

# RESTING ENERGY REQUIREMENTS (RER) for Ideal Body Weight

RER can be calculated using the following formula:  $RER \text{ in kcal/day} = 70 \times (\text{body weight in kilograms})^{0.75}$   
Then again, why bother with math? The table below is an extrapolation of RER calculations for dogs and cats by body weight.  
(Note that 1 kilogram = 2.2 pounds.)

BODY WEIGHT (POUNDS)	BODY WEIGHT (KG)	RER IN KCAL/DAY	RER IN KCAL/DAY
2	0.91	0.91	65
4	1.82	1.82	110
6	2.73	2.73	149
8	3.64	3.64	184
10	4.55	4.55	218
15	6.82	6.82	295
20	9.09	9.09	366
25	11.36	11.36	433
30	13.64	13.64	497
35	15.91	15.91	558
40	18.18	18.18	616
50	22.73	22.73	729
60	27.27	27.27	835
70	31.62	31.62	938
80	36.36	36.36	1,037
90	40.91	40.91	1,132
100	45.45	45.45	1,225
110	50.00	50.00	1,316
120	54.55	54.55	1,405
130	59.09	59.09	1,492
140	63.64	63.64	1,577
150	68.18	68.18	1,661

Now we have the resting energy requirements for an animal based on its body weight or body surface area and we are one step closer to determining the daily energy requirements for your individual pet. You can use RER as a baseline to extrapolate the energy needs of an individual animal using multipliers to account for specifics such as activity level, age, breed, reproductive status, etc. The table below shows the calculation for daily energy requirements (DER) for dogs and cats.<sup>5</sup>

## DETERMINING DER BY RER

ACTIVITY	DOG DER	CAT DER
Weight loss	1.0 × RER	1.0 × RER
Neutered adult (normal activity)	1.6 × RER	1.2 × RER
Intact adult	1.8 × RER	1.4 × RER
Light activity	2.0 × RER	N/A
Moderate activity	3.0 × RER	1.6 × RER
Heavy activity	4–8 × RER	N/A
Pregnancy (0–42 days)	1.8 × RER	1.6 × RER (free feed)
Pregnancy (42+ days)	3.0 × RER	2 × RER (free feed)
Lactation	4–8 × RER	2–6 × RER (free feed)
Puppy/kitten (weaning to 4 months)	3.0 × RER	2.5 × RER
Puppy/kitten (4 months to adult size)	2.0 × RER	2.5 × RER