

Table S1. Predicted energy expenditure equations compared to indirect calorimetry for calculating energy expenditure in critically ill children.

Reference	Clinical condition Age range (years)	Predictive equation (kcal/day)
Harris-Benedict [1]	Healthy; 21-70	
• Male		$66.473 + (13.7516 \times \text{Weight}) + (5.0033 \times \text{Height}) - (6.755 \times \text{Age})$
• Female		$655.0955 + (9.5634 \times \text{Weight}) + (1.8496 \times \text{Height}) - (4.6756 \times \text{Age})$
Schofield H-W (WHO) [2]	Healthy; 3-18	
<3 years old		
• Male		$(0.167 \times \text{Weight}) + (1517.4 \times \text{Height}) - 617.6$
• Female		$(16.252 \times \text{Weight}) + (1023.2 \times \text{Height}) - 413.5$
3-10 years old		
• Male		$(19.6 \times \text{Weight}) + (103.3 \times \text{Height}) + 414.9$
• Female		$(16.97 \times \text{Weight}) + (161.8 \times \text{Height}) + 371.2$
10-18 years old		
• Male		$(16.25 \times \text{Weight}) + (137.2 \times \text{Height}) + 515.5$
• Female		$(8.365 \times \text{Weight}) + (465 \times \text{Height}) + 200$
FAO/WHO/UNU [3]	Healthy; 3-18	
<3 years old		
• Male		$(60.9 \times \text{Weight}) - 54$
• Female		$(61 \times \text{Weight}) - 51$
3-10 years old		
• Male		$(22.7 \times \text{Weight}) + 495$
• Female		$(22.5 \times \text{Weight}) + 499$
10-18 years old		
• Male		$(16.6 \times \text{Weight}) + (77 \times \text{Height}) + 572$
• Female		$(7.4 \times \text{Weight}) + (482 \times \text{Height}) + 217$
Henry (Oxford) W-H [4]	Healthy; 3-18	
<3 years old		
• Male		$(28.2 \times \text{Weight}) + (859 \times \text{Height}^*) - 371$
• Female		$(30.4 \times \text{Weight}) + (703 \times \text{Height}^*) - 287$
3-10 years old		
• Male		$(15.1 \times \text{Weight}) + (74.2 \times \text{Height}^*) + 306$
• Female		$(15.9 \times \text{Weight}) + (210 \times \text{Height}^*) + 349$
10-18 years old		
• Male		$(15.6 \times \text{Weight}) + (266 \times \text{Height}^*) + 299$
• Female		$(9.40 \times \text{Weight}) + (249 \times \text{Height}^*) + 462$
Institute for Medicine of the National Academies and Food and Nutrition Board (IOM) [5]	Healthy; 0-18	
• Male		$68 - (43.3 \times \text{Age}) + (712 \times \text{Height}) + (19.2 \times \text{Weight})$
• Female		$189 - (17.6 \times \text{Age}) + (625 \times \text{Height}) + (7.9 \times \text{Weight})$
Lawrence (Equation 3) [6]	Healthy; 4-11	

		$632.4 + (15.66 \times \text{Age}) + (9.53 \times \text{Weight})$
Kaneko [7]	Healthy; 6-17	
• Male		$(14.4 \times \text{Weight}) + (5.09 \times \text{Height}) - (34 \times \text{Age}) + 403$
• Female		$(7.64 \times \text{Weight}) + (4.22 \times \text{Height}) - (22.5 \times \text{Age}) + 526$
Dietz [8]	Healthy; 6-17	
• Male		$(16.6 \times \text{Weight}) + (77 \times \text{Height}^*) + 572$
• Female		$(7.4 \times \text{Weight}) + (482 \times \text{Height}^*) + 217$
Maffei [9]	Healthy; obese; 6-10	
• Male		$1.287 + (28.6 \times \text{Weight}) + (23.6 \times \text{Height}) - (69.1 \times \text{Age})^{\#}$
• Female		$1.552 + (35.8 \times \text{Weight}) + (15.6 \times \text{Height}) - (36.3 \times \text{Age})^{\#}$
Molnár [10]	Healthy; obese; 10-16	
• Male		$(50 \times \text{Weight}) + (25.3 \times \text{Height}) - (50.3 \times \text{Age}) + 26.9^{\#}$
• Female		$(51.2 \times \text{Weight}) + (24.5 \times \text{Height}) - (207.5 \times \text{Age}) + 1.629.8^{\#}$
Muller [11]	Healthy; obese; 5-17	
• Male		$(50 \times \text{Weight}) + (25.3 \times \text{Height}) - (50.3 \times \text{Age}) + 26.9^{\#}$
• Female		$(51.2 \times \text{Weight}) + (24.5 \times \text{Height}) - (207.5 \times \text{Age}) + 1.629.8^{\#}$
Mifflin [12]	Healthy; obese; 19-78	
		$(9.99 \times \text{Weight}) + (6.25 \times \text{Height}) - (4.92 \times \text{Age}) + (166 \times \text{sex} (1 \text{ male; } 0 \text{ female})) - 161$
Lazzer (Equation 1) [13]	Obese; 7-18	
		$(12 \times \text{Weight}) - (14 \times \text{Age}) + (241 \times \text{Sex} (1 \text{ male; } 0 \text{ female})) + 909$
Caldwell-Kennedy [14]	Healthy; obese; Studied in critically ill, mechanically ventilated [15]; 19-78	
		$22 + (31.05 \times \text{Weight}) + (1.16 \times \text{Age})$
White (Equation 2) [16]	Critically ill, mechanically ventilated; 54±53 months	
		$(17 \times \text{Age}) - (48 \times \text{Weight}) + (292 \times \text{Temperature (°C)}) - 9677^{\#}$
Meyer (Equation C) [17]	Critically ill, mechanically ventilated; 3-16	
• <3 years old		$(88 \times \text{Weight}) + 92 - (0.7 \times \text{Weight})^2 - (37 \times \text{Weight})$
• 3-10 years old		$(88 \times \text{Weight}) + 110 - (0.7 \times \text{Weight})^2 - (37 \times \text{Weight})$
• 10-18 years old		$(88 \times \text{Weight}) - 910 - (0.7 \times \text{Weight})^2$

*Height in meters; [#] Predicted energy expenditure in KJ/day

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