males</b>							
	<b>L</b>	<b>S</b>	<b>M</b>				<b>Ht-Z Prediction</b>		<b>L</b>	<b>S</b>	<b>M</b>				<b>Ht-Z Prediction</b>	
<b>Age,y</b>			<b>3rd</b>	<b>10th</b>	<b>50th</b>	<b>90th</b>	<b>97th</b>	<b>Equation</b>			<b>3rd</b>	<b>10th</b>	<b>50th</b>	<b>90th</b>	<b>97th</b>	<b>Equation</b>
<b>5</b>	-0.018	0.088	0.438	0.462	0.517	0.578	0.610	0.322 + (Ht-Z * 0.556)	-0.402	0.084	0.447	0.469	0.521	0.582	0.614	0.330 + (Ht-Z * 0.467)
<b>6</b>	-0.018	0.088	0.464	0.490	0.548	0.613	0.647	0.083 + (Ht-Z * 0.675)	-0.402	0.084	0.474	0.497	0.552	0.617	0.651	0.149 + (Ht-Z * 0.757)
<b>7</b>	-0.018	0.088	0.493	0.519	0.581	0.650	0.686	0.167 + (Ht-Z * 0.745)	-0.402	0.084	0.504	0.529	0.588	0.657	0.693	0.108 + (Ht-Z * 0.698)
<b>8</b>	-0.018	0.088	0.523	0.552	0.617	0.691	0.728	0.244 + (Ht-Z * 0.780)	-0.402	0.084	0.542	0.569	0.632	0.706	0.745	0.088 + (Ht-Z * 0.734)
<b>9</b>	-0.018	0.088	0.557	0.587	0.656	0.735	0.774	0.186 + (Ht-Z * 0.700)	-0.402	0.084	0.578	0.607	0.675	0.754	0.795	0.099 + (Ht-Z * 0.736)
<b>10</b>	-0.018	0.088	0.594	0.626	0.701	0.784	0.827	0.038 + (Ht-Z * 0.640)	-0.402	0.084	0.609	0.639	0.711	0.794	0.837	0.035 + (Ht-Z * 0.732)
<b>11</b>	-0.018	0.088	0.638	0.672	0.752	0.842	0.888	-0.067 + (Ht-Z * 0.655)	-0.402	0.084	0.639	0.670	0.745	0.832	0.878	0.018 + (Ht-Z * 0.668)
<b>12</b>	-0.018	0.087	0.687	0.724	0.810	0.905	0.954	-0.053 + (Ht-Z * 0.672)	-0.402	0.084	0.673	0.707	0.785	0.877	0.925	-0.067 + (Ht-Z * 0.668)
<b>13</b>	-0.018	0.085	0.736	0.775	0.864	0.964	1.015	-0.018 + (Ht-Z * 0.611)	-0.402	0.084	0.717	0.752	0.836	0.934	0.985	-0.122 + (Ht-Z * 0.663)
<b>14</b>	-0.018	0.083	0.776	0.815	0.906	1.007	1.059	-0.062 + (Ht-Z * 0.559)	-0.402	0.084	0.769	0.807	0.897	1.002	1.057	-0.121 + (Ht-Z * 0.680)
<b>15</b>	-0.018	0.080	0.803	0.843	0.934	1.035	1.087	-0.110 + (Ht-Z * 0.539)	-0.402	0.084	0.825	0.866	0.962	1.075	1.134	-0.140 + (Ht-Z * 0.592)
<b>16</b>	-0.018	0.079	0.821	0.861	0.952	1.052	1.103	-0.172 + (Ht-Z * 0.532)	-0.402	0.084	0.871	0.914	1.016	1.135	1.198	-0.143 + (Ht-Z * 0.515)
<b>17</b>	-0.018	0.078	0.831	0.871	0.962	1.062	1.113	-0.235 + (Ht-Z * 0.532)	-0.402	0.084	0.903	0.948	1.053	1.177	1.241	-0.144 + (Ht-Z * 0.490)
<b>18</b>	-0.018	0.077	0.836	0.876	0.967	1.067	1.118	-0.251 + (Ht-Z * 0.523)	-0.402	0.084	0.921	0.966	1.074	1.199	1.265	-0.194 + (Ht-Z * 0.527)
<b>19</b>	-0.018	0.077	0.838	0.878	0.969	1.069	1.120	-0.301 + (Ht-Z * 0.542)	-0.402	0.084	0.929	0.974	1.083	1.210	1.276	-0.191 + (Ht-Z * 0.547)



<b>20</b>	-0.018 0.077 0.839 0.879 0.970 1.070 1.120	$-0.318 + (Ht-Z * 0.483)$	-0.402 0.084 0.933 0.979 1.088 1.215 1.282	$-0.218 + (Ht-Z * 0.551)$
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**Table 4** Age and Sex- Specific Reference percentiles for Lumbar Spine Bone Mineral Content for Black and Non-Black Children  
L, M, and S values to calculate Z-scores and Ht-Z prediction equations to calculate Height Adjusted Z-scores are also shown.

Lumbar Spine BMC, g																
Black Females							Black Males									
Age,y	L	S	M					Ht-Z Prediction	L	S	M					Ht-Z Prediction
			3rd	10th	50th	90th	97th	Equation			3rd	10th	50th	90th	97th	Equation
5	0.457	0.180	10.72	12.14	15.49	19.29	21.22	-0.453 + (Ht-Z * 0.477)	0.069	0.154	11.31	12.43	15.15	18.41	20.16	-0.537 + (Ht-Z * 0.611)
6	0.457	0.180	11.88	13.45	17.16	21.36	23.51	-0.298 + (Ht-Z * 0.631)	0.069	0.157	12.79	14.08	17.24	21.05	23.09	-0.448 + (Ht-Z * 0.717)
7	0.457	0.180	13.08	14.81	18.89	23.52	25.88	-0.067 + (Ht-Z * 0.615)	0.069	0.160	14.35	15.83	19.46	23.86	26.24	-0.379 + (Ht-Z * 0.625)
8	0.457	0.180	14.19	16.07	20.50	25.53	28.09	0.018 + (Ht-Z * 0.618)	0.069	0.164	15.74	17.40	21.49	26.46	29.14	-0.325 + (Ht-Z * 0.643)
9	0.457	0.180	15.69	17.77	22.67	28.22	31.06	-0.049 + (Ht-Z * 0.571)	0.069	0.167	17.11	18.95	23.50	29.06	32.06	-0.194 + (Ht-Z * 0.652)
10	0.457	0.180	18.13	20.53	26.19	32.61	35.89	-0.300 + (Ht-Z * 0.664)	0.069	0.171	18.64	20.70	25.80	32.06	35.45	-0.266 + (Ht-Z * 0.593)
11	0.457	0.180	21.99	24.90	31.77	39.55	43.52	-0.521 + (Ht-Z * 0.838)	0.069	0.176	20.50	22.83	28.65	35.83	39.75	-0.382 + (Ht-Z * 0.647)
12	0.457	0.180	26.90	30.46	38.86	48.38	53.24	-0.476 + (Ht-Z * 0.898)	0.069	0.183	23.14	25.89	32.80	41.39	46.11	-0.450 + (Ht-Z * 0.709)
13	0.457	0.180	31.39	35.55	45.35	56.46	62.13	-0.228 + (Ht-Z * 0.832)	0.069	0.192	26.95	30.31	38.82	49.51	55.42	-0.549 + (Ht-Z * 0.877)
14	0.457	0.180	35.13	39.78	50.75	63.19	69.54	-0.064 + (Ht-Z * 0.767)	0.069	0.197	32.10	36.23	46.73	59.99	67.36	-0.373 + (Ht-Z * 0.823)
15	0.457	0.180	37.89	42.91	54.74	68.15	75.00	-0.041 + (Ht-Z * 0.724)	0.069	0.197	37.69	42.54	54.85	70.42	79.06	-0.239 + (Ht-Z * 0.810)
16	0.457	0.180	39.79	45.06	57.48	71.56	78.75	-0.040 + (Ht-Z * 0.756)	0.069	0.193	42.52	47.88	61.47	78.58	88.05	-0.098 + (Ht-Z * 0.783)
17	0.457	0.180	41.01	46.45	59.25	73.77	81.18	-0.115 + (Ht-Z * 0.795)	0.069	0.190	46.05	51.75	66.14	84.18	94.14	-0.031 + (Ht-Z * 0.778)
18	0.457	0.180	41.79	47.32	60.37	75.16	82.72	-0.102 + (Ht-Z * 0.783)	0.069	0.188	48.32	54.21	69.07	87.64	97.88	0.029 + (Ht-Z * 0.775)
19	0.457	0.180	42.33	47.93	61.15	76.13	83.78	-0.141 + (Ht-Z * 0.730)	0.069	0.186	49.74	55.75	70.87	89.75	100.14	0.076 + (Ht-Z * 0.804)
20	0.457	0.180	42.80	48.47	61.84	76.99	84.72	-0.164 + (Ht-Z * 0.760)	0.069	0.185	50.73	56.82	72.13	91.21	101.70	0.093 + (Ht-Z * 0.855)
Non-Black Females							Non-Black Males									
Age,y	L	S	M					Ht-Z Prediction	L	S	M					Ht-Z Prediction
			3rd	10th	50th	90th	97th	Equation			3rd	10th	50th	90th	97th	Equation



5	0.122	0.137	11.10	12.09	14.44	17.18	18.62	-0.305 + (Ht-Z * 0.851)	0.058	0.141	10.60	11.55	13.86	16.59	18.05	0.085 + (Ht-Z * 0.664)
6	0.122	0.143	12.32	13.46	16.20	19.42	21.12	-0.199 + (Ht-Z * 0.775)	0.058	0.145	12.47	13.62	16.41	19.72	21.49	-0.066 + (Ht-Z * 0.796)
7	0.122	0.149	13.48	14.78	17.93	21.66	23.63	-0.002 + (Ht-Z * 0.759)	0.058	0.148	14.07	15.39	18.61	22.47	24.52	-0.092 + (Ht-Z * 0.814)
8	0.122	0.155	14.57	16.04	19.60	23.85	26.11	0.058 + (Ht-Z * 0.772)	0.058	0.151	15.56	17.06	20.72	25.11	27.46	-0.097 + (Ht-Z * 0.838)
9	0.122	0.162	15.74	17.40	21.48	26.38	29.00	0.041 + (Ht-Z * 0.744)	0.058	0.154	16.95	18.62	22.72	27.65	30.30	-0.039 + (Ht-Z * 0.836)
10	0.122	0.174	17.23	19.20	24.06	29.96	33.15	-0.092 + (Ht-Z * 0.753)	0.058	0.158	18.22	20.06	24.59	30.06	33.01	-0.083 + (Ht-Z * 0.857)
11	0.122	0.191	19.40	21.85	28.00	35.63	39.79	-0.197 + (Ht-Z * 0.825)	0.058	0.163	19.63	21.68	26.74	32.90	36.23	-0.096 + (Ht-Z * 0.886)
12	0.122	0.207	22.85	26.01	34.03	44.15	49.74	-0.136 + (Ht-Z * 0.833)	0.058	0.172	21.71	24.11	30.08	37.42	41.42	-0.176 + (Ht-Z * 0.894)
13	0.122	0.207	27.67	31.50	41.24	53.54	60.35	-0.066 + (Ht-Z * 0.790)	0.058	0.185	24.81	27.78	35.25	44.59	49.73	-0.223 + (Ht-Z * 0.929)
14	0.122	0.194	32.70	36.90	47.45	60.58	67.76	-0.055 + (Ht-Z * 0.746)	0.058	0.195	29.63	33.37	42.89	54.91	61.60	-0.146 + (Ht-Z * 0.943)
15	0.122	0.178	36.74	41.04	51.70	64.72	71.76	-0.058 + (Ht-Z * 0.766)	0.058	0.191	36.04	40.50	51.80	66.03	73.91	-0.125 + (Ht-Z * 0.910)
16	0.122	0.166	39.58	43.87	54.39	67.06	73.85	-0.079 + (Ht-Z * 0.814)	0.058	0.182	42.00	46.92	59.29	74.68	83.14	-0.081 + (Ht-Z * 0.822)
17	0.122	0.157	41.47	45.72	56.06	68.41	74.99	-0.112 + (Ht-Z * 0.850)	0.058	0.176	46.19	51.42	64.47	80.59	89.41	-0.025 + (Ht-Z * 0.814)
18	0.122	0.152	42.66	46.87	57.08	69.20	75.62	-0.108 + (Ht-Z * 0.839)	0.058	0.173	48.66	54.07	67.56	84.18	93.24	-0.044 + (Ht-Z * 0.844)
19	0.122	0.149	43.41	47.59	57.71	69.67	75.99	-0.147 + (Ht-Z * 0.835)	0.058	0.172	50.12	55.66	69.43	86.36	95.59	-0.060 + (Ht-Z * 0.872)
20	0.122	0.146	43.98	48.14	58.18	70.02	76.27	-0.141 + (Ht-Z * 0.755)	0.058	0.171	51.20	56.82	70.80	87.98	97.33	-0.062 + (Ht-Z * 0.841)

**Table 5** Age and Sex- Specific Reference percentiles for Total Hip Bone Mineral Content for Black and Non-Black Children  
L, M, and S values to calculate Z-scores and Ht-Z prediction equations to calculate Height Adjusted Z-scores are also shown.

Total Hip BMC																
Black Females								Black Males								
Age,y	L	S	M					Ht-Z Prediction	L	S	M					Ht-Z Prediction
			3rd	10th	50th	90th	97th	Equation			3rd	10th	50th	90th	97th	Equation
5	0.485	0.198	5.32	6.12	8.02	10.18	11.29	$0.673 + (Ht-Z * 0.409)$	0.208	0.161	6.40	7.09	8.75	10.70	11.72	$0.216 + (Ht-Z * 0.650)$
6	0.403	0.194	6.69	7.65	9.94	12.60	13.98	$0.352 + (Ht-Z * 0.492)$	0.177	0.163	7.86	8.71	10.77	13.22	14.52	$0.065 + (Ht-Z * 0.816)$
7	0.314	0.191	8.19	9.29	11.97	15.15	16.82	$0.290 + (Ht-Z * 0.476)$	0.145	0.165	9.36	10.38	12.87	15.85	17.45	$-0.160 + (Ht-Z * 0.859)$
8	0.226	0.187	9.62	10.85	13.87	17.51	19.45	$0.140 + (Ht-Z * 0.540)$	0.112	0.168	10.95	12.15	15.10	18.68	20.60	$-0.186 + (Ht-Z * 0.873)$
9	0.130	0.183	11.18	12.53	15.89	20.00	22.23	$-0.051 + (Ht-Z * 0.595)$	0.079	0.170	12.48	13.85	17.25	21.40	23.65	$-0.275 + (Ht-Z * 0.665)$
10	0.019	0.178	13.08	14.56	18.29	22.95	25.52	$-0.328 + (Ht-Z * 0.590)$	0.046	0.172	14.00	15.54	19.39	24.14	26.74	$-0.290 + (Ht-Z * 0.688)$
11	-0.107	0.172	15.45	17.09	21.25	26.56	29.55	$-0.493 + (Ht-Z * 0.711)$	0.007	0.174	15.76	17.51	21.89	27.36	30.38	$-0.366 + (Ht-Z * 0.711)$
12	-0.237	0.167	18.05	19.83	24.42	30.40	33.83	$-0.374 + (Ht-Z * 0.714)$	-0.046	0.177	18.19	20.20	25.32	31.80	35.43	$-0.495 + (Ht-Z * 0.694)$
13	-0.353	0.162	20.32	22.22	27.13	33.63	37.42	$-0.233 + (Ht-Z * 0.706)$	-0.111	0.180	21.21	23.55	29.56	37.32	41.72	$-0.583 + (Ht-Z * 0.840)$
14	-0.445	0.158	22.08	24.04	29.17	36.04	40.09	$-0.146 + (Ht-Z * 0.579)$	-0.185	0.180	25.01	27.71	34.73	43.95	49.26	$-0.478 + (Ht-Z * 0.793)$
15	-0.508	0.155	23.26	25.27	30.53	37.62	41.84	$-0.110 + (Ht-Z * 0.587)$	-0.256	0.177	28.69	31.69	39.52	49.93	56.01	$-0.369 + (Ht-Z * 0.753)$
16	-0.547	0.153	23.98	26.01	31.34	38.56	42.88	$-0.158 + (Ht-Z * 0.659)$	-0.315	0.174	31.68	34.88	43.24	54.45	61.04	$-0.347 + (Ht-Z * 0.729)$
17	-0.567	0.152	24.35	26.40	31.76	39.05	43.42	$-0.238 + (Ht-Z * 0.681)$	-0.358	0.170	33.98	37.30	46.01	57.73	64.65	$-0.222 + (Ht-Z * 0.636)$
18	-0.576	0.152	24.54	26.58	31.97	39.29	43.69	$-0.225 + (Ht-Z * 0.633)$	-0.383	0.168	35.31	38.70	47.59	59.58	66.68	$-0.216 + (Ht-Z * 0.668)$
19	-0.582	0.152	24.64	26.69	32.09	39.43	43.84	$-0.267 + (Ht-Z * 0.616)$	-0.391	0.167	35.75	39.17	48.12	60.19	67.34	$-0.210 + (Ht-Z * 0.718)$
20	-0.587	0.151	24.74	26.80	32.20	39.56	43.98	$-0.343 + (Ht-Z * 0.713)$	-0.392	0.167	35.81	39.22	48.18	60.27	67.42	$-0.105 + (Ht-Z * 0.756)$
Non-Black Females								Non-Black Males								
Age,y	L	S	M					Ht-Z Prediction	L	S	M					Ht-Z Prediction
			3rd	10th	50th	90th	97th	Equation			3rd	10th	50th	90th	97th	Equation

<b>5</b>	0.188	0.164	5.45	6.04	7.49	9.21	10.11	0.387 + (Ht-Z * 0.648)	0.198	0.181	5.20	5.83	7.39	9.27	10.27	0.745 + (Ht-Z * 0.505)
<b>6</b>	0.164	0.168	6.54	7.27	9.05	11.18	12.32	0.313 + (Ht-Z * 0.679)	0.198	0.181	6.48	7.27	9.21	11.55	12.79	0.509 + (Ht-Z * 0.548)
<b>7</b>	0.139	0.172	7.64	8.51	10.64	13.21	14.60	0.235 + (Ht-Z * 0.750)	0.198	0.181	7.80	8.76	11.09	13.90	15.41	0.353 + (Ht-Z * 0.564)
<b>8</b>	0.113	0.176	8.79	9.80	12.32	15.38	17.04	0.227 + (Ht-Z * 0.692)	0.198	0.181	9.21	10.33	13.09	16.41	18.18	0.209 + (Ht-Z * 0.682)
<b>9</b>	0.083	0.180	10.03	11.20	14.14	17.77	19.75	0.112 + (Ht-Z * 0.724)	0.198	0.181	10.62	11.92	15.10	18.92	20.97	0.100 + (Ht-Z * 0.689)
<b>10</b>	0.049	0.185	11.45	12.81	16.25	20.55	22.93	-0.113 + (Ht-Z * 0.721)	0.198	0.181	12.00	13.47	17.06	21.39	23.70	0.028 + (Ht-Z * 0.827)
<b>11</b>	0.010	0.188	13.26	14.85	18.90	24.03	26.89	-0.254 + (Ht-Z * 0.788)	0.198	0.181	13.54	15.19	19.24	24.12	26.73	-0.067 + (Ht-Z * 0.838)
<b>12</b>	-0.033	0.188	15.55	17.39	22.10	28.15	31.55	-0.195 + (Ht-Z * 0.793)	0.198	0.181	15.57	17.47	22.13	27.75	30.75	-0.196 + (Ht-Z * 0.895)
<b>13</b>	-0.074	0.184	17.96	20.00	25.25	32.01	35.83	-0.141 + (Ht-Z * 0.755)	0.198	0.181	18.47	20.72	26.25	32.91	36.47	-0.284 + (Ht-Z * 0.939)
<b>14</b>	-0.109	0.177	19.94	22.10	27.64	34.74	38.76	-0.141 + (Ht-Z * 0.712)	0.198	0.181	22.19	24.90	31.54	39.54	43.81	-0.302 + (Ht-Z * 0.943)
<b>15</b>	-0.135	0.170	21.34	23.55	29.18	36.39	40.46	-0.196 + (Ht-Z * 0.685)	0.198	0.181	25.85	29.00	36.74	46.05	51.03	-0.270 + (Ht-Z * 0.798)
<b>16</b>	-0.152	0.165	22.22	24.45	30.11	37.33	41.39	-0.231 + (Ht-Z * 0.707)	0.198	0.181	28.48	31.95	40.48	50.74	56.23	-0.266 + (Ht-Z * 0.722)
<b>17</b>	-0.162	0.162	22.72	24.95	30.61	37.82	41.88	-0.259 + (Ht-Z * 0.694)	0.198	0.181	30.09	33.76	42.77	53.61	59.41	-0.254 + (Ht-Z * 0.706)
<b>18</b>	-0.166	0.161	22.92	25.15	30.81	38.02	42.07	-0.263 + (Ht-Z * 0.704)	0.198	0.181	30.98	34.76	44.04	55.20	61.17	-0.261 + (Ht-Z * 0.677)
<b>19</b>	-0.167	0.161	22.95	25.19	30.85	38.05	42.10	-0.293 + (Ht-Z * 0.688)	0.198	0.181	31.45	35.28	44.70	56.03	62.09	-0.279 + (Ht-Z * 0.705)
<b>20</b>	-0.169	0.161	23.03	25.27	30.93	38.13	42.18	-0.299 + (Ht-Z * 0.649)	0.198	0.181	31.74	35.61	45.11	56.55	62.67	-0.302 + (Ht-Z * 0.696)

**Table 6** Age and Sex- Specific Reference percentiles for Total Hip areal Bone Mineral Density for Black and Non-Black Children  
L, M, and S values to calculate Z-scores and Ht-Z prediction equations to calculate Height Adjusted Z-scores are also shown.

Total Hip aBMD																
Black Females								Black Males								
Age,y	L	S	M				Ht-Z Prediction	Equation	L	S	M				Ht-Z Prediction	
	3rd	10th	50th	90th	97th	3rd	10th		50th	90th	97th	Equation				
5	-0.226	0.096	0.489	0.517	0.584	0.661	0.701	0.217 + (Ht-Z * 0.503)	2.845	0.075	0.510	0.547	0.612	0.667	0.690	0.317 + (Ht-Z * 0.092)
6	-0.226	0.098	0.519	0.549	0.622	0.706	0.750	0.123 + (Ht-Z * 0.442)	2.632	0.083	0.541	0.584	0.661	0.725	0.753	0.084 + (Ht-Z * 0.334)
7	-0.226	0.100	0.548	0.581	0.659	0.750	0.798	0.096 + (Ht-Z * 0.302)	2.427	0.089	0.570	0.618	0.706	0.781	0.813	-0.119 + (Ht-Z * 0.448)
8	-0.226	0.102	0.572	0.607	0.690	0.788	0.840	0.029 + (Ht-Z * 0.317)	2.243	0.095	0.593	0.646	0.744	0.829	0.865	-0.135 + (Ht-Z * 0.419)
9	-0.226	0.104	0.594	0.631	0.720	0.824	0.880	-0.087 + (Ht-Z * 0.316)	2.080	0.100	0.612	0.669	0.776	0.869	0.909	-0.167 + (Ht-Z * 0.318)
10	-0.226	0.107	0.621	0.660	0.756	0.868	0.928	-0.274 + (Ht-Z * 0.331)	1.920	0.104	0.629	0.690	0.805	0.906	0.950	-0.156 + (Ht-Z * 0.353)
11	-0.226	0.110	0.661	0.704	0.809	0.934	1.001	-0.366 + (Ht-Z * 0.498)	1.739	0.109	0.650	0.714	0.837	0.949	0.998	-0.251 + (Ht-Z * 0.310)
12	-0.226	0.114	0.709	0.757	0.874	1.014	1.090	-0.296 + (Ht-Z * 0.532)	1.517	0.115	0.678	0.746	0.881	1.006	1.062	-0.336 + (Ht-Z * 0.318)
13	-0.226	0.118	0.750	0.803	0.931	1.086	1.169	-0.203 + (Ht-Z * 0.545)	1.254	0.121	0.718	0.790	0.938	1.081	1.146	-0.486 + (Ht-Z * 0.494)
14	-0.226	0.121	0.783	0.839	0.977	1.143	1.233	-0.098 + (Ht-Z * 0.468)	0.970	0.126	0.766	0.842	1.003	1.166	1.242	-0.368 + (Ht-Z * 0.441)
15	-0.226	0.123	0.803	0.861	1.005	1.179	1.274	-0.069 + (Ht-Z * 0.446)	0.698	0.130	0.816	0.893	1.065	1.247	1.334	-0.233 + (Ht-Z * 0.371)
16	-0.226	0.124	0.814	0.874	1.021	1.200	1.297	-0.069 + (Ht-Z * 0.467)	0.464	0.132	0.857	0.935	1.114	1.311	1.409	-0.148 + (Ht-Z * 0.329)
17	-0.226	0.125	0.820	0.880	1.030	1.211	1.310	-0.142 + (Ht-Z * 0.501)	0.289	0.133	0.885	0.964	1.148	1.355	1.461	-0.043 + (Ht-Z * 0.313)
18	-0.226	0.125	0.822	0.883	1.034	1.216	1.315	-0.126 + (Ht-Z * 0.505)	0.175	0.134	0.903	0.981	1.168	1.382	1.494	0.010 + (Ht-Z * 0.347)
19	-0.226	0.125	0.823	0.885	1.035	1.218	1.318	-0.104 + (Ht-Z * 0.496)	0.113	0.134	0.912	0.990	1.178	1.397	1.511	0.004 + (Ht-Z * 0.436)
20	-0.226	0.125	0.824	0.885	1.036	1.220	1.319	-0.188 + (Ht-Z * 0.598)	0.080	0.135	0.917	0.995	1.184	1.404	1.521	-0.021 + (Ht-Z * 0.433)
Non-Black Females								Non-Black Males								
Age,y	L	S	M				Ht-Z Prediction	Equation	L	S	M				Ht-Z Prediction	
	3rd	10th	50th	90th	97th	3rd	10th		50th	90th	97th	Equation				

<b>5</b>	-0.168	0.089	0.475	0.500	0.559	0.627	0.662	-0.087 + (Ht-Z * 0.333)	0.841	0.092	0.476	0.507	0.573	0.641	0.674	0.349 + (Ht-Z * 0.184)
<b>6</b>	-0.126	0.092	0.489	0.517	0.581	0.654	0.692	0.040 + (Ht-Z * 0.372)	0.841	0.096	0.501	0.536	0.610	0.685	0.721	0.267 + (Ht-Z * 0.254)
<b>7</b>	-0.083	0.096	0.504	0.533	0.603	0.682	0.723	0.138 + (Ht-Z * 0.465)	0.841	0.100	0.526	0.563	0.645	0.728	0.767	0.184 + (Ht-Z * 0.291)
<b>8</b>	-0.038	0.100	0.518	0.550	0.625	0.710	0.754	0.196 + (Ht-Z * 0.388)	0.841	0.103	0.547	0.588	0.676	0.767	0.810	0.109 + (Ht-Z * 0.372)
<b>9</b>	0.016	0.104	0.534	0.568	0.650	0.742	0.790	0.141 + (Ht-Z * 0.420)	0.841	0.106	0.566	0.609	0.704	0.800	0.846	0.111 + (Ht-Z * 0.412)
<b>10</b>	0.083	0.110	0.553	0.592	0.682	0.784	0.837	-0.028 + (Ht-Z * 0.482)	0.841	0.109	0.582	0.628	0.728	0.830	0.879	0.075 + (Ht-Z * 0.434)
<b>11</b>	0.169	0.117	0.581	0.625	0.727	0.843	0.902	-0.131 + (Ht-Z * 0.572)	0.841	0.112	0.599	0.648	0.754	0.863	0.915	0.003 + (Ht-Z * 0.430)
<b>12</b>	0.268	0.122	0.623	0.673	0.790	0.921	0.987	-0.108 + (Ht-Z * 0.613)	0.841	0.115	0.621	0.673	0.788	0.905	0.961	-0.084 + (Ht-Z * 0.470)
<b>13</b>	0.370	0.125	0.670	0.726	0.856	1.000	1.072	-0.078 + (Ht-Z * 0.590)	0.841	0.119	0.654	0.712	0.838	0.967	1.028	-0.174 + (Ht-Z * 0.537)
<b>14</b>	0.459	0.124	0.709	0.770	0.907	1.058	1.132	-0.087 + (Ht-Z * 0.529)	0.841	0.123	0.701	0.766	0.907	1.051	1.120	-0.160 + (Ht-Z * 0.550)
<b>15</b>	0.527	0.122	0.735	0.798	0.940	1.092	1.168	-0.114 + (Ht-Z * 0.508)	0.841	0.125	0.752	0.823	0.978	1.137	1.213	-0.154 + (Ht-Z * 0.440)
<b>16</b>	0.573	0.121	0.751	0.815	0.959	1.112	1.187	-0.120 + (Ht-Z * 0.522)	0.841	0.127	0.791	0.867	1.032	1.202	1.283	-0.133 + (Ht-Z * 0.418)
<b>17</b>	0.599	0.120	0.760	0.824	0.969	1.122	1.198	-0.149 + (Ht-Z * 0.499)	0.841	0.128	0.815	0.894	1.066	1.242	1.326	-0.129 + (Ht-Z * 0.402)
<b>18</b>	0.610	0.120	0.763	0.828	0.973	1.127	1.202	-0.149 + (Ht-Z * 0.492)	0.841	0.128	0.829	0.909	1.085	1.265	1.351	-0.136 + (Ht-Z * 0.413)
<b>19</b>	0.612	0.120	0.764	0.829	0.974	1.127	1.202	-0.181 + (Ht-Z * 0.483)	0.841	0.128	0.836	0.917	1.095	1.277	1.363	-0.156 + (Ht-Z * 0.466)
<b>20</b>	0.615	0.120	0.765	0.830	0.975	1.129	1.204	-0.235 + (Ht-Z * 0.453)	0.841	0.128	0.840	0.922	1.100	1.283	1.371	-0.226 + (Ht-Z * 0.456)

**Table 7** Age and Sex- Specific Reference percentiles for Femoral Neck Bone Mineral Content for Black and Non-Black Children  
L, M, and S values to calculate Z-scores and Ht-Z prediction equations to calculate Height Adjusted Z-scores are also shown.

Femoral Neck BMC																
Black Females								Black Males								
Age,y	L	S	M					Ht-Z Prediction	L	S	M					Ht-Z Prediction
			3rd	10th	50th	90th	97 <sup>th</sup>	Equation			3rd	10th	50th	90th	97 <sup>th</sup>	Equation
5	0.331	0.141	1.353	1.483	1.786	2.127	2.301	-0.026 + (Ht-Z * 0.518)	0.357	0.149	1.396	1.540	1.877	2.257	2.452	-0.411 + (Ht-Z * 0.737)
6	0.331	0.142	1.469	1.610	1.942	2.316	2.507	-0.104 + (Ht-Z * 0.517)	0.357	0.149	1.585	1.748	2.130	2.562	2.783	-0.339 + (Ht-Z * 0.487)
7	0.331	0.143	1.599	1.754	2.119	2.530	2.741	0.002 + (Ht-Z * 0.453)	0.357	0.149	1.776	1.959	2.387	2.871	3.119	-0.360 + (Ht-Z * 0.485)
8	0.331	0.144	1.735	1.906	2.306	2.758	2.989	-0.023 + (Ht-Z * 0.475)	0.357	0.149	1.955	2.156	2.627	3.160	3.432	-0.269 + (Ht-Z * 0.540)
9	0.331	0.146	1.897	2.085	2.527	3.028	3.284	-0.056 + (Ht-Z * 0.469)	0.357	0.149	2.114	2.332	2.841	3.418	3.712	-0.192 + (Ht-Z * 0.490)
10	0.331	0.147	2.093	2.303	2.798	3.359	3.646	-0.265 + (Ht-Z * 0.433)	0.357	0.149	2.265	2.498	3.044	3.661	3.977	-0.182 + (Ht-Z * 0.510)
11	0.331	0.149	2.331	2.569	3.128	3.763	4.089	-0.377 + (Ht-Z * 0.575)	0.357	0.149	2.436	2.687	3.274	3.938	4.278	-0.304 + (Ht-Z * 0.540)
12	0.331	0.151	2.579	2.846	3.475	4.190	4.557	-0.287 + (Ht-Z * 0.629)	0.357	0.149	2.671	2.946	3.590	4.318	4.690	-0.344 + (Ht-Z * 0.483)
13	0.331	0.153	2.793	3.085	3.776	4.562	4.967	-0.120 + (Ht-Z * 0.529)	0.357	0.149	2.980	3.286	4.004	4.817	5.232	-0.441 + (Ht-Z * 0.643)
14	0.331	0.154	2.958	3.271	4.011	4.855	5.289	0.031 + (Ht-Z * 0.478)	0.357	0.149	3.350	3.694	4.502	5.415	5.882	-0.297 + (Ht-Z * 0.566)
15	0.331	0.155	3.067	3.394	4.167	5.050	5.504	0.080 + (Ht-Z * 0.469)	0.357	0.149	3.713	4.094	4.989	6.002	6.519	-0.208 + (Ht-Z * 0.565)
16	0.331	0.156	3.131	3.466	4.260	5.166	5.633	0.008 + (Ht-Z * 0.593)	0.357	0.149	4.007	4.419	5.385	6.477	7.035	-0.151 + (Ht-Z * 0.592)
17	0.331	0.156	3.167	3.508	4.313	5.233	5.707	-0.048 + (Ht-Z * 0.668)	0.357	0.149	4.210	4.643	5.658	6.805	7.392	-0.026 + (Ht-Z * 0.502)
18	0.331	0.156	3.189	3.533	4.345	5.274	5.752	-0.088 + (Ht-Z * 0.606)	0.357	0.149	4.322	4.767	5.809	6.987	7.589	0.029 + (Ht-Z * 0.513)
19	0.331	0.156	3.206	3.552	4.369	5.304	5.786	-0.172 + (Ht-Z * 0.524)	0.357	0.149	4.363	4.812	5.864	7.053	7.661	0.007 + (Ht-Z * 0.659)
20	0.331	0.157	3.222	3.570	4.393	5.333	5.818	-0.225 + (Ht-Z * 0.653)	0.357	0.149	4.369	4.818	5.871	7.062	7.671	0.015 + (Ht-Z * 0.685)
Non-Black Females								Non-Black Males								
Age,y	L	S	M					Ht-Z Prediction	L	S	M					Ht-Z Prediction
			3 <sup>rd</sup>	10th	50th	90th	97 <sup>th</sup>	Equation			3rd	10th	50th	90th	97 <sup>th</sup>	Equation

<b>5</b>	0.510	0.140	1.292	1.420	1.713	2.034	2.193	-0.219 + (Ht-Z * 0.667)	1.000	0.161	1.192	1.357	1.708	2.059	2.224	0.018 + (Ht-Z * 0.709)
<b>6</b>	0.510	0.142	1.394	1.535	1.857	2.210	2.386	-0.101 + (Ht-Z * 0.670)	1.000	0.160	1.348	1.534	1.930	2.326	2.512	0.094 + (Ht-Z * 0.473)
<b>7</b>	0.510	0.144	1.496	1.650	2.003	2.390	2.583	0.064 + (Ht-Z * 0.721)	1.000	0.160	1.506	1.713	2.154	2.595	2.802	0.084 + (Ht-Z * 0.569)
<b>8</b>	0.510	0.147	1.602	1.770	2.156	2.580	2.791	0.128 + (Ht-Z * 0.666)	1.000	0.159	1.662	1.889	2.374	2.858	3.085	0.061 + (Ht-Z * 0.588)
<b>9</b>	0.510	0.150	1.719	1.904	2.329	2.796	3.030	0.085 + (Ht-Z * 0.633)	1.000	0.159	1.808	2.054	2.579	3.104	3.350	0.040 + (Ht-Z * 0.599)
<b>10</b>	0.510	0.153	1.864	2.071	2.546	3.070	3.333	-0.079 + (Ht-Z * 0.640)	1.000	0.159	1.948	2.213	2.776	3.340	3.604	0.051 + (Ht-Z * 0.621)
<b>11</b>	0.510	0.157	2.057	2.293	2.836	3.436	3.736	-0.170 + (Ht-Z * 0.731)	1.000	0.158	2.101	2.385	2.990	3.595	3.879	-0.022 + (Ht-Z * 0.619)
<b>12</b>	0.510	0.160	2.308	2.577	3.199	3.887	4.232	-0.145 + (Ht-Z * 0.720)	1.000	0.157	2.297	2.606	3.263	3.921	4.229	-0.145 + (Ht-Z * 0.668)
<b>13</b>	0.510	0.159	2.575	2.873	3.563	4.325	4.708	-0.098 + (Ht-Z * 0.674)	1.000	0.157	2.575	2.918	3.650	4.382	4.725	-0.176 + (Ht-Z * 0.693)
<b>14</b>	0.510	0.156	2.793	3.109	3.839	4.643	5.046	-0.090 + (Ht-Z * 0.647)	1.000	0.156	2.934	3.322	4.148	4.975	5.363	-0.125 + (Ht-Z * 0.708)
<b>15</b>	0.510	0.153	2.942	3.266	4.012	4.833	5.244	-0.092 + (Ht-Z * 0.639)	1.000	0.155	3.289	3.720	4.639	5.558	5.990	-0.115 + (Ht-Z * 0.577)
<b>16</b>	0.510	0.150	3.033	3.360	4.112	4.938	5.352	-0.114 + (Ht-Z * 0.676)	1.000	0.154	3.569	4.034	5.024	6.015	6.480	-0.086 + (Ht-Z * 0.519)
<b>17</b>	0.510	0.148	3.082	3.410	4.164	4.992	5.406	-0.132 + (Ht-Z * 0.659)	1.000	0.153	3.760	4.247	5.285	6.323	6.810	-0.078 + (Ht-Z * 0.512)
<b>18</b>	0.510	0.148	3.101	3.430	4.185	5.013	5.427	-0.144 + (Ht-Z * 0.648)	1.000	0.153	3.878	4.379	5.445	6.512	7.012	-0.056 + (Ht-Z * 0.489)
<b>19</b>	0.510	0.148	3.104	3.433	4.189	5.017	5.431	-0.099 + (Ht-Z * 0.603)	1.000	0.153	3.951	4.460	5.544	6.628	7.136	-0.128 + (Ht-Z * 0.543)
<b>20</b>	0.510	0.147	3.115	3.444	4.200	5.028	5.442	-0.196 + (Ht-Z * 0.579)	1.000	0.153	4.005	4.520	5.616	6.713	7.228	-0.245 + (Ht-Z * 0.536)

**Table 8** Age and Sex- Specific Reference percentiles for Femoral Neck areal Bone Mineral Density for Black and Non-Black Children  
L, M, and S values to calculate Z-scores and Ht-Z prediction equations to calculate Height Adjusted Z-scores are also shown.

Femoral Neck aBMD																	
Black Females									Black Males								
Age,y	L	S	M					Ht-Z Prediction	Equation	L	S	M					Ht-Z Prediction
	3rd	10th	50th	90th	97th	3rd	10th	50th		90th	97th	Equation					
5	0.096	0.097	0.467	0.495	0.562	0.635	0.673	0.199 + (Ht-Z * 0.221)	2.418	0.092	0.462	0.503	0.578	0.640	0.667	-0.085 + (Ht-Z * 0.255)	
6	0.096	0.101	0.485	0.516	0.587	0.667	0.708	-0.025 + (Ht-Z * 0.312)	2.284	0.096	0.495	0.542	0.626	0.698	0.728	-0.019 + (Ht-Z * 0.109)	
7	0.096	0.104	0.505	0.538	0.616	0.703	0.748	0.058 + (Ht-Z * 0.232)	2.156	0.101	0.525	0.576	0.671	0.752	0.786	-0.303 + (Ht-Z * 0.377)	
8	0.096	0.108	0.526	0.562	0.646	0.741	0.790	0.044 + (Ht-Z * 0.254)	2.042	0.105	0.550	0.605	0.708	0.797	0.836	-0.235 + (Ht-Z * 0.339)	
9	0.096	0.113	0.548	0.587	0.679	0.784	0.837	-0.039 + (Ht-Z * 0.236)	1.941	0.109	0.569	0.628	0.738	0.835	0.877	-0.245 + (Ht-Z * 0.266)	
10	0.096	0.118	0.574	0.617	0.718	0.833	0.893	-0.176 + (Ht-Z * 0.189)	1.846	0.112	0.586	0.648	0.766	0.869	0.915	-0.239 + (Ht-Z * 0.364)	
11	0.096	0.123	0.605	0.653	0.765	0.895	0.963	-0.254 + (Ht-Z * 0.334)	1.744	0.116	0.605	0.670	0.795	0.907	0.956	-0.248 + (Ht-Z * 0.245)	
12	0.096	0.129	0.639	0.692	0.818	0.964	1.040	-0.244 + (Ht-Z * 0.381)	1.623	0.120	0.628	0.697	0.832	0.954	1.008	-0.260 + (Ht-Z * 0.204)	
13	0.096	0.135	0.670	0.728	0.867	1.029	1.114	-0.161 + (Ht-Z * 0.320)	1.483	0.125	0.658	0.731	0.878	1.013	1.074	-0.339 + (Ht-Z * 0.339)	
14	0.096	0.140	0.696	0.758	0.908	1.084	1.177	-0.045 + (Ht-Z * 0.273)	1.331	0.130	0.691	0.770	0.930	1.082	1.150	-0.248 + (Ht-Z * 0.289)	
15	0.096	0.143	0.712	0.777	0.935	1.122	1.221	-0.004 + (Ht-Z * 0.309)	1.181	0.136	0.725	0.809	0.983	1.151	1.229	-0.190 + (Ht-Z * 0.296)	
16	0.096	0.146	0.721	0.788	0.952	1.145	1.248	-0.013 + (Ht-Z * 0.365)	1.048	0.140	0.754	0.842	1.028	1.212	1.298	-0.084 + (Ht-Z * 0.296)	
17	0.096	0.147	0.726	0.795	0.961	1.159	1.263	-0.049 + (Ht-Z * 0.412)	0.943	0.144	0.775	0.866	1.060	1.257	1.350	0.056 + (Ht-Z * 0.268)	
18	0.096	0.148	0.729	0.798	0.966	1.166	1.271	-0.098 + (Ht-Z * 0.389)	0.872	0.147	0.788	0.880	1.080	1.286	1.384	0.118 + (Ht-Z * 0.270)	
19	0.096	0.148	0.730	0.800	0.969	1.169	1.276	-0.065 + (Ht-Z * 0.368)	0.832	0.148	0.795	0.888	1.091	1.302	1.402	0.080 + (Ht-Z * 0.347)	
20	0.096	0.149	0.731	0.801	0.971	1.172	1.279	-0.149 + (Ht-Z * 0.440)	0.808	0.149	0.799	0.892	1.098	1.311	1.413	0.081 + (Ht-Z * 0.408)	
Non-Black Females									Non-Black Males								
Age,y	L	S	M					Ht-Z Prediction	Equation	L	S	M					Ht-Z Prediction
	3rd	10th	50th	90th	97th	3rd	10th	50th		90th	97th	Equation					



5	-0.419	0.087	0.461	0.485	0.541	0.606	0.641	-0.379 + (Ht-Z * 0.349)	0.543	0.098	0.449	0.479	0.546	0.616	0.651	0.171 + (Ht-Z * 0.183)
6	-0.367	0.090	0.472	0.497	0.557	0.627	0.664	-0.185 + (Ht-Z * 0.376)	0.543	0.101	0.473	0.506	0.578	0.655	0.693	0.046 + (Ht-Z * 0.205)
7	-0.312	0.094	0.484	0.511	0.574	0.649	0.688	-0.050 + (Ht-Z * 0.475)	0.543	0.104	0.497	0.532	0.611	0.694	0.735	0.034 + (Ht-Z * 0.282)
8	-0.252	0.097	0.496	0.525	0.593	0.673	0.715	0.075 + (Ht-Z * 0.379)	0.543	0.107	0.518	0.555	0.640	0.730	0.774	-0.022 + (Ht-Z * 0.346)
9	-0.181	0.101	0.509	0.540	0.614	0.700	0.745	0.091 + (Ht-Z * 0.403)	0.543	0.109	0.536	0.576	0.666	0.761	0.808	0.006 + (Ht-Z * 0.384)
10	-0.087	0.107	0.526	0.560	0.642	0.736	0.786	0.003 + (Ht-Z * 0.415)	0.543	0.111	0.552	0.594	0.688	0.789	0.839	0.028 + (Ht-Z * 0.363)
11	0.037	0.113	0.549	0.588	0.680	0.786	0.841	-0.058 + (Ht-Z * 0.484)	0.543	0.113	0.567	0.612	0.712	0.818	0.870	0.011 + (Ht-Z * 0.354)
12	0.186	0.121	0.580	0.625	0.731	0.852	0.913	-0.047 + (Ht-Z * 0.470)	0.543	0.116	0.586	0.633	0.739	0.852	0.908	-0.043 + (Ht-Z * 0.397)
13	0.341	0.126	0.616	0.668	0.788	0.922	0.989	-0.044 + (Ht-Z * 0.456)	0.543	0.119	0.611	0.662	0.777	0.900	0.960	-0.079 + (Ht-Z * 0.385)
14	0.476	0.129	0.644	0.702	0.833	0.976	1.047	-0.048 + (Ht-Z * 0.399)	0.543	0.124	0.646	0.702	0.829	0.965	1.032	-0.065 + (Ht-Z * 0.399)
15	0.578	0.130	0.663	0.724	0.862	1.010	1.083	-0.024 + (Ht-Z * 0.389)	0.543	0.129	0.682	0.745	0.885	1.036	1.111	-0.064 + (Ht-Z * 0.282)
16	0.644	0.130	0.673	0.736	0.879	1.029	1.103	-0.035 + (Ht-Z * 0.417)	0.543	0.133	0.713	0.780	0.933	1.098	1.180	-0.068 + (Ht-Z * 0.259)
17	0.680	0.131	0.678	0.742	0.887	1.039	1.113	-0.028 + (Ht-Z * 0.371)	0.543	0.136	0.734	0.805	0.967	1.143	1.230	-0.051 + (Ht-Z * 0.275)
18	0.692	0.131	0.679	0.744	0.889	1.042	1.116	-0.040 + (Ht-Z * 0.370)	0.543	0.138	0.745	0.819	0.986	1.167	1.257	-0.041 + (Ht-Z * 0.283)
19	0.697	0.131	0.680	0.745	0.890	1.043	1.117	-0.060 + (Ht-Z * 0.356)	0.543	0.139	0.749	0.824	0.993	1.177	1.268	-0.061 + (Ht-Z * 0.314)
20	0.710	0.131	0.682	0.747	0.893	1.046	1.121	-0.153 + (Ht-Z * 0.319)	0.543	0.139	0.750	0.825	0.994	1.179	1.270	-0.158 + (Ht-Z * 0.299)

**Table 9** Age and Sex- Specific Reference percentiles for Distal One-Third Radius Bone Mineral Content for Black and Non-Black Children  
L, M, and S values to calculate Z-scores and Ht-Z prediction equations to calculate Height Adjusted Z-scores are also shown.

Distal One Third Radius BMC																
Black Females								Black Males								
Age,y	L	S	M					Ht-Z Prediction	L	S	M					Ht-Z Prediction
			3rd	10th	50th	90th	97th	Equation			3rd	10th	50th	90th	97th	Equation
5	1.000	0.132	0.606	0.669	0.805	0.941	1.004	-0.218 + (Ht-Z * 0.552)	0.240	0.119	0.654	0.705	0.824	0.957	1.025	-0.377 + (Ht-Z *0.641)
6	1.000	0.130	0.656	0.724	0.869	1.013	1.081	-0.196 + (Ht-Z * 0.606)	0.240	0.121	0.721	0.778	0.911	1.061	1.137	-0.216 + (Ht-Z *0.580)
7	1.000	0.128	0.715	0.788	0.942	1.097	1.169	-0.065 + (Ht-Z * 0.542)	0.240	0.123	0.787	0.850	0.999	1.166	1.252	-0.275 + (Ht-Z *0.394)
8	1.000	0.126	0.777	0.854	1.019	1.184	1.261	0.033 + (Ht-Z * 0.494)	0.240	0.125	0.853	0.923	1.087	1.273	1.368	-0.169 + (Ht-Z *0.368)
9	1.000	0.124	0.845	0.927	1.102	1.277	1.359	-0.029 + (Ht-Z * 0.413)	0.240	0.127	0.917	0.994	1.174	1.378	1.482	-0.108 + (Ht-Z *0.391)
10	1.000	0.122	0.927	1.015	1.202	1.389	1.477	-0.201 + (Ht-Z * 0.461)	0.240	0.130	0.980	1.063	1.259	1.482	1.596	-0.157 + (Ht-Z *0.412)
11	1.000	0.119	1.031	1.126	1.328	1.531	1.626	-0.402 + (Ht-Z * 0.660)	0.240	0.132	1.048	1.139	1.353	1.596	1.721	-0.293 + (Ht-Z *0.444)
12	1.000	0.116	1.150	1.253	1.471	1.690	1.793	-0.305 + (Ht-Z * 0.695)	0.240	0.134	1.135	1.235	1.472	1.741	1.880	-0.346 + (Ht-Z *0.407)
13	1.000	0.113	1.262	1.371	1.604	1.836	1.945	-0.059 + (Ht-Z * 0.519)	0.240	0.135	1.250	1.362	1.625	1.926	2.081	-0.418 + (Ht-Z *0.527)
14	1.000	0.111	1.352	1.466	1.708	1.950	2.064	-0.031 + (Ht-Z * 0.658)	0.240	0.134	1.389	1.512	1.802	2.132	2.302	-0.241 + (Ht-Z *0.548)
15	1.000	0.109	1.416	1.533	1.782	2.030	2.147	-0.027 + (Ht-Z * 0.601)	0.240	0.130	1.533	1.665	1.973	2.324	2.504	-0.084 + (Ht-Z *0.522)
16	1.000	0.108	1.461	1.580	1.832	2.085	2.203	-0.077 + (Ht-Z * 0.729)	0.240	0.125	1.664	1.800	2.118	2.476	2.660	-0.027 + (Ht-Z *0.537)
17	1.000	0.107	1.492	1.611	1.866	2.121	2.241	-0.156 + (Ht-Z * 0.756)	0.240	0.119	1.772	1.910	2.229	2.587	2.769	0.024 + (Ht-Z *0.505)
18	1.000	0.106	1.515	1.635	1.892	2.149	2.270	-0.225 + (Ht-Z * 0.767)	0.240	0.113	1.856	1.993	2.310	2.663	2.843	0.063 + (Ht-Z *0.489)
19	1.000	0.105	1.536	1.657	1.916	2.174	2.295	-0.242 + (Ht-Z * 0.675)	0.240	0.109	1.921	2.056	2.369	2.717	2.893	0.040 + (Ht-Z *0.577)
20	1.000	0.105	1.557	1.679	1.939	2.199	2.322	-0.254 + (Ht-Z * 0.664)	0.240	0.105	1.976	2.110	2.419	2.761	2.933	0.103 + (Ht-Z *0.476)
Non-Black Females								Non-Black Males								
	L	S	M					Ht-Z Prediction	L	S	M					Ht-Z Prediction

Age,y	3rd	10th	50th	90th	97th	Equation	3rd	10th	50th	90th	97th	Equation				
5	1.000	0.132	0.541	0.598	0.719	0.839	0.896	-0.227 + (Ht-Z * 0.607)	1.000	0.114	0.568	0.617	0.722	0.827	0.876	0.084 + (Ht-Z * 0.665)
6	1.000	0.133	0.586	0.648	0.781	0.913	0.975	-0.063 + (Ht-Z * 0.465)	1.000	0.117	0.632	0.688	0.809	0.930	0.986	-0.054 + (Ht-Z * 0.557)
7	1.000	0.134	0.632	0.700	0.844	0.989	1.056	0.046 + (Ht-Z * 0.447)	1.000	0.119	0.691	0.755	0.891	1.027	1.091	-0.049 + (Ht-Z * 0.438)
8	1.000	0.135	0.679	0.753	0.909	1.066	1.139	0.085 + (Ht-Z * 0.433)	1.000	0.122	0.745	0.816	0.966	1.117	1.187	-0.112 + (Ht-Z * 0.586)
9	1.000	0.136	0.729	0.808	0.978	1.148	1.228	0.080 + (Ht-Z * 0.517)	1.000	0.124	0.795	0.872	1.036	1.200	1.277	-0.012 + (Ht-Z * 0.539)
10	1.000	0.137	0.787	0.874	1.060	1.245	1.332	-0.041 + (Ht-Z * 0.474)	1.000	0.126	0.842	0.926	1.104	1.282	1.366	-0.047 + (Ht-Z * 0.570)
11	1.000	0.137	0.863	0.959	1.163	1.367	1.463	-0.163 + (Ht-Z * 0.523)	1.000	0.128	0.897	0.988	1.182	1.376	1.467	-0.097 + (Ht-Z * 0.536)
12	1.000	0.135	0.963	1.068	1.291	1.515	1.620	-0.106 + (Ht-Z * 0.621)	1.000	0.131	0.969	1.070	1.285	1.500	1.601	-0.166 + (Ht-Z * 0.572)
13	1.000	0.131	1.072	1.184	1.421	1.659	1.770	0.002 + (Ht-Z * 0.608)	1.000	0.133	1.069	1.182	1.424	1.665	1.779	-0.235 + (Ht-Z * 0.650)
14	1.000	0.124	1.168	1.281	1.524	1.766	1.880	0.034 + (Ht-Z * 0.518)	1.000	0.132	1.205	1.333	1.604	1.876	2.004	-0.147 + (Ht-Z * 0.670)
15	1.000	0.119	1.240	1.354	1.596	1.838	1.952	-0.015 + (Ht-Z * 0.515)	1.000	0.129	1.360	1.500	1.797	2.094	2.234	-0.121 + (Ht-Z * 0.605)
16	1.000	0.114	1.292	1.405	1.646	1.887	2.000	-0.053 + (Ht-Z * 0.514)	1.000	0.125	1.499	1.646	1.960	2.273	2.421	-0.057 + (Ht-Z * 0.519)
17	1.000	0.111	1.329	1.442	1.682	1.921	2.034	-0.102 + (Ht-Z * 0.509)	1.000	0.121	1.603	1.754	2.076	2.398	2.550	-0.008 + (Ht-Z * 0.468)
18	1.000	0.109	1.358	1.470	1.708	1.947	2.059	-0.099 + (Ht-Z * 0.504)	1.000	0.118	1.677	1.830	2.156	2.482	2.635	-0.041 + (Ht-Z * 0.549)
19	1.000	0.107	1.381	1.492	1.730	1.967	2.079	-0.136 + (Ht-Z * 0.540)	1.000	0.116	1.731	1.885	2.213	2.542	2.696	0.000 + (Ht-Z * 0.575)
20	1.000	0.106	1.402	1.513	1.749	1.986	2.097	-0.141 + (Ht-Z * 0.493)	1.000	0.114	1.777	1.932	2.262	2.592	2.747	0.012 + (Ht-Z * 0.575)

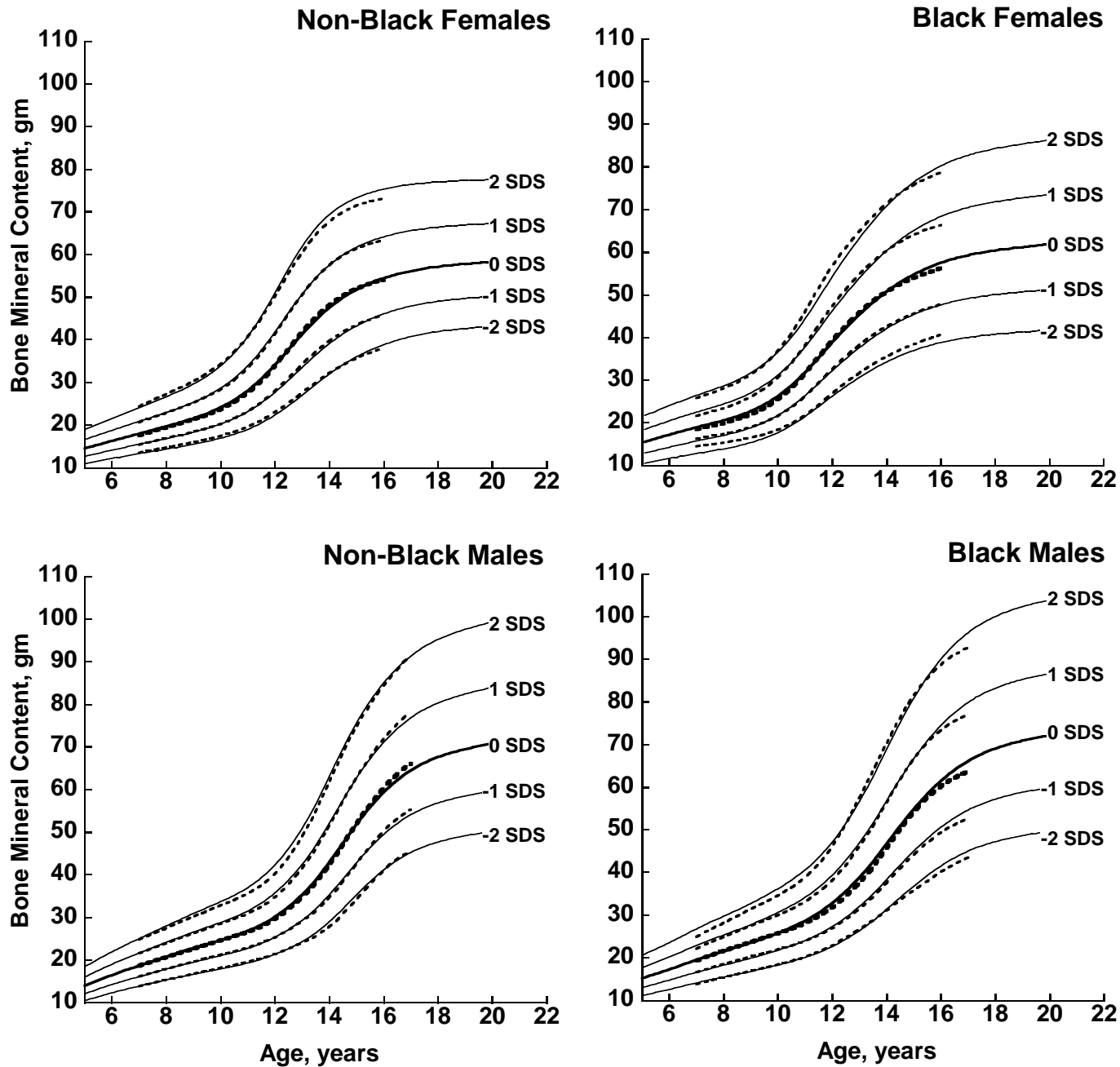
**Table 10** Age and Sex- Specific Reference percentiles for Distal One Third Radius areal Bone Mineral Density for Black and Non-Black Children  
L, M, and S values to calculate Z-scores and Ht-Z prediction equations to calculate Height Adjusted Z-scores are also shown.

Distal One Third Radius aBMD																
Black Females								Black Males								
Age,y	L	S	M				Ht-Z Prediction	Equation	L	S	M				Ht-Z Prediction	
	3rd	10th	50th	90th	97th	3rd	10th		50th	90th	97th	Equation				
5	0.332	0.078	0.377	0.396	0.439	0.484	0.506	-0.643 + (Ht-Z * 0.696)	1.482	0.085	0.362	0.386	0.435	0.481	0.502	-0.442 + (Ht-Z *0.344)
6	0.332	0.077	0.393	0.413	0.456	0.503	0.526	-0.449 + (Ht-Z * 0.510)	1.482	0.085	0.385	0.410	0.462	0.511	0.534	-0.180 + (Ht-Z *0.382)
7	0.332	0.076	0.411	0.431	0.476	0.524	0.548	-0.163 + (Ht-Z * 0.450)	1.482	0.085	0.407	0.434	0.489	0.541	0.564	-0.187 + (Ht-Z *0.122)
8	0.332	0.076	0.428	0.449	0.495	0.545	0.569	-0.005 + (Ht-Z * 0.379)	1.482	0.085	0.427	0.456	0.513	0.567	0.592	-0.232 + (Ht-Z *0.186)
9	0.332	0.075	0.446	0.468	0.516	0.567	0.592	-0.045 + (Ht-Z * 0.279)	1.482	0.085	0.446	0.475	0.535	0.592	0.618	-0.142 + (Ht-Z *0.268)
10	0.332	0.074	0.469	0.491	0.540	0.593	0.619	-0.151 + (Ht-Z * 0.285)	1.482	0.085	0.463	0.493	0.556	0.615	0.642	-0.296 + (Ht-Z *0.182)
11	0.332	0.073	0.496	0.519	0.571	0.626	0.653	-0.235 + (Ht-Z * 0.419)	1.482	0.085	0.481	0.512	0.577	0.638	0.666	-0.314 + (Ht-Z *0.220)
12	0.332	0.072	0.527	0.551	0.605	0.663	0.691	-0.234 + (Ht-Z * 0.534)	1.482	0.085	0.501	0.534	0.601	0.665	0.694	-0.317 + (Ht-Z *0.276)
13	0.332	0.071	0.556	0.581	0.637	0.697	0.726	-0.047 + (Ht-Z * 0.430)	1.482	0.085	0.524	0.559	0.630	0.697	0.727	-0.292 + (Ht-Z *0.290)
14	0.332	0.070	0.579	0.605	0.663	0.724	0.754	0.055 + (Ht-Z * 0.450)	1.482	0.085	0.552	0.589	0.663	0.733	0.765	-0.155 + (Ht-Z *0.366)
15	0.332	0.069	0.597	0.623	0.682	0.744	0.775	0.043 + (Ht-Z * 0.390)	1.482	0.085	0.581	0.619	0.697	0.771	0.805	0.047 + (Ht-Z *0.326)
16	0.332	0.069	0.609	0.636	0.695	0.758	0.789	0.021 + (Ht-Z * 0.427)	1.482	0.085	0.606	0.646	0.728	0.805	0.840	0.070 + (Ht-Z *0.376)
17	0.332	0.069	0.618	0.645	0.705	0.769	0.800	-0.038 + (Ht-Z * 0.527)	1.482	0.085	0.627	0.669	0.753	0.833	0.869	0.149 + (Ht-Z *0.315)
18	0.332	0.068	0.626	0.653	0.713	0.777	0.809	-0.081 + (Ht-Z * 0.560)	1.482	0.085	0.643	0.686	0.772	0.854	0.891	0.224 + (Ht-Z *0.256)
19	0.332	0.068	0.633	0.660	0.721	0.786	0.817	-0.189 + (Ht-Z * 0.578)	1.482	0.085	0.655	0.699	0.787	0.870	0.908	0.149 + (Ht-Z *0.331)
20	0.332	0.068	0.641	0.668	0.729	0.794	0.826	-0.174 + (Ht-Z * 0.422)	1.482	0.085	0.666	0.710	0.799	0.884	0.923	0.230 + (Ht-Z *0.344)
Non-Black Females								Non-Black Males								
Age,y	L	S	M				Ht-Z Prediction	Equation	L	S	M				Ht-Z Prediction	
	3rd	10th	50th	90th	97th	3rd	10th		50th	90th	97th	Equation				

<b>5</b>	1.069	0.075	0.350	0.368	0.408	0.447	0.465	-0.243 + (Ht-Z * 0.268)	0.161	0.071	0.360	0.376	0.413	0.452	0.471	-0.243 + (Ht-Z * 0.268)
<b>6</b>	1.069	0.076	0.366	0.386	0.428	0.469	0.489	-0.127 + (Ht-Z * 0.256)	0.161	0.073	0.377	0.395	0.433	0.475	0.496	-0.127 + (Ht-Z * 0.256)
<b>7</b>	1.069	0.077	0.383	0.403	0.448	0.492	0.512	-0.145 + (Ht-Z * 0.303)	0.161	0.074	0.394	0.412	0.453	0.498	0.520	-0.145 + (Ht-Z * 0.303)
<b>8</b>	1.069	0.078	0.398	0.420	0.467	0.514	0.535	-0.044 + (Ht-Z * 0.424)	0.161	0.075	0.409	0.429	0.472	0.519	0.542	-0.044 + (Ht-Z * 0.424)
<b>9</b>	1.069	0.079	0.414	0.437	0.487	0.536	0.559	0.040 + (Ht-Z * 0.424)	0.161	0.076	0.424	0.444	0.490	0.539	0.564	0.040 + (Ht-Z * 0.424)
<b>10</b>	1.069	0.080	0.432	0.457	0.509	0.561	0.585	0.063 + (Ht-Z * 0.424)	0.161	0.077	0.438	0.459	0.507	0.559	0.585	0.063 + (Ht-Z * 0.424)
<b>11</b>	1.069	0.081	0.455	0.481	0.537	0.592	0.618	-0.017 + (Ht-Z * 0.429)	0.161	0.078	0.453	0.476	0.526	0.581	0.608	-0.017 + (Ht-Z * 0.429)
<b>12</b>	1.069	0.080	0.484	0.511	0.570	0.628	0.656	-0.074 + (Ht-Z * 0.433)	0.161	0.079	0.472	0.496	0.549	0.607	0.636	-0.074 + (Ht-Z * 0.433)
<b>13</b>	1.069	0.078	0.515	0.544	0.604	0.665	0.693	-0.121 + (Ht-Z * 0.465)	0.161	0.080	0.497	0.522	0.579	0.641	0.672	-0.121 + (Ht-Z * 0.465)
<b>14</b>	1.069	0.075	0.542	0.571	0.632	0.693	0.721	-0.053 + (Ht-Z * 0.459)	0.161	0.081	0.528	0.555	0.616	0.683	0.716	-0.053 + (Ht-Z * 0.459)
<b>15</b>	1.069	0.072	0.563	0.592	0.653	0.713	0.741	-0.022 + (Ht-Z * 0.405)	0.161	0.080	0.565	0.593	0.658	0.728	0.763	-0.022 + (Ht-Z * 0.405)
<b>16</b>	1.069	0.070	0.579	0.607	0.667	0.727	0.755	0.029 + (Ht-Z * 0.421)	0.161	0.078	0.600	0.629	0.696	0.768	0.804	0.029 + (Ht-Z * 0.421)
<b>17</b>	1.069	0.069	0.590	0.618	0.678	0.737	0.765	0.069 + (Ht-Z * 0.341)	0.161	0.076	0.628	0.658	0.726	0.799	0.835	0.069 + (Ht-Z * 0.341)
<b>18</b>	1.069	0.068	0.597	0.625	0.685	0.744	0.771	0.001 + (Ht-Z * 0.407)	0.161	0.074	0.650	0.680	0.748	0.821	0.858	0.001 + (Ht-Z * 0.407)
<b>19</b>	1.069	0.067	0.603	0.631	0.690	0.749	0.776	-0.003 + (Ht-Z * 0.450)	0.161	0.072	0.667	0.697	0.765	0.839	0.875	-0.003 + (Ht-Z * 0.450)
<b>20</b>	1.069	0.066	0.607	0.635	0.694	0.752	0.780	-0.036 + (Ht-Z * 0.443)	0.161	0.071	0.682	0.712	0.781	0.854	0.890	-0.036 + (Ht-Z * 0.443)

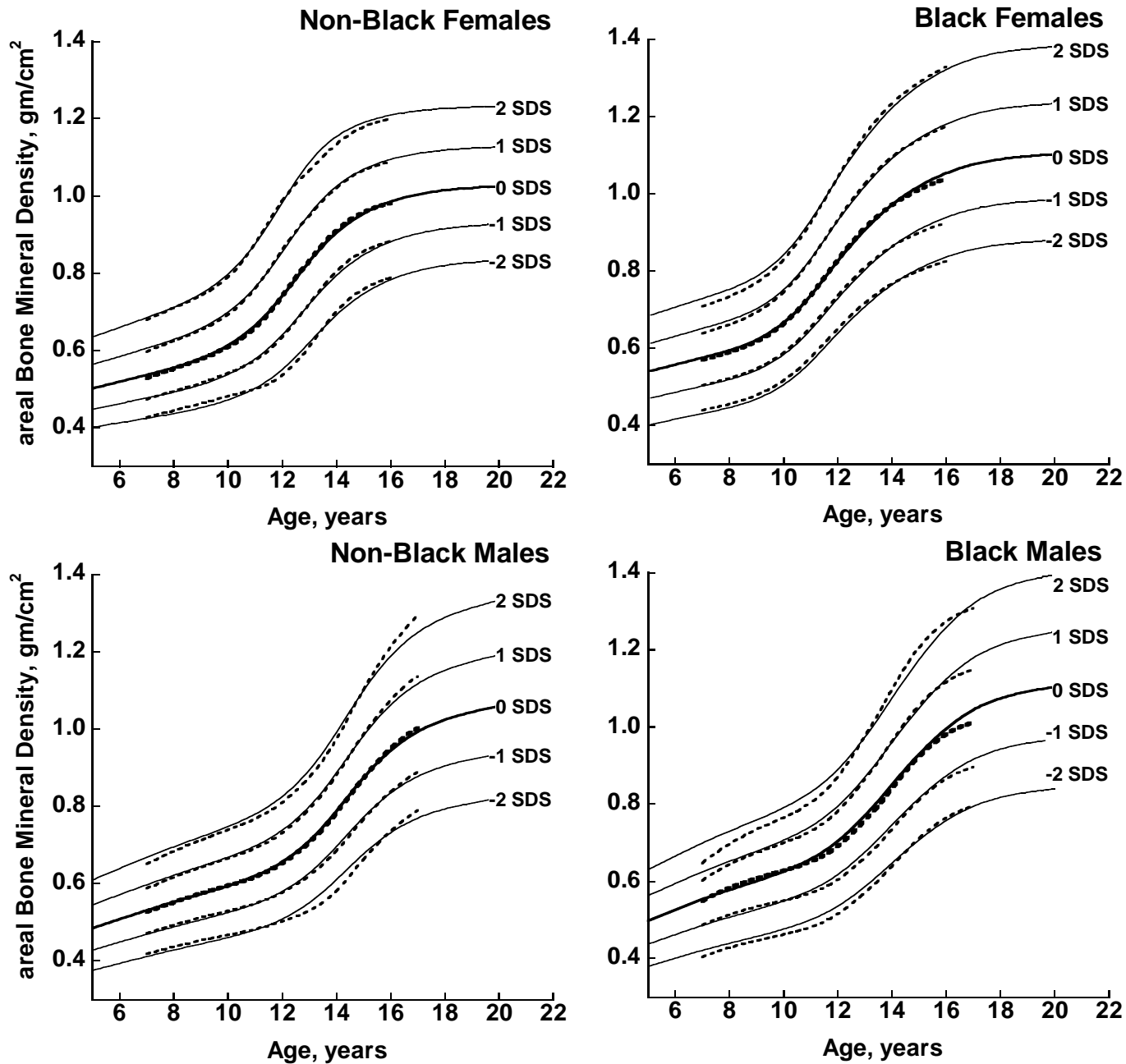
# Lumbar Spine Bone Mineral Content

Figure 1.



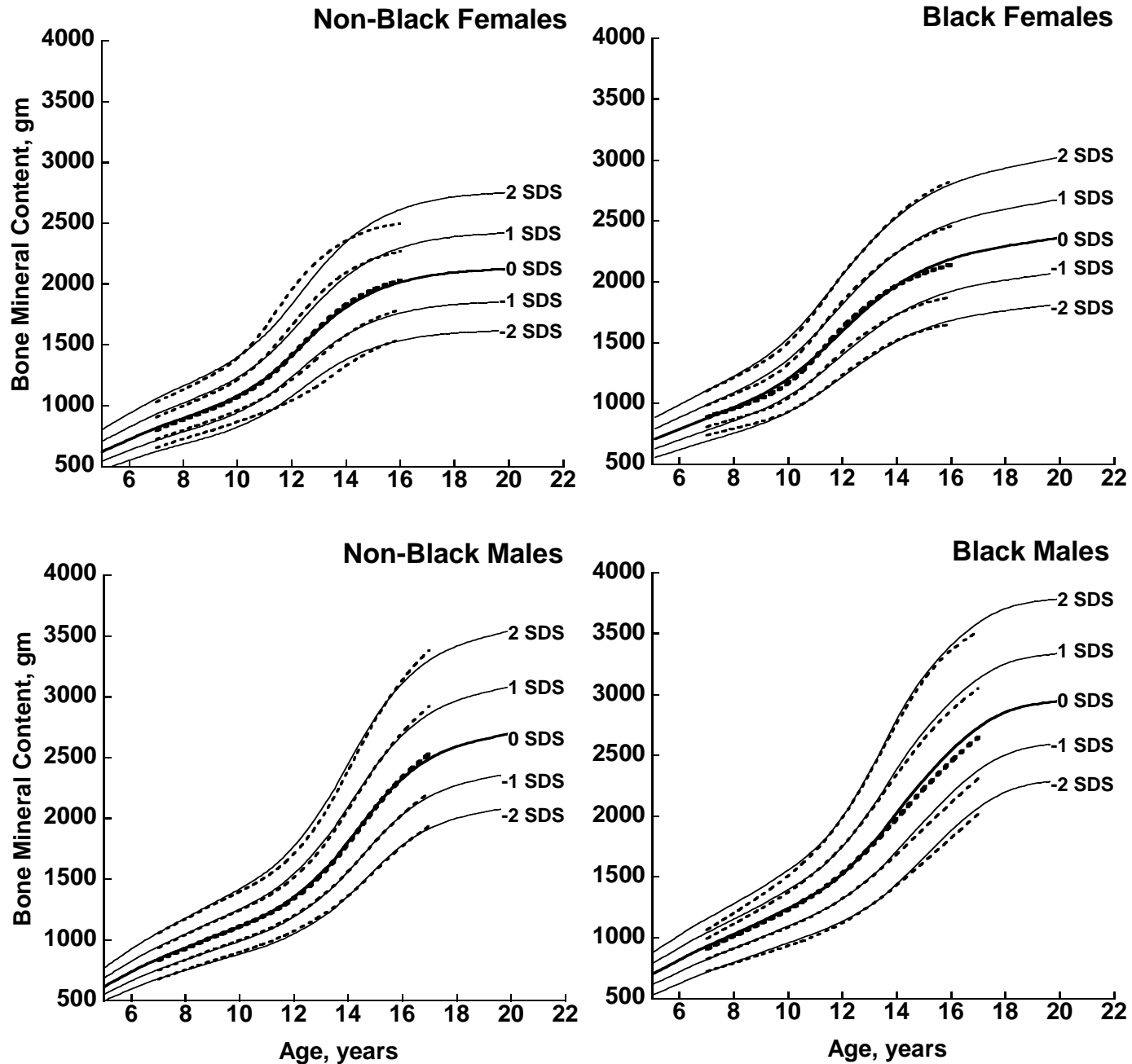
# Lumbar Spine areal Bone Mineral Density

Figure 2.



# Total Body Bone Mineral Content

Figure 3.





# Total Body areal Bone Mineral Density

Figure 4.

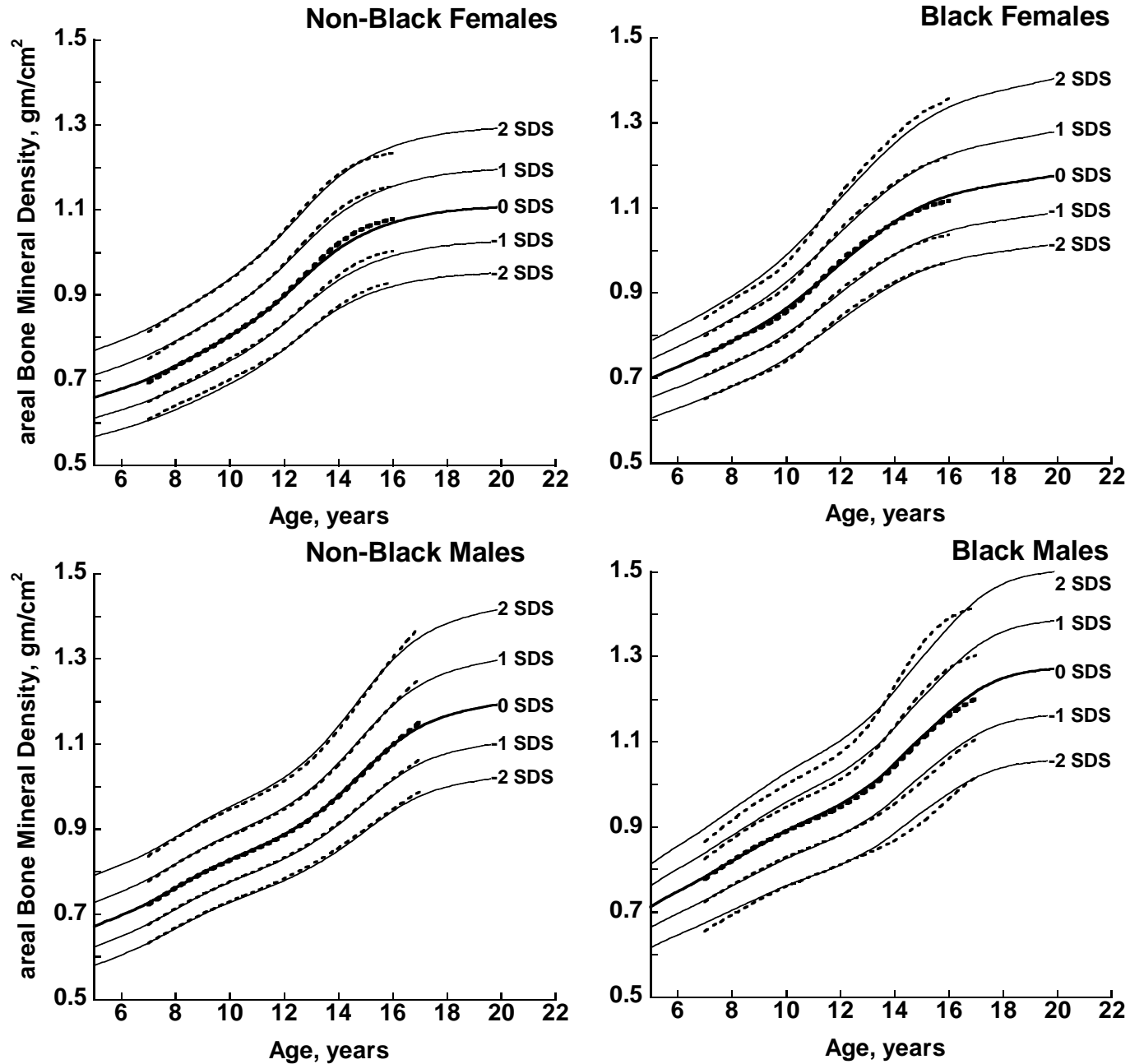


Figure 5.

# Distal One Third Radius areal Bone Mineral Density

