

Tear 'N Share



Kitten Tube Feeding: Delivering the Optimal Nutrients on the Appropriate Schedule

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Safe and effective tube feeding hinges on choosing the right size tube for the individual kitten’s weight and growth stage, and on providing appropriately calculated, frequent meals to support their delicate digestive system and nutritional needs. More information is provided in the Technician Talk article on page 42 of the Spring 2024 Issue of *The Feline Practitioner*.

Tube Size

Selecting the correct diameter tubing not only prevents esophageal discomfort, but also potential esophageal trauma. The size of tube that can be safely used depends on the size of the kitten (i.e., breed/maturity)—see table 1. When in doubt, start with a smaller tube if you are unsure about which size will safely fit without causing distress or trauma. Likewise, if you observe esophageal bulging from the tubing, feel a dragging sensation when the tube is being inserted, or the patient is actively in distress, select a smaller size tube.

Energy Requirements

Resting energy requirements (RER) should be calculated by a factor of 2-2.5 to achieve an estimated caloric intake for energy and growth—this is the maintenance energy requirements

Tube Size (French gauge)	Body Weight (ounces/ grams)
3.5 Fr	<2.8–3.5 oz / <80–100 g
5 Fr	>3.5–8.8 oz / >100–250 g
8 Fr	>8.8–15.9 oz / >250–452 g
12 Fr	1 lb / >453 g

Table 1. Selection of feeding tube based on body weight.

RER are determined using the equation:

$$\text{RER} = 70 \times (\text{body weight in kg})^{0.75}$$

The RER is then multiplied by a factor of 2–2.5 to calculate the kitten’s MER—i.e., the energy and nutrient requirements for growth and to prevent further metabolic distress:

$$\text{MER} = \text{RER} \times 2 \text{ (to 2.5)}$$

(MER, see box). Most commercial milk replacers/kitten formulas do the calculations for you—the daily caloric energy needs and the equivalent amount of formula, according to the recommended feeding schedule, are displayed on the nutrition label. Knowing the minimum caloric needs can assist in ensuring you are feeding the kitten correctly, while keeping good feeding records allows tracking of trends in the event of any weight loss.

Table 2 (on the next page) shows an example of the type of information that is available. Note that this is specific to one commercial milk formula; each product will have a different kcal/ml per reconstituted milk replacer/kitten formula. Also, the calculated ‘MER’ and ‘Formula Intake’ are intended as starting estimates (see table footnote).

Feeding Schedule and Quantity

Typically, a healthy kitten with normal digestion can be fed 4 ml/100 g body weight comfortably. However, kittens who are ill (including many critical neonates) may have slowed digestion (gastrointestinal motility) and delayed gastric emptying, leading to food fermentation. Smaller, more frequent meals are required to prevent painful gastric bloating.



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How Often Should You Feed?

- **First week of life:** Feed every 2 hours to meet the kitten's nutritional needs, caloric intake, and hydration. Due to their limited glycogen stores, kittens rely on regular feeding to prevent hypoglycemia
- **Week 2:** Feed every 2–3 hours
- **Weeks 3–4:** Feed every 3–4 hours

- **Weeks 4–5:** Feed every 5 hours
- **Week 5 and beyond:** Weaning begins at around week 5. However, kittens who need feeding support at this age can be tube fed every 5–6 hours. When tube feeding, the kitten's caloric intake must meet their needs for energy expenditure due to play or illness, as well as growth. Again, it is important NOT to overfeed and cause abdominal distension and discomfort. Pay attention to the kitten and revert to smaller, more frequent meals, if necessary.

Body Weight			MER*/day (kcal)	Formula Intake** (ml)
Ounces	Grams	Kilograms		
2.5	70	0.07	23.82	27.3
4	113	0.113	34.11	39.2
5.5	156	0.156	43.44	49.93
7	198	0.198	51.94	59.7
8.5	241	0.241	60.19	69.10
10	284	0.284	68.08	78.25
11.5	326	0.326	75.50	86.78
13	369	0.369	82.85	95.2
14.5	411	0.411	89.83	112.3
16 (1 lb)	454	0.454	96.79	111

Table 2. The information in this table is just an example based on a specific product, and each calculation must be conducted for the specific product used. The calculated MER (kcal/day) and Formula Intake (ml/day) are estimates for healthy kittens/cats who have a healthy body weight, and represent starting points. Always adjust a cat's calorie intake in light of their body condition (BCS) and muscle condition (MCS) scores, what they are eating, their body weight, breed, and the nutritional goals that have been set.

* Based on VETPOCKET Kcal calculator.

** Volume of milk replacer needed per day based on 12.4Kcal/15ml (in this example)=0.87kcal/ml when made up to a 1:2 ratio of formula to water. You can round up or down on the volume to a whole number.

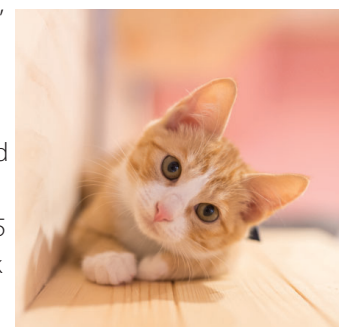
MER (maintenance energy requirements) = RER (resting energy requirements) x 2 (to 2.5).

Round-the-clock Responsibility

For kittens up to week 4, or for any kittens who are ill and need round-the-clock care, set an alarm to ensure you are waking up to feed/check on them, as required. It is not uncommon for kittens to have hypoglycemic events and pass during the night, if not checked frequently.

Caregiver Care Tips

It is very important that the caregiver for the kitten takes care of themselves. If the kitten is stable and has no underlying disease, is growing normally, and is hydrated, they can sleep during the night! Give the kitten a late-night meal and put them to bed, and then ensure the caregiver gets rest as well. The kitten should be able to sleep comfortably for 5 hours from week 4 onwards. 🐾



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