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## males Scaling For Weight, Height, Age & Gender

Posted by Tom C. - 2010/02/21 03:18

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In thinking about it, scaling is normalization running backwards. Guyton et.al. consider normalization for cardiac output and this might be extended to other attributes. Cardiac Index

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Cardiac index is cardiac output normalized by body surface area.  $CI = CO / BSA$  (1) where  $CI = \text{Cardiac Index ((L/Min)/M}^2)$   $CO = \text{Cardiac Output (L/Min)}$   $BSA = \text{Body Surface Area (M}^2)$  Textbook values are CI equal to 3.5 and BSA equal to 1.73 for a CO of CO of 6.0 L/Min. HumMod gives us  $W = 72.4 \text{ kG}$   $H = 178 \text{ cM}$   $\text{Age} = 37 \text{ years}$   $BSA = 1.9 \text{ M}^2$   $CO = 5.5 \text{ L/Min}$   $CI = 2.9 \text{ (L/Min)/M}^2$  Note that cardiac index decreases with age (more on this below) and default HumMod is 37 years old. Body Surface Area ===== DuBois and DuBois (1916) give us  $BSA = W^{0.425} * H^{0.725} * C$   $BSA = \text{Area in cM}^2$   $W = \text{Weight in kG}$   $H = \text{Height in cM}$   $C = \text{Constant } 71.84$  Reduce C to 0.007184 to get area in  $\text{M}^2$ . Cardiac Index And Age

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Use the data of Brandfonbrener et.al. to see the effect of age on cardiac index. I read the following values off a graph (will look at the original later). Age CI %vs.40

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Revisions ===== Date : 2010-02-12 Data from  
Brandfonbrener et.al. 1955 Age CI

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