

# SUPERSONIC MACH40™

## Obstetrical References



Obstetrical Ref. :

PM.LAB.134-B  
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# 1 Fetal Growth Equations And Tables



# Abdominal Circumference (AC by GA)

## AC by GA - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:** Fetal growth table generated from ASUM equations with polynomial interpretation of standard deviations

| GA (week) | AC (mm)    | +/-2 SD    |
|-----------|------------|------------|
| 11 weeks  | 49.3231 mm | 8.9715 mm  |
| 12 weeks  | 61.4484 mm | 9.50361 mm |
| 13 weeks  | 73.4799 mm | 10.1216 mm |
| 14 weeks  | 85.4176 mm | 10.8189 mm |
| 15 weeks  | 97.2615 mm | 11.5889 mm |
| 16 weeks  | 109.012 mm | 12.4251 mm |
| 17 weeks  | 120.668 mm | 13.321 mm  |
| 18 weeks  | 132.23 mm  | 14.2699 mm |
| 19 weeks  | 143.699 mm | 15.2653 mm |
| 20 weeks  | 155.074 mm | 16.3007 mm |
| 21 weeks  | 166.355 mm | 17.3694 mm |
| 22 weeks  | 177.542 mm | 18.465 mm  |
| 23 weeks  | 188.636 mm | 19.5808 mm |
| 24 weeks  | 199.636 mm | 20.7104 mm |
| 25 weeks  | 210.542 mm | 21.847 mm  |
| 26 weeks  | 221.354 mm | 22.9843 mm |
| 27 weeks  | 232.072 mm | 24.1155 mm |
| 28 weeks  | 242.696 mm | 25.2342 mm |
| 29 weeks  | 253.227 mm | 26.3338 mm |

| GA (week) | AC (mm)    | +/-2 SD    |
|-----------|------------|------------|
| 30 weeks  | 263.664 mm | 27.4078 mm |
| 31 weeks  | 274.007 mm | 28.4495 mm |
| 32 weeks  | 284.256 mm | 29.4524 mm |
| 33 weeks  | 294.412 mm | 30.41 mm   |
| 34 weeks  | 304.474 mm | 31.3156 mm |
| 35 weeks  | 314.442 mm | 32.1628 mm |
| 36 weeks  | 324.316 mm | 32.945 mm  |
| 37 weeks  | 334.096 mm | 33.6555 mm |
| 38 weeks  | 343.782 mm | 34.2879 mm |
| 39 weeks  | 353.375 mm | 34.8356 mm |
| 40 weeks  | 362.874 mm | 35.292 mm  |
| 41 weeks  | 372.279 mm | 35.6506 mm |

## AC by GA - CFEF2000

**Name:** CFEF 2000

**Author:** CFEF

**Year:** 2000

**Reference:** Crequat J, Duyme M and Brodaty G, Fetal growth charts by the French College of fetal ultrasonography and the Inserm U 155 , Biometry 2000, 28, pp 435-455, 2000

**Comments:** <http://cfef.org/>

| GA (week) | AC (mm)  | 3%       | 10%      | 90%      | 97%      |
|-----------|----------|----------|----------|----------|----------|
| 15 weeks  | 95 mm    | 80.7 mm  | 85.3 mm  | 104.4 mm | 108.8 mm |
| 16 weeks  | 106.4 mm | 91.3 mm  | 96.1 mm  | 116.8 mm | 121.6 mm |
| 17 weeks  | 118 mm   | 101.7 mm | 106.8 mm | 129 mm   | 134 mm   |
| 18 weeks  | 129.2 mm | 111.8 mm | 117.4 mm | 141 mm   | 146.6 mm |
| 19 weeks  | 140.4 mm | 122 mm   | 128 mm   | 153 mm   | 158.8 mm |
| 20 weeks  | 151.4 mm | 132 mm   | 138 mm   | 164.7 mm | 171 mm   |
| 21 weeks  | 162.3 mm | 141.6 mm | 148.2 mm | 176.3 mm | 183 mm   |
| 22 weeks  | 173 mm   | 151.4 mm | 158.2 mm | 187.8 mm | 194.7 mm |
| 23 weeks  | 183.6 mm | 160.9 mm | 168.2 mm | 199 mm   | 206.3 mm |

| GA (week) | AC (mm)  | 3%       | 10%      | 90%      | 97%      |
|-----------|----------|----------|----------|----------|----------|
| 24 weeks  | 194 mm   | 170.2 mm | 177.8 mm | 210.3 mm | 218 mm   |
| 25 weeks  | 204.4 mm | 179.3 mm | 187.3 mm | 221.3 mm | 229.3 mm |
| 26 weeks  | 214.5 mm | 188.4 mm | 196.7 mm | 232.3 mm | 240.6 mm |
| 27 weeks  | 224.5 mm | 197.3 mm | 206 mm   | 243 mm   | 251.6 mm |
| 28 weeks  | 234.4 mm | 206.2 mm | 215.1 mm | 253.6 mm | 262.6 mm |
| 29 weeks  | 244 mm   | 214.7 mm | 224 mm   | 264 mm   | 273.3 mm |
| 30 weeks  | 253.6 mm | 223.2 mm | 232.8 mm | 274.2 mm | 283.7 mm |
| 31 weeks  | 263 mm   | 231.6 mm | 241.6 mm | 284.2 mm | 294.4 mm |
| 32 weeks  | 272.2 mm | 239.7 mm | 250 mm   | 294.3 mm | 304.6 mm |
| 33 weeks  | 281.2 mm | 247.8 mm | 258.4 mm | 304 mm   | 314.8 mm |
| 34 weeks  | 290.2 mm | 255.6 mm | 266.7 mm | 313.8 mm | 324.8 mm |
| 35 weeks  | 298.8 mm | 263.2 mm | 274.7 mm | 323.3 mm | 334.5 mm |
| 36 weeks  | 307.4 mm | 271 mm   | 282.6 mm | 332.5 mm | 344.3 mm |
| 37 weeks  | 316 mm   | 278.3 mm | 290.3 mm | 341.7 mm | 353.8 mm |
| 38 weeks  | 324.7 mm | 285.6 mm | 298 mm   | 350.7 mm | 363 mm   |
| 39 weeks  | 332.4 mm | 292.7 mm | 305.3 mm | 359.6 mm | 372.2 mm |
| 40 weeks  | 339 mm   | 298 mm   | 311 mm   | 367 mm   | 380 mm   |

## AC by GA - Hadlock1984

**Name:** Hadlock 1984

**Author:** Hadlock

**Year:** 1984

**Reference:** Hadlock F.P, Deter R.L, Harrist R.B. and Park S.K, Estimating fetal age: computer-assisted analysis of multiple fetal growth parameters, Radiology, 152, pp 497-501, 1984

**Comments:**

| GA (week)  | AC (cm)    | +/-1 SD |
|------------|------------|---------|
| 12 weeks   | 4.58288 cm | 1.34 cm |
| 12.5 weeks | 5.26562 cm | 1.34 cm |
| 13 weeks   | 5.94338 cm | 1.34 cm |
| 13.5 weeks | 6.61615 cm | 1.34 cm |

| <b>GA (week)</b> | <b>AC (cm)</b> | <b>+/-1 SD</b> |
|------------------|----------------|----------------|
| 14 weeks         | 7.28392 cm     | 1.34 cm        |
| 14.5 weeks       | 7.9467 cm      | 1.34 cm        |
| 15 weeks         | 8.6045 cm      | 1.34 cm        |
| 15.5 weeks       | 9.25731 cm     | 1.34 cm        |
| 16 weeks         | 9.90512 cm     | 1.34 cm        |
| 16.5 weeks       | 10.5479 cm     | 1.34 cm        |
| 17 weeks         | 11.1858 cm     | 1.34 cm        |
| 17.5 weeks       | 11.8186 cm     | 1.34 cm        |
| 18 weeks         | 12.4465 cm     | 1.34 cm        |
| 18.5 weeks       | 13.0693 cm     | 1.34 cm        |
| 19 weeks         | 13.6872 cm     | 1.34 cm        |
| 19.5 weeks       | 14.3001 cm     | 1.34 cm        |
| 20 weeks         | 14.908 cm      | 1.34 cm        |
| 20.5 weeks       | 15.5109 cm     | 1.34 cm        |
| 21 weeks         | 16.1088 cm     | 1.34 cm        |
| 21.5 weeks       | 16.7017 cm     | 1.34 cm        |
| 22 weeks         | 17.2897 cm     | 1.34 cm        |
| 22.5 weeks       | 17.8726 cm     | 1.34 cm        |
| 23 weeks         | 18.4506 cm     | 1.34 cm        |
| 23.5 weeks       | 19.0235 cm     | 1.34 cm        |
| 24 weeks         | 19.5915 cm     | 1.34 cm        |
| 24.5 weeks       | 20.1545 cm     | 1.34 cm        |
| 25 weeks         | 20.7125 cm     | 1.34 cm        |
| 25.5 weeks       | 21.2655 cm     | 1.34 cm        |
| 26 weeks         | 21.8135 cm     | 1.34 cm        |
| 26.5 weeks       | 22.3565 cm     | 1.34 cm        |
| 27 weeks         | 22.8946 cm     | 1.34 cm        |
| 27.5 weeks       | 23.4276 cm     | 1.34 cm        |
| 28 weeks         | 23.9557 cm     | 1.34 cm        |
| 28.5 weeks       | 24.4787 cm     | 1.34 cm        |
| 29 weeks         | 24.9968 cm     | 1.34 cm        |
| 29.5 weeks       | 25.5099 cm     | 1.34 cm        |

| GA (week)  | AC (cm)    | +/-1 SD |
|------------|------------|---------|
| 30 weeks   | 26.018 cm  | 1.34 cm |
| 30.5 weeks | 26.5211 cm | 1.34 cm |
| 31 weeks   | 27.0192 cm | 1.34 cm |
| 31.5 weeks | 27.5123 cm | 1.34 cm |
| 32 weeks   | 28.0005 cm | 1.34 cm |
| 32.5 weeks | 28.4836 cm | 1.34 cm |
| 33 weeks   | 28.9618 cm | 1.34 cm |
| 33.5 weeks | 29.4349 cm | 1.34 cm |
| 34 weeks   | 29.9031 cm | 1.34 cm |
| 34.5 weeks | 30.3663 cm | 1.34 cm |
| 35 weeks   | 30.8245 cm | 1.34 cm |
| 35.5 weeks | 31.2777 cm | 1.34 cm |
| 36 weeks   | 31.7259 cm | 1.34 cm |
| 36.5 weeks | 32.1691 cm | 1.34 cm |
| 37 weeks   | 32.6074 cm | 1.34 cm |
| 37.5 weeks | 33.0406 cm | 1.34 cm |
| 38 weeks   | 33.4689 cm | 1.34 cm |
| 38.5 weeks | 33.8921 cm | 1.34 cm |
| 39 weeks   | 34.3104 cm | 1.34 cm |
| 39.5 weeks | 34.7237 cm | 1.34 cm |
| 40 weeks   | 35.132 cm  | 1.34 cm |

## AC by GA - Merz1988

**Name:** Merz 1988

**Author:** Merz

**Year:** 1988

**Reference:** Merz E, Goldhofer W and Timor-Tritsch E , Ultrasound in Gynecology and Obstetrics, Textbook and Atlas, Georg Thieme Verlag , 1991

**Comments:** From Merz E, Habilitationsschrift, Mainz University Woman's Hospital, 1988

| <b>GA (week)</b> | <b>AC (mm)</b> | <b>5%</b> | <b>95%</b> |
|------------------|----------------|-----------|------------|
| 12 weeks         | 58 mm          | 40 mm     | 76 mm      |
| 13 weeks         | 68 mm          | 50 mm     | 87 mm      |
| 14 weeks         | 79 mm          | 60 mm     | 98 mm      |
| 15 weeks         | 89 mm          | 69 mm     | 109 mm     |
| 16 weeks         | 99 mm          | 79 mm     | 119 mm     |
| 17 weeks         | 110 mm         | 89 mm     | 130 mm     |
| 18 weeks         | 120 mm         | 99 mm     | 141 mm     |
| 19 weeks         | 130 mm         | 108 mm    | 152 mm     |
| 20 weeks         | 140 mm         | 118 mm    | 162 mm     |
| 21 weeks         | 151 mm         | 128 mm    | 173 mm     |
| 22 weeks         | 161 mm         | 138 mm    | 184 mm     |
| 23 weeks         | 171 mm         | 148 mm    | 195 mm     |
| 24 weeks         | 182 mm         | 158 mm    | 205 mm     |
| 25 weeks         | 192 mm         | 167 mm    | 216 mm     |
| 26 weeks         | 202 mm         | 177 mm    | 227 mm     |
| 27 weeks         | 212 mm         | 187 mm    | 238 mm     |
| 28 weeks         | 223 mm         | 197 mm    | 248 mm     |
| 29 weeks         | 233 mm         | 207 mm    | 259 mm     |
| 30 weeks         | 243 mm         | 217 mm    | 270 mm     |
| 31 weeks         | 253 mm         | 227 mm    | 280 mm     |
| 32 weeks         | 264 mm         | 237 mm    | 291 mm     |
| 33 weeks         | 274 mm         | 246 mm    | 302 mm     |
| 34 weeks         | 284 mm         | 256 mm    | 312 mm     |
| 35 weeks         | 295 mm         | 266 mm    | 323 mm     |
| 36 weeks         | 305 mm         | 276 mm    | 334 mm     |
| 37 weeks         | 315 mm         | 286 mm    | 344 mm     |
| 38 weeks         | 325 mm         | 296 mm    | 355 mm     |
| 39 weeks         | 336 mm         | 306 mm    | 365 mm     |
| 40 weeks         | 346 mm         | 316 mm    | 376 mm     |



# Biparietal Diameter (BPD by GA)

## BPD by GA - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:** Fetal growth table generated from ASUM equations with polynomial interpretation of standard deviations - equivalent to 1989 table

| GA (week) | BPD (mm)   | +/-2 SD    |
|-----------|------------|------------|
| 11 weeks  | 15.5549 mm | 2.92038 mm |
| 12 weeks  | 19.3916 mm | 3.32946 mm |
| 13 weeks  | 23.1541 mm | 3.67624 mm |
| 14 weeks  | 26.8424 mm | 3.96575 mm |
| 15 weeks  | 30.4565 mm | 4.20303 mm |
| 16 weeks  | 33.9964 mm | 4.39311 mm |
| 17 weeks  | 37.4621 mm | 4.54103 mm |
| 18 weeks  | 40.8536 mm | 4.65182 mm |
| 19 weeks  | 44.1709 mm | 4.73052 mm |
| 20 weeks  | 47.414 mm  | 4.78216 mm |
| 21 weeks  | 50.5829 mm | 4.81176 mm |
| 22 weeks  | 53.6776 mm | 4.82438 mm |
| 23 weeks  | 56.6981 mm | 4.82504 mm |
| 24 weeks  | 59.6444 mm | 4.81877 mm |
| 25 weeks  | 62.5165 mm | 4.81061 mm |
| 26 weeks  | 65.3144 mm | 4.80559 mm |
| 27 weeks  | 68.0381 mm | 4.80875 mm |
| 28 weeks  | 70.6876 mm | 4.82512 mm |

| GA (week) | BPD (mm)   | +/-2 SD    |
|-----------|------------|------------|
| 29 weeks  | 73.2629 mm | 4.85974 mm |
| 30 weeks  | 75.764 mm  | 4.91763 mm |
| 31 weeks  | 78.1909 mm | 5.00384 mm |
| 32 weeks  | 80.5436 mm | 5.1234 mm  |
| 33 weeks  | 82.8221 mm | 5.28134 mm |
| 34 weeks  | 85.0264 mm | 5.48269 mm |
| 35 weeks  | 87.1565 mm | 5.73249 mm |
| 36 weeks  | 89.2124 mm | 6.03577 mm |
| 37 weeks  | 91.1941 mm | 6.39757 mm |
| 38 weeks  | 93.1016 mm | 6.82292 mm |
| 39 weeks  | 94.9349 mm | 7.31686 mm |
| 40 weeks  | 96.694 mm  | 7.88441 mm |
| 41 weeks  | 98.3789 mm | 8.53062 mm |

## BPD by GA - CFEF2006

**Name:** CFEF 2006

**Author:** CFEF

**Year:** 2006

**Reference:** L.J. Salomon, M. Duyme, J. Crequat, G. Brodaty, C. Talmant, N. Fries and M. Althuser - CFEF - Collège Français d'Echographie Foetale, Paris, France - Ultrasound Obstet Gynecol 2006

**Comments:**

| GA (week) | BPD (mm)   | +/-1 SD   |
|-----------|------------|-----------|
| 11 weeks  | 26.1896 mm | 2.2018 mm |
| 12 weeks  | 27.8012 mm | 2.2654 mm |
| 13 weeks  | 29.6618 mm | 2.329 mm  |
| 14 weeks  | 31.7492 mm | 2.3926 mm |
| 15 weeks  | 34.0412 mm | 2.4562 mm |
| 16 weeks  | 36.5156 mm | 2.5198 mm |
| 17 weeks  | 39.1502 mm | 2.5834 mm |
| 18 weeks  | 41.9228 mm | 2.647 mm  |

| GA (week) | BPD (mm)   | +/-1 SD   |
|-----------|------------|-----------|
| 19 weeks  | 44.8112 mm | 2.7106 mm |
| 20 weeks  | 47.7932 mm | 2.7742 mm |
| 21 weeks  | 50.8466 mm | 2.8378 mm |
| 22 weeks  | 53.9492 mm | 2.9014 mm |
| 23 weeks  | 57.0788 mm | 2.965 mm  |
| 24 weeks  | 60.2132 mm | 3.0286 mm |
| 25 weeks  | 63.3302 mm | 3.0922 mm |
| 26 weeks  | 66.4076 mm | 3.1558 mm |
| 27 weeks  | 69.4232 mm | 3.2194 mm |
| 28 weeks  | 72.3548 mm | 3.283 mm  |
| 29 weeks  | 75.1802 mm | 3.3466 mm |
| 30 weeks  | 77.8772 mm | 3.4102 mm |
| 31 weeks  | 80.4236 mm | 3.4738 mm |
| 32 weeks  | 82.7972 mm | 3.5374 mm |
| 33 weeks  | 84.9758 mm | 3.601 mm  |
| 34 weeks  | 86.9372 mm | 3.6646 mm |
| 35 weeks  | 88.6592 mm | 3.7282 mm |
| 36 weeks  | 90.1196 mm | 3.7918 mm |
| 37 weeks  | 91.2962 mm | 3.8554 mm |
| 38 weeks  | 92.1668 mm | 3.919 mm  |
| 39 weeks  | 92.7092 mm | 3.9826 mm |
| 40 weeks  | 92.9012 mm | 4.0462 mm |
| 41 weeks  | 92.7206 mm | 4.1098 mm |

## BPD by GA - Hadlock1984

**Name:** Hadlock 1984

**Author:** Hadlock

**Year:** 1984

**Reference:** Hadlock F.P, Deter R.L, Harrist R.B. and Park S.K, Estimating fetal age: computer-assisted analysis of multiple fetal growth parameters, Radiology, 152, pp 497-501, 1984

**Comments:**

| <b>GA (week)</b> | <b>BPD (cm)</b> | <b>+/-1 SD</b> |
|------------------|-----------------|----------------|
| 12 weeks         | 1.73459 cm      | 0.3 cm         |
| 12.5 weeks       | 1.92586 cm      | 0.3 cm         |
| 13 weeks         | 2.11598 cm      | 0.3 cm         |
| 13.5 weeks       | 2.30492 cm      | 0.3 cm         |
| 14 weeks         | 2.49262 cm      | 0.3 cm         |
| 14.5 weeks       | 2.67903 cm      | 0.3 cm         |
| 15 weeks         | 2.86413 cm      | 0.3 cm         |
| 15.5 weeks       | 3.04784 cm      | 0.3 cm         |
| 16 weeks         | 3.23014 cm      | 0.3 cm         |
| 16.5 weeks       | 3.41098 cm      | 0.3 cm         |
| 17 weeks         | 3.59031 cm      | 0.3 cm         |
| 17.5 weeks       | 3.76808 cm      | 0.3 cm         |
| 18 weeks         | 3.94425 cm      | 0.3 cm         |
| 18.5 weeks       | 4.11877 cm      | 0.3 cm         |
| 19 weeks         | 4.2916 cm       | 0.3 cm         |
| 19.5 weeks       | 4.46269 cm      | 0.3 cm         |
| 20 weeks         | 4.632 cm        | 0.3 cm         |
| 20.5 weeks       | 4.79948 cm      | 0.3 cm         |
| 21 weeks         | 4.96508 cm      | 0.3 cm         |
| 21.5 weeks       | 5.12876 cm      | 0.3 cm         |
| 22 weeks         | 5.29047 cm      | 0.3 cm         |
| 22.5 weeks       | 5.45017 cm      | 0.3 cm         |
| 23 weeks         | 5.60781 cm      | 0.3 cm         |
| 23.5 weeks       | 5.76335 cm      | 0.3 cm         |
| 24 weeks         | 5.91674 cm      | 0.3 cm         |
| 24.5 weeks       | 6.06793 cm      | 0.3 cm         |
| 25 weeks         | 6.21687 cm      | 0.3 cm         |
| 25.5 weeks       | 6.36354 cm      | 0.3 cm         |
| 26 weeks         | 6.50786 cm      | 0.3 cm         |
| 26.5 weeks       | 6.64981 cm      | 0.3 cm         |
| 27 weeks         | 6.78934 cm      | 0.3 cm         |

| GA (week)  | BPD (cm)   | +/-1 SD |
|------------|------------|---------|
| 27.5 weeks | 6.92639 cm | 0.3 cm  |
| 28 weeks   | 7.06093 cm | 0.3 cm  |
| 28.5 weeks | 7.1929 cm  | 0.3 cm  |
| 29 weeks   | 7.32227 cm | 0.3 cm  |
| 29.5 weeks | 7.44899 cm | 0.3 cm  |
| 30 weeks   | 7.573 cm   | 0.3 cm  |
| 30.5 weeks | 7.69427 cm | 0.3 cm  |
| 31 weeks   | 7.81275 cm | 0.3 cm  |
| 31.5 weeks | 7.92839 cm | 0.3 cm  |
| 32 weeks   | 8.04115 cm | 0.3 cm  |
| 32.5 weeks | 8.15098 cm | 0.3 cm  |
| 33 weeks   | 8.25784 cm | 0.3 cm  |
| 33.5 weeks | 8.36168 cm | 0.3 cm  |
| 34 weeks   | 8.46246 cm | 0.3 cm  |
| 34.5 weeks | 8.56012 cm | 0.3 cm  |
| 35 weeks   | 8.65462 cm | 0.3 cm  |
| 35.5 weeks | 8.74593 cm | 0.3 cm  |
| 36 weeks   | 8.83398 cm | 0.3 cm  |
| 36.5 weeks | 8.91875 cm | 0.3 cm  |
| 37 weeks   | 9.00017 cm | 0.3 cm  |
| 37.5 weeks | 9.0782 cm  | 0.3 cm  |
| 38 weeks   | 9.15281 cm | 0.3 cm  |
| 38.5 weeks | 9.22394 cm | 0.3 cm  |
| 39 weeks   | 9.29154 cm | 0.3 cm  |
| 39.5 weeks | 9.35558 cm | 0.3 cm  |
| 40 weeks   | 9.416 cm   | 0.3 cm  |

## BPD by GA - Merz1988

**Name:** Merz 1988

**Author:** Merz

**Year:** 1988

**Reference:** Merz E, Goldhofer W and Timor-Tritsch E , Ultrasound in Gynecology and Obstetrics, Textbook and Atlas, Georg Thieme Verlag , 1991

**Comments:** From Merz E, Habilitationsschrift, Mainz University Woman's Hospital, 1988

| GA (week) | BPD (mm) | 5%    | 95%    |
|-----------|----------|-------|--------|
| 12 weeks  | 20 mm    | 15 mm | 24 mm  |
| 13 weeks  | 24 mm    | 19 mm | 28 mm  |
| 14 weeks  | 28 mm    | 23 mm | 32 mm  |
| 15 weeks  | 31 mm    | 27 mm | 36 mm  |
| 16 weeks  | 35 mm    | 30 mm | 40 mm  |
| 17 weeks  | 39 mm    | 34 mm | 44 mm  |
| 18 weeks  | 43 mm    | 38 mm | 48 mm  |
| 19 weeks  | 46 mm    | 41 mm | 51 mm  |
| 20 weeks  | 50 mm    | 45 mm | 55 mm  |
| 21 weeks  | 53 mm    | 48 mm | 58 mm  |
| 22 weeks  | 56 mm    | 51 mm | 62 mm  |
| 23 weeks  | 60 mm    | 54 mm | 65 mm  |
| 24 weeks  | 63 mm    | 57 mm | 68 mm  |
| 25 weeks  | 66 mm    | 60 mm | 71 mm  |
| 26 weeks  | 69 mm    | 63 mm | 74 mm  |
| 27 weeks  | 72 mm    | 66 mm | 77 mm  |
| 28 weeks  | 74 mm    | 69 mm | 80 mm  |
| 29 weeks  | 77 mm    | 71 mm | 83 mm  |
| 30 weeks  | 79 mm    | 74 mm | 85 mm  |
| 31 weeks  | 82 mm    | 76 mm | 88 mm  |
| 32 weeks  | 84 mm    | 78 mm | 90 mm  |
| 33 weeks  | 86 mm    | 80 mm | 92 mm  |
| 34 weeks  | 89 mm    | 82 mm | 95 mm  |
| 35 weeks  | 91 mm    | 84 mm | 97 mm  |
| 36 weeks  | 93 mm    | 86 mm | 99 mm  |
| 37 weeks  | 94 mm    | 88 mm | 101 mm |

| GA (week) | BPD (mm) | 5%    | 95%    |
|-----------|----------|-------|--------|
| 38 weeks  | 96 mm    | 90 mm | 103 mm |
| 39 weeks  | 98 mm    | 91 mm | 104 mm |
| 40 weeks  | 99 mm    | 93 mm | 106 mm |

## Biparietal Diameter outer - outer (BPDoo by GA)

### BPD by GA - ISUOG\_Leung2008

**Name:** ISUOG Leung 2008 (BPDoo)

**Author:** ISUOG\_Leung

**Year:** 2008

**Reference:** Fetal biometry in ethnic Chinese: biparietal diameter, head circumference, abdominal circumference and femur length T. N. LEUNG, M. W. PANG, S. S. DALJIT, T. Y. LEUNG, C. F. POON, S. M. WONG and T. K. LAU Fetal Medicine Unit, Department of Obstetrics and Gynaecology, The Chinese University of Hong Kong, The Prince of Wales Hospital, Hong Kong

**Comments:**

| Gest Age (week) | BPD (cm)   | +/-1 SD     |
|-----------------|------------|-------------|
| 12 weeks        | 2.0546 cm  | 0.265289 cm |
| 12.5 weeks      | 2.21683 cm | 0.267016 cm |
| 13 weeks        | 2.38029 cm | 0.268743 cm |
| 13.5 weeks      | 2.54487 cm | 0.270471 cm |
| 14 weeks        | 2.71044 cm | 0.272198 cm |
| 14.5 weeks      | 2.87687 cm | 0.273925 cm |
| 15 weeks        | 3.04402 cm | 0.275652 cm |
| 15.5 weeks      | 3.21176 cm | 0.27738 cm  |
| 16 weeks        | 3.37998 cm | 0.279107 cm |
| 16.5 weeks      | 3.54853 cm | 0.280834 cm |
| 17 weeks        | 3.71728 cm | 0.282562 cm |

| Gest Age (week) | BPD (cm)   | +/-1 SD     |
|-----------------|------------|-------------|
| 17.5 weeks      | 3.88612 cm | 0.284289 cm |
| 18 weeks        | 4.0549 cm  | 0.286016 cm |
| 18.5 weeks      | 4.2235 cm  | 0.287743 cm |
| 19 weeks        | 4.39179 cm | 0.289471 cm |
| 19.5 weeks      | 4.55964 cm | 0.291198 cm |
| 20 weeks        | 4.72692 cm | 0.292925 cm |
| 20.5 weeks      | 4.89349 cm | 0.294652 cm |
| 21 weeks        | 5.05924 cm | 0.29638 cm  |
| 21.5 weeks      | 5.22402 cm | 0.298107 cm |
| 22 weeks        | 5.38771 cm | 0.299834 cm |
| 22.5 weeks      | 5.55019 cm | 0.301561 cm |
| 23 weeks        | 5.71131 cm | 0.303289 cm |
| 23.5 weeks      | 5.87096 cm | 0.305016 cm |
| 24 weeks        | 6.02899 cm | 0.306743 cm |
| 24.5 weeks      | 6.18529 cm | 0.30847 cm  |
| 25 weeks        | 6.33972 cm | 0.310198 cm |
| 25.5 weeks      | 6.49215 cm | 0.311925 cm |
| 26 weeks        | 6.64245 cm | 0.313652 cm |
| 26.5 weeks      | 6.79049 cm | 0.315379 cm |
| 27 weeks        | 6.93614 cm | 0.317107 cm |
| 27.5 weeks      | 7.07928 cm | 0.318834 cm |
| 28 weeks        | 7.21977 cm | 0.320561 cm |
| 28.5 weeks      | 7.35749 cm | 0.322289 cm |
| 29 weeks        | 7.49229 cm | 0.324016 cm |
| 29.5 weeks      | 7.62406 cm | 0.325743 cm |
| 30 weeks        | 7.75267 cm | 0.32747 cm  |
| 30.5 weeks      | 7.87797 cm | 0.329198 cm |
| 31 weeks        | 7.99986 cm | 0.330925 cm |
| 31.5 weeks      | 8.11818 cm | 0.332652 cm |
| 32 weeks        | 8.23282 cm | 0.334379 cm |
| 32.5 weeks      | 8.34365 cm | 0.336107 cm |
| 33 weeks        | 8.45053 cm | 0.337834 cm |



| Gest Age (week) | BPD (cm)   | +/-1 SD     |
|-----------------|------------|-------------|
| 33.5 weeks      | 8.55334 cm | 0.339561 cm |
| 34 weeks        | 8.65194 cm | 0.341288 cm |
| 34.5 weeks      | 8.74621 cm | 0.343016 cm |
| 35 weeks        | 8.83602 cm | 0.344743 cm |
| 35.5 weeks      | 8.92123 cm | 0.34647 cm  |
| 36 weeks        | 9.00172 cm | 0.348197 cm |
| 36.5 weeks      | 9.07735 cm | 0.349925 cm |
| 37 weeks        | 9.148 cm   | 0.351652 cm |
| 37.5 weeks      | 9.21354 cm | 0.353379 cm |
| 38 weeks        | 9.27384 cm | 0.355106 cm |
| 38.5 weeks      | 9.32877 cm | 0.356834 cm |
| 39 weeks        | 9.37819 cm | 0.358561 cm |
| 39.5 weeks      | 9.42198 cm | 0.360288 cm |
| 40 weeks        | 9.46002 cm | 0.362016 cm |
| 40.5 weeks      | 9.49216 cm | 0.363743 cm |
| 41 weeks        | 9.51828 cm | 0.36547 cm  |
| 41.5 weeks      | 9.53825 cm | 0.367197 cm |
| 42 weeks        | 9.55193 cm | 0.368925 cm |

## Biparietal Diameter outer - inner (BPDoi by GA)

### BPD by GA - ISUOG\_Leung2008

**Name:** ISUOG Leung 2008 (BPDoi)

**Author:** ISUOG\_Leung

**Year:** 2008

**Reference:** Fetal biometry in ethnic Chinese: biparietal diameter, head circumference, abdominal circumference and femur length T. N. LEUNG, M. W. PANG, S. S. DALJIT, T. Y. LEUNG, C. F. POON,

S. M. WONG and T. K. LAU Fetal Medicine Unit, Department of Obstetrics and Gynaecology, The Chinese University of Hong Kong, The Prince of Wales Hospital, Hong Kong

**Comments:**

| Gest Age (week) | BPD (cm)   | +/-1 SD     |
|-----------------|------------|-------------|
| 12 weeks        | 1.97522 cm | 0.262384 cm |
| 12.5 weeks      | 2.13807 cm | 0.264085 cm |
| 13 weeks        | 2.30199 cm | 0.265785 cm |
| 13.5 weeks      | 2.46685 cm | 0.267485 cm |
| 14 weeks        | 2.63254 cm | 0.269186 cm |
| 14.5 weeks      | 2.79892 cm | 0.270886 cm |
| 15 weeks        | 2.96589 cm | 0.272586 cm |
| 15.5 weeks      | 3.13331 cm | 0.274287 cm |
| 16 weeks        | 3.30106 cm | 0.275987 cm |
| 16.5 weeks      | 3.46903 cm | 0.277687 cm |
| 17 weeks        | 3.63709 cm | 0.279388 cm |
| 17.5 weeks      | 3.80511 cm | 0.281088 cm |
| 18 weeks        | 3.97298 cm | 0.282788 cm |
| 18.5 weeks      | 4.14057 cm | 0.284489 cm |
| 19 weeks        | 4.30776 cm | 0.286189 cm |
| 19.5 weeks      | 4.47442 cm | 0.287889 cm |
| 20 weeks        | 4.64045 cm | 0.28959 cm  |
| 20.5 weeks      | 4.80571 cm | 0.29129 cm  |
| 21 weeks        | 4.97007 cm | 0.29299 cm  |
| 21.5 weeks      | 5.13343 cm | 0.294691 cm |
| 22 weeks        | 5.29566 cm | 0.296391 cm |
| 22.5 weeks      | 5.45662 cm | 0.298091 cm |
| 23 weeks        | 5.61622 cm | 0.299792 cm |
| 23.5 weeks      | 5.77431 cm | 0.301492 cm |
| 24 weeks        | 5.93078 cm | 0.303192 cm |
| 24.5 weeks      | 6.0855 cm  | 0.304892 cm |
| 25 weeks        | 6.23836 cm | 0.306593 cm |
| 25.5 weeks      | 6.38923 cm | 0.308293 cm |

| <b>Gest Age (week)</b> | <b>BPD (cm)</b> | <b>+/-1 SD</b> |
|------------------------|-----------------|----------------|
| 26 weeks               | 6.53798 cm      | 0.309993 cm    |
| 26.5 weeks             | 6.68451 cm      | 0.311694 cm    |
| 27 weeks               | 6.82868 cm      | 0.313394 cm    |
| 27.5 weeks             | 6.97037 cm      | 0.315094 cm    |
| 28 weeks               | 7.10946 cm      | 0.316795 cm    |
| 28.5 weeks             | 7.24582 cm      | 0.318495 cm    |
| 29 weeks               | 7.37935 cm      | 0.320195 cm    |
| 29.5 weeks             | 7.5099 cm       | 0.321896 cm    |
| 30 weeks               | 7.63737 cm      | 0.323596 cm    |
| 30.5 weeks             | 7.76162 cm      | 0.325296 cm    |
| 31 weeks               | 7.88254 cm      | 0.326997 cm    |
| 31.5 weeks             | 8.00001 cm      | 0.328697 cm    |
| 32 weeks               | 8.1139 cm       | 0.330397 cm    |
| 32.5 weeks             | 8.22408 cm      | 0.332098 cm    |
| 33 weeks               | 8.33045 cm      | 0.333798 cm    |
| 33.5 weeks             | 8.43286 cm      | 0.335498 cm    |
| 34 weeks               | 8.53122 cm      | 0.337199 cm    |
| 34.5 weeks             | 8.62538 cm      | 0.338899 cm    |
| 35 weeks               | 8.71523 cm      | 0.340599 cm    |
| 35.5 weeks             | 8.80064 cm      | 0.3423 cm      |
| 36 weeks               | 8.8815 cm       | 0.344 cm       |
| 36.5 weeks             | 8.95769 cm      | 0.3457 cm      |
| 37 weeks               | 9.02907 cm      | 0.347401 cm    |
| 37.5 weeks             | 9.09552 cm      | 0.349101 cm    |
| 38 weeks               | 9.15694 cm      | 0.350801 cm    |
| 38.5 weeks             | 9.21318 cm      | 0.352501 cm    |
| 39 weeks               | 9.26414 cm      | 0.354202 cm    |
| 39.5 weeks             | 9.30968 cm      | 0.355902 cm    |
| 40 weeks               | 9.34969 cm      | 0.357602 cm    |
| 40.5 weeks             | 9.38404 cm      | 0.359303 cm    |
| 41 weeks               | 9.41261 cm      | 0.361003 cm    |
| 41.5 weeks             | 9.43529 cm      | 0.362703 cm    |

| Gest Age (week) | BPD (cm)   | +/-1 SD     |
|-----------------|------------|-------------|
| 42 weeks        | 9.45194 cm | 0.364404 cm |

## Crown-Rump Length (CRL by GA)

### CRL by GA - Hadlock1992

**Name:** Hadlock\_1992

**Author:** Hadlock

**Year:** 1992

**Reference:** Fetal Crown-Rump Length: Reevaluation of Relation to Menstrual Age (5-18 weeks) with High-Resolution Real-Time US

**Comments:**

| GA (week)  | CRL (cm)    | +/-1 SD  |
|------------|-------------|----------|
| 5 weeks    | 0.222017 cm | 0.132 cm |
| 5.5 weeks  | 0.323257 cm | 0.132 cm |
| 6 weeks    | 0.458221 cm | 0.132 cm |
| 6.5 weeks  | 0.633076 cm | 0.132 cm |
| 7 weeks    | 0.853455 cm | 0.132 cm |
| 7.5 weeks  | 1.12393 cm  | 0.132 cm |
| 8 weeks    | 1.44749 cm  | 0.132 cm |
| 8.5 weeks  | 1.82517 cm  | 0.132 cm |
| 9 weeks    | 2.25575 cm  | 0.132 cm |
| 9.5 weeks  | 2.73569 cm  | 0.132 cm |
| 10 weeks   | 3.25926 cm  | 0.132 cm |
| 10.5 weeks | 3.81889 cm  | 0.132 cm |
| 11 weeks   | 4.40564 cm  | 0.132 cm |
| 11.5 weeks | 5.00986 cm  | 0.132 cm |
| 12 weeks   | 5.62178 cm  | 0.132 cm |
| 12.5 weeks | 6.23223 cm  | 0.132 cm |

| GA (week)  | CRL (cm)   | +/-1 SD  |
|------------|------------|----------|
| 13 weeks   | 6.83319 cm | 0.132 cm |
| 13.5 weeks | 7.41828 cm | 0.132 cm |
| 14 weeks   | 7.98308 cm | 0.132 cm |
| 14.5 weeks | 8.5254 cm  | 0.132 cm |
| 15 weeks   | 9.04534 cm | 0.132 cm |
| 15.5 weeks | 9.54531 cm | 0.132 cm |
| 16 weeks   | 10.03 cm   | 0.132 cm |
| 16.5 weeks | 10.5061 cm | 0.132 cm |
| 17 weeks   | 10.9826 cm | 0.132 cm |
| 17.5 weeks | 11.4704 cm | 0.132 cm |
| 18 weeks   | 11.9826 cm | 0.132 cm |
| 18.5 weeks | 12.5346 cm | 0.132 cm |
| 19 weeks   | 13.1446 cm | 0.132 cm |
| 19.5 weeks | 13.8342 cm | 0.132 cm |

## CRL by GA - Hansmann1986

**Name:** Hansmann\_1986

**Author:** Hansmann

**Year:** 1986

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, Ultrasound Diagnosis in Obstetrics and Gynecology, Springer-Verlag, New York, 1986

**Comments:**

| GA (wd) | CRL (mm) | +/-2 SD |
|---------|----------|---------|
| 7w1d    | 6.9 mm   | 4.6 mm  |
| 7w2d    | 7.6 mm   | 4.85 mm |
| 7w3d    | 8.3 mm   | 5.1 mm  |
| 7w4d    | 9 mm     | 5.35 mm |
| 7w5d    | 9.6 mm   | 5.65 mm |
| 7w6d    | 10.2 mm  | 5.9 mm  |
| 8w0d    | 10.8 mm  | 6.1 mm  |

| <b>GA (wd)</b> | <b>CRL (mm)</b> | <b>+/-2 SD</b> |
|----------------|-----------------|----------------|
| 8w1d           | 11.4 mm         | 6.4 mm         |
| 8w2d           | 12.1 mm         | 6.65 mm        |
| 8w3d           | 12.7 mm         | 6.9 mm         |
| 8w4d           | 13.3 mm         | 7.15 mm        |
| 8w5d           | 14 mm           | 7.4 mm         |
| 8w6d           | 14.7 mm         | 7.7 mm         |
| 9w0d           | 15.4 mm         | 7.95 mm        |
| 9w1d           | 16.2 mm         | 8.2 mm         |
| 9w3d           | 17.8 mm         | 8.7 mm         |
| 9w5d           | 19.6 mm         | 9.25 mm        |
| 10w0d          | 21.5 mm         | 9.75 mm        |
| 10w2d          | 23.6 mm         | 10.3 mm        |
| 10w4d          | 25.9 mm         | 10.75 mm       |
| 10w6d          | 28.3 mm         | 11.3 mm        |
| 11w2d          | 32.4 mm         | 12.05 mm       |
| 11w4d          | 35.3 mm         | 12.6 mm        |
| 11w6d          | 38.3 mm         | 13.1 mm        |
| 12w2d          | 43.2 mm         | 13.9 mm        |
| 12w4d          | 46.6 mm         | 14.55 mm       |
| 12w6d          | 50.2 mm         | 14.9 mm        |
| 13w2d          | 55.6 mm         | 15.65 mm       |
| 13w4d          | 59.4 mm         | 16.15 mm       |
| 13w6d          | 63.1 mm         | 16.7 mm        |
| 14w2d          | 68.8 mm         | 17.5 mm        |
| 14w4d          | 72.6 mm         | 17.5 mm        |
| 14w6d          | 76.3 mm         | 18.5 mm        |
| 15w2d          | 81.8 mm         | 19.3 mm        |
| 15w4d          | 85.4 mm         | 19.8 mm        |
| 15w6d          | 88.9 mm         | 20.3 mm        |
| 16w2d          | 93.9 mm         | 21.1 mm        |
| 16w4d          | 97.1 mm         | 21.6 mm        |
| 16w6d          | 100.1 mm        | 22.1 mm        |

| GA (wd) | CRL (mm) | +/-2 SD  |
|---------|----------|----------|
| 17w2d   | 104.4 mm | 22.9 mm  |
| 17w4d   | 107 mm   | 23.4 mm  |
| 17w6d   | 109.5 mm | 23.9 mm  |
| 18w2d   | 113 mm   | 24.7 mm  |
| 18w4d   | 115.1 mm | 25.25 mm |
| 18w6d   | 117.2 mm | 25.7 mm  |
| 19w2d   | 120 mm   | 26.5 mm  |
| 19w4d   | 121.9 mm | 27.05 mm |
| 19w6d   | 123.7 mm | 27.5 mm  |
| 20w1d   | 125.5 mm | 28.05 mm |
| 20w3d   | 127.4 mm | 28.55 mm |
| 20w5d   | 129.4 mm | 29.1 mm  |
| 21w0d   | 131.6 mm | 29.6 mm  |
| 21w1d   | 132.8 mm | 29.85 mm |
| 21w2d   | 134 mm   | 30.05 mm |

## Femur Length (FL by GA)

### FL by GA - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:** Fetal growth table generated from ASUM equations with polynomial interpretation of standard deviations

| GA (week) | FL (mm)   | +/-2 SD    |
|-----------|-----------|------------|
| 11 weeks  | 5.7551 mm | 1.90788 mm |
| 12 weeks  | 8.7962 mm | 2.42423 mm |

| <b>GA (week)</b> | <b>FL (mm)</b> | <b>+/-2 SD</b> |
|------------------|----------------|----------------|
| 13 weeks         | 11.8149 mm     | 2.88716 mm     |
| 14 weeks         | 14.8088 mm     | 3.2994 mm      |
| 15 weeks         | 17.7755 mm     | 3.66367 mm     |
| 16 weeks         | 20.7126 mm     | 3.98271 mm     |
| 17 weeks         | 23.6177 mm     | 4.25924 mm     |
| 18 weeks         | 26.4884 mm     | 4.49599 mm     |
| 19 weeks         | 29.3223 mm     | 4.6957 mm      |
| 20 weeks         | 32.117 mm      | 4.8611 mm      |
| 21 weeks         | 34.8701 mm     | 4.99491 mm     |
| 22 weeks         | 37.5792 mm     | 5.09986 mm     |
| 23 weeks         | 40.2419 mm     | 5.17869 mm     |
| 24 weeks         | 42.8558 mm     | 5.23413 mm     |
| 25 weeks         | 45.4185 mm     | 5.2689 mm      |
| 26 weeks         | 47.9276 mm     | 5.28574 mm     |
| 27 weeks         | 50.3807 mm     | 5.28737 mm     |
| 28 weeks         | 52.7754 mm     | 5.27652 mm     |
| 29 weeks         | 55.1093 mm     | 5.25593 mm     |
| 30 weeks         | 57.38 mm       | 5.22833 mm     |
| 31 weeks         | 59.5851 mm     | 5.19644 mm     |
| 32 weeks         | 61.7222 mm     | 5.16299 mm     |
| 33 weeks         | 63.7889 mm     | 5.13072 mm     |
| 34 weeks         | 65.7828 mm     | 5.10236 mm     |
| 35 weeks         | 67.7015 mm     | 5.08063 mm     |
| 36 weeks         | 69.5426 mm     | 5.06827 mm     |
| 37 weeks         | 71.3037 mm     | 5.068 mm       |
| 38 weeks         | 72.9824 mm     | 5.08255 mm     |
| 39 weeks         | 74.5763 mm     | 5.11466 mm     |
| 40 weeks         | 76.083 mm      | 5.16706 mm     |
| 41 weeks         | 77.5001 mm     | 5.24247 mm     |



## FL by GA - CFEF2000

**Name:** CFEF 2000

**Author:** CFEF

**Year:** 2000

**Reference:** Crequat J, Duyme M and Brodaty G, Fetal growth charts by the French College of fetal ultrasonography and the Inserm U 155 , Biometry 2000, 28, pp 435-455, 2000

**Comments:** <http://cfef.org/>

| GA (week) | FL (mm)  | 3%       | 10%      | 90%      | 97%      |
|-----------|----------|----------|----------|----------|----------|
| 12 weeks  | 6.33 mm  | 2.76 mm  | 3.89 mm  | 8.79 mm  | 10 mm    |
| 13 weeks  | 9.88 mm  | 6.09 mm  | 7.29 mm  | 12.42 mm | 13.65 mm |
| 14 weeks  | 13.33 mm | 9.4 mm   | 10.65 mm | 16 mm    | 17.27 mm |
| 15 weeks  | 16.66 mm | 12.56 mm | 13.87 mm | 19.44 mm | 20.77 mm |
| 16 weeks  | 19.95 mm | 15.7 mm  | 17 mm    | 22.8 mm  | 24.18 mm |
| 17 weeks  | 23.12 mm | 18.74 mm | 20.12 mm | 26.13 mm | 27.53 mm |
| 18 weeks  | 26.23 mm | 21.69 mm | 23.14 mm | 29.3 mm  | 30.8 mm  |
| 19 weeks  | 29.25 mm | 24.59 mm | 26.06 mm | 32.44 mm | 33.91 mm |
| 20 weeks  | 32.23 mm | 27.42 mm | 28.94 mm | 35.48 mm | 37.03 mm |
| 21 weeks  | 35.05 mm | 30.12 mm | 31.72 mm | 38.41 mm | 40 mm    |
| 22 weeks  | 37.87 mm | 32.83 mm | 34.39 mm | 41.3 mm  | 42.91 mm |
| 23 weeks  | 40.5 mm  | 35.34 mm | 37 mm    | 44.03 mm | 45.71 mm |
| 24 weeks  | 43.16 mm | 37.89 mm | 39.58 mm | 46.75 mm | 48.42 mm |
| 25 weeks  | 45.69 mm | 40.33 mm | 42.04 mm | 49.36 mm | 51.08 mm |
| 26 weeks  | 48.17 mm | 42.66 mm | 44.4 mm  | 51.88 mm | 53.62 mm |
| 27 weeks  | 50.53 mm | 44.95 mm | 46.72 mm | 54.32 mm | 56.09 mm |
| 28 weeks  | 52.8 mm  | 47.13 mm | 48.94 mm | 56.64 mm | 58.45 mm |
| 29 weeks  | 54.94 mm | 49.22 mm | 51.06 mm | 58.91 mm | 60.72 mm |
| 30 weeks  | 57.13 mm | 51.3 mm  | 53.14 mm | 61.08 mm | 62.92 mm |
| 31 weeks  | 59.15 mm | 53.26 mm | 55.13 mm | 63.14 mm | 65.04 mm |
| 32 weeks  | 61.11 mm | 55.12 mm | 57.04 mm | 65.19 mm | 67.07 mm |
| 33 weeks  | 63 mm    | 56.96 mm | 58.87 mm | 67.1 mm  | 69.03 mm |
| 34 weeks  | 64.76 mm | 58.69 mm | 60.62 mm | 68.88 mm | 70.84 mm |

| GA (week) | FL (mm)  | 3%       | 10%      | 90%      | 97%      |
|-----------|----------|----------|----------|----------|----------|
| 35 weeks  | 66.47 mm | 60.33 mm | 62.29 mm | 70.65 mm | 72.63 mm |
| 36 weeks  | 68.13 mm | 61.9 mm  | 63.89 mm | 72.34 mm | 74.3 mm  |
| 37 weeks  | 69.63 mm | 63.4 mm  | 65.36 mm | 73.91 mm | 75.89 mm |
| 38 weeks  | 71.11 mm | 64.81 mm | 66.79 mm | 75.38 mm | 77.41 mm |
| 39 weeks  | 72.48 mm | 66.16 mm | 68.19 mm | 76.81 mm | 78.84 mm |
| 40 weeks  | 73.79 mm | 67.42 mm | 69.47 mm | 78.14 mm | 80.17 mm |
| 41 weeks  | 74 mm    | 68 mm    | 70 mm    | 79 mm    | 81 mm    |

## FL by GA - Hadlock1984

**Name:** Hadlock 1984

**Author:** Hadlock

**Year:** 1984

**Reference:** Hadlock F.P, Deter R.L, Harrist R.B. and Park S.K, Estimating fetal age: computer-assisted analysis of multiple fetal growth parameters, Radiology, 152, pp 497-501, 1984

**Comments:**

| GA (week)  | FL (cm)    | +/-1 SD |
|------------|------------|---------|
| 12 weeks   | 0.7244 cm  | 0.3 cm  |
| 12.5 weeks | 0.89625 cm | 0.3 cm  |
| 13 weeks   | 1.0664 cm  | 0.3 cm  |
| 13.5 weeks | 1.23485 cm | 0.3 cm  |
| 14 weeks   | 1.4016 cm  | 0.3 cm  |
| 14.5 weeks | 1.56665 cm | 0.3 cm  |
| 15 weeks   | 1.73 cm    | 0.3 cm  |
| 15.5 weeks | 1.89165 cm | 0.3 cm  |
| 16 weeks   | 2.0516 cm  | 0.3 cm  |
| 16.5 weeks | 2.20985 cm | 0.3 cm  |
| 17 weeks   | 2.3664 cm  | 0.3 cm  |
| 17.5 weeks | 2.52125 cm | 0.3 cm  |
| 18 weeks   | 2.6744 cm  | 0.3 cm  |
| 18.5 weeks | 2.82585 cm | 0.3 cm  |

| <b>GA (week)</b> | <b>FL (cm)</b> | <b>+/-1 SD</b> |
|------------------|----------------|----------------|
| 19 weeks         | 2.9756 cm      | 0.3 cm         |
| 19.5 weeks       | 3.12365 cm     | 0.3 cm         |
| 20 weeks         | 3.27 cm        | 0.3 cm         |
| 20.5 weeks       | 3.41465 cm     | 0.3 cm         |
| 21 weeks         | 3.5576 cm      | 0.3 cm         |
| 21.5 weeks       | 3.69885 cm     | 0.3 cm         |
| 22 weeks         | 3.8384 cm      | 0.3 cm         |
| 22.5 weeks       | 3.97625 cm     | 0.3 cm         |
| 23 weeks         | 4.1124 cm      | 0.3 cm         |
| 23.5 weeks       | 4.24685 cm     | 0.3 cm         |
| 24 weeks         | 4.3796 cm      | 0.3 cm         |
| 24.5 weeks       | 4.51065 cm     | 0.3 cm         |
| 25 weeks         | 4.64 cm        | 0.3 cm         |
| 25.5 weeks       | 4.76765 cm     | 0.3 cm         |
| 26 weeks         | 4.8936 cm      | 0.3 cm         |
| 26.5 weeks       | 5.01785 cm     | 0.3 cm         |
| 27 weeks         | 5.1404 cm      | 0.3 cm         |
| 27.5 weeks       | 5.26125 cm     | 0.3 cm         |
| 28 weeks         | 5.3804 cm      | 0.3 cm         |
| 28.5 weeks       | 5.49785 cm     | 0.3 cm         |
| 29 weeks         | 5.6136 cm      | 0.3 cm         |
| 29.5 weeks       | 5.72765 cm     | 0.3 cm         |
| 30 weeks         | 5.84 cm        | 0.3 cm         |
| 30.5 weeks       | 5.95065 cm     | 0.3 cm         |
| 31 weeks         | 6.0596 cm      | 0.3 cm         |
| 31.5 weeks       | 6.16685 cm     | 0.3 cm         |
| 32 weeks         | 6.2724 cm      | 0.3 cm         |
| 32.5 weeks       | 6.37625 cm     | 0.3 cm         |
| 33 weeks         | 6.4784 cm      | 0.3 cm         |
| 33.5 weeks       | 6.57885 cm     | 0.3 cm         |
| 34 weeks         | 6.6776 cm      | 0.3 cm         |
| 34.5 weeks       | 6.77465 cm     | 0.3 cm         |

| GA (week)  | FL (cm)    | +/-1 SD |
|------------|------------|---------|
| 35 weeks   | 6.87 cm    | 0.3 cm  |
| 35.5 weeks | 6.96365 cm | 0.3 cm  |
| 36 weeks   | 7.0556 cm  | 0.3 cm  |
| 36.5 weeks | 7.14585 cm | 0.3 cm  |
| 37 weeks   | 7.2344 cm  | 0.3 cm  |
| 37.5 weeks | 7.32125 cm | 0.3 cm  |
| 38 weeks   | 7.4064 cm  | 0.3 cm  |
| 38.5 weeks | 7.48985 cm | 0.3 cm  |
| 39 weeks   | 7.5716 cm  | 0.3 cm  |
| 39.5 weeks | 7.65165 cm | 0.3 cm  |
| 40 weeks   | 7.73 cm    | 0.3 cm  |

## FL by GA - ISUOG\_Leung2008

**Name:** ISUOG Leung 2008

**Author:** ISUOG\_Leung

**Year:** 2008

**Reference:** Fetal biometry in ethnic Chinese: biparietal diameter, head circumference, abdominal circumference and femur length T. N. LEUNG, M. W. PANG, S. S. DALJIT, T. Y. LEUNG, C. F. POON, S. M. WONG and T. K. LAU Fetal Medicine Unit, Department of Obstetrics and Gynaecology, The Chinese University of Hong Kong, The Prince of Wales Hospital, Hong Kong

**Comments:**

| Gest Age (week) | FL (cm)     | +/-1 SD     |
|-----------------|-------------|-------------|
| 12 weeks        | 0.56757 cm  | 0.167466 cm |
| 12.5 weeks      | 0.740987 cm | 0.169057 cm |
| 13 weeks        | 0.911841 cm | 0.170647 cm |
| 13.5 weeks      | 1.08016 cm  | 0.172238 cm |
| 14 weeks        | 1.24599 cm  | 0.173829 cm |
| 14.5 weeks      | 1.40934 cm  | 0.175419 cm |
| 15 weeks        | 1.57026 cm  | 0.17701 cm  |

| Gest Age (week) | FL (cm)    | +/-1 SD     |
|-----------------|------------|-------------|
| 15.5 weeks      | 1.72878 cm | 0.178601 cm |
| 16 weeks        | 1.88492 cm | 0.180191 cm |
| 16.5 weeks      | 2.03872 cm | 0.181782 cm |
| 17 weeks        | 2.19021 cm | 0.183373 cm |
| 17.5 weeks      | 2.33941 cm | 0.184963 cm |
| 18 weeks        | 2.48638 cm | 0.186554 cm |
| 18.5 weeks      | 2.63112 cm | 0.188145 cm |
| 19 weeks        | 2.77368 cm | 0.189736 cm |
| 19.5 weeks      | 2.91409 cm | 0.191326 cm |
| 20 weeks        | 3.05238 cm | 0.192917 cm |
| 20.5 weeks      | 3.18857 cm | 0.194508 cm |
| 21 weeks        | 3.32271 cm | 0.196098 cm |
| 21.5 weeks      | 3.45482 cm | 0.197689 cm |
| 22 weeks        | 3.58494 cm | 0.19928 cm  |
| 22.5 weeks      | 3.71309 cm | 0.20087 cm  |
| 23 weeks        | 3.83931 cm | 0.202461 cm |
| 23.5 weeks      | 3.96363 cm | 0.204052 cm |
| 24 weeks        | 4.08608 cm | 0.205642 cm |
| 24.5 weeks      | 4.20669 cm | 0.207233 cm |
| 25 weeks        | 4.32549 cm | 0.208824 cm |
| 25.5 weeks      | 4.44252 cm | 0.210414 cm |
| 26 weeks        | 4.55781 cm | 0.212005 cm |
| 26.5 weeks      | 4.67138 cm | 0.213596 cm |
| 27 weeks        | 4.78327 cm | 0.215186 cm |
| 27.5 weeks      | 4.89352 cm | 0.216777 cm |
| 28 weeks        | 5.00215 cm | 0.218368 cm |
| 28.5 weeks      | 5.10919 cm | 0.219959 cm |
| 29 weeks        | 5.21467 cm | 0.221549 cm |
| 29.5 weeks      | 5.31864 cm | 0.22314 cm  |
| 30 weeks        | 5.42111 cm | 0.224731 cm |
| 30.5 weeks      | 5.52212 cm | 0.226321 cm |
| 31 weeks        | 5.6217 cm  | 0.227912 cm |

| Gest Age (week) | FL (cm)    | +/-1 SD     |
|-----------------|------------|-------------|
| 31.5 weeks      | 5.71989 cm | 0.229503 cm |
| 32 weeks        | 5.81671 cm | 0.231093 cm |
| 32.5 weeks      | 5.9122 cm  | 0.232684 cm |
| 33 weeks        | 6.00638 cm | 0.234275 cm |
| 33.5 weeks      | 6.09929 cm | 0.235865 cm |
| 34 weeks        | 6.19097 cm | 0.237456 cm |
| 34.5 weeks      | 6.28143 cm | 0.239047 cm |
| 35 weeks        | 6.37072 cm | 0.240637 cm |
| 35.5 weeks      | 6.45887 cm | 0.242228 cm |
| 36 weeks        | 6.5459 cm  | 0.243819 cm |
| 36.5 weeks      | 6.63185 cm | 0.245409 cm |
| 37 weeks        | 6.71675 cm | 0.247 cm    |
| 37.5 weeks      | 6.80062 cm | 0.248591 cm |
| 38 weeks        | 6.88352 cm | 0.250181 cm |
| 38.5 weeks      | 6.96545 cm | 0.251772 cm |
| 39 weeks        | 7.04646 cm | 0.253363 cm |
| 39.5 weeks      | 7.12658 cm | 0.254954 cm |
| 40 weeks        | 7.20584 cm | 0.256544 cm |
| 40.5 weeks      | 7.28426 cm | 0.258135 cm |
| 41 weeks        | 7.36189 cm | 0.259726 cm |
| 41.5 weeks      | 7.43875 cm | 0.261316 cm |
| 42 weeks        | 7.51488 cm | 0.262907 cm |

## FL by GA - Jeanty1982

**Name:** Jeanty 1982

**Author:** Jeanty

**Year:** 1982

**Reference:** Ultrasonic Evaluation of Fetal Limb Growth, Jeanty et al., June 1982, Radiology 143: 751-754

**Comments:**

| Gest Age (week) | FL (mm) | +/-1 SD |
|-----------------|---------|---------|
| 12 weeks        | 8 mm    | 0 mm    |
| 13 weeks        | 12 mm   | 4 mm    |
| 14 weeks        | 15 mm   | 4 mm    |
| 15 weeks        | 18 mm   | 4 mm    |
| 16 weeks        | 21 mm   | 4 mm    |
| 17 weeks        | 24 mm   | 2 mm    |
| 18 weeks        | 27 mm   | 2 mm    |
| 19 weeks        | 30 mm   | 4 mm    |
| 20 weeks        | 33 mm   | 4 mm    |
| 21 weeks        | 36 mm   | 5 mm    |
| 22 weeks        | 38 mm   | 5 mm    |
| 23 weeks        | 41 mm   | 3 mm    |
| 24 weeks        | 43 mm   | 3 mm    |
| 25 weeks        | 46 mm   | 4 mm    |
| 26 weeks        | 48 mm   | 4 mm    |
| 27 weeks        | 51 mm   | 3 mm    |
| 28 weeks        | 53 mm   | 3 mm    |
| 29 weeks        | 55 mm   | 3 mm    |
| 30 weeks        | 57 mm   | 3 mm    |
| 31 weeks        | 59 mm   | 4 mm    |
| 32 weeks        | 61 mm   | 4 mm    |
| 33 weeks        | 63 mm   | 4 mm    |
| 34 weeks        | 65 mm   | 4 mm    |
| 35 weeks        | 67 mm   | 3 mm    |
| 36 weeks        | 68 mm   | 3 mm    |
| 37 weeks        | 70 mm   | 4 mm    |
| 38 weeks        | 72 mm   | 4 mm    |
| 39 weeks        | 73 mm   | 5 mm    |
| 40 weeks        | 75 mm   | 5 mm    |

## FL by GA - Merz1988

**Name:** Merz 1988

**Author:** Merz

**Year:** 1988

**Reference:** Merz E, Goldhofer W and Timor-Tritsch E , Ultrasound in Gynecology and Obstetrics, Textbook and Atlas, Georg Thieme Verlag , 1991

**Comments:** From Merz E, Habilitationsschrift, Mainz University Woman's Hospital, 1988

| GA (week) | FL (mm) | 5%    | 95%   |
|-----------|---------|-------|-------|
| 12 weeks  | 9 mm    | 5 mm  | 13 mm |
| 13 weeks  | 12 mm   | 8 mm  | 16 mm |
| 14 weeks  | 15 mm   | 11 mm | 19 mm |
| 15 weeks  | 18 mm   | 14 mm | 22 mm |
| 16 weeks  | 21 mm   | 17 mm | 25 mm |
| 17 weeks  | 24 mm   | 20 mm | 28 mm |
| 18 weeks  | 27 mm   | 22 mm | 31 mm |
| 19 weeks  | 30 mm   | 25 mm | 34 mm |
| 20 weeks  | 32 mm   | 28 mm | 37 mm |
| 21 weeks  | 35 mm   | 31 mm | 40 mm |
| 22 weeks  | 38 mm   | 34 mm | 42 mm |
| 23 weeks  | 41 mm   | 36 mm | 45 mm |
| 24 weeks  | 43 mm   | 39 mm | 48 mm |
| 25 weeks  | 46 mm   | 41 mm | 51 mm |
| 26 weeks  | 49 mm   | 44 mm | 53 mm |
| 27 weeks  | 51 mm   | 46 mm | 56 mm |
| 28 weeks  | 53 mm   | 49 mm | 58 mm |
| 29 weeks  | 56 mm   | 51 mm | 61 mm |
| 30 weeks  | 58 mm   | 53 mm | 63 mm |
| 31 weeks  | 60 mm   | 56 mm | 65 mm |
| 32 weeks  | 63 mm   | 58 mm | 68 mm |
| 33 weeks  | 65 mm   | 60 mm | 70 mm |
| 34 weeks  | 67 mm   | 62 mm | 72 mm |



| GA (week) | FL (mm) | 5%    | 95%   |
|-----------|---------|-------|-------|
| 35 weeks  | 69 mm   | 64 mm | 74 mm |
| 36 weeks  | 71 mm   | 66 mm | 76 mm |
| 37 weeks  | 73 mm   | 68 mm | 78 mm |
| 38 weeks  | 75 mm   | 69 mm | 80 mm |
| 39 weeks  | 76 mm   | 71 mm | 82 mm |
| 40 weeks  | 78 mm   | 73 mm | 84 mm |

## Gestational Sac (GS by GA)

### GS by GA - Hellman 1969

**Name:** Hellman 1969 GS by GA

**Author:** Hellman

**Year:** 1969

**Reference:** HELLMAN, L. Mh, KOBAYASHI, M., FILLISTI, L., et al. Growth and development of the human fetus prior to the twentieth week of gestation. American Journal of Obstetrics and Gynecology, 1969, vol. 103, no 6, p. 789-798.

**Comments:**

| Gest Age (wd) | Gestational Sac (cm) | +/-2 SD |
|---------------|----------------------|---------|
| 6w0d          | 1.67 cm              | 0.64 cm |
| 6w4d          | 2.02 cm              | 0.64 cm |
| 7w0d          | 2.37 cm              | 0.64 cm |
| 7w4d          | 2.72 cm              | 0.64 cm |
| 8w0d          | 3.07 cm              | 0.64 cm |
| 8w4d          | 3.42 cm              | 0.64 cm |
| 9w0d          | 3.78 cm              | 0.64 cm |
| 9w4d          | 4.13 cm              | 0.64 cm |
| 10w0d         | 4.48 cm              | 0.64 cm |
| 10w4d         | 4.83 cm              | 0.64 cm |
| 11w0d         | 5.18 cm              | 0.64 cm |

| Gest Age (wd) | Gestational Sac (cm) | +/-2 SD |
|---------------|----------------------|---------|
| 11w4d         | 5.53 cm              | 0.64 cm |
| 12w0d         | 5.88 cm              | 0.64 cm |

## GS by GA - Rempen1991

**Name:** Rempen 1991 GS by GA

**Author:** Rempen

**Year:** 1991

**Reference:** REMPEN, A. "Biometrie in der Fruhgraviditat (I. Trimenon)" Der Frauenarzt, 1991, 32, 4, p 425-430.

**Comments:**

| Gest Age (wd) | Gestational Sac (cm) | +/-2 SD |
|---------------|----------------------|---------|
| 4w4d          | 0.05 cm              | 1.05 cm |
| 4w5d          | 0.18 cm              | 1.05 cm |
| 4w6d          | 0.32 cm              | 1.05 cm |
| 5w0d          | 0.45 cm              | 1.05 cm |
| 5w1d          | 0.58 cm              | 1.05 cm |
| 5w2d          | 0.71 cm              | 1.05 cm |
| 5w3d          | 0.84 cm              | 1.05 cm |
| 5w4d          | 0.97 cm              | 1.05 cm |
| 5w5d          | 1.09 cm              | 1.05 cm |
| 5w6d          | 1.22 cm              | 1.05 cm |
| 6w0d          | 1.34 cm              | 1.05 cm |
| 6w1d          | 1.46 cm              | 1.05 cm |
| 6w2d          | 1.59 cm              | 1.05 cm |
| 6w3d          | 1.71 cm              | 1.05 cm |
| 6w4d          | 1.83 cm              | 1.05 cm |
| 6w5d          | 1.94 cm              | 1.05 cm |
| 6w6d          | 2.06 cm              | 1.05 cm |
| 7w0d          | 2.17 cm              | 1.05 cm |
| 7w1d          | 2.29 cm              | 1.05 cm |

| Gest Age (wd) | Gestational Sac (cm) | +/-2 SD |
|---------------|----------------------|---------|
| 7w2d          | 2.4 cm               | 1.05 cm |
| 7w3d          | 2.51 cm              | 1.05 cm |
| 7w4d          | 2.62 cm              | 1.05 cm |
| 7w5d          | 2.73 cm              | 1.05 cm |
| 7w6d          | 2.84 cm              | 1.05 cm |
| 8w0d          | 2.95 cm              | 1.05 cm |
| 8w1d          | 3.05 cm              | 1.05 cm |
| 8w2d          | 3.16 cm              | 1.05 cm |
| 8w3d          | 3.26 cm              | 1.05 cm |
| 8w4d          | 3.36 cm              | 1.05 cm |
| 8w5d          | 3.46 cm              | 1.05 cm |
| 8w6d          | 3.56 cm              | 1.05 cm |
| 9w0d          | 3.66 cm              | 1.05 cm |
| 9w1d          | 3.76 cm              | 1.05 cm |
| 9w2d          | 3.85 cm              | 1.05 cm |
| 9w3d          | 3.95 cm              | 1.05 cm |
| 9w4d          | 4.04 cm              | 1.05 cm |
| 9w5d          | 4.13 cm              | 1.05 cm |
| 9w6d          | 4.22 cm              | 1.05 cm |
| 10w0d         | 4.31 cm              | 1.05 cm |
| 10w1d         | 4.4 cm               | 1.05 cm |
| 10w2d         | 4.49 cm              | 1.05 cm |
| 10w3d         | 4.57 cm              | 1.05 cm |
| 10w4d         | 4.66 cm              | 1.05 cm |
| 10w5d         | 4.74 cm              | 1.05 cm |
| 10w6d         | 4.82 cm              | 1.05 cm |
| 11w0d         | 4.9 cm               | 1.05 cm |
| 11w1d         | 4.98 cm              | 1.05 cm |
| 11w2d         | 5.06 cm              | 1.05 cm |
| 11w3d         | 5.14 cm              | 1.05 cm |
| 11w4d         | 5.21 cm              | 1.05 cm |
| 11w5d         | 5.29 cm              | 1.05 cm |

| Gest Age (wd) | Gestational Sac (cm) | +/-2 SD |
|---------------|----------------------|---------|
| 11w6d         | 5.36 cm              | 1.05 cm |
| 12w0d         | 5.43 cm              | 1.05 cm |
| 12w1d         | 5.51 cm              | 1.05 cm |
| 12w2d         | 5.58 cm              | 1.05 cm |
| 12w3d         | 5.64 cm              | 1.05 cm |
| 12w4d         | 5.71 cm              | 1.05 cm |
| 12w5d         | 5.78 cm              | 1.05 cm |
| 12w6d         | 5.84 cm              | 1.05 cm |
| 13w0d         | 5.91 cm              | 1.05 cm |
| 13w1d         | 5.97 cm              | 1.05 cm |
| 13w2d         | 6.03 cm              | 1.05 cm |

## Head Circumference (HC by GA)

### HC by GA - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:** Fetal growth table generated from ASUM equations with polynomial interpretation of standard deviations

| GA (week) | HC (mm)    | +/-2 SD    |
|-----------|------------|------------|
| 11 weeks  | 54.9661 mm | 14.4875 mm |
| 12 weeks  | 69.5524 mm | 14.7958 mm |
| 13 weeks  | 83.7989 mm | 15.1475 mm |
| 14 weeks  | 97.7056 mm | 15.5381 mm |

| GA (week) | HC (mm)    | +/-2 SD    |
|-----------|------------|------------|
| 15 weeks  | 111.272 mm | 15.9634 mm |
| 16 weeks  | 124.5 mm   | 16.4189 mm |
| 17 weeks  | 137.387 mm | 16.9003 mm |
| 18 weeks  | 149.934 mm | 17.4032 mm |
| 19 weeks  | 162.142 mm | 17.9232 mm |
| 20 weeks  | 174.01 mm  | 18.4561 mm |
| 21 weeks  | 185.538 mm | 18.9973 mm |
| 22 weeks  | 196.726 mm | 19.5426 mm |
| 23 weeks  | 207.575 mm | 20.0877 mm |
| 24 weeks  | 218.084 mm | 20.628 mm  |
| 25 weeks  | 228.252 mm | 21.1593 mm |
| 26 weeks  | 238.082 mm | 21.6772 mm |
| 27 weeks  | 247.571 mm | 22.1773 mm |
| 28 weeks  | 256.72 mm  | 22.6553 mm |
| 29 weeks  | 265.53 mm  | 23.1068 mm |
| 30 weeks  | 274 mm     | 23.5274 mm |
| 31 weeks  | 282.13 mm  | 23.9128 mm |
| 32 weeks  | 289.92 mm  | 24.2586 mm |
| 33 weeks  | 297.371 mm | 24.5604 mm |
| 34 weeks  | 304.482 mm | 24.8139 mm |
| 35 weeks  | 311.252 mm | 25.0148 mm |
| 36 weeks  | 317.684 mm | 25.1585 mm |
| 37 weeks  | 323.775 mm | 25.2409 mm |
| 38 weeks  | 329.526 mm | 25.2574 mm |
| 39 weeks  | 334.938 mm | 25.2039 mm |
| 40 weeks  | 340.01 mm  | 25.0758 mm |
| 41 weeks  | 344.742 mm | 24.8688 mm |

## HC by GA - CFEF2000

Name: CFEF 2000

**Author:** CFEF

**Year:** 2000

**Reference:** Crequat J, Duyme M and Brodaty G, Fetal growth charts by the French College of fetal ultrasonography and the Inserm U 155 , Biometry 2000, 28, pp 435-455, 2000

**Comments:** <http://cfef.org/>

| GA (week) | HC (mm)   | 3%        | 10%       | 90%       | 97%       |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 16 weeks  | 120.86 mm | 105.8 mm  | 110.58 mm | 131.25 mm | 136.11 mm |
| 17 weeks  | 134.49 mm | 118.67 mm | 123.78 mm | 145.38 mm | 150.39 mm |
| 18 weeks  | 147.55 mm | 131.08 mm | 136.36 mm | 158.92 mm | 164.11 mm |
| 19 weeks  | 160.29 mm | 143 mm    | 148.53 mm | 172.14 mm | 177.48 mm |
| 20 weeks  | 172.47 mm | 154.53 mm | 160.21 mm | 184.86 mm | 190.54 mm |
| 21 weeks  | 184.21 mm | 165.41 mm | 171.49 mm | 197.12 mm | 203.09 mm |
| 22 weeks  | 195.74 mm | 176.12 mm | 182.35 mm | 208.91 mm | 215.15 mm |
| 23 weeks  | 206.64 mm | 186.32 mm | 192.31 mm | 220.26 mm | 226.76 mm |
| 24 weeks  | 217.18 mm | 196.19 mm | 203 mm    | 231.39 mm | 238 mm    |
| 25 weeks  | 227.32 mm | 205.5 mm  | 212.4 mm  | 241.91 mm | 248.81 mm |
| 26 weeks  | 236.72 mm | 214.44 mm | 221.57 mm | 252 mm    | 259.23 mm |
| 27 weeks  | 246 mm    | 222.87 mm | 230.33 mm | 261.75 mm | 269.13 mm |
| 28 weeks  | 254.77 mm | 231 mm    | 238.56 mm | 271 mm    | 278.57 mm |
| 29 weeks  | 263 mm    | 238.4 mm  | 246.35 mm | 279.71 mm | 287.56 mm |
| 30 weeks  | 270.84 mm | 245.86 mm | 253.74 mm | 288.13 mm | 296 mm    |
| 31 weeks  | 278.33 mm | 252.54 mm | 260.81 mm | 296 mm    | 304.27 mm |
| 32 weeks  | 285.29 mm | 258.86 mm | 267.22 mm | 303.54 mm | 312 mm    |
| 33 weeks  | 292 mm    | 264.62 mm | 273.38 mm | 310.4 mm  | 319.1 mm  |
| 34 weeks  | 298.1 mm  | 270.14 mm | 279 mm    | 317 mm    | 325.91 mm |
| 35 weeks  | 303.62 mm | 275.33 mm | 284.23 mm | 323 mm    | 332.16 mm |
| 36 weeks  | 308.81 mm | 279.79 mm | 289 mm    | 328.75 mm | 338 mm    |
| 37 weeks  | 313.52 mm | 283.9 mm  | 293.32 mm | 334 mm    | 343.34 mm |
| 38 weeks  | 317.88 mm | 287.63 mm | 297.29 mm | 338.64 mm | 348.29 mm |
| 39 weeks  | 321.86 mm | 290.88 mm | 300.76 mm | 343 mm    | 352.67 mm |
| 40 weeks  | 324 mm    | 293 mm    | 303 mm    | 346 mm    | 356 mm    |

## HC by GA - Hadlock1984

**Name:** Hadlock 1984

**Author:** Hadlock

**Year:** 1984

**Reference:** Hadlock F.P, Deter R.L, Harrist R.B. and Park S.K, Estimating fetal age: computer-assisted analysis of multiple fetal growth parameters, Radiology, 152, pp 497-501, 1984

**Comments:**

| GA (week)  | HC (cm)    | +/-1 SD |
|------------|------------|---------|
| 12 weeks   | 6.79971 cm | 1 cm    |
| 12.5 weeks | 7.52234 cm | 1 cm    |
| 13 weeks   | 8.2402 cm  | 1 cm    |
| 13.5 weeks | 8.9531 cm  | 1 cm    |
| 14 weeks   | 9.66083 cm | 1 cm    |
| 14.5 weeks | 10.3632 cm | 1 cm    |
| 15 weeks   | 11.0601 cm | 1 cm    |
| 15.5 weeks | 11.7512 cm | 1 cm    |
| 16 weeks   | 12.4363 cm | 1 cm    |
| 16.5 weeks | 13.1154 cm | 1 cm    |
| 17 weeks   | 13.7882 cm | 1 cm    |
| 17.5 weeks | 14.4544 cm | 1 cm    |
| 18 weeks   | 15.114 cm  | 1 cm    |
| 18.5 weeks | 15.7667 cm | 1 cm    |
| 19 weeks   | 16.4123 cm | 1 cm    |
| 19.5 weeks | 17.0507 cm | 1 cm    |
| 20 weeks   | 17.6816 cm | 1 cm    |
| 20.5 weeks | 18.3049 cm | 1 cm    |
| 21 weeks   | 18.9203 cm | 1 cm    |
| 21.5 weeks | 19.5277 cm | 1 cm    |
| 22 weeks   | 20.1269 cm | 1 cm    |
| 22.5 weeks | 20.7177 cm | 1 cm    |
| 23 weeks   | 21.2998 cm | 1 cm    |

| <b>GA (week)</b> | <b>HC (cm)</b> | <b>+/-1 SD</b> |
|------------------|----------------|----------------|
| 23.5 weeks       | 21.8732 cm     | 1 cm           |
| 24 weeks         | 22.4376 cm     | 1 cm           |
| 24.5 weeks       | 22.9929 cm     | 1 cm           |
| 25 weeks         | 23.5388 cm     | 1 cm           |
| 25.5 weeks       | 24.0751 cm     | 1 cm           |
| 26 weeks         | 24.6016 cm     | 1 cm           |
| 26.5 weeks       | 25.1183 cm     | 1 cm           |
| 27 weeks         | 25.6248 cm     | 1 cm           |
| 27.5 weeks       | 26.121 cm      | 1 cm           |
| 28 weeks         | 26.6066 cm     | 1 cm           |
| 28.5 weeks       | 27.0816 cm     | 1 cm           |
| 29 weeks         | 27.5457 cm     | 1 cm           |
| 29.5 weeks       | 27.9987 cm     | 1 cm           |
| 30 weeks         | 28.4404 cm     | 1 cm           |
| 30.5 weeks       | 28.8707 cm     | 1 cm           |
| 31 weeks         | 29.2893 cm     | 1 cm           |
| 31.5 weeks       | 29.696 cm      | 1 cm           |
| 32 weeks         | 30.0907 cm     | 1 cm           |
| 32.5 weeks       | 30.4732 cm     | 1 cm           |
| 33 weeks         | 30.8433 cm     | 1 cm           |
| 33.5 weeks       | 31.2007 cm     | 1 cm           |
| 34 weeks         | 31.5453 cm     | 1 cm           |
| 34.5 weeks       | 31.877 cm      | 1 cm           |
| 35 weeks         | 32.1955 cm     | 1 cm           |
| 35.5 weeks       | 32.5005 cm     | 1 cm           |
| 36 weeks         | 32.7921 cm     | 1 cm           |
| 36.5 weeks       | 33.0698 cm     | 1 cm           |
| 37 weeks         | 33.3336 cm     | 1 cm           |
| 37.5 weeks       | 33.5833 cm     | 1 cm           |
| 38 weeks         | 33.8186 cm     | 1 cm           |
| 38.5 weeks       | 34.0394 cm     | 1 cm           |
| 39 weeks         | 34.2455 cm     | 1 cm           |



| GA (week)  | HC (cm)    | +/-1 SD |
|------------|------------|---------|
| 39.5 weeks | 34.4367 cm | 1 cm    |
| 40 weeks   | 34.6128 cm | 1 cm    |

## HC by GA - ISUOG\_Leung2008

**Name:** ISUOG Leung 2008

**Author:** ISUOG\_Leung

**Year:** 2008

**Reference:** Fetal biometry in ethnic Chinese: biparietal diameter, head circumference, abdominal circumference and femur length T. N. LEUNG, M. W. PANG, S. S. DALJIT, T. Y. LEUNG, C. F. POON, S. M. WONG and T. K. LAU Fetal Medicine Unit, Department of Obstetrics and Gynaecology, The Chinese University of Hong Kong, The Prince of Wales Hospital, Hong Kong

**Comments:**

| Gest Age (week) | HC (cm)    | +/-1 SD     |
|-----------------|------------|-------------|
| 12 weeks        | 6.97451 cm | 0.783146 cm |
| 12.5 weeks      | 7.58893 cm | 0.787589 cm |
| 13 weeks        | 8.20665 cm | 0.792033 cm |
| 13.5 weeks      | 8.82717 cm | 0.796476 cm |
| 14 weeks        | 9.45002 cm | 0.800919 cm |
| 14.5 weeks      | 10.0747 cm | 0.805362 cm |
| 15 weeks        | 10.7008 cm | 0.809805 cm |
| 15.5 weeks      | 11.3277 cm | 0.814248 cm |
| 16 weeks        | 11.955 cm  | 0.818691 cm |
| 16.5 weeks      | 12.5823 cm | 0.823135 cm |
| 17 weeks        | 13.209 cm  | 0.827578 cm |
| 17.5 weeks      | 13.8346 cm | 0.832021 cm |
| 18 weeks        | 14.4587 cm | 0.836464 cm |
| 18.5 weeks      | 15.0808 cm | 0.840907 cm |
| 19 weeks        | 15.7003 cm | 0.84535 cm  |
| 19.5 weeks      | 16.317 cm  | 0.849793 cm |

| <b>Gest Age (week)</b> | <b>HC (cm)</b> | <b>+/-1 SD</b> |
|------------------------|----------------|----------------|
| 20 weeks               | 16.9301 cm     | 0.854237 cm    |
| 20.5 weeks             | 17.5393 cm     | 0.85868 cm     |
| 21 weeks               | 18.1441 cm     | 0.863123 cm    |
| 21.5 weeks             | 18.744 cm      | 0.867566 cm    |
| 22 weeks               | 19.3384 cm     | 0.872009 cm    |
| 22.5 weeks             | 19.9271 cm     | 0.876452 cm    |
| 23 weeks               | 20.5093 cm     | 0.880895 cm    |
| 23.5 weeks             | 21.0847 cm     | 0.885338 cm    |
| 24 weeks               | 21.6528 cm     | 0.889782 cm    |
| 24.5 weeks             | 22.2131 cm     | 0.894225 cm    |
| 25 weeks               | 22.7651 cm     | 0.898668 cm    |
| 25.5 weeks             | 23.3084 cm     | 0.903111 cm    |
| 26 weeks               | 23.8424 cm     | 0.907554 cm    |
| 26.5 weeks             | 24.3667 cm     | 0.911997 cm    |
| 27 weeks               | 24.8807 cm     | 0.91644 cm     |
| 27.5 weeks             | 25.3841 cm     | 0.920884 cm    |
| 28 weeks               | 25.8763 cm     | 0.925327 cm    |
| 28.5 weeks             | 26.3568 cm     | 0.92977 cm     |
| 29 weeks               | 26.8252 cm     | 0.934213 cm    |
| 29.5 weeks             | 27.281 cm      | 0.938656 cm    |
| 30 weeks               | 27.7236 cm     | 0.943099 cm    |
| 30.5 weeks             | 28.1527 cm     | 0.947542 cm    |
| 31 weeks               | 28.5677 cm     | 0.951986 cm    |
| 31.5 weeks             | 28.9682 cm     | 0.956429 cm    |
| 32 weeks               | 29.3536 cm     | 0.960872 cm    |
| 32.5 weeks             | 29.7235 cm     | 0.965315 cm    |
| 33 weeks               | 30.0774 cm     | 0.969758 cm    |
| 33.5 weeks             | 30.4148 cm     | 0.974201 cm    |
| 34 weeks               | 30.7352 cm     | 0.978644 cm    |
| 34.5 weeks             | 31.0382 cm     | 0.983088 cm    |
| 35 weeks               | 31.3233 cm     | 0.987531 cm    |
| 35.5 weeks             | 31.59 cm       | 0.991974 cm    |

| Gest Age (week) | HC (cm)    | +/-1 SD     |
|-----------------|------------|-------------|
| 36 weeks        | 31.8378 cm | 0.996417 cm |
| 36.5 weeks      | 32.0662 cm | 1.00086 cm  |
| 37 weeks        | 32.2747 cm | 1.0053 cm   |
| 37.5 weeks      | 32.4629 cm | 1.00975 cm  |
| 38 weeks        | 32.6303 cm | 1.01419 cm  |
| 38.5 weeks      | 32.7764 cm | 1.01863 cm  |
| 39 weeks        | 32.9007 cm | 1.02308 cm  |
| 39.5 weeks      | 33.0027 cm | 1.02752 cm  |
| 40 weeks        | 33.082 cm  | 1.03196 cm  |
| 40.5 weeks      | 33.138 cm  | 1.03641 cm  |
| 41 weeks        | 33.1703 cm | 1.04085 cm  |
| 41.5 weeks      | 33.1785 cm | 1.04529 cm  |
| 42 weeks        | 33.1619 cm | 1.04973 cm  |

## HC by GA - Merz1988

**Name:** Merz 1988

**Author:** Merz

**Year:** 1988

**Reference:** Merz E, Goldhofer W and Timor-Tritsch E , Ultrasound in Gynecology and Obstetrics, Textbook and Atlas, Georg Thieme Verlag , 1991

**Comments:** From Merz E, Habilitationsschrift, Mainz University Woman's Hospital, 1988

| GA (week) | HC (mm) | 5%     | 95%    |
|-----------|---------|--------|--------|
| 12 weeks  | 76 mm   | 63 mm  | 90 mm  |
| 13 weeks  | 90 mm   | 77 mm  | 104 mm |
| 14 weeks  | 104 mm  | 90 mm  | 118 mm |
| 15 weeks  | 117 mm  | 104 mm | 132 mm |
| 16 weeks  | 131 mm  | 117 mm | 146 mm |
| 17 weeks  | 144 mm  | 130 mm | 159 mm |
| 18 weeks  | 157 mm  | 142 mm | 172 mm |

| GA (week) | HC (mm) | 5%     | 95%    |
|-----------|---------|--------|--------|
| 19 weeks  | 169 mm  | 155 mm | 185 mm |
| 20 weeks  | 182 mm  | 167 mm | 197 mm |
| 21 weeks  | 194 mm  | 179 mm | 210 mm |
| 22 weeks  | 205 mm  | 190 mm | 222 mm |
| 23 weeks  | 217 mm  | 201 mm | 233 mm |
| 24 weeks  | 228 mm  | 212 mm | 245 mm |
| 25 weeks  | 239 mm  | 223 mm | 256 mm |
| 26 weeks  | 249 mm  | 233 mm | 266 mm |
| 27 weeks  | 259 mm  | 243 mm | 277 mm |
| 28 weeks  | 269 mm  | 253 mm | 287 mm |
| 29 weeks  | 279 mm  | 262 mm | 296 mm |
| 30 weeks  | 288 mm  | 271 mm | 306 mm |
| 31 weeks  | 296 mm  | 279 mm | 315 mm |
| 32 weeks  | 305 mm  | 288 mm | 323 mm |
| 33 weeks  | 313 mm  | 296 mm | 332 mm |
| 34 weeks  | 321 mm  | 303 mm | 340 mm |
| 35 weeks  | 328 mm  | 311 mm | 347 mm |
| 36 weeks  | 336 mm  | 318 mm | 355 mm |
| 37 weeks  | 342 mm  | 324 mm | 362 mm |
| 38 weeks  | 349 mm  | 331 mm | 368 mm |
| 39 weeks  | 355 mm  | 337 mm | 375 mm |
| 40 weeks  | 361 mm  | 343 mm | 381 mm |

## Humerus Length (HL by GA)

### HL by GA - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:** Fetal growth table generated from ASUM equations with polynomial interpretation of standard deviations

| GA (week) | HL (mm)    | +/-2 SD    |
|-----------|------------|------------|
| 11 weeks  | 6.496 mm   | 2.5658 mm  |
| 12 weeks  | 9.4544 mm  | 3.03711 mm |
| 13 weeks  | 12.3586 mm | 3.44905 mm |
| 14 weeks  | 15.208 mm  | 3.80497 mm |
| 15 weeks  | 18.002 mm  | 4.10823 mm |
| 16 weeks  | 20.74 mm   | 4.36216 mm |
| 17 weeks  | 23.4214 mm | 4.57012 mm |
| 18 weeks  | 26.0456 mm | 4.73545 mm |
| 19 weeks  | 28.612 mm  | 4.8615 mm  |
| 20 weeks  | 31.12 mm   | 4.95163 mm |
| 21 weeks  | 33.569 mm  | 5.00917 mm |
| 22 weeks  | 35.9584 mm | 5.03748 mm |
| 23 weeks  | 38.2876 mm | 5.0399 mm  |
| 24 weeks  | 40.556 mm  | 5.01978 mm |
| 25 weeks  | 42.763 mm  | 4.98048 mm |
| 26 weeks  | 44.908 mm  | 4.92533 mm |
| 27 weeks  | 46.9904 mm | 4.85769 mm |
| 28 weeks  | 49.0096 mm | 4.7809 mm  |
| 29 weeks  | 50.965 mm  | 4.69831 mm |
| 30 weeks  | 52.856 mm  | 4.61328 mm |
| 31 weeks  | 54.682 mm  | 4.52914 mm |
| 32 weeks  | 56.4424 mm | 4.44925 mm |
| 33 weeks  | 58.1366 mm | 4.37695 mm |
| 34 weeks  | 59.764 mm  | 4.31559 mm |
| 35 weeks  | 61.324 mm  | 4.26853 mm |
| 36 weeks  | 62.816 mm  | 4.2391 mm  |
| 37 weeks  | 64.2394 mm | 4.23066 mm |
| 38 weeks  | 65.5936 mm | 4.24655 mm |

| GA (week) | HL (mm)   | +/-2 SD    |
|-----------|-----------|------------|
| 39 weeks  | 66.878 mm | 4.29012 mm |
| 40 weeks  | 68.092 mm | 4.36473 mm |
| 41 weeks  | 69.235 mm | 4.47371 mm |

## HL by GA - Jeanty1982

**Name:** Jeanty 1982

**Author:** Jeanty

**Year:** 1982

**Reference:** Ultrasonic Evaluation of Fetal Limb Growth, Jeanty et al., June 1982, Radiology 143: 751-754

**Comments:**

| Gest Age (week) | HL (mm) | +/-1 SD |
|-----------------|---------|---------|
| 12 weeks        | 9 mm    | 0 mm    |
| 13 weeks        | 12 mm   | 4 mm    |
| 14 weeks        | 15 mm   | 4 mm    |
| 15 weeks        | 18 mm   | 4 mm    |
| 16 weeks        | 21 mm   | 4 mm    |
| 17 weeks        | 23 mm   | 3 mm    |
| 18 weeks        | 26 mm   | 3 mm    |
| 19 weeks        | 29 mm   | 4 mm    |
| 20 weeks        | 31 mm   | 4 mm    |
| 21 weeks        | 33 mm   | 3 mm    |
| 22 weeks        | 36 mm   | 3 mm    |
| 23 weeks        | 38 mm   | 3 mm    |
| 24 weeks        | 40 mm   | 3 mm    |
| 25 weeks        | 42 mm   | 4 mm    |
| 26 weeks        | 44 mm   | 4 mm    |
| 27 weeks        | 46 mm   | 3 mm    |
| 28 weeks        | 48 mm   | 3 mm    |
| 29 weeks        | 49 mm   | 3 mm    |

| Gest Age (week) | HL (mm) | +/-1 SD |
|-----------------|---------|---------|
| 30 weeks        | 51 mm   | 3 mm    |
| 31 weeks        | 53 mm   | 3 mm    |
| 32 weeks        | 54 mm   | 3 mm    |
| 33 weeks        | 55 mm   | 3 mm    |
| 34 weeks        | 57 mm   | 3 mm    |
| 35 weeks        | 58 mm   | 3 mm    |
| 36 weeks        | 59 mm   | 3 mm    |
| 37 weeks        | 60 mm   | 2 mm    |
| 38 weeks        | 61 mm   | 2 mm    |
| 39 weeks        | 62 mm   | 4 mm    |
| 40 weeks        | 63 mm   | 4 mm    |

## Occipito-Frontal Diameter (OFD by GA)

### OFD by GA - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:** Fetal growth table generated from ASUM equations with polynomial interpretation of standard deviations

| GA (week) | OFD (mm)   | +/-2 SD    |
|-----------|------------|------------|
| 11 weeks  | 18.6426 mm | 2.20666 mm |
| 12 weeks  | 24.0012 mm | 2.36762 mm |
| 13 weeks  | 29.2268 mm | 2.52938 mm |
| 14 weeks  | 34.3194 mm | 2.6916 mm  |
| 15 weeks  | 39.279 mm  | 2.85394 mm |

| <b>GA (week)</b> | <b>OFD (mm)</b> | <b>+/-2 SD</b> |
|------------------|-----------------|----------------|
| 16 weeks         | 44.1056 mm      | 3.01606 mm     |
| 17 weeks         | 48.7992 mm      | 3.1776 mm      |
| 18 weeks         | 53.3598 mm      | 3.33824 mm     |
| 19 weeks         | 57.7874 mm      | 3.49763 mm     |
| 20 weeks         | 62.082 mm       | 3.65542 mm     |
| 21 weeks         | 66.2436 mm      | 3.81128 mm     |
| 22 weeks         | 70.2722 mm      | 3.96486 mm     |
| 23 weeks         | 74.1678 mm      | 4.11583 mm     |
| 24 weeks         | 77.9304 mm      | 4.26383 mm     |
| 25 weeks         | 81.56 mm        | 4.40853 mm     |
| 26 weeks         | 85.0566 mm      | 4.54958 mm     |
| 27 weeks         | 88.4202 mm      | 4.68665 mm     |
| 28 weeks         | 91.6508 mm      | 4.81939 mm     |
| 29 weeks         | 94.7484 mm      | 4.94745 mm     |
| 30 weeks         | 97.713 mm       | 5.07051 mm     |
| 31 weeks         | 100.545 mm      | 5.18821 mm     |
| 32 weeks         | 103.243 mm      | 5.30021 mm     |
| 33 weeks         | 105.809 mm      | 5.40617 mm     |
| 34 weeks         | 108.241 mm      | 5.50575 mm     |
| 35 weeks         | 110.541 mm      | 5.59861 mm     |
| 36 weeks         | 112.708 mm      | 5.68441 mm     |
| 37 weeks         | 114.741 mm      | 5.76279 mm     |
| 38 weeks         | 116.642 mm      | 5.83343 mm     |
| 39 weeks         | 118.409 mm      | 5.89598 mm     |
| 40 weeks         | 120.044 mm      | 5.95009 mm     |
| 41 weeks         | 121.546 mm      | 5.99543 mm     |



# Trans-Abdominal Diameter (TAD by GA)

## TAD by GA - CFEF2000

**Name:** CFEF 2000

**Author:** CFEF

**Year:** 2000

**Reference:** Crequat J, Duyme M and Brodaty G, Fetal growth charts by the French College of fetal ultrasonography and the Inserm U 155 , Biometry 2000, 28, pp 435-455, 2000

**Comments:** <http://cfef.org/>

| GA (week) | TAD (mm) | 3%       | 10%      | 90%      | 97%      |
|-----------|----------|----------|----------|----------|----------|
| 11 weeks  | 13.5 mm  | 9.68 mm  | 11 mm    | 16 mm    | 17.25 mm |
| 12 weeks  | 17 mm    | 12.68 mm | 14 mm    | 20 mm    | 21.46 mm |
| 13 weeks  | 20.56 mm | 15.6 mm  | 17.25 mm | 24 mm    | 25.51 mm |
| 14 weeks  | 24 mm    | 18.69 mm | 20.41 mm | 27.84 mm | 29.56 mm |
| 15 weeks  | 27.69 mm | 21.76 mm | 23.64 mm | 31.74 mm | 33.61 mm |
| 16 weeks  | 31.21 mm | 25 mm    | 27 mm    | 35.53 mm | 37.48 mm |
| 17 weeks  | 34.7 mm  | 28.23 mm | 30.34 mm | 39.21 mm | 41.39 mm |
| 18 weeks  | 38.31 mm | 31.54 mm | 33.64 mm | 42.89 mm | 45.14 mm |
| 19 weeks  | 41.69 mm | 34.78 mm | 37 mm    | 46.42 mm | 48.59 mm |
| 20 weeks  | 45.21 mm | 38.16 mm | 40.26 mm | 50 mm    | 52.2 mm  |
| 21 weeks  | 48.34 mm | 41.14 mm | 43.46 mm | 53.22 mm | 55.63 mm |
| 22 weeks  | 51.57 mm | 44.21 mm | 46.61 mm | 56.75 mm | 59.08 mm |
| 23 weeks  | 54.72 mm | 47 mm    | 49.47 mm | 60 mm    | 62.46 mm |
| 24 weeks  | 57.88 mm | 49.77 mm | 52.39 mm | 63.43 mm | 66 mm    |
| 25 weeks  | 61 mm    | 52.54 mm | 55.18 mm | 66.74 mm | 69.44 mm |
| 26 weeks  | 64 mm    | 55.17 mm | 58 mm    | 70.12 mm | 72.89 mm |
| 27 weeks  | 67.11 mm | 57.72 mm | 60.73 mm | 73.42 mm | 76.42 mm |
| 28 weeks  | 70.27 mm | 60.43 mm | 63.58 mm | 76.8 mm  | 79.87 mm |
| 29 weeks  | 73.27 mm | 63.13 mm | 66.36 mm | 80.17 mm | 83.33 mm |

| GA (week) | TAD (mm)  | 3%       | 10%      | 90%       | 97%       |
|-----------|-----------|----------|----------|-----------|-----------|
| 30 weeks  | 76.17 mm  | 65.8 mm  | 69.17 mm | 83.45 mm  | 86.75 mm  |
| 31 weeks  | 79.25 mm  | 68.35 mm | 71.88 mm | 86.68 mm  | 90.13 mm  |
| 32 weeks  | 82.1 mm   | 70.9 mm  | 74.43 mm | 89.76 mm  | 93.36 mm  |
| 33 weeks  | 84.78 mm  | 73.08 mm | 76.75 mm | 92.89 mm  | 96.64 mm  |
| 34 weeks  | 87.55 mm  | 75.25 mm | 79.08 mm | 95.89 mm  | 99.86 mm  |
| 35 weeks  | 90 mm     | 77 mm    | 81.1 mm  | 99 mm     | 103 mm    |
| 36 weeks  | 92.36 mm  | 78.48 mm | 82.9 mm  | 102 mm    | 106.31 mm |
| 37 weeks  | 94.81 mm  | 79.79 mm | 84.6 mm  | 105 mm    | 109.67 mm |
| 38 weeks  | 97 mm     | 80.92 mm | 86.1 mm  | 108.19 mm | 113.29 mm |
| 39 weeks  | 99.33 mm  | 81.85 mm | 87.41 mm | 111.34 mm | 117 mm    |
| 40 weeks  | 101.64 mm | 82.58 mm | 88.59 mm | 114.52 mm | 120.7 mm  |
| 41 weeks  | 103 mm    | 82.8 mm  | 89.2 mm  | 117 mm    | 123 mm    |

## Transverse Cerebellar Diameter (TCD by GA)

### TCD by GA - Hill 1990

**Name:** Hill 1990 TCD by GA

**Author:** Hill

**Year:** 1990

**Reference:** HILL, LYNDON M., GUZICK, DAVID, FRIES, JOANNE, et al. The transverse cerebellar diameter in estimating gestational age in the large for gestational age fetus. *Obstetrics and Gynecology*, 1990, vol. 75, no 6, p. 981-985.

**Comments:**

| Gest Age (wd) | Transverse Cerebellar Diameter (cm) | +/-2 SD |
|---------------|-------------------------------------|---------|
| 15w0d         | 1.5 cm                              | 0.3 cm  |
| 16w0d         | 1.6 cm                              | 0.2 cm  |

| <b>Gest Age (wd)</b> | <b>Transverse Cerebellar Diameter (cm)</b> | <b>+/-2 SD</b> |
|----------------------|--|----------------|
| 17w0d                | 1.7 cm                                     | 0.2 cm         |
| 18w0d                | 1.8 cm                                     | 0.2 cm         |
| 19w0d                | 2 cm                                       | 0.2 cm         |
| 20w0d                | 2 cm                                       | 0.3 cm         |
| 21w0d                | 2.2 cm                                     | 0.3 cm         |
| 22w0d                | 2.3 cm                                     | 0.3 cm         |
| 23w0d                | 2.4 cm                                     | 0.3 cm         |
| 24w0d                | 2.6 cm                                     | 0.4 cm         |
| 25w0d                | 2.8 cm                                     | 0.4 cm         |
| 26w0d                | 3 cm                                       | 0.4 cm         |
| 27w0d                | 3 cm                                       | 0.4 cm         |
| 28w0d                | 3.3 cm                                     | 0.4 cm         |
| 29w0d                | 3.4 cm                                     | 0.4 cm         |
| 30w0d                | 3.7 cm                                     | 0.4 cm         |
| 31w0d                | 3.9 cm                                     | 0.4 cm         |
| 32w0d                | 4.1 cm                                     | 0.5 cm         |
| 33w0d                | 4.3 cm                                     | 0.5 cm         |
| 34w0d                | 4.6 cm                                     | 0.9 cm         |
| 35w0d                | 4.7 cm                                     | 0.7 cm         |
| 36w0d                | 4.9 cm                                     | 0.9 cm         |
| 37w0d                | 5.1 cm                                     | 1.1 cm         |
| 38w0d                | 5.1 cm                                     | 1.2 cm         |
| 39w0d                | 5.2 cm                                     | 1 cm           |
| 40w0d                | 5.2 cm                                     | 0.8 cm         |

# Tibia by GA (TIB by GA)

## TIB by GA - Jeanty1982

**Name:** Jeanty 1982

**Author:** Jeanty

**Year:** 1982

**Reference:** Ultrasonic Evaluation of Fetal Limb Growth, Jeanty et al., June 1982, Radiology 143: 751-754

**Comments:**

| Gest Age (week) | TIB (mm) | +/-1 SD |
|-----------------|----------|---------|
| 12 weeks        | 7 mm     | 3 mm    |
| 13 weeks        | 10 mm    | 3 mm    |
| 14 weeks        | 13 mm    | 3 mm    |
| 15 weeks        | 16 mm    | 6 mm    |
| 16 weeks        | 19 mm    | 6 mm    |
| 17 weeks        | 22 mm    | 4 mm    |
| 18 weeks        | 24 mm    | 4 mm    |
| 19 weeks        | 27 mm    | 4 mm    |
| 20 weeks        | 29 mm    | 4 mm    |
| 21 weeks        | 32 mm    | 4 mm    |
| 22 weeks        | 34 mm    | 4 mm    |
| 23 weeks        | 36 mm    | 4 mm    |
| 24 weeks        | 39 mm    | 4 mm    |
| 25 weeks        | 41 mm    | 5 mm    |
| 26 weeks        | 43 mm    | 5 mm    |
| 27 weeks        | 45 mm    | 3 mm    |
| 28 weeks        | 47 mm    | 3 mm    |
| 29 weeks        | 49 mm    | 5 mm    |
| 30 weeks        | 51 mm    | 5 mm    |
| 31 weeks        | 52 mm    | 3 mm    |
| 32 weeks        | 54 mm    | 3 mm    |

| <b>Gest Age (week)</b> | <b>TIB (mm)</b> | <b>+/-1 SD</b> |
|------------------------|-----------------|----------------|
| 33 weeks               | 56 mm           | 4 mm           |
| 34 weeks               | 57 mm           | 4 mm           |
| 35 weeks               | 59 mm           | 6 mm           |
| 36 weeks               | 60 mm           | 6 mm           |
| 37 weeks               | 61 mm           | 5 mm           |
| 38 weeks               | 62 mm           | 5 mm           |
| 39 weeks               | 64 mm           | 3 mm           |
| 40 weeks               | 65 mm           | 3 mm           |



# **2 Gestational Age Equations and Tables**





# Abdominal Circumference (GA by AC)

## GA by AC - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:**

Input parameter: AC (mm)

Min limit: 52

Max limit: 367

Output: GA (week)

Equation:

$$0.0000367 * \_AC * \_AC + 0.07715 * \_AC + 7.192$$

## GA by AC - CFEF2000

**Name:** CFEF 2000

**Author:** CFEF

**Year:** 2000

**Reference:** Crequat J, Duyme M and Brodaty G, Fetal growth charts by the French College of fetal ultrasonography and the Inserm U 155 , Biometry 2000, 28, pp 435-455, 2000

**Comments:** <http://cfef.org/>

| AC (mm) | GA (week) |
|---------|-----------|
| 95 mm   | 15 weeks  |

| AC (mm)  | GA (week) |
|----------|-----------|
| 106.4 mm | 16 weeks  |
| 118 mm   | 17 weeks  |
| 129.2 mm | 18 weeks  |
| 140.4 mm | 19 weeks  |
| 151.4 mm | 20 weeks  |
| 162.3 mm | 21 weeks  |
| 173 mm   | 22 weeks  |
| 183.6 mm | 23 weeks  |
| 194 mm   | 24 weeks  |
| 204.4 mm | 25 weeks  |
| 214.5 mm | 26 weeks  |
| 224.5 mm | 27 weeks  |
| 234.4 mm | 28 weeks  |
| 244 mm   | 29 weeks  |
| 253.6 mm | 30 weeks  |
| 263 mm   | 31 weeks  |
| 272.2 mm | 32 weeks  |
| 281.2 mm | 33 weeks  |
| 290.2 mm | 34 weeks  |
| 298.8 mm | 35 weeks  |
| 307.4 mm | 36 weeks  |
| 316 mm   | 37 weeks  |
| 324.7 mm | 38 weeks  |
| 332.4 mm | 39 weeks  |
| 339 mm   | 40 weeks  |

## GA by AC - Hadlock1984

**Name:** Hadlock 1984

**Author:** Hadlock

**Year:** 1984

**Reference:** Hadlock F.P, Deter R.L, Harrist R.B. and Park S.K, Estimating fetal age: computer-assisted analysis of multiple fetal growth parameters, Radiology,152, pp 497-501, 1984

**Comments:**

| AC (cm) | GA (week)     | +/-2 SD    |
|---------|---------------|------------|
| 4.6 cm  | 11.68 weeks   | 1.66 weeks |
| 5.3 cm  | 12.232 weeks  | 1.66 weeks |
| 6 cm    | 12.7876 weeks | 1.66 weeks |
| 6.7 cm  | 13.3467 weeks | 1.66 weeks |
| 7.3 cm  | 13.8287 weeks | 1.66 weeks |
| 8 cm    | 14.3944 weeks | 1.66 weeks |
| 8.6 cm  | 14.8821 weeks | 1.66 weeks |
| 9.3 cm  | 15.4543 weeks | 1.66 weeks |
| 9.9 cm  | 15.9475 weeks | 1.66 weeks |
| 10.6 cm | 16.5263 weeks | 1.66 weeks |
| 11.2 cm | 17.0252 weeks | 1.66 weeks |
| 11.9 cm | 17.6105 weeks | 1.66 weeks |
| 12.5 cm | 18.115 weeks  | 2.06 weeks |
| 13.1 cm | 18.6221 weeks | 2.06 weeks |
| 13.7 cm | 19.1318 weeks | 2.06 weeks |
| 14.4 cm | 19.7297 weeks | 2.06 weeks |
| 15 cm   | 20.245 weeks  | 2.06 weeks |
| 15.6 cm | 20.7629 weeks | 2.06 weeks |
| 16.2 cm | 21.2834 weeks | 2.06 weeks |
| 16.8 cm | 21.8065 weeks | 2.06 weeks |
| 17.4 cm | 22.3321 weeks | 2.06 weeks |
| 17.9 cm | 22.7722 weeks | 2.06 weeks |
| 18.5 cm | 23.3026 weeks | 2.06 weeks |
| 19.1 cm | 23.8356 weeks | 2.06 weeks |
| 19.7 cm | 24.3712 weeks | 2.18 weeks |
| 20.2 cm | 24.8195 weeks | 2.18 weeks |
| 20.8 cm | 25.3599 weeks | 2.18 weeks |
| 21.3 cm | 25.8122 weeks | 2.18 weeks |

| AC (cm) | GA (week)     | +/-2 SD    |
|---------|---------------|------------|
| 21.9 cm | 26.3573 weeks | 2.18 weeks |
| 22.4 cm | 26.8135 weeks | 2.18 weeks |
| 23 cm   | 27.3634 weeks | 2.18 weeks |
| 23.5 cm | 27.8236 weeks | 2.18 weeks |
| 24 cm   | 28.2856 weeks | 2.18 weeks |
| 24.6 cm | 28.8424 weeks | 2.18 weeks |
| 25.1 cm | 29.3083 weeks | 2.18 weeks |
| 25.6 cm | 29.7761 weeks | 2.18 weeks |
| 26.1 cm | 30.2457 weeks | 2.96 weeks |
| 26.6 cm | 30.717 weeks  | 2.96 weeks |
| 27.1 cm | 31.1902 weeks | 2.96 weeks |
| 27.6 cm | 31.6651 weeks | 2.96 weeks |
| 28.1 cm | 32.1419 weeks | 2.96 weeks |
| 28.6 cm | 32.6205 weeks | 2.96 weeks |
| 29.1 cm | 33.1008 weeks | 2.96 weeks |
| 29.5 cm | 33.4864 weeks | 2.96 weeks |
| 30 cm   | 33.97 weeks   | 2.96 weeks |
| 30.5 cm | 34.4554 weeks | 2.96 weeks |
| 30.9 cm | 34.845 weeks  | 2.96 weeks |
| 31.4 cm | 35.3337 weeks | 2.96 weeks |
| 31.8 cm | 35.7259 weeks | 3.04 weeks |
| 32.3 cm | 36.2177 weeks | 3.04 weeks |
| 32.7 cm | 36.6125 weeks | 3.04 weeks |
| 33.2 cm | 37.1077 weeks | 3.04 weeks |
| 33.6 cm | 37.5051 weeks | 3.04 weeks |
| 34 cm   | 37.9036 weeks | 3.04 weeks |
| 34.4 cm | 38.3033 weeks | 3.04 weeks |
| 34.8 cm | 38.7041 weeks | 3.04 weeks |
| 35.3 cm | 39.2068 weeks | 3.04 weeks |
| 35.7 cm | 39.6103 weeks | 3.04 weeks |
| 36.1 cm | 40.0149 weeks | 3.04 weeks |
| 36.5 cm | 40.4206 weeks | 3.04 weeks |

| AC (cm) | GA (week)     | +/-2 SD    |
|---------|---------------|------------|
| 36.9 cm | 40.8275 weeks | 3.04 weeks |
| 37.3 cm | 41.2355 weeks | 3.04 weeks |
| 37.7 cm | 41.6447 weeks | 3.04 weeks |
| 38.1 cm | 42.0551 weeks | 3.04 weeks |

## GA by AC - Hansmann1986

**Name:** Hansmann\_1986

**Author:** Hansmann

**Year:** 1986

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, Ultrasound Diagnosis in Obstetrics and Gynecology, Springer-Verlag, New York, 1986

**Comments:**

| AC (cm) | GA (week) |
|---------|-----------|
| 5.3 cm  | 12 weeks  |
| 6.3 cm  | 13 weeks  |
| 7.5 cm  | 14 weeks  |
| 8.5 cm  | 15 weeks  |
| 9.7 cm  | 16 weeks  |
| 10.7 cm | 17 weeks  |
| 11.6 cm | 18 weeks  |
| 12.6 cm | 19 weeks  |
| 13.5 cm | 20 weeks  |
| 14.5 cm | 21 weeks  |
| 15.5 cm | 22 weeks  |
| 16.5 cm | 23 weeks  |
| 17.3 cm | 24 weeks  |
| 18.3 cm | 25 weeks  |
| 19.1 cm | 26 weeks  |
| 20.2 cm | 27 weeks  |
| 21.1 cm | 28 weeks  |

| AC (cm) | GA (week) |
|---------|-----------|
| 22.2 cm | 29 weeks  |
| 23 cm   | 30 weeks  |
| 24 cm   | 31 weeks  |
| 24.9 cm | 32 weeks  |
| 25.8 cm | 33 weeks  |
| 26.8 cm | 34 weeks  |
| 27.7 cm | 35 weeks  |
| 28.7 cm | 36 weeks  |
| 29.6 cm | 37 weeks  |
| 30.6 cm | 38 weeks  |
| 31.5 cm | 39 weeks  |
| 32 cm   | 40 weeks  |

## GA by AC - Merz1988

**Name:** Merz 1988

**Author:** Merz

**Year:** 1988

**Reference:** Merz E, Goldhofer W and Timor-Tritsch E , Ultrasound in Gynecology and Obstetrics, Textbook and Atlas, Georg Thieme Verlag , 1991

**Comments:** From Merz E, Habilitationsschrift, Mainz University Woman's Hospital, 1988

| AC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 56 mm   | 12w1d   | 10w6d | 13w2d |
| 58 mm   | 12w2d   | 11w1d | 13w4d |
| 60 mm   | 12w4d   | 11w2d | 13w5d |
| 62 mm   | 12w5d   | 11w4d | 13w6d |
| 64 mm   | 12w6d   | 11w5d | 14w1d |
| 66 mm   | 13w1d   | 11w6d | 14w2d |
| 68 mm   | 13w2d   | 12w0d | 14w4d |
| 70 mm   | 13w4d   | 12w1d | 14w5d |

| AC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 72 mm   | 13w4d   | 12w3d | 14w6d |
| 74 mm   | 13w6d   | 12w4d | 15w1d |
| 76 mm   | 14w0d   | 12w6d | 15w2d |
| 78 mm   | 14w1d   | 12w6d | 15w4d |
| 80 mm   | 14w3d   | 13w1d | 15w5d |
| 82 mm   | 14w4d   | 13w2d | 15w6d |
| 84 mm   | 14w6d   | 13w4d | 16w1d |
| 86 mm   | 15w0d   | 13w5d | 16w2d |
| 88 mm   | 15w1d   | 13w6d | 16w4d |
| 90 mm   | 15w3d   | 14w0d | 16w5d |
| 92 mm   | 15w4d   | 14w1d | 16w6d |
| 94 mm   | 15w5d   | 14w3d | 17w1d |
| 96 mm   | 15w6d   | 14w4d | 17w2d |
| 98 mm   | 16w1d   | 14w6d | 17w4d |
| 100 mm  | 16w2d   | 14w6d | 17w5d |
| 102 mm  | 16w4d   | 15w1d | 17w6d |
| 104 mm  | 16w5d   | 15w2d | 18w1d |
| 106 mm  | 16w6d   | 15w4d | 18w2d |
| 108 mm  | 17w1d   | 15w5d | 18w3d |
| 110 mm  | 17w2d   | 15w6d | 18w4d |
| 112 mm  | 17w3d   | 16w0d | 18w6d |
| 114 mm  | 17w4d   | 16w1d | 19w0d |
| 116 mm  | 17w6d   | 16w3d | 19w1d |
| 118 mm  | 18w0d   | 16w4d | 19w3d |
| 120 mm  | 18w1d   | 16w6d | 19w4d |
| 122 mm  | 18w3d   | 17w0d | 19w6d |
| 124 mm  | 18w4d   | 17w1d | 20w0d |
| 126 mm  | 18w6d   | 17w2d | 20w1d |
| 128 mm  | 19w0d   | 17w4d | 20w3d |
| 130 mm  | 19w1d   | 17w5d | 20w4d |
| 132 mm  | 19w2d   | 17w6d | 20w6d |
| 134 mm  | 19w4d   | 18w0d | 21w0d |

| AC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 136 mm  | 19w5d   | 18w1d | 21w1d |
| 138 mm  | 19w6d   | 18w3d | 21w3d |
| 140 mm  | 20w1d   | 18w4d | 21w4d |
| 142 mm  | 20w2d   | 18w6d | 21w6d |
| 144 mm  | 20w4d   | 19w0d | 22w0d |
| 146 mm  | 20w5d   | 19w1d | 22w1d |
| 148 mm  | 20w6d   | 19w2d | 22w3d |
| 150 mm  | 21w1d   | 19w4d | 22w4d |
| 152 mm  | 21w1d   | 19w5d | 22w6d |
| 154 mm  | 21w3d   | 19w6d | 23w0d |
| 156 mm  | 21w4d   | 20w1d | 23w1d |
| 158 mm  | 21w6d   | 20w1d | 23w3d |
| 160 mm  | 22w0d   | 20w3d | 23w4d |
| 162 mm  | 22w1d   | 20w4d | 23w6d |
| 164 mm  | 22w3d   | 20w6d | 24w0d |
| 166 mm  | 22w4d   | 21w0d | 24w1d |
| 168 mm  | 22w6d   | 21w1d | 24w3d |
| 170 mm  | 23w0d   | 21w2d | 24w4d |
| 172 mm  | 23w1d   | 21w4d | 24w6d |
| 174 mm  | 23w2d   | 21w5d | 25w0d |
| 176 mm  | 23w4d   | 21w6d | 25w1d |
| 178 mm  | 23w5d   | 22w1d | 25w3d |
| 180 mm  | 23w6d   | 22w1d | 25w4d |
| 182 mm  | 24w1d   | 22w3d | 25w6d |
| 184 mm  | 24w2d   | 22w4d | 26w0d |
| 186 mm  | 24w4d   | 22w6d | 26w1d |
| 188 mm  | 24w5d   | 23w0d | 26w3d |
| 190 mm  | 24w6d   | 23w1d | 26w4d |
| 192 mm  | 25w0d   | 23w2d | 26w6d |
| 194 mm  | 25w1d   | 23w4d | 27w0d |
| 196 mm  | 25w3d   | 23w5d | 27w1d |
| 198 mm  | 25w4d   | 23w6d | 27w3d |



| AC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 200 mm  | 25w6d   | 24w1d | 27w4d |
| 202 mm  | 26w0d   | 24w2d | 27w6d |
| 204 mm  | 26w1d   | 24w3d | 27w6d |
| 206 mm  | 26w3d   | 24w4d | 28w1d |
| 208 mm  | 26w4d   | 24w6d | 28w2d |
| 210 mm  | 26w6d   | 25w0d | 28w4d |
| 212 mm  | 27w0d   | 25w1d | 28w5d |
| 214 mm  | 27w1d   | 25w2d | 28w6d |
| 216 mm  | 27w2d   | 25w4d | 29w1d |
| 218 mm  | 27w4d   | 25w5d | 29w2d |
| 220 mm  | 27w5d   | 25w6d | 29w4d |
| 222 mm  | 27w6d   | 26w1d | 29w5d |
| 224 mm  | 28w1d   | 26w2d | 29w6d |
| 226 mm  | 28w2d   | 26w3d | 30w1d |
| 228 mm  | 28w4d   | 26w4d | 30w2d |
| 230 mm  | 28w5d   | 26w6d | 30w4d |
| 232 mm  | 28w6d   | 27w0d | 30w5d |
| 234 mm  | 29w0d   | 27w1d | 30w6d |
| 236 mm  | 29w1d   | 27w3d | 31w1d |
| 238 mm  | 29w3d   | 27w4d | 31w2d |
| 240 mm  | 29w4d   | 27w5d | 31w4d |
| 242 mm  | 29w6d   | 27w6d | 31w5d |
| 244 mm  | 30w0d   | 28w1d | 31w6d |
| 246 mm  | 30w1d   | 28w2d | 32w1d |
| 248 mm  | 30w3d   | 28w3d | 32w2d |
| 250 mm  | 30w4d   | 28w4d | 32w4d |
| 252 mm  | 30w6d   | 28w6d | 32w5d |
| 254 mm  | 30w6d   | 29w0d | 32w6d |
| 256 mm  | 31w1d   | 29w1d | 33w1d |
| 258 mm  | 31w2d   | 29w3d | 33w2d |
| 260 mm  | 31w4d   | 29w4d | 33w4d |
| 262 mm  | 31w5d   | 29w5d | 33w5d |

| AC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 264 mm  | 31w6d   | 29w6d | 33w6d |
| 266 mm  | 32w1d   | 30w1d | 34w1d |
| 268 mm  | 32w2d   | 30w2d | 34w2d |
| 270 mm  | 32w4d   | 30w4d | 34w4d |
| 272 mm  | 32w5d   | 30w4d | 34w5d |
| 274 mm  | 32w6d   | 30w6d | 34w6d |
| 276 mm  | 33w0d   | 31w0d | 35w1d |
| 278 mm  | 33w1d   | 31w1d | 35w2d |
| 280 mm  | 33w3d   | 31w3d | 35w4d |
| 282 mm  | 33w4d   | 31w4d | 35w5d |
| 284 mm  | 33w6d   | 31w5d | 35w6d |
| 286 mm  | 34w0d   | 31w6d | 36w1d |
| 288 mm  | 34w1d   | 32w1d | 36w2d |
| 290 mm  | 34w3d   | 32w2d | 36w4d |
| 292 mm  | 34w4d   | 32w4d | 36w5d |
| 294 mm  | 34w5d   | 32w4d | 36w6d |
| 296 mm  | 34w6d   | 32w6d | 37w1d |
| 298 mm  | 35w1d   | 33w0d | 37w1d |
| 300 mm  | 35w2d   | 33w1d | 37w3d |
| 302 mm  | 35w4d   | 33w3d | 37w4d |
| 304 mm  | 35w5d   | 33w4d | 37w6d |
| 306 mm  | 35w6d   | 33w5d | 38w0d |
| 308 mm  | 36w1d   | 33w6d | 38w1d |
| 310 mm  | 36w2d   | 34w1d | 38w3d |
| 312 mm  | 36w4d   | 34w2d | 38w4d |
| 314 mm  | 36w4d   | 34w4d | 38w6d |
| 316 mm  | 36w6d   | 34w4d | 39w0d |
| 318 mm  | 37w0d   | 34w6d | 39w1d |
| 320 mm  | 37w1d   | 35w0d | 39w3d |
| 322 mm  | 37w3d   | 35w1d | 39w4d |
| 324 mm  | 37w4d   | 35w3d | 39w6d |
| 326 mm  | 37w6d   | 35w4d | 40w0d |

| AC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 328 mm  | 38w0d   | 35w5d | 40w1d |
| 330 mm  | 38w1d   | 35w6d | 40w3d |
| 332 mm  | 38w3d   | 36w1d | 40w4d |
| 334 mm  | 38w4d   | 36w2d | 40w6d |
| 336 mm  | 38w5d   | 36w4d | 41w0d |
| 338 mm  | 38w6d   | 36w5d | 41w1d |
| 340 mm  | 39w1d   | 36w6d | 41w3d |
| 342 mm  | 39w2d   | 37w0d | 41w4d |
| 344 mm  | 39w4d   | 37w1d | 41w6d |
| 346 mm  | 39w5d   | 37w3d | 42w0d |
| 348 mm  | 39w6d   | 37w4d | 42w1d |

## Biparietal Diameter (GA by BPD)

### GA by BPD - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:** Equivalent to 1989 table

Input parameter: BPD (mm)

Min limit: 16

Max limit: 98

Output: GA (week)

Equation:

$$0.397 * \_BPD - 0.00306 * \_BPD^2 + 0.00002788 * \_BPD^3 + 4.933$$

## GA by BPD - CFEF2000

**Name:** CFEF 2000

**Author:** CFEF

**Year:** 2000

**Reference:** Crequat J, Duyme M and Brodaty G, Fetal growth charts by the French College of fetal ultrasonography and the Inserm U 155 , Biometry 2000, 28, pp 435-455, 2000

**Comments:** <http://cfef.org/>

| BPD (mm) | GA (week) |
|----------|-----------|
| 15.36 mm | 11 weeks  |
| 19.4 mm  | 12 weeks  |
| 23.3 mm  | 13 weeks  |
| 27.14 mm | 14 weeks  |
| 30.89 mm | 15 weeks  |
| 34.53 mm | 16 weeks  |
| 38.12 mm | 17 weeks  |
| 41.58 mm | 18 weeks  |
| 45 mm    | 19 weeks  |
| 48.22 mm | 20 weeks  |
| 51.43 mm | 21 weeks  |
| 54.53 mm | 22 weeks  |
| 57.51 mm | 23 weeks  |
| 60.42 mm | 24 weeks  |
| 63.25 mm | 25 weeks  |
| 65.94 mm | 26 weeks  |
| 68.55 mm | 27 weeks  |
| 71.03 mm | 28 weeks  |
| 73.5 mm  | 29 weeks  |
| 75.8 mm  | 30 weeks  |
| 78 mm    | 31 weeks  |

| BPD (mm) | GA (week) |
|----------|-----------|
| 80.16 mm | 32 weeks  |
| 82.14 mm | 33 weeks  |
| 84.07 mm | 34 weeks  |
| 85.9 mm  | 35 weeks  |
| 87.61 mm | 36 weeks  |
| 89.24 mm | 37 weeks  |
| 90.7 mm  | 38 weeks  |
| 92.1 mm  | 39 weeks  |
| 93.45 mm | 40 weeks  |
| 94 mm    | 41 weeks  |

## GA by BPD - Hadlock1984

**Name:** Hadlock 1984

**Author:** Hadlock

**Year:** 1984

**Reference:** Hadlock F.P, Deter R.L, Harrist R.B. and Park S.K, Estimating fetal age: computer-assisted analysis of multiple fetal growth parameters, Radiology,152, pp 497-501, 1984

**Comments:**

| BPD (cm) | GA (week)     | +/-2 SD    |
|----------|---------------|------------|
| 1.7 cm   | 12.5438 weeks | 1.19 weeks |
| 1.9 cm   | 12.9608 weeks | 1.19 weeks |
| 2.1 cm   | 13.3913 weeks | 1.19 weeks |
| 2.3 cm   | 13.8352 weeks | 1.19 weeks |
| 2.5 cm   | 14.2925 weeks | 1.19 weeks |
| 2.7 cm   | 14.7632 weeks | 1.19 weeks |
| 2.9 cm   | 15.2473 weeks | 1.19 weeks |
| 3.1 cm   | 15.7448 weeks | 1.19 weeks |
| 3.2 cm   | 15.9986 weeks | 1.19 weeks |
| 3.4 cm   | 16.5163 weeks | 1.19 weeks |
| 3.6 cm   | 17.0473 weeks | 1.19 weeks |

| <b>BPD (cm)</b> | <b>GA (week)</b> | <b>+/-2 SD</b> |
|-----------------|------------------|----------------|
| 3.8 cm          | 17.5917 weeks    | 1.19 weeks     |
| 3.9 cm          | 17.869 weeks     | 1.73 weeks     |
| 4.1 cm          | 18.4336 weeks    | 1.73 weeks     |
| 4.3 cm          | 19.0115 weeks    | 1.73 weeks     |
| 4.5 cm          | 19.6029 weeks    | 1.73 weeks     |
| 4.6 cm          | 19.9036 weeks    | 1.73 weeks     |
| 4.8 cm          | 20.5151 weeks    | 1.73 weeks     |
| 5 cm            | 21.14 weeks      | 1.73 weeks     |
| 5.1 cm          | 21.4575 weeks    | 1.73 weeks     |
| 5.3 cm          | 22.1025 weeks    | 1.73 weeks     |
| 5.5 cm          | 22.7609 weeks    | 1.73 weeks     |
| 5.6 cm          | 23.0951 weeks    | 1.73 weeks     |
| 5.8 cm          | 23.7737 weeks    | 1.73 weeks     |
| 5.9 cm          | 24.118 weeks     | 2.18 weeks     |
| 6.1 cm          | 24.8166 weeks    | 2.18 weeks     |
| 6.2 cm          | 25.1709 weeks    | 2.18 weeks     |
| 6.4 cm          | 25.8897 weeks    | 2.18 weeks     |
| 6.5 cm          | 26.2541 weeks    | 2.18 weeks     |
| 6.7 cm          | 26.993 weeks     | 2.18 weeks     |
| 6.8 cm          | 27.3674 weeks    | 2.18 weeks     |
| 6.9 cm          | 27.7452 weeks    | 2.18 weeks     |
| 7.1 cm          | 28.5109 weeks    | 2.18 weeks     |
| 7.2 cm          | 28.8988 weeks    | 2.18 weeks     |
| 7.3 cm          | 29.29 weeks      | 2.18 weeks     |
| 7.5 cm          | 30.0825 weeks    | 2.18 weeks     |
| 7.6 cm          | 30.4838 weeks    | 3.08 weeks     |
| 7.7 cm          | 30.8884 weeks    | 3.08 weeks     |
| 7.8 cm          | 31.2964 weeks    | 3.08 weeks     |
| 7.9 cm          | 31.7077 weeks    | 3.08 weeks     |
| 8.1 cm          | 32.5404 weeks    | 3.08 weeks     |
| 8.2 cm          | 32.9618 weeks    | 3.08 weeks     |
| 8.3 cm          | 33.3866 weeks    | 3.08 weeks     |

| BPD (cm) | GA (week)     | +/-2 SD    |
|----------|---------------|------------|
| 8.4 cm   | 33.8147 weeks | 3.08 weeks |
| 8.5 cm   | 34.2461 weeks | 3.08 weeks |
| 8.6 cm   | 34.6809 weeks | 3.08 weeks |
| 8.7 cm   | 35.119 weeks  | 3.08 weeks |
| 8.8 cm   | 35.5605 weeks | 3.08 weeks |
| 8.9 cm   | 36.0054 weeks | 3.2 weeks  |
| 9 cm     | 36.4536 weeks | 3.2 weeks  |
| 9.1 cm   | 36.9052 weeks | 3.2 weeks  |
| 9.2 cm   | 37.3601 weeks | 3.2 weeks  |
| 9.3 cm   | 37.8183 weeks | 3.2 weeks  |
| 9.4 cm   | 38.2799 weeks | 3.2 weeks  |
| 9.5 cm   | 38.7449 weeks | 3.2 weeks  |
| 9.6 cm   | 39.2132 weeks | 3.2 weeks  |
| 9.7 cm   | 39.6849 weeks | 3.2 weeks  |
| 9.8 cm   | 40.1599 weeks | 3.2 weeks  |
| 9.9 cm   | 40.6383 weeks | 3.2 weeks  |
| 10 cm    | 41.12 weeks   | 3.2 weeks  |
| 10.1 cm  | 41.6051 weeks | 3.2 weeks  |
| 10.2 cm  | 42.0935 weeks | 3.2 weeks  |

## GA by BPD - Hansmann 1986

**Name:** Hansmann\_1986

**Author:** Hansmann

**Year:** 1986

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, Ultrasound Diagnosis in Obstetrics and Gynecology, Springer-Verlag, New York, 1986

**Comments:**

| BPD (mm) | GA (day) | 5%      | 95%      |
|----------|----------|---------|----------|
| 29 mm    | 94 days  | 86 days | 101 days |
| 30 mm    | 96 days  | 89 days | 103 days |

| <b>BPD (mm)</b> | <b>GA (day)</b> | <b>5%</b> | <b>95%</b> |
|-----------------|-----------------|-----------|------------|
| 31 mm           | 98 days         | 90 days   | 106 days   |
| 32 mm           | 100 days        | 93 days   | 108 days   |
| 33 mm           | 102 days        | 94 days   | 111 days   |
| 34 mm           | 105 days        | 96 days   | 114 days   |
| 35 mm           | 107 days        | 99 days   | 115 days   |
| 36 mm           | 109 days        | 101 days  | 118 days   |
| 37 mm           | 112 days        | 104 days  | 120 days   |
| 38 mm           | 114 days        | 105 days  | 123 days   |
| 39 mm           | 116 days        | 108 days  | 125 days   |
| 40 mm           | 119 days        | 110 days  | 127 days   |
| 41 mm           | 121 days        | 112 days  | 130 days   |
| 42 mm           | 123 days        | 115 days  | 132 days   |
| 43 mm           | 125 days        | 116 days  | 134 days   |
| 44 mm           | 127 days        | 118 days  | 136 days   |
| 45 mm           | 130 days        | 121 days  | 139 days   |
| 46 mm           | 132 days        | 123 days  | 141 days   |
| 47 mm           | 134 days        | 125 days  | 144 days   |
| 48 mm           | 136 days        | 126 days  | 146 days   |
| 49 mm           | 138 days        | 127 days  | 148 days   |
| 50 mm           | 140 days        | 130 days  | 148 days   |
| 51 mm           | 143 days        | 133 days  | 153 days   |
| 52 mm           | 145 days        | 135 days  | 155 days   |
| 53 mm           | 147 days        | 136 days  | 158 days   |
| 54 mm           | 150 days        | 140 days  | 160 days   |
| 55 mm           | 152 days        | 142 days  | 161 days   |
| 56 mm           | 154 days        | 145 days  | 163 days   |
| 57 mm           | 156 days        | 147 days  | 165 days   |
| 58 mm           | 159 days        | 150 days  | 167 days   |
| 59 mm           | 161 days        | 151 days  | 171 days   |
| 60 mm           | 163 days        | 153 days  | 172 days   |
| 61 mm           | 165 days        | 155 days  | 175 days   |
| 62 mm           | 168 days        | 158 days  | 178 days   |



| <b>BPD (mm)</b> | <b>GA (day)</b> | <b>5%</b> | <b>95%</b> |
|-----------------|-----------------|-----------|------------|
| 63 mm           | 170 days        | 160 days  | 179 days   |
| 64 mm           | 172 days        | 162 days  | 182 days   |
| 65 mm           | 174 days        | 165 days  | 184 days   |
| 66 mm           | 176 days        | 167 days  | 187 days   |
| 67 mm           | 178 days        | 169 days  | 190 days   |
| 68 mm           | 181 days        | 171 days  | 191 days   |
| 69 mm           | 183 days        | 174 days  | 193 days   |
| 70 mm           | 185 days        | 175 days  | 195 days   |
| 71 mm           | 187 days        | 177 days  | 199 days   |
| 72 mm           | 190 days        | 179 days  | 200 days   |
| 73 mm           | 192 days        | 182 days  | 205 days   |
| 74 mm           | 195 days        | 183 days  | 207 days   |
| 75 mm           | 197 days        | 185 days  | 209 days   |
| 76 mm           | 200 days        | 187 days  | 212 days   |
| 77 mm           | 202 days        | 190 days  | 215 days   |
| 78 mm           | 205 days        | 191 days  | 220 days   |
| 79 mm           | 208 days        | 192 days  | 224 days   |
| 80 mm           | 210 days        | 195 days  | 225 days   |
| 81 mm           | 213 days        | 198 days  | 228 days   |
| 82 mm           | 217 days        | 202 days  | 232 days   |
| 83 mm           | 219 days        | 203 days  | 236 days   |
| 84 mm           | 223 days        | 206 days  | 240 days   |
| 85 mm           | 226 days        | 209 days  | 242 days   |
| 86 mm           | 229 days        | 211 days  | 246 days   |
| 87 mm           | 233 days        | 212 days  | 253 days   |
| 88 mm           | 236 days        | 217 days  | 255 days   |
| 89 mm           | 240 days        | 221 days  | 259 days   |
| 90 mm           | 243 days        | 224 days  | 262 days   |
| 91 mm           | 246 days        | 225 days  | 271 days   |
| 92 mm           | 251 days        | 233 days  | 275 days   |
| 93 mm           | 257 days        | 236 days  | 278 days   |
| 94 mm           | 262 days        | 243 days  | 281 days   |

| BPD (mm) | GA (day) | 5%       | 95%      |
|----------|----------|----------|----------|
| 95 mm    | 269 days | 247 days | 287 days |
| 96 mm    | 272 days | 247 days | 290 days |
| 97 mm    | 273 days | 251 days | 294 days |
| 98 mm    | 275 days | 255 days | 294 days |
| 99 mm    | 276 days | 256 days | 298 days |
| 100 mm   | 277 days | 257 days | 296 days |
| 101 mm   | 278 days | 260 days | 298 days |
| 102 mm   | 279 days | 260 days | 296 days |
| 103 mm   | 280 days | 261 days | 296 days |
| 104 mm   | 281 days | 262 days | 296 days |
| 105 mm   | 282 days | 265 days | 296 days |

## GA by BPD - Merz1988

**Name:** Merz 1988

**Author:** Merz

**Year:** 1988

**Reference:** Merz E, Goldhofer W and Timor-Tritsch E , Ultrasound in Gynecology and Obstetrics, Textbook and Atlas, Georg Thieme Verlag , 1991

**Comments:** From Merz E, Habilitationsschrift, Mainz University Woman's Hospital, 1988

| BPD (mm) | GA (wd) | 5%    | 95%   |
|----------|---------|-------|-------|
| 21 mm    | 12w1d   | 10w5d | 13w5d |
| 22 mm    | 12w3d   | 10w6d | 13w6d |
| 23 mm    | 12w5d   | 11w1d | 14w1d |
| 24 mm    | 13w0d   | 11w4d | 14w4d |
| 25 mm    | 13w1d   | 11w5d | 14w5d |
| 26 mm    | 13w4d   | 12w0d | 15w0d |
| 27 mm    | 13w6d   | 12w1d | 15w3d |
| 28 mm    | 14w1d   | 12w4d | 15w5d |
| 29 mm    | 14w2d   | 12w5d | 15w6d |

| <b>BPD (mm)</b> | <b>GA (wd)</b> | <b>5%</b> | <b>95%</b> |
|-----------------|----------------|-----------|------------|
| 30 mm           | 14w4d          | 13w0d     | 16w1d      |
| 31 mm           | 14w6d          | 13w2d     | 16w4d      |
| 32 mm           | 15w1d          | 13w4d     | 16w6d      |
| 33 mm           | 15w3d          | 13w6d     | 17w0d      |
| 34 mm           | 15w5d          | 14w0d     | 17w3d      |
| 35 mm           | 16w0d          | 14w2d     | 17w5d      |
| 36 mm           | 16w2d          | 14w4d     | 18w0d      |
| 37 mm           | 16w4d          | 14w6d     | 18w1d      |
| 38 mm           | 16w6d          | 15w1d     | 18w4d      |
| 39 mm           | 17w1d          | 15w3d     | 18w6d      |
| 40 mm           | 17w3d          | 15w5d     | 19w1d      |
| 41 mm           | 17w5d          | 15w6d     | 19w4d      |
| 42 mm           | 18w0d          | 16w1d     | 19w6d      |
| 43 mm           | 18w2d          | 16w4d     | 20w1d      |
| 44 mm           | 18w4d          | 16w6d     | 20w3d      |
| 45 mm           | 18w6d          | 17w1d     | 20w5d      |
| 46 mm           | 19w1d          | 17w3d     | 21w0d      |
| 47 mm           | 19w3d          | 17w4d     | 21w1d      |
| 48 mm           | 19w5d          | 17w6d     | 21w4d      |
| 49 mm           | 20w0d          | 18w1d     | 21w6d      |
| 50 mm           | 20w3d          | 18w4d     | 22w1d      |
| 51 mm           | 20w5d          | 18w6d     | 22w4d      |
| 52 mm           | 21w0d          | 19w1d     | 22w6d      |
| 53 mm           | 21w2d          | 19w3d     | 23w1d      |
| 54 mm           | 21w4d          | 19w5d     | 23w4d      |
| 55 mm           | 21w6d          | 20w0d     | 23w6d      |
| 56 mm           | 22w1d          | 20w2d     | 24w1d      |
| 57 mm           | 22w4d          | 20w4d     | 24w3d      |
| 58 mm           | 22w6d          | 20w6d     | 24w5d      |
| 59 mm           | 23w1d          | 21w1d     | 25w1d      |
| 60 mm           | 23w4d          | 21w4d     | 25w4d      |
| 61 mm           | 23w6d          | 21w6d     | 25w6d      |

| <b>BPD (mm)</b> | <b>GA (wd)</b> | <b>5%</b> | <b>95%</b> |
|-----------------|----------------|-----------|------------|
| 62 mm           | 24w1d          | 22w1d     | 26w1d      |
| 63 mm           | 24w4d          | 22w4d     | 26w4d      |
| 64 mm           | 24w6d          | 22w6d     | 26w6d      |
| 65 mm           | 25w1d          | 23w1d     | 27w1d      |
| 66 mm           | 25w4d          | 23w4d     | 27w4d      |
| 67 mm           | 25w6d          | 23w6d     | 27w6d      |
| 68 mm           | 26w1d          | 24w1d     | 28w2d      |
| 69 mm           | 26w4d          | 24w3d     | 28w4d      |
| 70 mm           | 26w6d          | 24w5d     | 28w6d      |
| 71 mm           | 27w1d          | 25w1d     | 29w2d      |
| 72 mm           | 27w4d          | 25w4d     | 29w5d      |
| 73 mm           | 27w6d          | 25w6d     | 30w0d      |
| 74 mm           | 28w2d          | 26w1d     | 30w3d      |
| 75 mm           | 28w4d          | 26w4d     | 30w5d      |
| 76 mm           | 29w0d          | 26w6d     | 31w1d      |
| 77 mm           | 29w3d          | 27w1d     | 31w4d      |
| 78 mm           | 29w6d          | 27w4d     | 32w0d      |
| 79 mm           | 30w1d          | 27w6d     | 32w2d      |
| 80 mm           | 30w4d          | 28w2d     | 32w5d      |
| 81 mm           | 30w6d          | 28w5d     | 33w1d      |
| 82 mm           | 31w2d          | 29w1d     | 33w4d      |
| 83 mm           | 31w5d          | 29w4d     | 33w6d      |
| 84 mm           | 32w1d          | 29w6d     | 34w2d      |
| 85 mm           | 32w4d          | 30w2d     | 34w5d      |
| 86 mm           | 32w6d          | 30w5d     | 35w1d      |
| 87 mm           | 33w2d          | 31w0d     | 35w4d      |
| 88 mm           | 33w6d          | 31w4d     | 36w1d      |
| 89 mm           | 34w1d          | 31w6d     | 36w4d      |
| 90 mm           | 34w4d          | 32w2d     | 36w6d      |
| 91 mm           | 35w1d          | 32w6d     | 37w3d      |
| 92 mm           | 35w4d          | 33w1d     | 37w6d      |
| 93 mm           | 35w6d          | 33w4d     | 38w1d      |

| BPD (mm) | GA (wd) | 5%    | 95%   |
|----------|---------|-------|-------|
| 94 mm    | 36w3d   | 34w0d | 38w6d |
| 95 mm    | 36w6d   | 34w4d | 39w2d |
| 96 mm    | 37w2d   | 34w6d | 39w5d |
| 97 mm    | 37w6d   | 35w3d | 40w1d |
| 98 mm    | 38w2d   | 35w6d | 40w5d |
| 99 mm    | 38w6d   | 36w3d | 41w1d |
| 100 mm   | 39w2d   | 36w6d | 41w6d |
| 101 mm   | 39w6d   | 37w2d | 42w2d |
| 102 mm   | 40w2d   | 37w6d | 42w6d |

## GA by BPD - Osaka 1989

**Name:** Osaka 1989

**Author:** Osaka

**Year:** 1989

**Reference:** Osaka University, Perinatal Care, vol.9, no 5, pp 407-422.

**Comments:**

| Biparietal Diameter (cm) | Gest Age (week) | +/-1 SD   |
|--------------------------|-----------------|-----------|
| 1.33 cm                  | 10 weeks        | 0.19 week |
| 1.72 cm                  | 11 weeks        | 0.2 week  |
| 2.09 cm                  | 12 weeks        | 0.21 week |
| 2.46 cm                  | 13 weeks        | 0.22 week |
| 2.82 cm                  | 14 weeks        | 0.23 week |
| 3.18 cm                  | 15 weeks        | 0.24 week |
| 3.52 cm                  | 16 weeks        | 0.25 week |
| 3.86 cm                  | 17 weeks        | 0.26 week |
| 4.2 cm                   | 18 weeks        | 0.27 week |
| 4.53 cm                  | 19 weeks        | 0.28 week |
| 4.85 cm                  | 20 weeks        | 0.29 week |
| 5.17 cm                  | 21 weeks        | 0.29 week |
| 5.48 cm                  | 22 weeks        | 0.3 week  |

| Biparietal Diameter (cm) | Gest Age (week) | +/-1 SD   |
|--------------------------|-----------------|-----------|
| 5.79 cm                  | 23 weeks        | 0.31 week |
| 6.09 cm                  | 24 weeks        | 0.32 week |
| 6.39 cm                  | 25 weeks        | 0.32 week |
| 6.67 cm                  | 26 weeks        | 0.33 week |
| 6.95 cm                  | 27 weeks        | 0.34 week |
| 7.23 cm                  | 28 weeks        | 0.34 week |
| 7.49 cm                  | 29 weeks        | 0.35 week |
| 7.74 cm                  | 30 weeks        | 0.35 week |
| 7.98 cm                  | 31 weeks        | 0.36 week |
| 8.21 cm                  | 32 weeks        | 0.36 week |
| 8.43 cm                  | 33 weeks        | 0.37 week |
| 8.62 cm                  | 34 weeks        | 0.37 week |
| 8.8 cm                   | 35 weeks        | 0.37 week |
| 8.96 cm                  | 36 weeks        | 0.38 week |
| 9.1 cm                   | 37 weeks        | 0.38 week |
| 9.21 cm                  | 38 weeks        | 0.38 week |
| 9.3 cm                   | 39 weeks        | 0.39 week |
| 9.36 cm                  | 40 weeks        | 0.39 week |

## Biparietal Diameter outer - outer (GA by BPDoo)

### GA by BPD - ISUOG\_Leung2008

**Name:** ISUOG Leung 2008 (BPDoo)

**Author:** ISUOG\_Leung

**Year:** 2008

**Reference:** "Fetal biometry in ethnic Chinese: biparietal diameter, head circumference, abdominal circumference and femur length. T. N. LEUNG, M. W. PANG, S. S. DALJIT, T. Y. LEUNG, C. F. POON,

S. M. WONG and T. K. LAU Fetal. Medicine Unit, Department of Obstetrics and Gynaecology, The Chinese University of Hong Kong, The Prince of Wales Hospital, Hong Kong"

**Comments:**

Input parameter: BPD (cm)

Min limit: 1.73471

Max limit: 9.72529

Output: Gest Age (week)

Equation:

$$7.717964+2.339119*\_BPD+0.010324*\_BPD^2+0.008511*\_BPD^3$$

## Biparietal Diameter outer - inner (GA by BPDoi)

### GA by BPD - ISUOG\_Leung2008

**Name:** ISUOG Leung 2008 (BPDoi)

**Author:** ISUOG\_Leung

**Year:** 2008

**Reference:** "Fetal biometry in ethnic Chinese: biparietal diameter, head circumference, abdominal circumference and femur length. T. N. LEUNG, M. W. PANG, S. S. DALJIT, T. Y. LEUNG, C. F. POON, S. M. WONG and T. K. LAU. Fetal Medicine Unit, Department of Obstetrics and Gynaecology, The Chinese University of Hong Kong, The Prince of Wales Hospital, Hong Kong"

**Comments:**

Input parameter: BPD (cm)

Min limit: 1.71283

Max limit: 11.5873

Output: Gest Age (week)

Equation:

$$7.996225 + 2.277074 * \_BPD + 0.025200 * \_BPD^2 + 0.008007 * \_BPD^3$$

## Crown-Rump Length (GA by CRL)

### GA by CRL - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:**

Input parameter: CRL (mm)

Min limit: 1

Max limit: 87

Output: GA (week)

Equation:

$$-0.0007 * \_CRL * \_CRL + 0.1584 * \_CRL + 5.2876$$

### GA by CRL - Hadlock1992

**Name:** Hadlock 1992

**Author:** Hadlock

**Year:** 1992



**Reference:** Hadlock F.P, Shah Y.P.,Kanon D.J. and lindsay J.V., Fetal crown-rump length: reevaluation of relation to menstrual age (5-18 weeks) with high-resolution real-time US, Radiology, 182 pp 501-505, 1992

**Comments:**

| CRL (cm) | GA (week) | 5%          | 95%          |
|----------|-----------|-------------|--------------|
| 0.2 cm   | 5.7 weeks | 5.244 weeks | 6.156 weeks  |
| 0.3 cm   | 5.9 weeks | 5.428 weeks | 6.372 weeks  |
| 0.4 cm   | 6.1 weeks | 5.612 weeks | 6.588 weeks  |
| 0.5 cm   | 6.2 weeks | 5.704 weeks | 6.696 weeks  |
| 0.6 cm   | 6.4 weeks | 5.888 weeks | 6.912 weeks  |
| 0.7 cm   | 6.6 weeks | 6.072 weeks | 7.128 weeks  |
| 0.8 cm   | 6.7 weeks | 6.164 weeks | 7.236 weeks  |
| 0.9 cm   | 6.9 weeks | 6.348 weeks | 7.452 weeks  |
| 1 cm     | 7.2 weeks | 6.624 weeks | 7.776 weeks  |
| 1.1 cm   | 7.2 weeks | 6.624 weeks | 7.776 weeks  |
| 1.2 cm   | 7.4 weeks | 6.808 weeks | 7.992 weeks  |
| 1.3 cm   | 7.5 weeks | 6.9 weeks   | 8.1 weeks    |
| 1.4 cm   | 7.7 weeks | 7.084 weeks | 8.316 weeks  |
| 1.5 cm   | 7.9 weeks | 7.268 weeks | 8.532 weeks  |
| 1.6 cm   | 8 weeks   | 7.36 weeks  | 8.64 weeks   |
| 1.7 cm   | 8.1 weeks | 7.452 weeks | 8.748 weeks  |
| 1.8 cm   | 8.3 weeks | 7.636 weeks | 8.964 weeks  |
| 1.9 cm   | 8.4 weeks | 7.728 weeks | 9.072 weeks  |
| 2 cm     | 8.6 weeks | 7.912 weeks | 9.288 weeks  |
| 2.1 cm   | 8.7 weeks | 8.004 weeks | 9.396 weeks  |
| 2.2 cm   | 8.9 weeks | 8.188 weeks | 9.612 weeks  |
| 2.3 cm   | 9 weeks   | 8.28 weeks  | 9.72 weeks   |
| 2.4 cm   | 9.1 weeks | 8.372 weeks | 9.828 weeks  |
| 2.5 cm   | 9.2 weeks | 8.464 weeks | 9.936 weeks  |
| 2.6 cm   | 9.4 weeks | 8.648 weeks | 10.152 weeks |
| 2.7 cm   | 9.5 weeks | 8.74 weeks  | 10.26 weeks  |
| 2.8 cm   | 9.6 weeks | 8.832 weeks | 10.368 weeks |

| <b>CRL (cm)</b> | <b>GA (week)</b> | <b>5%</b>    | <b>95%</b>   |
|-----------------|------------------|--------------|--------------|
| 2.9 cm          | 9.7 weeks        | 8.924 weeks  | 10.476 weeks |
| 3 cm            | 9.9 weeks        | 9.108 weeks  | 10.692 weeks |
| 3.1 cm          | 10 weeks         | 9.2 weeks    | 10.8 weeks   |
| 3.2 cm          | 10.1 weeks       | 9.292 weeks  | 10.908 weeks |
| 3.3 cm          | 10.2 weeks       | 9.384 weeks  | 11.016 weeks |
| 3.4 cm          | 10.3 weeks       | 9.476 weeks  | 11.124 weeks |
| 3.5 cm          | 10.4 weeks       | 9.568 weeks  | 11.232 weeks |
| 3.6 cm          | 10.5 weeks       | 9.66 weeks   | 11.34 weeks  |
| 3.7 cm          | 10.6 weeks       | 9.752 weeks  | 11.448 weeks |
| 3.8 cm          | 10.7 weeks       | 9.844 weeks  | 11.556 weeks |
| 3.9 cm          | 10.8 weeks       | 9.936 weeks  | 11.664 weeks |
| 4 cm            | 10.9 weeks       | 10.028 weeks | 11.772 weeks |
| 4.1 cm          | 11 weeks         | 10.12 weeks  | 11.88 weeks  |
| 4.2 cm          | 11.1 weeks       | 10.212 weeks | 11.988 weeks |
| 4.3 cm          | 11.2 weeks       | 10.304 weeks | 12.096 weeks |
| 4.4 cm          | 11.2 weeks       | 10.304 weeks | 12.096 weeks |
| 4.5 cm          | 11.3 weeks       | 10.396 weeks | 12.204 weeks |
| 4.6 cm          | 11.4 weeks       | 10.488 weeks | 12.312 weeks |
| 4.7 cm          | 11.5 weeks       | 10.58 weeks  | 12.42 weeks  |
| 4.8 cm          | 11.6 weeks       | 10.672 weeks | 12.528 weeks |
| 4.9 cm          | 11.7 weeks       | 10.764 weeks | 12.636 weeks |
| 5 cm            | 11.7 weeks       | 10.764 weeks | 12.636 weeks |
| 5.1 cm          | 11.8 weeks       | 10.856 weeks | 12.744 weeks |
| 5.2 cm          | 11.9 weeks       | 10.948 weeks | 12.852 weeks |
| 5.3 cm          | 12 weeks         | 11.04 weeks  | 12.96 weeks  |
| 5.4 cm          | 12 weeks         | 11.04 weeks  | 12.96 weeks  |
| 5.5 cm          | 12.1 weeks       | 11.132 weeks | 13.068 weeks |
| 5.6 cm          | 12.2 weeks       | 11.224 weeks | 13.176 weeks |
| 5.7 cm          | 12.3 weeks       | 11.316 weeks | 13.284 weeks |
| 5.8 cm          | 12.3 weeks       | 11.316 weeks | 13.284 weeks |
| 5.9 cm          | 12.4 weeks       | 11.408 weeks | 13.392 weeks |
| 6 cm            | 12.5 weeks       | 11.5 weeks   | 13.5 weeks   |

| <b>CRL (cm)</b> | <b>GA (week)</b> | <b>5%</b>    | <b>95%</b>   |
|-----------------|------------------|--------------|--------------|
| 6.1 cm          | 12.6 weeks       | 11.592 weeks | 13.608 weeks |
| 6.2 cm          | 12.6 weeks       | 11.592 weeks | 13.608 weeks |
| 6.3 cm          | 12.7 weeks       | 11.684 weeks | 13.716 weeks |
| 6.4 cm          | 12.8 weeks       | 11.776 weeks | 13.824 weeks |
| 6.5 cm          | 12.8 weeks       | 11.776 weeks | 13.824 weeks |
| 6.6 cm          | 12.9 weeks       | 11.868 weeks | 13.932 weeks |
| 6.7 cm          | 13 weeks         | 11.96 weeks  | 14.04 weeks  |
| 6.8 cm          | 13.1 weeks       | 12.052 weeks | 14.148 weeks |
| 6.9 cm          | 13.1 weeks       | 12.052 weeks | 14.148 weeks |
| 7 cm            | 13.2 weeks       | 12.144 weeks | 14.256 weeks |
| 7.1 cm          | 13.3 weeks       | 12.236 weeks | 14.364 weeks |
| 7.2 cm          | 13.4 weeks       | 12.328 weeks | 14.472 weeks |
| 7.3 cm          | 13.4 weeks       | 12.328 weeks | 14.472 weeks |
| 7.4 cm          | 13.5 weeks       | 12.42 weeks  | 14.58 weeks  |
| 7.5 cm          | 13.6 weeks       | 12.512 weeks | 14.688 weeks |
| 7.6 cm          | 13.7 weeks       | 12.604 weeks | 14.796 weeks |
| 7.7 cm          | 13.8 weeks       | 12.696 weeks | 14.904 weeks |
| 7.8 cm          | 13.8 weeks       | 12.696 weeks | 14.904 weeks |
| 7.9 cm          | 13.9 weeks       | 12.788 weeks | 15.012 weeks |
| 8 cm            | 14 weeks         | 12.88 weeks  | 15.12 weeks  |
| 8.1 cm          | 14.1 weeks       | 12.972 weeks | 15.228 weeks |
| 8.2 cm          | 14.2 weeks       | 13.064 weeks | 15.336 weeks |
| 8.3 cm          | 14.2 weeks       | 13.064 weeks | 15.336 weeks |
| 8.4 cm          | 14.3 weeks       | 13.156 weeks | 15.444 weeks |
| 8.5 cm          | 14.4 weeks       | 13.248 weeks | 15.552 weeks |
| 8.6 cm          | 14.5 weeks       | 13.34 weeks  | 15.66 weeks  |
| 8.7 cm          | 14.6 weeks       | 13.432 weeks | 15.768 weeks |
| 8.8 cm          | 14.7 weeks       | 13.524 weeks | 15.876 weeks |
| 8.9 cm          | 14.8 weeks       | 13.616 weeks | 15.984 weeks |
| 9 cm            | 14.9 weeks       | 13.708 weeks | 16.092 weeks |
| 9.1 cm          | 15 weeks         | 13.8 weeks   | 16.2 weeks   |
| 9.2 cm          | 15.1 weeks       | 13.892 weeks | 16.308 weeks |

| <b>CRL (cm)</b> | <b>GA (week)</b> | <b>5%</b>    | <b>95%</b>   |
|-----------------|------------------|--------------|--------------|
| 9.3 cm          | 15.2 weeks       | 13.984 weeks | 16.416 weeks |
| 9.4 cm          | 15.3 weeks       | 14.076 weeks | 16.524 weeks |
| 9.5 cm          | 15.3 weeks       | 14.076 weeks | 16.524 weeks |
| 9.6 cm          | 15.4 weeks       | 14.168 weeks | 16.632 weeks |
| 9.7 cm          | 15.5 weeks       | 14.26 weeks  | 16.74 weeks  |
| 9.8 cm          | 15.6 weeks       | 14.352 weeks | 16.848 weeks |
| 9.9 cm          | 15.7 weeks       | 14.444 weeks | 16.956 weeks |
| 10 cm           | 15.9 weeks       | 14.628 weeks | 17.172 weeks |
| 10.1 cm         | 16 weeks         | 14.72 weeks  | 17.28 weeks  |
| 10.2 cm         | 16.1 weeks       | 14.812 weeks | 17.388 weeks |
| 10.3 cm         | 16.2 weeks       | 14.904 weeks | 17.496 weeks |
| 10.4 cm         | 16.3 weeks       | 14.996 weeks | 17.604 weeks |
| 10.5 cm         | 16.4 weeks       | 15.088 weeks | 17.712 weeks |
| 10.6 cm         | 16.5 weeks       | 15.18 weeks  | 17.82 weeks  |
| 10.7 cm         | 16.6 weeks       | 15.272 weeks | 17.928 weeks |
| 10.8 cm         | 16.7 weeks       | 15.364 weeks | 18.036 weeks |
| 10.9 cm         | 16.8 weeks       | 15.456 weeks | 18.144 weeks |
| 11 cm           | 16.9 weeks       | 15.548 weeks | 18.252 weeks |
| 11.1 cm         | 17 weeks         | 15.64 weeks  | 18.36 weeks  |
| 11.2 cm         | 17.1 weeks       | 15.732 weeks | 18.468 weeks |
| 11.3 cm         | 17.2 weeks       | 15.824 weeks | 18.576 weeks |
| 11.4 cm         | 17.3 weeks       | 15.916 weeks | 18.684 weeks |
| 11.5 cm         | 17.4 weeks       | 16.008 weeks | 18.792 weeks |
| 11.6 cm         | 17.5 weeks       | 16.1 weeks   | 18.9 weeks   |
| 11.7 cm         | 17.6 weeks       | 16.192 weeks | 19.008 weeks |
| 11.8 cm         | 17.7 weeks       | 16.284 weeks | 19.116 weeks |
| 11.9 cm         | 17.8 weeks       | 16.376 weeks | 19.224 weeks |
| 12 cm           | 17.9 weeks       | 16.468 weeks | 19.332 weeks |
| 12.1 cm         | 18 weeks         | 16.56 weeks  | 19.44 weeks  |

## GA by CRL - Hansmann1986

**Name:** Hansmann\_1986

**Author:** Hansmann

**Year:** 1986

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, Ultrasound Diagnosis in Obstetrics and Gynecology, Springer-Verlag, New York, 1986

**Comments:**

| CRL (mm) | GA (wd) |
|----------|---------|
| 6 mm     | 6w1d    |
| 7 mm     | 6w2d    |
| 8 mm     | 6w4d    |
| 9 mm     | 6w6d    |
| 10 mm    | 7w0d    |
| 11 mm    | 7w2d    |
| 12 mm    | 7w3d    |
| 13 mm    | 7w4d    |
| 14 mm    | 7w6d    |
| 15 mm    | 8w0d    |
| 16 mm    | 8w2d    |
| 17 mm    | 8w3d    |
| 18 mm    | 8w4d    |
| 19 mm    | 8w5d    |
| 20 mm    | 8w6d    |
| 21 mm    | 9w0d    |
| 22 mm    | 9w1d    |
| 23 mm    | 9w2d    |
| 24 mm    | 9w3d    |
| 26 mm    | 9w5d    |
| 28 mm    | 10w0d   |
| 30 mm    | 10w2d   |
| 32 mm    | 10w3d   |

| <b>CRL (mm)</b> | <b>GA (wd)</b> |
|-----------------|----------------|
| 34 mm           | 10w5d          |
| 36 mm           | 10w6d          |
| 38 mm           | 11w1d          |
| 40 mm           | 11w2d          |
| 42 mm           | 11w3d          |
| 44 mm           | 11w4d          |
| 46 mm           | 11w6d          |
| 48 mm           | 12w0d          |
| 50 mm           | 12w1d          |
| 52 mm           | 12w2d          |
| 54 mm           | 12w3d          |
| 56 mm           | 12w4d          |
| 58 mm           | 12w5d          |
| 60 mm           | 12w6d          |
| 63 mm           | 13w0d          |
| 66 mm           | 13w2d          |
| 70 mm           | 13w3d          |
| 73 mm           | 13w5d          |
| 76 mm           | 13w6d          |
| 80 mm           | 14w1d          |
| 83 mm           | 14w2d          |
| 86 mm           | 14w4d          |
| 90 mm           | 14w6d          |
| 93 mm           | 15w1d          |
| 96 mm           | 15w3d          |
| 100 mm          | 15w5d          |
| 103 mm          | 16w0d          |
| 106 mm          | 16w2d          |
| 110 mm          | 16w4d          |
| 113 mm          | 17w0d          |
| 116 mm          | 17w2d          |
| 120 mm          | 17w4d          |

| CRL (mm) | GA (wd) |
|----------|---------|
| 123 mm   | 18w0d   |
| 126 mm   | 18w2d   |
| 130 mm   | 18w6d   |
| 133 mm   | 19w1d   |
| 136 mm   | 19w4d   |
| 140 mm   | 20w0d   |
| 143 mm   | 20w3d   |
| 146 mm   | 20w6d   |
| 150 mm   | 21w3d   |

## GA by CRL - ISUOG\_Sahota2009

**Name:** ISUOG Sahota 2009

**Author:** ISUOG\_Sahota

**Year:** 2009

**Reference:** "Sahota DS, Leung TY, Leung TN, Chan OK, Lau TK. Fetal crown-rump length and estimation of gestational age in an ethnic Chinese population. Ultrasound Obstet Gynecol 2009

**Comments:** Revision 3

Input parameter: CRL (mm)

Min limit: 5

Max limit: 85

Output: Gest Age (day)

Equation:

$$26.643+7.822*_{\_}CRL^{0.5}$$

## GA by CRL - McLeannan\_Schluter2008

**Name:** McLennan Schluter 2008

**Author:** McLeannan\_Schluter

**Year:** 2008

**Reference:** "McLennan AC, Schluter PJ. Construction of modern Australian first trimester ultrasound dating and growth charts. J Med Imaging Radiat Oncol 2008

**Comments:** Revision 5

| CRL (mm) | Gest Age (wd) |
|----------|---------------|
| 5 mm     | 6w0d          |
| 10 mm    | 7w0d          |
| 15 mm    | 7w6d          |
| 20 mm    | 8w4d          |
| 25 mm    | 9w1d          |
| 30 mm    | 9w5d          |
| 35 mm    | 10w2d         |
| 40 mm    | 10w5d         |
| 45 mm    | 11w1d         |
| 50 mm    | 11w4d         |
| 55 mm    | 12w0d         |
| 60 mm    | 12w2d         |
| 65 mm    | 12w5d         |
| 70 mm    | 13w0d         |
| 75 mm    | 13w2d         |
| 80 mm    | 13w3d         |

## GA by CRL - Osaka1989

**Name:** Osaka 1989

**Author:** Osaka



**Year:** 1989

**Reference:** Osaka University, Perinatal Care, vol.9, no 5, pp 407-422.

**Comments:**

| Crown Rump Length (cm) | Gest Age (week) | +/-1 SD   |
|------------------------|-----------------|-----------|
| 0.87 cm                | 7 weeks         | 0.16 week |
| 1.3 cm                 | 8 weeks         | 0.26 week |
| 2.04 cm                | 9 weeks         | 0.37 week |
| 3 cm                   | 10 weeks        | 0.48 week |
| 4.12 cm                | 11 weeks        | 0.58 week |
| 5.3 cm                 | 12 weeks        | 0.69 week |
| 6.49 cm                | 13 weeks        | 0.79 week |

## GA by CRL - Robinson\_Fleming1975

**Name:** Robinson Fleming 1975

**Author:** Robinson\_Fleming

**Year:** 1975

**Reference:** "Robinson HP, Fleming JE. A critical evaluation of sonar crown-rump length measurements. Br J Obstet Gynaecol 1975

**Comments:** Rev 3 - Derived by R Napolitano, J Dhami, EO Ohuma, C Ioannou, A Conde-Agudelo, SH Kennedy, J Villar, AT Papageorghioua, from Robinson HP, Fleming JE. A critical evaluation of sonar crown-rump length measurements. Br J Obstet Gynaecol. 1975

Input parameter: CRL (mm)

Min limit: 5

Max limit: 85

Output: Gest Age (day)

Equation:

$$8.052*(\_CRL*1.037)^{0.5}+23.73$$

## GA by CRL - Verburg2008

**Name:** Verburg\_2008

**Author:** Verburg

**Year:** 2008

**Reference:** "Verburg BO, Steegers EA, De Ridder M, Snijders RJ, Smith E, Hofman A, et al. New charts for ultrasound dating of pregnancy and assessment of fetal growth: longitudinal data from a population-based cohort study. Ultrasound Obstet Gynecol 2008

**Comments:** Rev3

| CRL (mm) | Gest Age (wd) |
|----------|---------------|
| 5 mm     | 6w2d          |
| 10 mm    | 7w4d          |
| 15 mm    | 8w2d          |
| 20 mm    | 9w0d          |
| 25 mm    | 9w4d          |
| 30 mm    | 10w0d         |
| 35 mm    | 10w3d         |
| 40 mm    | 10w6d         |
| 45 mm    | 11w2d         |
| 50 mm    | 11w5d         |
| 55 mm    | 12w0d         |
| 60 mm    | 12w3d         |
| 65 mm    | 12w5d         |
| 70 mm    | 13w0d         |
| 75 mm    | 13w3d         |
| 80 mm    | 13w5d         |
| 85 mm    | 14w0d         |

# Femur Length (GA by FL)

## GA by FL - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:**

Input parameter: FL (mm)

Min limit: 8

Max limit: 77

Output: GA (week)

Equation:

$$0.41 * \_FL - 0.002884 * \_FL * \_FL + 0.00003924 * \_FL * \_FL * \_FL + 8.284$$

## GA by FL - CFEF2000

**Name:** CFEF 2000

**Author:** CFEF

**Year:** 2000

**Reference:** Crequat J, Duyme M and Brodaty G, Fetal growth charts by the French College of fetal ultrasonography and the Inserm U 155 , Biometry 2000, 28, pp 435-455, 2000

**Comments:** <http://cfef.org/>

| FL (mm) | GA (week) |
|---------|-----------|
| 6.33 mm | 12 weeks  |
| 9.88 mm | 13 weeks  |

| <b>FL (mm)</b> | <b>GA (week)</b> |
|----------------|------------------|
| 13.33 mm       | 14 weeks         |
| 16.66 mm       | 15 weeks         |
| 19.95 mm       | 16 weeks         |
| 23.12 mm       | 17 weeks         |
| 26.23 mm       | 18 weeks         |
| 29.25 mm       | 19 weeks         |
| 32.23 mm       | 20 weeks         |
| 35.05 mm       | 21 weeks         |
| 37.87 mm       | 22 weeks         |
| 40.5 mm        | 23 weeks         |
| 43.16 mm       | 24 weeks         |
| 45.69 mm       | 25 weeks         |
| 48.17 mm       | 26 weeks         |
| 50.53 mm       | 27 weeks         |
| 52.8 mm        | 28 weeks         |
| 54.94 mm       | 29 weeks         |
| 57.13 mm       | 30 weeks         |
| 59.15 mm       | 31 weeks         |
| 61.11 mm       | 32 weeks         |
| 63 mm          | 33 weeks         |
| 64.76 mm       | 34 weeks         |
| 66.47 mm       | 35 weeks         |
| 68.13 mm       | 36 weeks         |
| 69.63 mm       | 37 weeks         |
| 71.11 mm       | 38 weeks         |
| 72.48 mm       | 39 weeks         |
| 73.79 mm       | 40 weeks         |
| 74 mm          | 41 weeks         |

## GA by FL - Chitty1997

**Name:** Chitty 1997

**Author:** Chitty

**Year:** 1997

**Reference:** Altman D.G and Chitty L.S, New charts for ultrasound dating of pregnancy, Ultrasound Obstet. Gynecol, Vol 10, pp 174-191, 1997

**Comments:**

| FL (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 10 mm   | 13w0d   | 12w1d | 13w6d |
| 11 mm   | 13w2d   | 12w3d | 14w1d |
| 12 mm   | 13w4d   | 12w5d | 14w4d |
| 13 mm   | 13w6d   | 13w0d | 14w6d |
| 14 mm   | 14w1d   | 13w1d | 15w1d |
| 15 mm   | 14w3d   | 13w3d | 15w3d |
| 16 mm   | 14w5d   | 13w5d | 15w6d |
| 17 mm   | 15w0d   | 14w0d | 16w1d |
| 18 mm   | 15w2d   | 14w2d | 16w3d |
| 19 mm   | 15w5d   | 14w4d | 16w6d |
| 20 mm   | 16w0d   | 14w6d | 17w1d |
| 21 mm   | 16w2d   | 15w1d | 17w3d |
| 22 mm   | 16w4d   | 15w3d | 17w6d |
| 23 mm   | 16w6d   | 15w5d | 18w1d |
| 24 mm   | 17w2d   | 16w0d | 18w4d |
| 25 mm   | 17w4d   | 16w2d | 18w6d |
| 26 mm   | 17w6d   | 16w4d | 19w2d |
| 27 mm   | 18w2d   | 16w6d | 19w5d |
| 28 mm   | 18w4d   | 17w1d | 20w0d |
| 29 mm   | 18w6d   | 17w4d | 20w3d |
| 30 mm   | 19w2d   | 17w6d | 20w5d |
| 31 mm   | 19w4d   | 18w1d | 21w1d |
| 32 mm   | 20w0d   | 18w3d | 21w4d |

| <b>FL (mm)</b> | <b>GA (wd)</b> | <b>5%</b> | <b>95%</b> |
|----------------|----------------|-----------|------------|
| 33 mm          | 20w2d          | 18w5d     | 22w0d      |
| 34 mm          | 20w5d          | 19w1d     | 22w2d      |
| 35 mm          | 21w0d          | 19w3d     | 22w5d      |
| 36 mm          | 21w3d          | 19w5d     | 23w1d      |
| 37 mm          | 21w5d          | 20w1d     | 23w4d      |
| 38 mm          | 22w1d          | 20w3d     | 24w0d      |
| 39 mm          | 22w4d          | 20w5d     | 24w3d      |
| 40 mm          | 22w6d          | 21w1d     | 24w6d      |
| 41 mm          | 23w2d          | 21w3d     | 25w2d      |
| 42 mm          | 23w5d          | 21w6d     | 25w5d      |
| 43 mm          | 24w1d          | 22w1d     | 26w1d      |
| 44 mm          | 24w3d          | 22w4d     | 26w4d      |
| 45 mm          | 24w6d          | 22w6d     | 27w1d      |
| 46 mm          | 25w2d          | 23w2d     | 27w4d      |
| 47 mm          | 25w5d          | 23w4d     | 28w0d      |
| 48 mm          | 26w1d          | 24w0d     | 28w3d      |
| 49 mm          | 26w4d          | 24w3d     | 29w0d      |
| 50 mm          | 27w0d          | 24w5d     | 29w3d      |
| 51 mm          | 27w3d          | 25w1d     | 30w0d      |
| 52 mm          | 27w6d          | 25w4d     | 30w3d      |
| 53 mm          | 28w2d          | 26w0d     | 31w0d      |
| 54 mm          | 28w5d          | 26w2d     | 31w3d      |
| 55 mm          | 29w2d          | 26w5d     | 32w0d      |
| 56 mm          | 29w5d          | 27w1d     | 32w3d      |
| 57 mm          | 30w1d          | 27w4d     | 33w0d      |
| 58 mm          | 30w4d          | 28w0d     | 33w4d      |
| 59 mm          | 31w1d          | 28w3d     | 34w1d      |
| 60 mm          | 31w4d          | 28w6d     | 34w4d      |
| 61 mm          | 32w1d          | 29w2d     | 35w1d      |
| 62 mm          | 32w4d          | 29w5d     | 35w5d      |
| 63 mm          | 33w1d          | 30w1d     | 36w2d      |
| 64 mm          | 33w4d          | 30w4d     | 36w6d      |

| FL (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 65 mm   | 34w1d   | 31w0d | 37w3d |
| 66 mm   | 34w4d   | 31w3d | 38w0d |
| 67 mm   | 35w1d   | 32w0d | 38w5d |

## GA by FL - Hadlock1984

**Name:** Hadlock 1984

**Author:** Hadlock

**Year:** 1984

**Reference:** Hadlock F.P, Deter R.L, Harrist R.B. and Park S.K, Estimating fetal age: computer-assisted analysis of multiple fetal growth parameters, Radiology,152, pp 497-501, 1984

**Comments:**

| FL (cm) | GA (week)     | +/-2 SD    |
|---------|---------------|------------|
| 0.7 cm  | 12.1553 weeks | 1.38 weeks |
| 0.9 cm  | 12.7017 weeks | 1.38 weeks |
| 1.1 cm  | 13.2617 weeks | 1.38 weeks |
| 1.2 cm  | 13.5468 weeks | 1.38 weeks |
| 1.4 cm  | 14.1272 weeks | 1.38 weeks |
| 1.6 cm  | 14.7212 weeks | 1.38 weeks |
| 1.7 cm  | 15.0233 weeks | 1.38 weeks |
| 1.9 cm  | 15.6377 weeks | 1.38 weeks |
| 2 cm    | 15.95 weeks   | 1.38 weeks |
| 2.2 cm  | 16.5848 weeks | 1.38 weeks |
| 2.4 cm  | 17.2332 weeks | 1.38 weeks |
| 2.5 cm  | 17.5625 weeks | 1.38 weeks |
| 2.7 cm  | 18.2313 weeks | 1.8 weeks  |
| 2.8 cm  | 18.5708 weeks | 1.8 weeks  |
| 3 cm    | 19.26 weeks   | 1.8 weeks  |
| 3.1 cm  | 19.6097 weeks | 1.8 weeks  |
| 3.3 cm  | 20.3193 weeks | 1.8 weeks  |
| 3.4 cm  | 20.6792 weeks | 1.8 weeks  |

| <b>FL (cm)</b> | <b>GA (week)</b> | <b>+/-2 SD</b> |
|----------------|------------------|----------------|
| 3.5 cm         | 21.0425 weeks    | 1.8 weeks      |
| 3.7 cm         | 21.7793 weeks    | 1.8 weeks      |
| 3.8 cm         | 22.1528 weeks    | 1.8 weeks      |
| 4 cm           | 22.91 weeks      | 1.8 weeks      |
| 4.1 cm         | 23.2937 weeks    | 1.8 weeks      |
| 4.2 cm         | 23.6808 weeks    | 1.8 weeks      |
| 4.4 cm         | 24.4652 weeks    | 2.08 weeks     |
| 4.5 cm         | 24.8625 weeks    | 2.08 weeks     |
| 4.6 cm         | 25.2632 weeks    | 2.08 weeks     |
| 4.7 cm         | 25.6673 weeks    | 2.08 weeks     |
| 4.9 cm         | 26.4857 weeks    | 2.08 weeks     |
| 5 cm           | 26.9 weeks       | 2.08 weeks     |
| 5.1 cm         | 27.3177 weeks    | 2.08 weeks     |
| 5.2 cm         | 27.7388 weeks    | 2.08 weeks     |
| 5.4 cm         | 28.5912 weeks    | 2.08 weeks     |
| 5.5 cm         | 29.0225 weeks    | 2.08 weeks     |
| 5.6 cm         | 29.4572 weeks    | 2.08 weeks     |
| 5.7 cm         | 29.8953 weeks    | 2.08 weeks     |
| 5.8 cm         | 30.3368 weeks    | 2.96 weeks     |
| 5.9 cm         | 30.7817 weeks    | 2.96 weeks     |
| 6 cm           | 31.23 weeks      | 2.96 weeks     |
| 6.1 cm         | 31.6817 weeks    | 2.96 weeks     |
| 6.2 cm         | 32.1368 weeks    | 2.96 weeks     |
| 6.3 cm         | 32.5953 weeks    | 2.96 weeks     |
| 6.4 cm         | 33.0572 weeks    | 2.96 weeks     |
| 6.5 cm         | 33.5225 weeks    | 2.96 weeks     |
| 6.6 cm         | 33.9912 weeks    | 2.96 weeks     |
| 6.7 cm         | 34.4633 weeks    | 2.96 weeks     |
| 6.8 cm         | 34.9388 weeks    | 2.96 weeks     |
| 6.9 cm         | 35.4177 weeks    | 2.96 weeks     |
| 7 cm           | 35.9 weeks       | 3.12 weeks     |
| 7.1 cm         | 36.3857 weeks    | 3.12 weeks     |



| FL (cm) | GA (week)     | +/-2 SD    |
|---------|---------------|------------|
| 7.2 cm  | 36.8748 weeks | 3.12 weeks |
| 7.3 cm  | 37.3673 weeks | 3.12 weeks |
| 7.4 cm  | 37.8632 weeks | 3.12 weeks |
| 7.5 cm  | 38.3625 weeks | 3.12 weeks |
| 7.6 cm  | 38.8652 weeks | 3.12 weeks |
| 7.7 cm  | 39.3713 weeks | 3.12 weeks |
| 7.8 cm  | 40.0705 weeks | 3.12 weeks |
| 7.9 cm  | 40.3937 weeks | 3.12 weeks |
| 8 cm    | 40.91 weeks   | 3.12 weeks |
| 8.1 cm  | 41.4297 weeks | 3.12 weeks |
| 8.2 cm  | 41.9528 weeks | 3.12 weeks |
| 8.3 cm  | 42.4793 weeks | 3.12 weeks |

## GA by FL - Hansmann 1986

**Name:** Hansmann\_1986

**Author:** Hansmann

**Year:** 1986

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, Ultrasound Diagnosis in Obstetrics and Gynecology, Springer-Verlag, New York, 1986

**Comments:**

| FL (cm) | GA (week) |
|---------|-----------|
| 1 cm    | 13 weeks  |
| 1.2 cm  | 14 weeks  |
| 1.6 cm  | 15 weeks  |
| 1.8 cm  | 16 weeks  |
| 2.2 cm  | 17 weeks  |
| 2.5 cm  | 18 weeks  |
| 2.8 cm  | 19 weeks  |
| 3.1 cm  | 20 weeks  |

| FL (cm) | GA (week) |
|---------|-----------|
| 3.4 cm  | 21 weeks  |
| 3.6 cm  | 22 weeks  |
| 3.9 cm  | 23 weeks  |
| 4.1 cm  | 24 weeks  |
| 4.4 cm  | 25 weeks  |
| 4.7 cm  | 26 weeks  |
| 4.9 cm  | 27 weeks  |
| 5.1 cm  | 28 weeks  |
| 5.4 cm  | 29 weeks  |
| 5.6 cm  | 30 weeks  |
| 5.9 cm  | 31 weeks  |
| 6.1 cm  | 32 weeks  |
| 6.3 cm  | 33 weeks  |
| 6.5 cm  | 34 weeks  |
| 6.7 cm  | 35 weeks  |
| 6.9 cm  | 36 weeks  |
| 7.1 cm  | 37 weeks  |
| 7.3 cm  | 38 weeks  |
| 7.4 cm  | 39 weeks  |
| 7.5 cm  | 40 weeks  |

## GA by FL - ISUOG\_Leung2008

**Name:** ISUOG Leung 2008

**Author:** ISUOG\_Leung

**Year:** 2008

**Reference:** "Fetal biometry in ethnic Chinese: biparietal diameter, head circumference, abdominal circumference and femur length. T. N. LEUNG, M. W. PANG, S. S. DALJIT, T. Y. LEUNG, C. F. POON, S. M. WONG and T. K. LAU. Fetal Medicine Unit, Department of Obstetrics and Gynaecology, The Chinese University of Hong Kong, The Prince of Wales Hospital, Hong Kong"

**Comments:**

Input parameter: FL (cm)

Min limit: 1.02208

Max limit: 8.79549

Output: Gest Age (week)

Equation:

$$11.52821+1.591733*_{FL}+0.435641*_{FL}^2-0.017006*_{FL}^3$$

## GA by FL - Jeanty1984

**Name:** Jeanty 1984

**Author:** Jeanty

**Year:** 1984

**Reference:** Estimation of Gestational Age from Measurements of Fetal Long Bones, Jeanty et al., February 1984, J Ultrasound Med

**Comments:**

Input parameter: FL (mm)

Min limit: 10

Max limit: 80

Output: Gest Age (week)

Equation:

$$9.5411757+(0.29774510*_{FL})+(0.0010388013*_{FL}^2)$$

## GA by FL - Merz1988

**Name:** Merz 1988

**Author:** Merz

**Year:** 1988

**Reference:** Merz E, Goldhofer W and Timor-Tritsch E , Ultrasound in Gynecology and Obstetrics, Textbook and Atlas, Georg Thieme Verlag , 1991

**Comments:** From Merz E, Habilitationsschrift, Mainz University Woman's Hospital, 1988

| FL (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 10 mm   | 12w2d   | 11w1d | 13w4d |
| 11 mm   | 12w5d   | 11w4d | 13w6d |
| 12 mm   | 13w0d   | 11w6d | 14w1d |
| 13 mm   | 13w2d   | 12w1d | 14w4d |
| 14 mm   | 13w5d   | 12w3d | 15w0d |
| 15 mm   | 14w0d   | 12w5d | 15w2d |
| 16 mm   | 14w3d   | 13w1d | 15w5d |
| 17 mm   | 14w5d   | 13w3d | 16w0d |
| 18 mm   | 15w1d   | 13w6d | 16w3d |
| 19 mm   | 15w3d   | 14w1d | 16w5d |
| 20 mm   | 15w6d   | 14w4d | 17w1d |
| 21 mm   | 16w1d   | 14w6d | 17w3d |
| 22 mm   | 16w4d   | 15w1d | 17w6d |
| 23 mm   | 16w6d   | 15w3d | 18w1d |
| 24 mm   | 17w1d   | 15w6d | 18w4d |
| 25 mm   | 17w4d   | 16w1d | 19w1d |
| 26 mm   | 17w6d   | 16w3d | 19w3d |
| 27 mm   | 18w2d   | 16w6d | 19w6d |
| 28 mm   | 18w4d   | 17w1d | 20w1d |
| 29 mm   | 19w0d   | 17w4d | 20w4d |
| 30 mm   | 19w3d   | 17w6d | 20w6d |
| 31 mm   | 19w5d   | 18w1d | 21w1d |
| 32 mm   | 20w1d   | 18w4d | 21w4d |
| 33 mm   | 20w4d   | 18w6d | 22w1d |
| 34 mm   | 20w6d   | 19w1d | 22w3d |
| 35 mm   | 21w1d   | 19w4d | 22w6d |
| 36 mm   | 21w4d   | 20w0d | 23w1d |
| 37 mm   | 21w6d   | 20w2d | 23w4d |
| 38 mm   | 22w2d   | 20w5d | 23w6d |
| 39 mm   | 22w5d   | 21w0d | 24w3d |

| <b>FL (mm)</b> | <b>GA (wd)</b> | <b>5%</b> | <b>95%</b> |
|----------------|----------------|-----------|------------|
| 40 mm          | 23w1d          | 21w3d     | 24w6d      |
| 41 mm          | 23w3d          | 21w5d     | 25w1d      |
| 42 mm          | 23w6d          | 22w1d     | 25w4d      |
| 43 mm          | 24w1d          | 22w4d     | 25w6d      |
| 44 mm          | 24w4d          | 22w6d     | 26w3d      |
| 45 mm          | 25w0d          | 23w1d     | 26w6d      |
| 46 mm          | 25w3d          | 23w4d     | 27w1d      |
| 47 mm          | 25w6d          | 24w0d     | 27w4d      |
| 48 mm          | 26w1d          | 24w3d     | 28w0d      |
| 49 mm          | 26w4d          | 24w5d     | 28w2d      |
| 50 mm          | 26w6d          | 25w1d     | 28w5d      |
| 51 mm          | 27w2d          | 25w4d     | 29w1d      |
| 52 mm          | 27w5d          | 25w6d     | 29w4d      |
| 53 mm          | 28w1d          | 26w1d     | 30w0d      |
| 54 mm          | 28w4d          | 26w4d     | 30w4d      |
| 55 mm          | 29w0d          | 27w0d     | 31w0d      |
| 56 mm          | 29w3d          | 27w3d     | 31w3d      |
| 57 mm          | 29w6d          | 27w6d     | 31w6d      |
| 58 mm          | 30w1d          | 28w1d     | 32w1d      |
| 59 mm          | 30w4d          | 28w4d     | 32w4d      |
| 60 mm          | 31w0d          | 29w0d     | 33w0d      |
| 61 mm          | 31w4d          | 29w4d     | 33w4d      |
| 62 mm          | 31w6d          | 29w6d     | 33w6d      |
| 63 mm          | 32w2d          | 30w2d     | 34w2d      |
| 64 mm          | 32w6d          | 30w6d     | 34w6d      |
| 65 mm          | 33w1d          | 31w1d     | 35w1d      |
| 66 mm          | 33w4d          | 31w4d     | 35w4d      |
| 67 mm          | 34w1d          | 32w0d     | 36w1d      |
| 68 mm          | 34w4d          | 32w3d     | 36w4d      |
| 69 mm          | 35w0d          | 32w6d     | 37w1d      |
| 70 mm          | 35w3d          | 33w2d     | 37w4d      |
| 71 mm          | 35w6d          | 33w6d     | 38w0d      |

| FL (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 72 mm   | 36w2d   | 34w1d | 38w3d |
| 73 mm   | 36w6d   | 34w4d | 39w0d |
| 74 mm   | 37w2d   | 35w1d | 39w4d |
| 75 mm   | 37w5d   | 35w4d | 39w6d |
| 76 mm   | 38w1d   | 36w0d | 40w3d |
| 77 mm   | 38w5d   | 36w4d | 40w6d |
| 78 mm   | 39w1d   | 37w0d | 41w3d |
| 79 mm   | 39w4d   | 37w3d | 41w6d |
| 80 mm   | 40w1d   | 37w6d | 42w2d |

## GA by FL - Osaka 1989

**Name:** Osaka 1989

**Author:** Osaka

**Year:** 1989

**Reference:** Osaka University, Perinatal Care, vol.9, no 5, pp 407-422.

**Comments:**

| Femur Length (cm) | Gest Age (week) | +/-1 SD   |
|-------------------|-----------------|-----------|
| 0.94 cm           | 13 weeks        | 0.21 week |
| 1.26 cm           | 14 weeks        | 0.22 week |
| 1.57 cm           | 15 weeks        | 0.22 week |
| 1.88 cm           | 16 weeks        | 0.22 week |
| 2.18 cm           | 17 weeks        | 0.23 week |
| 2.47 cm           | 18 weeks        | 0.23 week |
| 2.75 cm           | 19 weeks        | 0.24 week |
| 3.03 cm           | 20 weeks        | 0.24 week |
| 3.3 cm            | 21 weeks        | 0.24 week |
| 3.57 cm           | 22 weeks        | 0.25 week |
| 3.83 cm           | 23 weeks        | 0.25 week |
| 4.08 cm           | 24 weeks        | 0.25 week |
| 4.32 cm           | 25 weeks        | 0.26 week |

| Femur Length (cm) | Gest Age (week) | +/-1 SD   |
|-------------------|-----------------|-----------|
| 4.56 cm           | 26 weeks        | 0.26 week |
| 4.78 cm           | 27 weeks        | 0.27 week |
| 5.01 cm           | 28 weeks        | 0.27 week |
| 5.22 cm           | 29 weeks        | 0.27 week |
| 5.43 cm           | 30 weeks        | 0.28 week |
| 5.63 cm           | 31 weeks        | 0.28 week |
| 5.82 cm           | 32 weeks        | 0.29 week |
| 6.01 cm           | 33 weeks        | 0.29 week |
| 6.19 cm           | 34 weeks        | 0.29 week |
| 6.36 cm           | 35 weeks        | 0.3 week  |
| 6.53 cm           | 36 weeks        | 0.3 week  |
| 6.69 cm           | 37 weeks        | 0.31 week |
| 6.84 cm           | 38 weeks        | 0.31 week |
| 6.98 cm           | 39 weeks        | 0.31 week |
| 7.12 cm           | 40 weeks        | 0.32 week |

## Gestational Sac (GA by GS)

### GA by GS - Daya1991

**Name:** Daya 1991

**Author:** Daya

**Year:** 1991

**Reference:** Daya S, Woods S, Ward S, Lappalainen R and Caco R, Early pregnancy assessment with transvaginal ultrasound scanning, CMAJ, Vol 144(4), pp 441-446, 1991

**Comments:**

| GS (mm) | GA (day)  | 5%        | 95%       |
|---------|-----------|-----------|-----------|
| 2 mm    | 34.9 days | 31.6 days | 38.2 days |
| 3 mm    | 35.8 days | 32.5 days | 39.1 days |

| GS (mm) | GA (day)  | 5%        | 95%       |
|---------|-----------|-----------|-----------|
| 4 mm    | 36.6 days | 33.3 days | 39.9 days |
| 5 mm    | 37.5 days | 34.2 days | 40.8 days |
| 6 mm    | 38.4 days | 35.1 days | 41.7 days |
| 7 mm    | 39.3 days | 36 days   | 42.6 days |
| 8 mm    | 40.2 days | 36.9 days | 43.5 days |
| 9 mm    | 41.1 days | 37.8 days | 44.3 days |
| 10 mm   | 41.9 days | 38.7 days | 45.2 days |
| 11 mm   | 42.8 days | 39.5 days | 46.1 days |
| 12 mm   | 43.7 days | 40.4 days | 47 days   |
| 13 mm   | 44.6 days | 41.3 days | 47.9 days |
| 14 mm   | 45.5 days | 42.2 days | 48.7 days |
| 15 mm   | 46.3 days | 43.1 days | 49.6 days |
| 16 mm   | 47.2 days | 44 days   | 50.5 days |
| 17 mm   | 48.1 days | 44.8 days | 51.4 days |
| 18 mm   | 49 days   | 45.7 days | 52.3 days |
| 19 mm   | 49.9 days | 46.6 days | 53.2 days |
| 20 mm   | 50.8 days | 47.5 days | 54 days   |
| 21 mm   | 51.6 days | 48.3 days | 54.9 days |
| 22 mm   | 52.5 days | 49.2 days | 55.8 days |
| 23 mm   | 53.4 days | 50.1 days | 56.7 days |
| 24 mm   | 54.3 days | 51 days   | 57.6 days |
| 25 mm   | 55.2 days | 51.9 days | 58.5 days |
| 26 mm   | 56 days   | 52.7 days | 59.4 days |
| 27 mm   | 56.9 days | 53.6 days | 60.3 days |
| 28 mm   | 57.8 days | 54.5 days | 61.1 days |
| 29 mm   | 58.7 days | 55.4 days | 62 days   |
| 30 mm   | 59.6 days | 56.2 days | 62.9 days |

## GA by GS - Hansmann1985

**Name:** Hansmann 1985



**Author:** Hansmann

**Year:** 1985

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, Ultrasound Diagnosis in Obstetrics and Gynecology, Springer-Verlag, New York, 1986

**Comments:**

| GS (mm) | GA (wd) |
|---------|---------|
| 7 mm    | 4w6d    |
| 9 mm    | 5w5d    |
| 10 mm   | 6w0d    |
| 13 mm   | 6w2d    |
| 15 mm   | 6w5d    |
| 24 mm   | 7w3d    |
| 28 mm   | 8w2d    |
| 34 mm   | 9w0d    |

## GA by GS - Hellman 1969

**Name:** Hellman 1969 GA by GS

**Author:** Hellman

**Year:** 1969

**Reference:** HELLMAN, L. Mh, KOBAYASHI, M., FILLISTI, L., et al. Growth and development of the human fetus prior to the twentieth week of gestation. American Journal of Obstetrics and Gynecology, 1969, vol. 103, no 6, p. 789-798.

**Comments:**

| Gestational Sac (cm) | Gest Age (wd) |
|----------------------|---------------|
| 1 cm                 | 5w0d          |
| 1.1 cm               | 5w1d          |
| 1.2 cm               | 5w2d          |
| 1.3 cm               | 5w4d          |
| 1.4 cm               | 5w4d          |
| 1.5 cm               | 5w6d          |

| Gestational Sac (cm) | Gest Age (wd) |
|----------------------|---------------|
| 1.6 cm               | 5w6d          |
| 1.7 cm               | 6w0d          |
| 1.8 cm               | 6w1d          |
| 1.9 cm               | 6w2d          |
| 2 cm                 | 6w4d          |
| 2.1 cm               | 6w4d          |
| 2.2 cm               | 6w6d          |
| 2.3 cm               | 6w6d          |
| 2.4 cm               | 7w0d          |
| 2.5 cm               | 7w1d          |
| 2.6 cm               | 7w2d          |
| 2.7 cm               | 7w4d          |
| 2.8 cm               | 7w4d          |
| 2.9 cm               | 7w6d          |
| 3 cm                 | 7w6d          |
| 3.1 cm               | 8w0d          |
| 3.2 cm               | 8w1d          |
| 3.3 cm               | 8w2d          |
| 3.4 cm               | 8w4d          |
| 3.5 cm               | 8w4d          |
| 3.6 cm               | 8w6d          |
| 3.7 cm               | 8w6d          |
| 3.8 cm               | 9w0d          |
| 3.9 cm               | 9w1d          |
| 4 cm                 | 9w2d          |
| 4.1 cm               | 9w4d          |
| 4.2 cm               | 9w4d          |
| 4.3 cm               | 9w5d          |
| 4.4 cm               | 9w6d          |
| 4.5 cm               | 10w0d         |
| 4.6 cm               | 10w1d         |
| 4.7 cm               | 10w2d         |

| Gestational Sac (cm) | Gest Age (wd) |
|----------------------|---------------|
| 4.8 cm               | 10w4d         |
| 4.9 cm               | 10w4d         |
| 5 cm                 | 10w5d         |
| 5.1 cm               | 10w6d         |
| 5.2 cm               | 11w0d         |
| 5.3 cm               | 11w1d         |
| 5.4 cm               | 11w2d         |
| 5.5 cm               | 11w4d         |
| 5.6 cm               | 11w4d         |
| 5.7 cm               | 11w5d         |
| 5.8 cm               | 11w6d         |
| 5.9 cm               | 12w0d         |
| 6 cm                 | 12w1d         |

## GA by GS - Rempen1991

**Name:** Rempen 1991 GA by GS

**Author:** Rempen

**Year:** 1991

**Reference:** REMPEN, A. "Biometrie in der Frühgravidität (I. Trimenon)" Der Frauenarzt, 1991, 32, 4, p 425-430.

**Comments:**

| Gestational Sac (cm) | Gest Age (wd) | +/-2 SD |
|----------------------|---------------|---------|
| 0.1 cm               | 4w5d          | 1w3d    |
| 0.2 cm               | 4w6d          | 1w3d    |
| 0.3 cm               | 5w0d          | 1w3d    |
| 0.4 cm               | 5w1d          | 1w3d    |
| 0.5 cm               | 5w2d          | 1w3d    |
| 0.6 cm               | 5w2d          | 1w3d    |
| 0.7 cm               | 5w3d          | 1w3d    |
| 0.8 cm               | 5w4d          | 1w3d    |

| Gestational Sac (cm) | Gest Age (wd) | +/-2 SD |
|----------------------|---------------|---------|
| 0.9 cm               | 5w5d          | 1w3d    |
| 1 cm                 | 5w5d          | 1w3d    |
| 1.1 cm               | 5w6d          | 1w3d    |
| 1.2 cm               | 6w0d          | 1w3d    |
| 1.3 cm               | 6w1d          | 1w3d    |
| 1.4 cm               | 6w2d          | 1w3d    |
| 1.5 cm               | 6w2d          | 1w3d    |
| 1.6 cm               | 6w3d          | 1w3d    |
| 1.7 cm               | 6w4d          | 1w3d    |
| 1.8 cm               | 6w5d          | 1w3d    |
| 1.9 cm               | 6w6d          | 1w3d    |
| 2 cm                 | 6w6d          | 1w3d    |
| 2.1 cm               | 7w0d          | 1w3d    |
| 2.2 cm               | 7w1d          | 1w3d    |
| 2.3 cm               | 7w2d          | 1w3d    |
| 2.4 cm               | 7w3d          | 1w3d    |
| 2.5 cm               | 7w4d          | 1w3d    |
| 2.6 cm               | 7w4d          | 1w3d    |
| 2.7 cm               | 7w5d          | 1w3d    |
| 2.8 cm               | 7w6d          | 1w3d    |
| 2.9 cm               | 8w0d          | 1w3d    |
| 3 cm                 | 8w1d          | 1w3d    |
| 3.1 cm               | 8w2d          | 1w3d    |
| 3.2 cm               | 8w3d          | 1w3d    |
| 3.3 cm               | 8w3d          | 1w3d    |
| 3.4 cm               | 8w4d          | 1w3d    |
| 3.5 cm               | 8w5d          | 1w3d    |
| 3.6 cm               | 8w6d          | 1w3d    |
| 3.7 cm               | 9w0d          | 1w3d    |
| 3.8 cm               | 9w1d          | 1w3d    |
| 3.9 cm               | 9w2d          | 1w3d    |
| 4 cm                 | 9w3d          | 1w3d    |

| Gestational Sac (cm) | Gest Age (wd) | +/-2 SD |
|----------------------|---------------|---------|
| 4.1 cm               | 9w4d          | 1w3d    |
| 4.2 cm               | 9w5d          | 1w3d    |
| 4.3 cm               | 9w6d          | 1w3d    |
| 4.4 cm               | 9w6d          | 1w3d    |
| 4.5 cm               | 10w0d         | 1w3d    |
| 4.6 cm               | 10w1d         | 1w3d    |
| 4.7 cm               | 10w2d         | 1w3d    |
| 4.8 cm               | 10w3d         | 1w3d    |
| 4.9 cm               | 10w4d         | 1w3d    |
| 5 cm                 | 10w5d         | 1w3d    |
| 5.1 cm               | 10w6d         | 1w3d    |
| 5.2 cm               | 11w0d         | 1w3d    |
| 5.3 cm               | 11w1d         | 1w3d    |
| 5.4 cm               | 11w2d         | 1w3d    |
| 5.5 cm               | 11w3d         | 1w3d    |
| 5.6 cm               | 11w4d         | 1w3d    |
| 5.7 cm               | 11w5d         | 1w3d    |
| 5.8 cm               | 11w6d         | 1w3d    |
| 5.9 cm               | 12w0d         | 1w3d    |
| 6 cm                 | 12w1d         | 1w3d    |
| 6.1 cm               | 12w2d         | 1w3d    |
| 6.2 cm               | 12w3d         | 1w3d    |
| 6.3 cm               | 12w4d         | 1w3d    |
| 6.4 cm               | 12w5d         | 1w3d    |
| 6.5 cm               | 12w6d         | 1w3d    |
| 6.6 cm               | 13w0d         | 1w3d    |
| 6.7 cm               | 13w1d         | 1w3d    |
| 6.8 cm               | 13w2d         | 1w3d    |
| 6.9 cm               | 13w3d         | 1w3d    |
| 7 cm                 | 13w4d         | 1w3d    |
| 7.1 cm               | 13w5d         | 1w3d    |
| 7.2 cm               | 14w0d         | 1w3d    |

| Gestational Sac (cm) | Gest Age (wd) | +/-2 SD |
|----------------------|---------------|---------|
| 7.3 cm               | 14w1d         | 1w3d    |

## Head Circumference (GA by HC)

### GA by HC - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:**

Input parameter: HC (mm)

Min limit: 59

Max limit: 344

Output: GA (week)

Equation:

$$0.0001797 * \_HC * \_HC + 0.02631 * \_HC + 9.667$$

### GA by HC - CFEF2000

**Name:** CFEF 2000

**Author:** CFEF

**Year:** 2000

**Reference:** Crequat J, Duyme M and Brodaty G, Fetal growth charts by the French College of fetal ultrasonography and the Inserm U 155 , Biometry 2000, 28, pp 435-455, 2000

**Comments:** <http://cfef.org/>

| HC (mm)   | GA (week) |
|-----------|-----------|
| 120.86 mm | 16 weeks  |
| 134.49 mm | 17 weeks  |
| 147.55 mm | 18 weeks  |
| 160.29 mm | 19 weeks  |
| 172.47 mm | 20 weeks  |
| 184.21 mm | 21 weeks  |
| 195.74 mm | 22 weeks  |
| 206.64 mm | 23 weeks  |
| 217.18 mm | 24 weeks  |
| 227.32 mm | 25 weeks  |
| 236.72 mm | 26 weeks  |
| 246 mm    | 27 weeks  |
| 254.77 mm | 28 weeks  |
| 263 mm    | 29 weeks  |
| 270.84 mm | 30 weeks  |
| 278.33 mm | 31 weeks  |
| 285.29 mm | 32 weeks  |
| 292 mm    | 33 weeks  |
| 298.1 mm  | 34 weeks  |
| 303.62 mm | 35 weeks  |
| 308.81 mm | 36 weeks  |
| 313.52 mm | 37 weeks  |
| 317.88 mm | 38 weeks  |
| 321.86 mm | 39 weeks  |
| 324 mm    | 40 weeks  |

## GA by HC - Chitty1997

**Name:** Chitty 1997

**Author:** Chitty

**Year:** 1997

**Reference:** Altman D.G and Chitty L.S, New charts for ultrasound dating of pregnancy, Ultrasound Obstet. Gynecol, Vol 10, pp 174-191, 1997

**Comments:**

| HC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 85 mm   | 12w6d   | 12w1d | 13w4d |
| 90 mm   | 13w2d   | 12w4d | 14w0d |
| 95 mm   | 13w5d   | 12w6d | 14w3d |
| 100 mm  | 14w0d   | 13w2d | 14w6d |
| 105 mm  | 14w3d   | 13w4d | 15w2d |
| 110 mm  | 14w6d   | 14w0d | 15w6d |
| 115 mm  | 15w2d   | 14w3d | 16w2d |
| 120 mm  | 15w5d   | 14w5d | 16w5d |
| 125 mm  | 16w1d   | 15w1d | 17w1d |
| 130 mm  | 16w3d   | 15w3d | 17w4d |
| 135 mm  | 16w6d   | 15w6d | 18w0d |
| 140 mm  | 17w2d   | 16w1d | 18w3d |
| 145 mm  | 17w5d   | 16w4d | 18w6d |
| 150 mm  | 18w1d   | 17w0d | 19w2d |
| 155 mm  | 18w3d   | 17w2d | 19w5d |
| 160 mm  | 18w6d   | 17w5d | 20w1d |
| 165 mm  | 19w2d   | 18w0d | 20w4d |
| 170 mm  | 19w5d   | 18w3d | 21w0d |
| 175 mm  | 20w0d   | 18w5d | 21w3d |
| 180 mm  | 20w3d   | 19w1d | 21w6d |
| 185 mm  | 20w6d   | 19w3d | 22w2d |
| 190 mm  | 21w2d   | 19w6d | 22w6d |
| 195 mm  | 21w5d   | 20w1d | 23w2d |
| 200 mm  | 22w0d   | 20w4d | 23w5d |
| 205 mm  | 22w3d   | 20w6d | 24w1d |
| 210 mm  | 22w6d   | 21w2d | 24w4d |
| 215 mm  | 23w2d   | 21w5d | 25w0d |



| HC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 220 mm  | 23w5d   | 22w0d | 25w4d |
| 225 mm  | 24w1d   | 22w3d | 26w0d |
| 230 mm  | 24w4d   | 22w6d | 26w3d |
| 235 mm  | 25w0d   | 23w1d | 27w0d |
| 240 mm  | 25w3d   | 23w4d | 27w3d |
| 245 mm  | 25w6d   | 24w0d | 28w0d |
| 250 mm  | 26w3d   | 24w3d | 28w3d |
| 255 mm  | 26w6d   | 24w6d | 29w0d |
| 260 mm  | 27w3d   | 25w2d | 29w4d |
| 265 mm  | 27w6d   | 25w5d | 30w1d |
| 270 mm  | 28w3d   | 26w2d | 30w5d |
| 275 mm  | 29w0d   | 26w5d | 31w2d |
| 280 mm  | 29w4d   | 27w2d | 32w0d |
| 285 mm  | 30w1d   | 27w5d | 32w4d |
| 290 mm  | 30w5d   | 28w2d | 33w2d |
| 295 mm  | 31w2d   | 28w6d | 34w0d |
| 300 mm  | 32w0d   | 29w3d | 34w5d |
| 305 mm  | 32w5d   | 30w0d | 35w3d |
| 310 mm  | 33w3d   | 30w5d | 36w2d |
| 315 mm  | 34w1d   | 31w2d | 37w1d |
| 320 mm  | 34w6d   | 32w0d | 38w0d |
| 325 mm  | 35w5d   | 32w5d | 38w6d |

## GA by HC - Hadlock1984

**Name:** Hadlock 1984

**Author:** Hadlock

**Year:** 1984

**Reference:** Hadlock F.P, Deter R.L, Harrist R.B. and Park S.K, Estimating fetal age: computer-assisted analysis of multiple fetal growth parameters, Radiology,152, pp 497-501, 1984

**Comments:**

| HC (cm) | GA (week)     | +/-2 SD    |
|---------|---------------|------------|
| 6.8 cm  | 12.7263 weeks | 1.19 weeks |
| 7.5 cm  | 13.1366 weeks | 1.19 weeks |
| 8.2 cm  | 13.5534 weeks | 1.19 weeks |
| 8.9 cm  | 13.9775 weeks | 1.19 weeks |
| 9.7 cm  | 14.4718 weeks | 1.19 weeks |
| 10.4 cm | 14.9135 weeks | 1.19 weeks |
| 11 cm   | 15.2993 weeks | 1.19 weeks |
| 11.7 cm | 15.7585 weeks | 1.19 weeks |
| 12.4 cm | 16.228 weeks  | 1.19 weeks |
| 13.1 cm | 16.7084 weeks | 1.19 weeks |
| 13.8 cm | 17.2004 weeks | 1.19 weeks |
| 14.4 cm | 17.6318 weeks | 1.19 weeks |
| 15.1 cm | 18.1469 weeks | 1.48 weeks |
| 15.8 cm | 18.6753 weeks | 1.48 weeks |
| 16.4 cm | 19.1393 weeks | 1.48 weeks |
| 17 cm   | 19.6139 weeks | 1.48 weeks |
| 17.7 cm | 20.1816 weeks | 1.48 weeks |
| 18.3 cm | 20.6805 weeks | 1.48 weeks |
| 18.9 cm | 21.1914 weeks | 1.48 weeks |
| 19.5 cm | 21.7145 weeks | 1.48 weeks |
| 20.1 cm | 22.2502 weeks | 1.48 weeks |
| 20.7 cm | 22.7989 weeks | 1.48 weeks |
| 21.3 cm | 23.3611 weeks | 1.48 weeks |
| 21.9 cm | 23.937 weeks  | 1.48 weeks |
| 22.4 cm | 24.4278 weeks | 2.06 weeks |
| 23 cm   | 25.0301 weeks | 2.06 weeks |
| 23.5 cm | 25.5434 weeks | 2.06 weeks |
| 24.1 cm | 26.1733 weeks | 2.06 weeks |
| 24.6 cm | 26.7101 weeks | 2.06 weeks |
| 25.1 cm | 27.258 weeks  | 2.06 weeks |
| 25.6 cm | 27.8172 weeks | 2.06 weeks |
| 26.1 cm | 28.3879 weeks | 2.06 weeks |

| HC (cm) | GA (week)     | +/-2 SD    |
|---------|---------------|------------|
| 26.6 cm | 28.9703 weeks | 2.06 weeks |
| 27.1 cm | 29.5648 weeks | 2.06 weeks |
| 27.5 cm | 30.0491 weeks | 2.06 weeks |
| 28 cm   | 30.6656 weeks | 2.06 weeks |
| 28.4 cm | 31.1679 weeks | 2.98 weeks |
| 28.8 cm | 31.6784 weeks | 2.98 weeks |
| 29.3 cm | 32.3281 weeks | 2.98 weeks |
| 29.7 cm | 32.8574 weeks | 2.98 weeks |
| 30.1 cm | 33.3953 weeks | 2.98 weeks |
| 30.4 cm | 33.8043 weeks | 2.98 weeks |
| 30.8 cm | 34.3574 weeks | 2.98 weeks |
| 31.2 cm | 34.9194 weeks | 2.98 weeks |
| 31.5 cm | 35.3468 weeks | 2.98 weeks |
| 31.8 cm | 35.7792 weeks | 2.98 weeks |
| 32.2 cm | 36.3639 weeks | 2.98 weeks |
| 32.5 cm | 36.8084 weeks | 2.98 weeks |
| 32.8 cm | 37.2583 weeks | 3.2 weeks  |
| 33 cm   | 37.5611 weeks | 3.2 weeks  |
| 33.3 cm | 38.0198 weeks | 3.2 weeks  |
| 33.5 cm | 38.3286 weeks | 3.2 weeks  |
| 33.8 cm | 38.7963 weeks | 3.2 weeks  |
| 34 cm   | 39.1112 weeks | 3.2 weeks  |
| 34.2 cm | 39.4285 weeks | 3.2 weeks  |
| 34.4 cm | 39.7483 weeks | 3.2 weeks  |
| 34.6 cm | 40.0705 weeks | 3.2 weeks  |
| 34.8 cm | 40.3953 weeks | 3.2 weeks  |
| 35 cm   | 40.7225 weeks | 3.2 weeks  |
| 35.2 cm | 41.0523 weeks | 3.2 weeks  |
| 35.4 cm | 41.3846 weeks | 3.2 weeks  |
| 35.6 cm | 41.7194 weeks | 3.2 weeks  |
| 35.8 cm | 42.0568 weeks | 3.2 weeks  |
| 36 cm   | 42.3968 weeks | 3.2 weeks  |

## GA by HC - Hansmann 1986

**Name:** Hansmann\_1986

**Author:** Hansmann

**Year:** 1986

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, Ultrasound Diagnosis in Obstetrics and Gynecology, Springer-Verlag, New York, 1986

**Comments:**

| HC (cm) | GA (week) |
|---------|-----------|
| 10.6 cm | 14 weeks  |
| 11.5 cm | 15 weeks  |
| 12.7 cm | 16 weeks  |
| 14 cm   | 17 weeks  |
| 15.2 cm | 18 weeks  |
| 16.4 cm | 19 weeks  |
| 17.6 cm | 20 weeks  |
| 19 cm   | 21 weeks  |
| 20.3 cm | 22 weeks  |
| 21.5 cm | 23 weeks  |
| 22.6 cm | 24 weeks  |
| 24 cm   | 25 weeks  |
| 25.1 cm | 26 weeks  |
| 26.3 cm | 27 weeks  |
| 27.4 cm | 28 weeks  |
| 28.4 cm | 29 weeks  |
| 29.3 cm | 30 weeks  |
| 30.3 cm | 31 weeks  |
| 31.1 cm | 32 weeks  |
| 31.8 cm | 33 weeks  |
| 32.5 cm | 34 weeks  |
| 33.2 cm | 35 weeks  |
| 33.7 cm | 36 weeks  |

| HC (cm) | GA (week) |
|---------|-----------|
| 34 cm   | 37 weeks  |
| 34.4 cm | 38 weeks  |
| 34.7 cm | 39 weeks  |
| 34.9 cm | 40 weeks  |

## GA by HC - ISUOG\_Leung2008

**Name:** ISUOG Leung 2008

**Author:** ISUOG\_Leung

**Year:** 2008

**Reference:** "Fetal biometry in ethnic Chinese: biparietal diameter, head circumference, abdominal circumference and femur length. T. N. LEUNG, M. W. PANG, S. S. DALJIT, T. Y. LEUNG, C. F. POON, S. M. WONG and T. K. LAU. Fetal Medicine Unit, Department of Obstetrics and Gynaecology, The Chinese University of Hong Kong, The Prince of Wales Hospital, Hong Kong"

**Comments:**

Input parameter: HC (cm)

Min limit: 6.19137

Max limit: 33.8651

Output: Gest Age (week)

Equation:

$$6.395595+0.966476*_{\text{HC}}-0.019933*_{\text{HC}}^2+0.00059*_{\text{HC}}^3$$

## GA by HC - Merz1988

**Name:** Merz 1988

**Author:** Merz

**Year:** 1988

**Reference:** Merz E, Goldhofer W and Timor-Tritsch E , Ultrasound in Gynecology and Obstetrics, Textbook and Atlas, Georg Thieme Verlag , 1991

**Comments:** From Merz E, Habilitationsschrift, Mainz University Woman's Hospital, 1988

| HC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 72 mm   | 12w1d   | 11w0d | 13w1d |
| 74 mm   | 12w2d   | 11w1d | 13w4d |
| 76 mm   | 12w3d   | 11w1d | 13w4d |
| 78 mm   | 12w4d   | 11w2d | 13w5d |
| 80 mm   | 12w5d   | 11w4d | 13w6d |
| 82 mm   | 12w6d   | 11w4d | 14w0d |
| 84 mm   | 12w6d   | 11w5d | 14w1d |
| 86 mm   | 13w1d   | 11w6d | 14w2d |
| 88 mm   | 13w1d   | 12w0d | 14w3d |
| 90 mm   | 13w2d   | 12w1d | 14w4d |
| 92 mm   | 13w4d   | 12w2d | 14w5d |
| 94 mm   | 13w4d   | 12w3d | 14w6d |
| 96 mm   | 13w5d   | 12w4d | 14w6d |
| 98 mm   | 13w6d   | 12w5d | 15w1d |
| 100 mm  | 14w0d   | 12w6d | 15w1d |
| 102 mm  | 14w1d   | 12w6d | 15w4d |
| 104 mm  | 14w2d   | 13w0d | 15w4d |
| 106 mm  | 14w3d   | 13w1d | 15w5d |
| 108 mm  | 14w4d   | 13w2d | 15w6d |
| 110 mm  | 14w5d   | 13w3d | 16w0d |
| 112 mm  | 14w6d   | 13w4d | 16w1d |
| 114 mm  | 15w0d   | 13w5d | 16w2d |
| 116 mm  | 15w1d   | 13w6d | 16w3d |
| 118 mm  | 15w2d   | 14w0d | 16w4d |
| 120 mm  | 15w3d   | 14w1d | 16w5d |
| 122 mm  | 15w4d   | 14w1d | 17w0d |
| 124 mm  | 15w5d   | 14w2d | 17w1d |

| <b>HC (mm)</b> | <b>GA (wd)</b> | <b>5%</b> | <b>95%</b> |
|----------------|----------------|-----------|------------|
| 126 mm         | 15w6d          | 14w3d     | 17w1d      |
| 128 mm         | 16w0d          | 14w4d     | 17w3d      |
| 130 mm         | 16w1d          | 14w5d     | 17w4d      |
| 132 mm         | 16w2d          | 14w6d     | 17w5d      |
| 134 mm         | 16w3d          | 15w0d     | 17w6d      |
| 136 mm         | 16w4d          | 15w1d     | 18w0d      |
| 138 mm         | 16w5d          | 15w2d     | 18w1d      |
| 140 mm         | 16w6d          | 15w4d     | 18w2d      |
| 142 mm         | 17w0d          | 15w4d     | 18w3d      |
| 144 mm         | 17w1d          | 15w6d     | 18w4d      |
| 146 mm         | 17w2d          | 15w6d     | 18w5d      |
| 148 mm         | 17w4d          | 16w0d     | 19w0d      |
| 150 mm         | 17w4d          | 16w1d     | 19w1d      |
| 152 mm         | 17w6d          | 16w2d     | 19w2d      |
| 154 mm         | 17w6d          | 16w3d     | 19w3d      |
| 156 mm         | 18w1d          | 16w4d     | 19w4d      |
| 158 mm         | 18w1d          | 16w5d     | 19w5d      |
| 160 mm         | 18w3d          | 16w6d     | 19w6d      |
| 162 mm         | 18w4d          | 17w0d     | 20w0d      |
| 164 mm         | 18w5d          | 17w1d     | 20w1d      |
| 166 mm         | 18w6d          | 17w2d     | 20w2d      |
| 168 mm         | 19w0d          | 17w4d     | 20w4d      |
| 170 mm         | 19w1d          | 17w4d     | 20w4d      |
| 172 mm         | 19w2d          | 17w6d     | 20w6d      |
| 174 mm         | 19w3d          | 17w6d     | 20w6d      |
| 176 mm         | 19w4d          | 18w0d     | 21w1d      |
| 178 mm         | 19w6d          | 18w1d     | 21w3d      |
| 180 mm         | 19w6d          | 18w2d     | 21w4d      |
| 182 mm         | 20w1d          | 18w4d     | 21w5d      |
| 184 mm         | 20w1d          | 18w4d     | 21w6d      |
| 186 mm         | 20w3d          | 18w6d     | 22w0d      |
| 188 mm         | 20w4d          | 19w0d     | 22w1d      |

| HC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 190 mm  | 20w5d   | 19w1d | 22w2d |
| 192 mm  | 20w6d   | 19w2d | 22w4d |
| 194 mm  | 21w1d   | 19w4d | 22w5d |
| 196 mm  | 21w1d   | 19w4d | 22w6d |
| 198 mm  | 21w3d   | 19w5d | 23w0d |
| 200 mm  | 21w4d   | 19w6d | 23w2d |
| 202 mm  | 21w5d   | 20w0d | 23w3d |
| 204 mm  | 21w6d   | 20w1d | 23w4d |
| 206 mm  | 22w1d   | 20w3d | 23w6d |
| 208 mm  | 22w1d   | 20w4d | 23w6d |
| 210 mm  | 22w3d   | 20w5d | 24w1d |
| 212 mm  | 22w4d   | 20w6d | 24w2d |
| 214 mm  | 22w5d   | 21w0d | 24w3d |
| 216 mm  | 22w6d   | 21w1d | 24w4d |
| 218 mm  | 23w1d   | 21w3d | 24w6d |
| 220 mm  | 23w2d   | 21w4d | 25w0d |
| 222 mm  | 23w4d   | 21w6d | 25w1d |
| 224 mm  | 23w4d   | 21w6d | 25w2d |
| 226 mm  | 23w6d   | 22w1d | 25w4d |
| 228 mm  | 24w0d   | 22w1d | 25w6d |
| 230 mm  | 24w1d   | 22w3d | 26w0d |
| 232 mm  | 24w3d   | 22w4d | 26w1d |
| 234 mm  | 24w4d   | 22w5d | 26w2d |
| 236 mm  | 24w5d   | 22w6d | 26w4d |
| 238 mm  | 24w6d   | 23w1d | 26w5d |
| 240 mm  | 25w1d   | 23w2d | 26w6d |
| 242 mm  | 25w2d   | 23w4d | 27w1d |
| 244 mm  | 25w4d   | 23w5d | 27w2d |
| 246 mm  | 25w5d   | 23w6d | 27w4d |
| 248 mm  | 25w6d   | 24w1d | 27w5d |
| 250 mm  | 26w0d   | 24w1d | 27w6d |
| 252 mm  | 26w1d   | 24w3d | 28w0d |



| HC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 254 mm  | 26w3d   | 24w4d | 28w1d |
| 256 mm  | 26w4d   | 24w6d | 28w3d |
| 258 mm  | 26w6d   | 25w0d | 28w4d |
| 260 mm  | 27w0d   | 25w1d | 28w6d |
| 262 mm  | 27w1d   | 25w3d | 29w0d |
| 264 mm  | 27w3d   | 25w4d | 29w1d |
| 266 mm  | 27w4d   | 25w6d | 29w3d |
| 268 mm  | 27w6d   | 26w0d | 29w4d |
| 270 mm  | 28w1d   | 26w1d | 30w0d |
| 272 mm  | 28w2d   | 26w3d | 30w1d |
| 274 mm  | 28w4d   | 26w4d | 30w3d |
| 276 mm  | 28w5d   | 26w6d | 30w4d |
| 278 mm  | 28w6d   | 27w0d | 30w6d |
| 280 mm  | 29w1d   | 27w1d | 31w0d |
| 282 mm  | 29w2d   | 27w3d | 31w1d |
| 284 mm  | 29w4d   | 27w5d | 31w4d |
| 286 mm  | 29w6d   | 27w6d | 31w5d |
| 288 mm  | 30w0d   | 28w1d | 31w6d |
| 290 mm  | 30w1d   | 28w2d | 32w1d |
| 292 mm  | 30w4d   | 28w4d | 32w3d |
| 294 mm  | 30w5d   | 28w6d | 32w4d |
| 296 mm  | 30w6d   | 29w0d | 32w6d |
| 298 mm  | 31w1d   | 29w1d | 33w0d |
| 300 mm  | 31w3d   | 29w3d | 33w3d |
| 302 mm  | 31w4d   | 29w4d | 33w4d |
| 304 mm  | 31w6d   | 29w6d | 33w6d |
| 306 mm  | 32w1d   | 30w1d | 34w1d |
| 308 mm  | 32w2d   | 30w2d | 34w2d |
| 310 mm  | 32w4d   | 30w4d | 34w4d |
| 312 mm  | 32w6d   | 30w6d | 34w6d |
| 314 mm  | 33w1d   | 31w1d | 35w1d |
| 316 mm  | 33w3d   | 31w3d | 35w3d |

| HC (mm) | GA (wd) | 5%    | 95%   |
|---------|---------|-------|-------|
| 318 mm  | 33w4d   | 31w4d | 35w4d |
| 320 mm  | 33w6d   | 31w6d | 36w0d |
| 322 mm  | 34w1d   | 32w0d | 36w1d |
| 324 mm  | 34w3d   | 32w2d | 36w4d |
| 326 mm  | 34w5d   | 32w4d | 36w6d |
| 328 mm  | 34w6d   | 32w6d | 37w0d |
| 330 mm  | 35w1d   | 33w1d | 37w2d |
| 332 mm  | 35w4d   | 33w2d | 37w5d |
| 334 mm  | 35w6d   | 33w4d | 38w0d |
| 336 mm  | 36w1d   | 33w6d | 38w2d |
| 338 mm  | 36w3d   | 34w1d | 38w4d |
| 340 mm  | 36w4d   | 34w3d | 38w6d |
| 342 mm  | 36w6d   | 34w5d | 39w1d |
| 344 mm  | 37w1d   | 35w0d | 39w3d |
| 346 mm  | 37w4d   | 35w2d | 39w5d |
| 348 mm  | 37w6d   | 35w4d | 40w1d |
| 350 mm  | 38w1d   | 35w6d | 40w4d |
| 352 mm  | 38w4d   | 36w1d | 40w6d |
| 354 mm  | 38w6d   | 36w4d | 41w1d |
| 356 mm  | 39w1d   | 36w6d | 41w3d |
| 358 mm  | 39w4d   | 37w1d | 41w6d |
| 360 mm  | 39w6d   | 37w4d | 42w1d |
| 362 mm  | 40w1d   | 37w6d | 42w3d |
| 364 mm  | 40w4d   | 38w1d | 42w6d |

## Humerus Length (GA by HL)

### GA by HL - ASUM2000

Name: ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:**

Input parameter: HL (mm)

Min limit: 8

Max limit: 68

Output: GA (week)

Equation:

$$0.406 * \text{__HL} - 0.002804 * \text{__HL} * \text{__HL} + 0.0000563 * \text{__HL} * \text{__HL} * \text{__HL} + 8.411$$

## GA by HL - Jeanty1984

**Name:** Jeanty 1984

**Author:** Jeanty

**Year:** 1984

**Reference:** Estimation of Gestational Age from Measurements of Fetal Long Bones, Jeanty et al., February 1984, J Ultrasound Med

**Comments:**

Input parameter: HL (mm)

Min limit: 10

Max limit: 69

Output: Gest Age (week)

Equation:

$$9.6519438 + (0.26200391 * \text{__HL}) + (0.0026105367 * \text{__HL}^2)$$

## GA by HL - Osaka 1989

**Name:** Osaka 1989

**Author:** Osaka

**Year:** 1989

**Reference:** Osaka University, Perinatal Care, vol.9, no 5, pp 407-422.

**Comments:**

| Humerus Length (cm) | Gest Age (week) | +/-1 SD   |
|---------------------|-----------------|-----------|
| 1.01 cm             | 13 weeks        | 0.2 week  |
| 1.31 cm             | 14 weeks        | 0.21 week |
| 1.59 cm             | 15 weeks        | 0.21 week |
| 1.87 cm             | 16 weeks        | 0.21 week |
| 2.15 cm             | 17 weeks        | 0.22 week |
| 2.41 cm             | 18 weeks        | 0.22 week |
| 2.67 cm             | 19 weeks        | 0.22 week |
| 2.91 cm             | 20 weeks        | 0.23 week |
| 3.15 cm             | 21 weeks        | 0.23 week |
| 3.38 cm             | 22 weeks        | 0.23 week |
| 3.61 cm             | 23 weeks        | 0.24 week |
| 3.82 cm             | 24 weeks        | 0.24 week |
| 4.03 cm             | 25 weeks        | 0.24 week |
| 4.23 cm             | 26 weeks        | 0.25 week |
| 4.42 cm             | 27 weeks        | 0.25 week |
| 4.6 cm              | 28 weeks        | 0.25 week |
| 4.78 cm             | 29 weeks        | 0.26 week |
| 4.94 cm             | 30 weeks        | 0.26 week |
| 5.1 cm              | 31 weeks        | 0.26 week |
| 5.25 cm             | 32 weeks        | 0.27 week |
| 5.39 cm             | 33 weeks        | 0.27 week |
| 5.53 cm             | 34 weeks        | 0.27 week |
| 5.65 cm             | 35 weeks        | 0.28 week |
| 5.77 cm             | 36 weeks        | 0.28 week |
| 5.88 cm             | 37 weeks        | 0.28 week |

| Humerus Length (cm) | Gest Age (week) | +/-1 SD   |
|---------------------|-----------------|-----------|
| 5.98 cm             | 38 weeks        | 0.29 week |
| 6.08 cm             | 39 weeks        | 0.29 week |
| 6.16 cm             | 40 weeks        | 0.29 week |

## Occipito-Frontal Diameter (GA by OFD)

### GA by OFD - ASUM2000

**Name:** ASUM 2000

**Author:** ASUM

**Year:** 2000

**Reference:** ASUM and Campbell Westerway S , Ultrasonic fetal Measurement Standards for an Australian Population, ASUM, 2003

**Comments:**

Input parameter: OFD (mm)

Min limit: 21

Max limit: 122

Output: Gest Age (week)

Equation:

$$0.381 * \_OFD - 0.00344 * \_OFD * \_OFD + 0.00002298 * \_OFD * \_OFD * \_OFD + 4.189$$

### GA by OFD - Hansmann1986

**Name:** Hansmann\_1986

**Author:** Hansmann

**Year:** 1986

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, *Ultrasound Diagnosis in Obstetrics and Gynecology*, Springer-Verlag, New York, 1986

**Comments:**

| OFD (cm) | GA (week) |
|----------|-----------|
| 3.1 cm   | 14 weeks  |
| 3.8 cm   | 15 weeks  |
| 4.1 cm   | 16 weeks  |
| 4.6 cm   | 17 weeks  |
| 5 cm     | 18 weeks  |
| 5.4 cm   | 19 weeks  |
| 5.8 cm   | 20 weeks  |
| 6.3 cm   | 21 weeks  |
| 6.7 cm   | 22 weeks  |
| 7.2 cm   | 23 weeks  |
| 7.6 cm   | 24 weeks  |
| 8 cm     | 25 weeks  |
| 8.4 cm   | 26 weeks  |
| 8.8 cm   | 27 weeks  |
| 9.1 cm   | 28 weeks  |
| 9.5 cm   | 29 weeks  |
| 9.8 cm   | 30 weeks  |
| 10 cm    | 31 weeks  |
| 10.3 cm  | 32 weeks  |
| 10.5 cm  | 33 weeks  |
| 10.7 cm  | 34 weeks  |
| 10.9 cm  | 35 weeks  |
| 11.1 cm  | 36 weeks  |
| 11.2 cm  | 37 weeks  |
| 11.3 cm  | 38 weeks  |
| 11.4 cm  | 39 weeks  |
| 11.5 cm  | 40 weeks  |

# Trans-Abdominal Diameter (GA by TAD)

## GA by TAD - CFEF2000

**Name:** CFEF 2000

**Author:** CFEF

**Year:** 2000

**Reference:** Crequat J, Duyme M and Brodaty G, Fetal growth charts by the French College of fetal ultrasonography and the Inserm U 155 , Biometry 2000, 28, pp 435-455, 2000

**Comments:** <http://cfef.org/>

| TAD (mm) | GA (week) |
|----------|-----------|
| 13.5 mm  | 11 weeks  |
| 17 mm    | 12 weeks  |
| 20.56 mm | 13 weeks  |
| 24 mm    | 14 weeks  |
| 27.69 mm | 15 weeks  |
| 31.21 mm | 16 weeks  |
| 34.7 mm  | 17 weeks  |
| 38.31 mm | 18 weeks  |
| 41.69 mm | 19 weeks  |
| 45.21 mm | 20 weeks  |
| 48.34 mm | 21 weeks  |
| 51.57 mm | 22 weeks  |
| 54.72 mm | 23 weeks  |
| 57.88 mm | 24 weeks  |
| 61 mm    | 25 weeks  |
| 64 mm    | 26 weeks  |
| 67.11 mm | 27 weeks  |
| 70.27 mm | 28 weeks  |
| 73.27 mm | 29 weeks  |

| TAD (mm)  | GA (week) |
|-----------|-----------|
| 76.17 mm  | 30 weeks  |
| 79.25 mm  | 31 weeks  |
| 82.1 mm   | 32 weeks  |
| 84.78 mm  | 33 weeks  |
| 87.55 mm  | 34 weeks  |
| 90 mm     | 35 weeks  |
| 92.36 mm  | 36 weeks  |
| 94.81 mm  | 37 weeks  |
| 97 mm     | 38 weeks  |
| 99.33 mm  | 39 weeks  |
| 101.64 mm | 40 weeks  |
| 103 mm    | 41 weeks  |

## Transverse Cerebellar Diameter (GA by TCD)

### GA by TCD - Hill 1990

**Name:** Hill 1990 GA by TCD

**Author:** Hill

**Year:** 1990

**Reference:** HILL, LYNDON M., GUZICK, DAVID, FRIES, JOANNE, et al. The transverse cerebellar diameter in estimating gestational age in the large for gestational age fetus. *Obstetrics and Gynecology*, 1990, vol. 75, no 6, p. 981-985.

**Comments:**

| Transverse Cerebellar Diameter (cm) | Gest Age (wd) | +/-2 SD |
|-------------------------------------|---------------|---------|
| 1.4 cm                              | 15w1d         | 0w4d    |
| 1.5 cm                              | 15w6d         | 0w4d    |



| Transverse Cerebellar Diameter (cm) | Gest Age (wd) | +/-2 SD |
|-------------------------------------|---------------|---------|
| 1.6 cm                              | 16w4d         | 0w4d    |
| 1.7 cm                              | 17w1d         | 0w4d    |
| 1.8 cm                              | 17w6d         | 0w4d    |
| 1.9 cm                              | 18w4d         | 0w6d    |
| 2 cm                                | 19w2d         | 0w6d    |
| 2.1 cm                              | 20w0d         | 0w6d    |
| 2.2 cm                              | 20w5d         | 0w6d    |
| 2.3 cm                              | 21w3d         | 0w6d    |
| 2.4 cm                              | 22w1d         | 0w6d    |
| 2.5 cm                              | 22w6d         | 0w6d    |
| 2.6 cm                              | 23w4d         | 0w6d    |
| 2.7 cm                              | 24w1d         | 1w0d    |
| 2.8 cm                              | 24w6d         | 1w0d    |
| 2.9 cm                              | 25w4d         | 1w0d    |
| 3 cm                                | 26w1d         | 1w0d    |
| 3.1 cm                              | 26w6d         | 1w0d    |
| 3.2 cm                              | 27w4d         | 1w0d    |
| 3.3 cm                              | 28w1d         | 1w0d    |
| 3.4 cm                              | 28w6d         | 1w0d    |
| 3.5 cm                              | 29w3d         | 1w0d    |
| 3.6 cm                              | 30w0d         | 1w1d    |
| 3.7 cm                              | 30w4d         | 1w1d    |
| 3.8 cm                              | 31w1d         | 1w1d    |
| 3.9 cm                              | 31w6d         | 1w1d    |
| 4 cm                                | 32w2d         | 1w1d    |
| 4.1 cm                              | 32w6d         | 1w1d    |
| 4.2 cm                              | 33w3d         | 1w1d    |
| 4.3 cm                              | 33w6d         | 1w1d    |
| 4.4 cm                              | 34w3d         | 1w1d    |
| 4.5 cm                              | 34w6d         | 1w1d    |
| 4.6 cm                              | 35w2d         | 1w1d    |

| Transverse Cerebellar Diameter (cm) | Gest Age (wd) | +/-2 SD |
|-------------------------------------|---------------|---------|
| 4.7 cm                              | 35w5d         | 1w1d    |
| 4.8 cm                              | 36w1d         | 1w4d    |
| 4.9 cm                              | 36w4d         | 1w4d    |
| 5 cm                                | 36w6d         | 1w4d    |
| 5.1 cm                              | 37w1d         | 1w4d    |
| 5.2 cm                              | 37w4d         | 1w4d    |
| 5.4 cm                              | 38w0d         | 1w4d    |
| 5.5 cm                              | 38w2d         | 1w4d    |
| 5.6 cm                              | 38w4d         | 1w4d    |

## Tibia (GA by TIB)

### GA by TIB - Jeanty1984

**Name:** Jeanty 1984

**Author:** Jeanty

**Year:** 1984

**Reference:** Estimation of Gestational Age from Measurements of Fetal Long Bones, Jeanty et al., February 1984, J Ultrasound Med

**Comments:**

Input parameter: TIB (mm)

Min limit: 10

Max limit: 69

Output: Gest Age (week)

Equation:

$$10.055043+(0.31317668*\_TIB)+(0.0016814056*\_TIB^2)$$

# Transverse Thoracic Diameter (GA by TTD)

## GA by TTD - Hansmann 1986

**Name:** Hansmann\_1986

**Author:** Hansmann

**Year:** 1986

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, Ultrasound Diagnosis in Obstetrics and Gynecology, Springer-Verlag, New York, 1986

**Comments:**

| TTD (cm) | GA (week) |
|----------|-----------|
| 1.7 cm   | 12 weeks  |
| 2 cm     | 13 weeks  |
| 2.4 cm   | 14 weeks  |
| 2.7 cm   | 15 weeks  |
| 3.1 cm   | 16 weeks  |
| 3.4 cm   | 17 weeks  |
| 3.7 cm   | 18 weeks  |
| 4 cm     | 19 weeks  |
| 4.4 cm   | 20 weeks  |
| 4.7 cm   | 21 weeks  |
| 5 cm     | 22 weeks  |
| 5.3 cm   | 23 weeks  |
| 5.6 cm   | 24 weeks  |
| 5.9 cm   | 25 weeks  |
| 6.2 cm   | 26 weeks  |
| 6.5 cm   | 27 weeks  |
| 6.9 cm   | 28 weeks  |
| 7.2 cm   | 29 weeks  |

| TTD (cm) | GA (week) |
|----------|-----------|
| 7.4 cm   | 30 weeks  |
| 7.8 cm   | 31 weeks  |
| 8.1 cm   | 32 weeks  |
| 8.3 cm   | 33 weeks  |
| 8.6 cm   | 34 weeks  |
| 8.9 cm   | 35 weeks  |
| 9.2 cm   | 36 weeks  |
| 9.4 cm   | 37 weeks  |
| 9.7 cm   | 38 weeks  |
| 9.9 cm   | 39 weeks  |
| 10.1 cm  | 40 weeks  |

## Ulna (GA by ULNA)

### GA by TTD - Hansmann1986

**Name:** Hansmann\_1986

**Author:** Hansmann

**Year:** 1986

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, Ultrasound Diagnosis in Obstetrics and Gynecology, Springer-Verlag, New York, 1986

**Comments:**

| TTD (cm) | GA (week) |
|----------|-----------|
| 1.7 cm   | 12 weeks  |
| 2 cm     | 13 weeks  |
| 2.4 cm   | 14 weeks  |
| 2.7 cm   | 15 weeks  |
| 3.1 cm   | 16 weeks  |
| 3.4 cm   | 17 weeks  |

| <b>TTD (cm)</b> | <b>GA (week)</b> |
|-----------------|------------------|
| 3.7 cm          | 18 weeks         |
| 4 cm            | 19 weeks         |
| 4.4 cm          | 20 weeks         |
| 4.7 cm          | 21 weeks         |
| 5 cm            | 22 weeks         |
| 5.3 cm          | 23 weeks         |
| 5.6 cm          | 24 weeks         |
| 5.9 cm          | 25 weeks         |
| 6.2 cm          | 26 weeks         |
| 6.5 cm          | 27 weeks         |
| 6.9 cm          | 28 weeks         |
| 7.2 cm          | 29 weeks         |
| 7.4 cm          | 30 weeks         |
| 7.8 cm          | 31 weeks         |
| 8.1 cm          | 32 weeks         |
| 8.3 cm          | 33 weeks         |
| 8.6 cm          | 34 weeks         |
| 8.9 cm          | 35 weeks         |
| 9.2 cm          | 36 weeks         |
| 9.4 cm          | 37 weeks         |
| 9.7 cm          | 38 weeks         |
| 9.9 cm          | 39 weeks         |
| 10.1 cm         | 40 weeks         |



# **3 Estimated Fetal Weight Equation and Tables**





# Gestational Age (EFW by GA)

## EFW by GA - CFEF2014

**Name:** CFEF 2014

**Author:** CFEF

**Year:** 2014

**Reference:** Courbe d'estimation de poids foetal 2014 par le CFEF - Janvier 2015 - Massoud M., Duyme M., Fontanges M., Collège Français d'Echographie Foetale (CFEF), Combourieu D. - Journal de Gynécologie Obstétrique et Biologie de la Reproduction - Accepté le 15 janvier 2015.

**Comments:**

| GA (week) | EFW (g)   | 3%        | 10%       | 90%       | 97%       |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 17 weeks  | 182.04 g  | 148.35 g  | 159.1 g   | 204.98 g  | 215.72 g  |
| 18 weeks  | 242.75 g  | 202.89 g  | 215.61 g  | 269.9 g   | 282.62 g  |
| 19 weeks  | 299.47 g  | 251.15 g  | 266.57 g  | 332.37 g  | 347.79 g  |
| 20 weeks  | 356.66 g  | 297.62 g  | 316.46 g  | 396.86 g  | 415.71 g  |
| 21 weeks  | 418.22 g  | 346.17 g  | 369.16 g  | 467.27 g  | 490.26 g  |
| 22 weeks  | 487.39 g  | 400.08 g  | 427.94 g  | 546.84 g  | 574.7 g   |
| 23 weeks  | 566.84 g  | 461.98 g  | 495.45 g  | 638.23 g  | 671.69 g  |
| 24 weeks  | 658.6 g   | 533.93 g  | 573.72 g  | 743.48 g  | 783.27 g  |
| 25 weeks  | 764.1 g   | 617.35 g  | 664.18 g  | 864.01 g  | 910.85 g  |
| 26 weeks  | 884.16 g  | 713.05 g  | 767.66 g  | 1000.65 g | 1055.26 g |
| 27 weeks  | 1018.97 g | 821.24 g  | 884.34 g  | 1153.6 g  | 1216.71 g |
| 28 weeks  | 1168.15 g | 941.51 g  | 1013.84 g | 1322.45 g | 1394.78 g |
| 29 weeks  | 1330.66 g | 1072.85 g | 1155.13 g | 1506.19 g | 1588.47 g |
| 30 weeks  | 1504.87 g | 1213.62 g | 1306.57 g | 1703.17 g | 1796.13 g |
| 31 weeks  | 1688.55 g | 1361.58 g | 1465.93 g | 1911.17 g | 2015.52 g |
| 32 weeks  | 1878.84 g | 1513.89 g | 1630.36 g | 2127.32 g | 2243.8 g  |
| 33 weeks  | 2072.28 g | 1667.06 g | 1796.39 g | 2348.17 g | 2477.49 g |
| 34 weeks  | 2264.78 g | 1817.03 g | 1959.93 g | 2569.63 g | 2712.53 g |

| GA (week) | EFW (g)   | 3%        | 10%       | 90%       | 97%       |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 35 weeks  | 2451.66 g | 1959.12 g | 2116.31 g | 2787.02 g | 2944.21 g |
| 36 weeks  | 2627.63 g | 2088 g    | 2260.22 g | 2995.03 g | 3167.25 g |
| 37 weeks  | 2786.76 g | 2197.79 g | 2385.76 g | 3187.76 g | 3375.73 g |
| 38 weeks  | 2922.53 g | 2281.95 g | 2486.39 g | 3358.68 g | 3563.12 g |

## EFW by GA - CFEF\_Massoud2015

**Name:** CFEF Massoud 2015

**Author:** CFEF\_Massoud

**Year:** 2015

**Reference:** Massoud M, et al. Courbe destination de poids fetal 2014 par le Colle\_ge fran \_cais de\_chographie fetale (CFEF). J Gynecol Obstet Biol Reprod (Paris) (2015), <http://dx.doi.org/10.1016/j.jgyn.2015.01.006>

**Comments:** Rev 1

| Gest Age (week) | EFW (g)   | 3%        | 10%       | 90%       | 97%       |
|-----------------|-----------|-----------|-----------|-----------|-----------|
| 17 weeks        | 182.036 g | 148.352 g | 159.102 g | 204.971 g | 215.721 g |
| 18 weeks        | 242.752 g | 202.885 g | 215.609 g | 269.895 g | 282.619 g |
| 19 weeks        | 299.465 g | 251.144 g | 266.565 g | 332.364 g | 347.786 g |
| 20 weeks        | 356.661 g | 297.614 g | 316.459 g | 396.863 g | 415.707 g |
| 21 weeks        | 418.215 g | 346.17 g  | 369.163 g | 467.266 g | 490.259 g |
| 22 weeks        | 487.39 g  | 400.076 g | 427.942 g | 546.837 g | 574.703 g |
| 23 weeks        | 566.837 g | 461.982 g | 495.447 g | 638.228 g | 671.692 g |
| 24 weeks        | 658.597 g | 533.929 g | 573.717 g | 743.477 g | 783.265 g |
| 25 weeks        | 764.097 g | 617.345 g | 664.181 g | 864.014 g | 910.85 g  |
| 26 weeks        | 884.154 g | 713.046 g | 767.655 g | 1000.65 g | 1055.26 g |
| 27 weeks        | 1018.97 g | 821.236 g | 884.344 g | 1153.6 g  | 1216.71 g |
| 28 weeks        | 1168.15 g | 941.509 g | 1013.84 g | 1322.45 g | 1394.78 g |
| 29 weeks        | 1330.66 g | 1072.85 g | 1155.13 g | 1506.19 g | 1588.46 g |
| 30 weeks        | 1504.87 g | 1213.62 g | 1306.57 g | 1703.17 g | 1796.12 g |

| Gest Age (week) | EFW (g)   | 3%        | 10%       | 90%       | 97%       |
|-----------------|-----------|-----------|-----------|-----------|-----------|
| 31 weeks        | 1688.55 g | 1361.58 g | 1465.93 g | 1911.17 g | 2015.52 g |
| 32 weeks        | 1878.84 g | 1513.88 g | 1630.36 g | 2127.32 g | 2243.8 g  |
| 33 weeks        | 2072.28 g | 1667.06 g | 1796.38 g | 2348.17 g | 2477.49 g |
| 34 weeks        | 2264.78 g | 1817.03 g | 1959.93 g | 2569.63 g | 2712.53 g |
| 35 weeks        | 2451.66 g | 1959.12 g | 2116.31 g | 2787.01 g | 2944.21 g |
| 36 weeks        | 2627.63 g | 2088 g    | 2260.22 g | 2995.03 g | 3167.25 g |
| 37 weeks        | 2786.76 g | 2197.79 g | 2385.76 g | 3187.76 g | 3375.73 g |
| 38 weeks        | 2922.53 g | 2281.95 g | 2486.39 g | 3358.68 g | 3563.12 g |

## EFW by GA - Doubilet1997

**Name:** Doubilet 1997

**Author:** Doubilet

**Year:** 1997

**Reference:** J Ultrasound Med. 1997 Apr

**Comments:**

| GA (week) | EFW (g) | 5%     | 10%    | 90%    | 95%    |
|-----------|---------|--------|--------|--------|--------|
| 25 weeks  | 660 g   | 450 g  | 490 g  | 889 g  | 968 g  |
| 26 weeks  | 760 g   | 523 g  | 568 g  | 1016 g | 1103 g |
| 27 weeks  | 875 g   | 609 g  | 660 g  | 1160 g | 1257 g |
| 28 weeks  | 1005 g  | 707 g  | 765 g  | 1322 g | 1430 g |
| 29 weeks  | 1153 g  | 820 g  | 884 g  | 1504 g | 1623 g |
| 30 weeks  | 1319 g  | 947 g  | 1020 g | 1706 g | 1836 g |
| 31 weeks  | 1502 g  | 1090 g | 1171 g | 1928 g | 2070 g |
| 32 weeks  | 1702 g  | 1249 g | 1338 g | 2167 g | 2321 g |
| 33 weeks  | 1918 g  | 1422 g | 1519 g | 2421 g | 2587 g |
| 34 weeks  | 2146 g  | 1608 g | 1714 g | 2687 g | 2865 g |
| 35 weeks  | 2383 g  | 1804 g | 1919 g | 2959 g | 3148 g |
| 36 weeks  | 2622 g  | 2006 g | 2129 g | 3230 g | 3428 g |
| 37 weeks  | 2859 g  | 2210 g | 2340 g | 3493 g | 3698 g |

| GA (week) | EFW (g) | 5%     | 10%    | 90%    | 95%    |
|-----------|---------|--------|--------|--------|--------|
| 38 weeks  | 3083 g  | 2409 g | 2544 g | 3736 g | 3947 g |
| 39 weeks  | 3288 g  | 2595 g | 2735 g | 3952 g | 4164 g |
| 40 weeks  | 3462 g  | 2762 g | 2904 g | 4127 g | 4340 g |
| 41 weeks  | 3597 g  | 2900 g | 3042 g | 4254 g | 4462 g |
| 42 weeks  | 3685 g  | 3002 g | 3142 g | 4322 g | 4523 g |
| 43 weeks  | 3717 g  | 3061 g | 3195 g | 4324 g | 4515 g |

## EFW by GA - Hadlock1991

**Name:** Hadlock 1991

**Author:** Hadlock

**Year:** 1991

**Reference:** Hadlock FP1, Harrist RB, Martinez-Poyer J, In utero analysis of fetal growth: a sonographic weight standard, Radiology. 1991 Oct, 181(1):129-33.

**Comments:**

| GA (week) | EFW (g) | 3%    | 10%   | 90%   | 97%   |
|-----------|---------|-------|-------|-------|-------|
| 10 weeks  | 35 g    | 26 g  | 29 g  | 41 g  | 44 g  |
| 11 weeks  | 45 g    | 34 g  | 37 g  | 53 g  | 56 g  |
| 12 weeks  | 58 g    | 43 g  | 48 g  | 68 g  | 73 g  |
| 13 weeks  | 73 g    | 55 g  | 61 g  | 85 g  | 91 g  |
| 14 weeks  | 93 g    | 70 g  | 77 g  | 109 g | 116 g |
| 15 weeks  | 117 g   | 88 g  | 97 g  | 137 g | 146 g |
| 16 weeks  | 146 g   | 110 g | 121 g | 171 g | 183 g |
| 17 weeks  | 181 g   | 136 g | 150 g | 212 g | 226 g |
| 18 weeks  | 223 g   | 167 g | 185 g | 261 g | 279 g |
| 19 weeks  | 273 g   | 205 g | 227 g | 319 g | 341 g |
| 20 weeks  | 331 g   | 248 g | 275 g | 387 g | 414 g |
| 21 weeks  | 399 g   | 299 g | 331 g | 467 g | 499 g |
| 22 weeks  | 478 g   | 359 g | 398 g | 559 g | 598 g |
| 23 weeks  | 568 g   | 426 g | 471 g | 665 g | 710 g |

| GA (week) | EFW (g) | 3%     | 10%    | 90%    | 97%    |
|-----------|---------|--------|--------|--------|--------|
| 24 weeks  | 670 g   | 503 g  | 556 g  | 784 g  | 838 g  |
| 25 weeks  | 785 g   | 589 g  | 652 g  | 918 g  | 981 g  |
| 26 weeks  | 913 g   | 685 g  | 758 g  | 1068 g | 1141 g |
| 27 weeks  | 1055 g  | 791 g  | 876 g  | 1234 g | 1319 g |
| 28 weeks  | 1210 g  | 908 g  | 1004 g | 1416 g | 1513 g |
| 29 weeks  | 1379 g  | 1034 g | 1145 g | 1613 g | 1724 g |
| 30 weeks  | 1559 g  | 1169 g | 1294 g | 1824 g | 1946 g |
| 31 weeks  | 1751 g  | 1313 g | 1453 g | 2049 g | 2189 g |
| 32 weeks  | 1953 g  | 1465 g | 1621 g | 2285 g | 2441 g |
| 33 weeks  | 2162 g  | 1622 g | 1794 g | 2530 g | 2703 g |
| 34 weeks  | 2377 g  | 1783 g | 1973 g | 2781 g | 2971 g |
| 35 weeks  | 2595 g  | 1946 g | 2154 g | 3036 g | 3244 g |
| 36 weeks  | 2813 g  | 2110 g | 2335 g | 3291 g | 3516 g |
| 37 weeks  | 3028 g  | 2271 g | 2513 g | 3543 g | 3785 g |
| 38 weeks  | 3236 g  | 2427 g | 2686 g | 3786 g | 4045 g |
| 39 weeks  | 3435 g  | 2576 g | 2851 g | 4019 g | 4294 g |
| 40 weeks  | 3619 g  | 2714 g | 3004 g | 4234 g | 4524 g |
| 41 weeks  | 3787 g  | 2840 g | 3143 g | 4431 g | 4734 g |
| 42 weeks  | 3934 g  | 2951 g | 3265 g | 4603 g | 4918 g |

## EFW by GA - Oken2003

**Name:** Oken 2003 - All (curve fit data)

**Author:** Oken

**Year:** 2003

**Reference:** BMC Pediatr. 2003, 3: 6. Published online 2003 Jul 8. doi: 10.1186/1471-2431-3-6 A nearly continuous measure of birth weight for gestational age using a United States national reference Emily Oken, Ken P Kleinman, Janet Rich-Edwards, and Matthew W Gillman

**Comments:** A mathematical curve fit for Oken z-scores is used rather than a direct look-up method. This is similar to approximations used for most standard percentile calculations (e.g. Hadlock). Oken percentiles are accurate at the anchor percentiles of 10th, 50th and 90th. There

may be a small difference from published values in-between the anchor percentiles, generally less than 5%, which is clinically acceptable and within the bounds of normal ultrasound measurements.

| GA (week) | EFW (g) | 3%     | 10%    | 90%    | 97%    |
|-----------|---------|--------|--------|--------|--------|
| 22 weeks  | 510 g   | 304 g  | 373 g  | 764 g  | 1086 g |
| 23 weeks  | 583 g   | 341 g  | 435 g  | 807 g  | 1123 g |
| 24 weeks  | 653 g   | 391 g  | 483 g  | 907 g  | 1246 g |
| 25 weeks  | 746 g   | 425 g  | 529 g  | 1021 g | 1376 g |
| 26 weeks  | 869 g   | 454 g  | 576 g  | 1235 g | 1691 g |
| 27 weeks  | 988 g   | 509 g  | 645 g  | 1431 g | 1936 g |
| 28 weeks  | 1134 g  | 557 g  | 726 g  | 1772 g | 2292 g |
| 29 weeks  | 1328 g  | 653 g  | 878 g  | 2240 g | 2619 g |
| 30 weeks  | 1541 g  | 766 g  | 1003 g | 2641 g | 2893 g |
| 31 weeks  | 1809 g  | 931 g  | 1204 g | 2958 g | 3148 g |
| 32 weeks  | 2095 g  | 1153 g | 1444 g | 3181 g | 3402 g |
| 33 weeks  | 2391 g  | 1354 g | 1673 g | 3374 g | 3610 g |
| 34 weeks  | 2629 g  | 1573 g | 1928 g | 3494 g | 3788 g |
| 35 weeks  | 2814 g  | 1809 g | 2155 g | 3603 g | 3963 g |
| 36 weeks  | 2966 g  | 2025 g | 2354 g | 3657 g | 4030 g |
| 37 weeks  | 3136 g  | 2257 g | 2552 g | 3770 g | 4115 g |
| 38 weeks  | 3301 g  | 2470 g | 2750 g | 3912 g | 4229 g |
| 39 weeks  | 3421 g  | 2609 g | 2884 g | 4025 g | 4332 g |
| 40 weeks  | 3509 g  | 2688 g | 2962 g | 4110 g | 4411 g |
| 41 weeks  | 3563 g  | 2717 g | 3004 g | 4166 g | 4489 g |
| 42 weeks  | 3514 g  | 2637 g | 2924 g | 4138 g | 4478 g |
| 43 weeks  | 3470 g  | 2599 g | 2892 g | 4082 g | 4417 g |
| 44 weeks  | 3479 g  | 2599 g | 2897 g | 4103 g | 4421 g |

## EFW by GA - Oken2003

**Name:** Oken 2003 - Females (curve fit data)

**Author:** Oken

**Year:** 2003

**Reference:** BMC Pediatr. 2003, 3: 6. Published online 2003 Jul 8. doi: 10.1186/1471-2431-3-6 A nearly continuous measure of birth weight for gestational age using a United States national reference Emily Oken, Ken P Kleinman, Janet Rich-Edwards, and Matthew W Gillman

**Comments:** A mathematical curve fit for Oken z-scores is used rather than a direct look-up method. This is similar to approximations used for most standard percentile calculations (e.g. Hadlock). Oken percentiles are accurate at the anchor percentiles of 10th, 50th and 90th. There may be a small difference from published values in-between the anchor percentiles, generally less than 5%, which is clinically acceptable and within the bounds of normal ultrasound measurements.

| GA (week) | EFW (g) | 3%     | 10%    | 90%    | 97%    |
|-----------|---------|--------|--------|--------|--------|
| 22 weeks  | 482 g   | 299 g  | 362 g  | 736 g  | 1063 g |
| 23 weeks  | 564 g   | 333 g  | 416 g  | 790 g  | 1105 g |
| 24 weeks  | 626 g   | 371 g  | 470 g  | 880 g  | 1254 g |
| 25 weeks  | 712 g   | 410 g  | 504 g  | 977 g  | 1337 g |
| 26 weeks  | 835 g   | 439 g  | 556 g  | 1201 g | 1684 g |
| 27 weeks  | 947 g   | 501 g  | 622 g  | 1416 g | 1951 g |
| 28 weeks  | 1087 g  | 523 g  | 693 g  | 1762 g | 2298 g |
| 29 weeks  | 1286 g  | 626 g  | 845 g  | 2296 g | 2648 g |
| 30 weeks  | 1500 g  | 737 g  | 965 g  | 2659 g | 2897 g |
| 31 weeks  | 1777 g  | 924 g  | 1180 g | 2977 g | 3171 g |
| 32 weeks  | 2061 g  | 1135 g | 1390 g | 3196 g | 3402 g |
| 33 weeks  | 2371 g  | 1326 g | 1638 g | 3345 g | 3594 g |
| 34 weeks  | 2597 g  | 1546 g | 1872 g | 3461 g | 3755 g |
| 35 weeks  | 2771 g  | 1756 g | 2099 g | 3559 g | 3915 g |
| 36 weeks  | 2904 g  | 1984 g | 2299 g | 3597 g | 3955 g |
| 37 weeks  | 3068 g  | 2209 g | 2495 g | 3685 g | 4029 g |
| 38 weeks  | 3232 g  | 2432 g | 2694 g | 3827 g | 4137 g |
| 39 weeks  | 3354 g  | 2573 g | 2834 g | 3936 g | 4236 g |
| 40 weeks  | 3441 g  | 2659 g | 2919 g | 4024 g | 4316 g |
| 41 weeks  | 3494 g  | 2687 g | 2949 g | 4082 g | 4384 g |
| 42 weeks  | 3451 g  | 2601 g | 2893 g | 4053 g | 4380 g |
| 43 weeks  | 3408 g  | 2572 g | 2849 g | 4003 g | 4336 g |

| GA (week) | EFW (g) | 3%     | 10%    | 90%    | 97%    |
|-----------|---------|--------|--------|--------|--------|
| 44 weeks  | 3411 g  | 2564 g | 2863 g | 4025 g | 4341 g |

## EFW by GA - Oken2003

**Name:** Oken 2003 - Males (curve fit data)

**Author:** Oken

**Year:** 2003

**Reference:** BMC Pediatr. 2003, 3: 6. Published online 2003 Jul 8. doi: 10.1186/1471-2431-3-6 A nearly continuous measure of birth weight for gestational age using a United States national reference Emily Oken, Ken P Kleinman, Janet Rich-Edwards, and Matthew W Gillman

**Comments:** A mathematical curve fit for Oken z-scores is used rather than a direct look-up method. This is similar to approximations used for most standard percentile calculations (e.g. Hadlock). Oken percentiles are accurate at the anchor percentiles of 10th, 50th and 90th. There may be a small difference from published values in-between the anchor percentiles, generally less than 5%, which is clinically acceptable and within the bounds of normal ultrasound measurements.

| GA (week) | EFW (g) | 3%     | 10%    | 90%    | 97%    |
|-----------|---------|--------|--------|--------|--------|
| 22 weeks  | 520 g   | 313 g  | 393 g  | 764 g  | 1086 g |
| 23 weeks  | 597 g   | 353 g  | 453 g  | 822 g  | 1138 g |
| 24 weeks  | 680 g   | 400 g  | 498 g  | 923 g  | 1263 g |
| 25 weeks  | 771 g   | 456 g  | 554 g  | 1049 g | 1394 g |
| 26 weeks  | 898 g   | 466 g  | 594 g  | 1245 g | 1684 g |
| 27 weeks  | 1023 g  | 511 g  | 674 g  | 1442 g | 1935 g |
| 28 weeks  | 1170 g  | 585 g  | 766 g  | 1784 g | 2287 g |
| 29 weeks  | 1360 g  | 679 g  | 906 g  | 2183 g | 2595 g |
| 30 weeks  | 1577 g  | 796 g  | 1044 g | 2617 g | 2891 g |
| 31 weeks  | 1834 g  | 931 g  | 1241 g | 2947 g | 3147 g |
| 32 weeks  | 2115 g  | 1162 g | 1475 g | 3175 g | 3401 g |
| 33 weeks  | 2410 g  | 1381 g | 1712 g | 3373 g | 3617 g |
| 34 weeks  | 2658 g  | 1607 g | 1957 g | 3517 g | 3799 g |
| 35 weeks  | 2849 g  | 1841 g | 2192 g | 3639 g | 3995 g |



| GA (week) | EFW (g) | 3%     | 10%    | 90%    | 97%    |
|-----------|---------|--------|--------|--------|--------|
| 36 weeks  | 3013 g  | 2071 g | 2410 g | 3705 g | 4061 g |
| 37 weeks  | 3193 g  | 2310 g | 2609 g | 3826 g | 4170 g |
| 38 weeks  | 3366 g  | 2524 g | 2807 g | 3968 g | 4297 g |
| 39 weeks  | 3489 g  | 2661 g | 2947 g | 4082 g | 4399 g |
| 40 weeks  | 3580 g  | 2745 g | 3029 g | 4166 g | 4485 g |
| 41 weeks  | 3636 g  | 2771 g | 3063 g | 4252 g | 4561 g |
| 42 weeks  | 3583 g  | 2682 g | 2979 g | 4224 g | 4552 g |
| 43 weeks  | 3537 g  | 2648 g | 2949 g | 4167 g | 4477 g |
| 44 weeks  | 3545 g  | 2650 g | 2954 g | 4167 g | 4481 g |

## Abdominal Circumference and Biparietal Diameter (EFW by AC, BPD)

### EFW by AC and BPD - Hadlock 1984

**Name:** Hadlock 1984 - EFW by AC and BPD

**Author:** Hadlock

**Year:** 1984

**Reference:** Hadlock F.P, Harrist R.B, Carpenter R.J, Deter R.L and Park S.K, Sonographic estimation of fetal weight. The value of femur length in addition to head and abdomen measurements, Radiology, 150, pp 535-540, 1984

**Comments:** Mean deviation +/- SD (%) 0.4 +/- 9.1

Input parameter: AC (cm)

Min limit: 4.6

Max limit: 38.1

Input parameter: BPD (cm)

Min limit: 1.7

Max limit: 10.2

Output: EFW 2 (g)

Equation:

$10^{(1.1134+0.05845* \_ac-0.000604* \_ac^2-0.007365* \_bpd^2+0.000595* \_bpd^3+0.1694* \_bpd)}$

## EFW by AC and BPD - Merz1991

**Name:** Merz 1991 - EFW by AC and BPD

**Author:** Merz

**Year:** 1991

**Reference:** Merz E, Goldhofer W and Timor-Tritsch E , Ultrasound in Gynecology and Obstetrics, Textbook and Atlas, Georg Thieme Verlag , 1991

**Comments:** From Merz E, Lieser H, Schicketanz KH and Härle J, Intrauterine fetal weight assessment using ultrasound. A comparison of several weight assessment methods and development of a new formula for the determination of fetal weight, Ultraschall Med, pp 15-24, 1988

Input parameter: AC (cm)

Min limit: 21

Max limit: 37

Input parameter: BPD (cm)

Min limit: 7

Max limit: 11

Output: EFW 2 (g)

Equation:

157.07186\*\_\_ac+15.90931\*\_\_bpd^2-3200.40479

## Abdominal Circumference, Biparietal Diameter and Femur Length (EFW by AC, BDP, FL)

### EFW by AC, BPD and FL - Hadlock1985

**Name:** Hadlock 1985 - EFW by AC, BPD and FL

**Author:** Hadlock

**Year:** 1985

**Reference:** Hadlock F.P, Harrist R.B, Sharman R.S, Deter R.L, Park S.K, Estimation of fetal weight with the use of head, body, and femur measurements--a prospective study, Am.J.Obstet.Gynecol., 151, pp 333-337, 1985

**Comments:** Mean deviation +/- SD (%) 0.3 +/- 7.5

Input parameter: AC (cm)

Min limit: 4.6

Max limit: 38.1

Input parameter: BPD (cm)

Min limit: 1.7

Max limit: 10.2

Input parameter: FL (cm)

Min limit: 0.7

Max limit: 8.3

Output: EFW 3 (g)

Equation:

$$10^{(1.335-0.0034*_{ac}*_{fl}+0.0316*_{bpd}+0.0457*_{ac}+0.1623*_{fl})}$$

## Abdominal Circumference, Biparietal Diameter, Femur Length and Head Circumference (EFW by AC, BDP, FL, HC)

### EFW by AC, BPD, FL and HC - Hadlock1985

**Name:** Hadlock 1985 - EFW by AC, BPD, FL and HC

**Author:** Hadlock

**Year:** 1985

**Reference:** Hadlock F.P, Harrist R.B, Sharman R.S, Deter R.L, Park S.K, Estimation of fetal weight with the use of head, body, and femur measurements--a prospective study, Am.J.Obstet.Gynecol., 151, pp 333-337, 1985

**Comments:** Mean deviation +/- SD (%) 0.1 +/- 7.4

Input parameter: AC (cm)

Min limit: 4.6

Max limit: 38.1

Input parameter: BPD (cm)

Min limit: 1.7

Max limit: 10.2

Input parameter: FL (cm)

Min limit: 0.7

Max limit: 8.3

Input parameter: HC (cm)

Min limit: 6.8

Max limit: 36

Output: EFW 4 (g)

Equation:

$$10^{(1.3596-0.00386*_{ac}*_{fl}+0.0064*_{hc}+0.00061*_{bpd}*_{ac}+0.0424*_{ac}+0.174*_{fl})}$$

## Abdominal Circumference and Femur Length (EFW by AC, FL)

### EFW by AC and FL - Hadlock1985

**Name:** Hadlock 1985 - EFW by AC and FL

**Author:** Hadlock

**Year:** 1985

**Reference:** Hadlock F.P, Harrist R.B, Sharman R.S, Deter R.L, Park S.K, Estimation of fetal weight with the use of head, body, and femur measurements--a prospective study, Am.J.Obstet.Gynecol., 151, pp 333-337, 1985

**Comments:** Mean deviation +/- SD (%) 0.3 +/- 8.0

Input parameter: AC (cm)

Min limit: 4.6

Max limit: 38.1

Input parameter: FL (cm)

Min limit: 0.7

Max limit: 8.3

Output: EFW 2 (g)

Equation:

$$10^{(1.304+0.05281*_{ac}+0.1938*_{fl}-0.004*_{ac}*_{fl})}$$

## Abdominal Circumference, Femur Length and Head Circumference (EFW by AC, FL, HC)

### EFW by AC, FL and HC - Hadlock1985

**Name:** Hadlock 1985 - EFW by AC, FL and HC

**Author:** Hadlock

**Year:** 1985

**Reference:** Hadlock F.P, Harrist R.B, Sharman R.S, Deter R.L, Park S.K, Estimation of fetal weight with the use of head, body, and femur measurements--a prospective study, Am.J.Obstet.Gynecol., 151, pp 333-337, 1985

**Comments:** Mean deviation +/- SD (%) 0.0 +/- 7.5

Input parameter: AC (cm)

Min limit: 4.6

Max limit: 38.1

Input parameter: FL (cm)

Min limit: 0.7

Max limit: 8.3

Input parameter: HC (cm)

Min limit: 6.8

Max limit: 36

Output: EFW 3 (g)

Equation:

$$10^{(1.326-0.00326*_{ac}*_{fl}+0.0107*_{hc}+0.0438*_{ac}+0.158*_{fl})}$$

## Abdominal Circumference and Head Circumference (EFW by AC, HC)

### EFW by AC and HC - Hadlock 1984

**Name:** Hadlock 1984 - EFW by AC and HC

**Author:** Hadlock

**Year:** 1984

**Reference:** Hadlock F.P, Harrist R.B, Carpenter R.J, Deter R.L and Park S.K, Sonographic estimation of fetal weight. The value of femur length in addition to head and abdomen measurements, Radiology, 150, pp 535-540, 1984

**Comments:** Mean deviation +/- SD (%) 0.4 +/- 9.1

Input parameter: AC (cm)

Min limit: 4.6

Max limit: 38.1

Input parameter: HC (cm)

Min limit: 6.8

Max limit: 36

Output: EFW 2 (g)

Equation:

$$10^{(1.182+0.0273*_{\text{hc}}+0.07057*_{\text{ac}}-0.00063*_{\text{ac}}^2-0.0002184*_{\text{hc}}*_{\text{ac}})}$$

## Biparietal Diameter and Transverse Thoracic Diameter (EFW by BPD, TTD)

### EFW by BPD and TTD - Hansmann 1986

**Name:** Hansmann 1986 - EFW by BPD and TTD

**Author:** Hansmann

**Year:** 1986

**Reference:** Hansmann, Hackeloer, Staudach and Wittman, Ultrasound Diagnosis in Obstetrics and Gynecology, Springer-Verlag, New York, 1986

**Comments:** Mean deviation +/- SD (%) 15.8

Input parameter: BPD (cm)

Min limit: 6



Max limit: 10.9

Input parameter: TTD (cm)

Min limit: 4.9

Max limit: 12.1

Output: EFW 2 (kg)

Equation:

$$-1.05775 * \text{__bpd} + 0.649145 * \text{__ttd} + 0.0930707 * \text{__bpd}^2 - 0.020562 * \text{__ttd}^2 + 0.515263$$





**Hologic Headquarters**

250 Campus Drive, Marlborough, MA  
01752, USA

USA Tel: +1.508.263.2900

Sales: +1.781.999.7453

Fax: +1.781.280.0668

Email: [info@hologic.com](mailto:info@hologic.com)

