

ENERGY REQUIREMENTS FOR PUPPIES FROM 2 TO 12 MONTHS OF AGE

Time Frame	Approximate Age In Months	MER*Toxicity
Weaning to 50% ABW	2 to 4	3xRER**
50 to 80% ABW	4 to 9	2.5xRER
>80% ABW	9 to 12	2xRER

* Metabolic Energy Requirements

** Resting Energy Requirements = $70 (BW \text{ kg})^{0.75}$

THE UNIQUE FEATURES OF THE CAT AN OBLIGATE CARNIVORE

Feature	Cat	Comments
Face	Forward position of ears and eyes	Increased visual acuity (night) and hearing
Dentition	Has 30 permanent teeth (dog has 42 with more molars designed to crush)	Tooth shape specialized for grasping and tearing flesh
Jaw	Restricted side to side and front to back mobility	Limited ability to grind
Claws	Retractable	
Digestive Tract	Stomach, caecum and colon short intestinal length is short surface area of stomach increased gastric pH lower	Evolutionary adaptation to a highly digestible protein, calorie dense diet
Glucose Metabolism	Uses gluconeogenic amino acids	Constant state of gluconeogenesis dependent on a continual intake of highly digestible, biologically appropriate protein
Fatty Acid Metabolism	Omega 6, 3 and arachadonic acid is essential	Found only in meat
Vitamin A Metabolism	Require performed Vitamin A can't convert beta carotene	Found in organ meat of prey
Liver	Enzyme system amino transferase which converts amino acids to energy and the urea cycle enzymes can't be turned off Limited ability to metabolize carbohydrates due to lack of glucokinase	Dogs can modify rate depending on how much dietary protein is present. Little glucose in all meat diet Dogs have multiple carbohydrate enzymes handling systems

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Urinary Tract	Originated in a dry climate Urine pH on a "prey" diet is under 7	Can product a highly concentrated urine Naturally have a low thirst drive.
Pancreas	Not adapted to dealing with post eating glucose surges	Results in an insulin surge rather than a constant level of insulin
Vitamins	The Enzymes responsible for endogenous synthesis of Vitamin D diverted to energy production. Niacin energy metabolism Can't convert beta-carotene to Vitamin A	Results in an insulin surge rather than a constant level of insulin