Supplemental Digital Content 2. Derivation of the equation to calculate predicted oxygen uptake.

EE (kcal) = (0.55 x VCO_2) + (4.471 x VO_2)

Therefore,

1) EE / VO_2 = ([0.55 x VCO_2] / VO_2) + 4.471

Since RER = VCO_2 / VO_2

2) EE / VO_2 = (0.55 x RER) + 4.471
3) EE = ([0.55 x RER) + 4.471] x VO_2

Therefore, assuming exercise efficiency is maintained

4) Predicted VO_2 = EE / ([0.55 x RER] + 4.471)
5) Predicted VO_2 = ([0.55 x Pre-KD VCO_2] + [4.471 x VO_2]) / ([0.55 x RER] + 4.471)

Energy conversion: 1 kcal = 4.18 kJ