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Nutritional Calculations at a Glance

Converting the % Nutrient to a g/100 kcal Basis

Nutritional profiles between diets can be reliably compared on a caloric basis using the typical analysis (% nutrient) and calorie density (kcal/kg) of the diet and the following calculations:

The equation to do this is: 1,000 x (nutrient % ÷ kcal/kg) = g/100 kcal

Example: For a dry cat food with minimum protein of 40% (as fed) and a calorie density of 4,000 kcal/kg, what is the protein concentration on an energy basis (i.e., g/100 kcal)?

Equation: 1,000 x (40 ÷ 4,000) = 10.0 g/100 kcal (compared with an AAFCO minimum of 6.5 g/100 kcal)

**If you prefer to review the nutrient on a mg per 100 kcal basis, you need to multiply this by 1,000 again.*

Example: For a canned cat food with a phosphorus level of 0.3% and a caloric density of 1,000 kcal/kg:

Equation: 1,000 x (0.3 ÷ 1,000) = 0.3 g/100 kcal x 1,000 = 300 mg/100 kcal

Resting Energy Requirements – Calculation

Resting energy requirement (RER) = 70 x body weight (BW; kg)$^{0.75}$

Maintenance energy requirement (MER) for growth: 2.0-2.5 x RER
Maintenance energy requirement (MER) for adult maintenance: 1.2 x RER

It is imperative to consider each individual cat and to adjust the caloric intake based on the cat's BCS.

Starting Estimates: Range of Energy Requirements by a Healthy Cat's Weight

Body weight (lb)	Body weight (kg)	MER (2.5 x RER) Kittens	MER (2.0 x RER) Post-spay/ neuter	MER (1.4 x RER) Post-spay/ neuter	MER (1.2 x RER) Adult Maintenance	RER Adult Maintenence	MER (0.8 x RER) Overweight
1	0.5	104					
2	1	175					
3	1.5	237	190				
4	2	294	235	165	141	118	
6	2.5		278	195	167	139	
7	3		319	223	191	160	
8	3.5			251	215	179	
9	4			277	238	198	158
10	4.5			303	260	216	173
11	5			328	281	234	187
12	5.5					251	201
13	6					268	215

This table represents starting estimates. Always adjust a cats calorie intake by analysis of BCS/MSC what they are eating, weight, breed, and nutrition goals.

These estimates are for healthy cat's that have a healthy body weight. Cats with a higher BCS (i.e., 6-9/9), need a formal nutrition plan closely monitored by their veterinarian.

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