# Body Surface Area Calculator

By its name, body surface area (BSA) is the total surface area of a human body. In many situations, BSA is a better indicator of metabolic mass than body weight since it is less affected by abnormal body fat. Directly measurement of body surface area is difficult. For estimation, many formulas have been published based on the body weight and body height. Some formulas are also based on gender. We give out results for most popular formulas.

## Result

Based on Du Bois formula: **1.65meter$^2$** OR **16,450cm$^2$** OR **17.71foot$^2$** OR **2,550inch$^2$**

Based on Mosteller formula: **1.62meter$^2$** OR **16,160cm$^2$** OR **17.39foot$^2$** OR **2,505inch$^2$**

Based on Haycock formula: **1.60meter$^2$** OR **16,047cm$^2$** OR **17.27foot$^2$** OR **2,487inch$^2$**

Based on Gehan and George formula: **1.62meter$^2$** OR **16,198cm$^2$** OR **17.44foot$^2$** OR **2,511inch$^2$**

Based on Boyd formula: **1.61meter$^2$** OR **16,061cm$^2$** OR **17.29foot$^2$** OR **2,489inch$^2$**

Based on Fujimoto formula: **1.59meter$^2$** OR **15,850cm$^2$** OR **17.06foot$^2$** OR **2,457inch$^2$**

Based on Takahira formula: **1.66meter$^2$** OR **16,581cm$^2$** OR **17.85foot$^2$** OR **2,570inch$^2$**

Based on Schlich formula: **1.57meter$^2$** OR **15,739cm$^2$** OR **16.94foot$^2$** OR **2,439inch$^2$**

Typical BSA for newborn is 0.25 m$^2$, child of 2 years old 0.5 m$^2$, child of 10 years old 1.14 m$^2$, adult women 1.6 m$^2$, adult man 1.9 m$^2$. The following are the popular body surface area estimation formulas.

Du Bois formula:

BSA = 0.007184 × W$^{0.425}$ × H$^{0.725}$

Du Bois D, Du Bois EF (Jun 1916). "A formula to estimate the approximate surface area if height and weight be known". Archives of Internal Medicine 17 (6): 863-71. PMID 2520314. Retrieved 2012-09-09.

Mosteller formula:

BSA = = 0.016667 × $W^{0.5}$ × $H^{0.5}$

Mosteller RD. "Simplified calculation of body-surface area". N Engl J Med 1987; 317:1098. PMID 3657876.

Haycock formula:

BSA = 0.024265 × $W^{0.5378}$ × $H^{0.3964}$

Haycock GB, Schwartz GJ, Wisotsky DH "Geometric method for measuring body surface area: A height-weight formula validated in infants, children and adults" J Pediatr 1978, 93:62-66.

Gehan and George formula:

BSA = 0.0235 × $W^{0.51456}$ × $H^{0.42246}$

Gehan EA, George SL, Cancer Chemother Rep 1970, 54:225-235

Boyd formula:

BSA = 0.03330 × $W^{(0.6157 - 0.0188 × log10(W)}$ × $H^{0.3}$

Boyd, Edith (1935). The Growth of the Surface Area of the Human Body. University of Minnesota. The Institute of Child Welfare, Monograph Series, No. x. London: Oxford University Press

Fujimoto formula:

BSA = 0.008883 × $W^{0.444}$ × $H^{0.663}$

Fujimoto S, Watanabe T, Sakamoto A, Yukawa K, Morimoto K. Studies on the physical surface area of Japanese. 18. Calculation formulae in three stages over all ages. Nippon Eiseigaku Zasshi 1968;5:443-50.

Takahira formula:

BSA = 0.007241 × $W^{0.425}$ × $H^{0.725}$

Fujimoto S, Watanabe T, Sakamoto A, Yukawa K, Morimoto K. Studies on the physical surface area of Japanese. 18. Calculation formulae in three stages over all ages. Nippon Eiseigaku Zasshi 1968;5:443-50.

Schlich formula:

Women BSA = 0.000975482 × $W^{0.46}$ × $H^{1.08}$

Men BSA $= 0.000579479 \times W^{0.38} \times H^{1.24}$

Schlich E, Schumm M, Schlich M: "3-D-Body-Scan als anthropometrisches Verfahren zur Bestimmung der spezifischen Korperoberflache". Ernahrungs Umschau 2010;57:178-183