

THE DIGESTIVE & URINARY SYSTEMS

Kolts & Kitties Combined Cat Info

I. THE DIGESTIVE SYSTEM

- ◆ The cat's digestive system includes the alimentary canal & the glands that go with it.
- ◆ The alimentary canal consists of the:
 - ✓ Lips, mouth, teeth, & tongue,
 - ✓ Esophagus,
 - ✓ Small & large intestines,
 - ✓ Anus.
- ◆ The accessory glands are the:
 - ✓ Liver,
 - ✓ Pancreas,
 - ✓ Salivary glands.

A. The Mouth

- ◆ The cat's mouth is the doorway to the digestive system
- ◆ The lips hold in food & retain saliva.
- ◆ The tongue is rough & covered with hook-like appendages. A cat uses its tongue to lap up liquids & to scrape food off bones.

B. The Teeth

- ◆ Kittens have a first set of teeth which are called the milk teeth.
- ◆ They fall out when the cat is between five & seven months old.
- ◆ Adult cats have permanent teeth. There are:

- ✓ 12 incisors,
- ✓ 4 canines,
- ✓ 10 premolars,
- ✓ 4 molars

◆ Teeth Parts

- ✓ The crown is the part of the tooth visible above the gums.
- ✓ Enamel covers the crown & neck of each tooth. Cats have thin enamel that can lead to cavities.
- ✓ Inside each tooth is the pulp, which houses the nerves & blood vessels.
- ✓ Below the gums is the root. At least half of each canine tooth grows below the gum line.
- ✓ Cats have shallow roots that lead to easy tooth loss if teeth are not cared for.

C. Salivary Glands, Pharynx & Esophagus

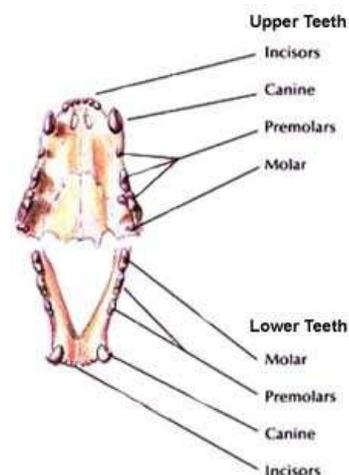
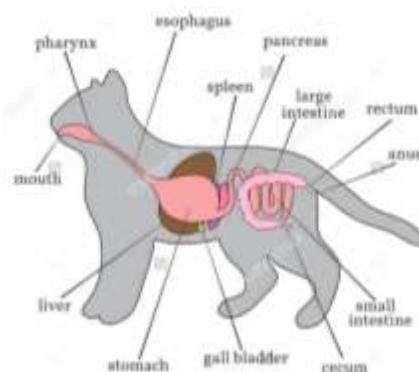
- ◆ The salivary glands are located behind the jaw. Their function is to moisten food as an aid in swallowing & digesting.
- ◆ The pharynx is a tube shared by the digestive & respiratory systems. Food enters the pharynx from the mouth & leaves through the esophagus.
- ◆ When swallowing, the epiglottis closes over the trachea to prevent food from entering.
- ◆ The esophagus is a strong elastic tube that carries food from pharynx to stomach.

D. The Stomach

- ◆ The cat's stomach is a sac-like organ with elastic walls. It has a fairly large capacity for food storage.
- ◆ In the stomach acid liquids help to break down proteins.
- ◆ At the bottom of the stomach is the pylorus, a muscular valve that moves the food into the small intestine.

E. The Intestines

- ◆ Small Intestine



- ✓ The duodenum is the first section of the small intestine, followed by the jejunum & ileum.
- ✓ The small intestine secretes digestive enzymes which break down proteins & carbohydrates.
- ✓ Bile & pancreatic juices enter the intestine here.
- ✓ Once the food is broken, it can be absorbed into the body. What is left over is passed on to the large intestine.

◆ Large Intestine

- ✓ The large intestine absorbs most of the moisture & then passes the waste products out of the body.
- ✓ The rectum is the last segment of the large intestine.
- ✓ It is very short & is located entirely within the pelvis.
- ✓ The anus is the muscular closure at the very end of the large intestine.

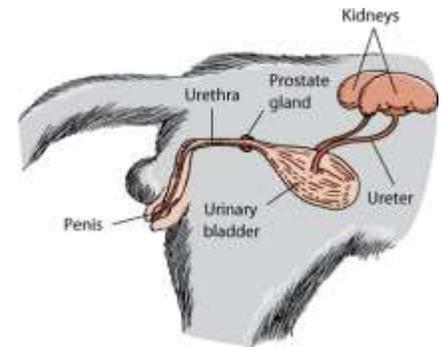
F. The Accessory Glands

◆ Liver

- ✓ The liver is the largest organ in the cat's body.
- ✓ It is situated just behind the diaphragm & mostly on the right side of the body.
- ✓ Its functions are to: filter blood, destroy toxins within the blood, produce proteins, manufacture bile,
- ✓ store sugar in the form of glycogen.
- ✓ Bile is produced to aid in the digestion of fats.
- ✓ Between meals, bile is stored in the gall bladder. It moves through the bile duct to the small intestine after a meal.

◆ Pancreas

- ✓ The pancreas is located near the stomach & is attached to the small intestine.
- ✓ The pancreas makes digestive juices called enzymes.
- ✓ The pancreas also contains the Islets of Langerhans which produce insulin to break down blood sugar.
- ✓ Diabetes is a condition that occurs in cats & people when there is a lack of insulin.



II. THE URINARY SYSTEM

◆ The important organs of the cat's urinary system are the:

- ✓ kidneys,
- ✓ ureters,
- ✓ bladder,
- ✓ urethra.

- ◆ The kidneys are located on either side of the body in the lumbar region (between ribs & pelvis). Blood is filtered through the kidneys & the liquid waste product is called urine.
- ◆ Urine is passed through the ureters to the bladder where it is stored.
- ◆ The urine is then discharged through the urethra, a tube connecting the bladder to the exterior of the body.

III. FEEDING YOUR CAT

A. General Information

- ◆ Good nutrition is essential for the health of a cat during all stages of its life.
- ◆ A cat that is malnourished:
 - ✓ Gets more diseases
 - ✓ Gets more infections
 - ✓ Has problems with growth
 - ✓ Has problems with reproduction.
- ◆ A cat's need for protein is great & can only be provided by animal products such as meat, fish, or eggs.
- ◆ Proteins provide essential amino acids such as **taurine**, which is important for a cat's eyesight.
- ◆ Lack of taurine will result in eye lesions which can lead to blindness.

B. Choosing Cat Food

- ◆ The best way to make sure your cat is eating a nutritionally balanced diet is to feed a high quality commercial cat food. Look for the words: “Animal feeding tests using AAFCO procedures substantiate that this diet provides complete & balanced nutrition for cats.”
- ◆ Since 1969, cat foods with “scientific,” “complete,” or “balanced” on the label must provide a completely balanced diet for cats of all ages. Words like “premium” & “gourmet” do not mean the food is of higher quality.
- ◆ AAFCO tested foods:
 - ✓ Have been tested & proven to be a good diet for the average cat.
 - ✓ Have more digestible ingredients so you feed less.
 - ✓ May cost more than non--tested foods.
- ◆ Cheap foods have lots of indigestible filler which may cause the cat to:
 - ✓ Lose weight.
 - ✓ Pass a lot of feces.
 - ✓ Have poor coat quality.

C. Types of Cat Food

- ◆ There are 4 basics types of cat food:
 - ✓ Dry
 - ✓ Maintenance Canned
 - ✓ Specialty Canned
 - ✓ Raw Diets

1. Dry Cat Foods

- ◆ The most popular & the easiest to feed.
- ◆ Dry cat foods contain an average of:
 - ✓ 31% protein,
 - ✓ 11% fat,
 - ✓ 10% moisture
 - ✓ 1500 -1700 digestible calories per pound
- ◆ Advantages:
 - ✓ Good for the teeth & gums.
 - ✓ Easy to store & keep.
 - ✓ Lower cost per feeding.
- ◆ Disadvantage:
 - ✓ Has a high carbohydrate level

2. Canned Maintenance Cat Food

- ◆ Canned maintenance cat food usually contains about:
 - ✓ 10% protein,
 - ✓ 4% fat (or more)
 - ✓ 75% water.
- ◆ Advantages:
 - ✓ Most cats find it very tasty.
 - ✓ Easy to eat for cats with bad teeth.
- ◆ Disadvantages:
 - ✓ Can cause tartar build up.
 - ✓ May not be complete & balanced.

3. Canned Specialty Cat Foods

- ◆ Usually not intended to be the only source of nutrition, but add variety & taste-appeal to the cat’s diet.
- ◆ Read the label to determine if the specialty cat food will provide a complete & balanced diet for your cat.
- ◆ Advantages:
 - ✓ Has more meat than maintenance food.
 - ✓ Have a strong smell to attract cat.
- ◆ Disadvantage:
 - ✓ Not all brands are complete & balanced
 - ✓ More expensive per feeding.

4. Raw Diets

- ◆ It is difficult to maintain a well-balanced diet & provide appropriate nutrients when feeding a raw diet.
- ◆ Contain high amounts of meat & some vegetables. May contain organs & intestines.
- ◆ Disadvantages:
 - ✓ Usually frozen & require special handling.
 - ✓ Most expensive type.
 - ✓ May not be balanced & complete.

D. Special Diet Formulas

- ◆ Cat food comes in many formulations for certain periods in a cat's life.
 - ✓ Wellness Diets
 - ✓ Therapeutic Diets
 - ✓ Special Needs Diets
 - ✓ Snack or "Junk" Food

1. Wellness Diets

- ◆ Formulated for healthy cats at a certain stage of life or nutritional need, such as:
 - ✓ Kitten
 - ✓ Adult
 - ✓ Senior

2. Special Needs Diets

- ◆ Have a special purpose in addition to providing proper nutrition. Such as:
 - ✓ Hairball Control
 - ✓ Sensitive Skin
 - ✓ Tartar Control
 - ✓ Weight Loss

3. Therapeutic Diets

- ◆ Designed to aid in the treatment of specific medical conditions. Must be bought from veterinarian.
- ◆ Fed to cats with diagnosed conditions like:
 - ✓ Kidney disease
 - ✓ Diabetes

4. Snack or "Junk" Food

- ◆ Includes cat treats & many of the specialty canned & semi--moist diets.
- ◆ Should be given as a special treat & in small amounts.

E. Water

- ◆ Fresh, cool water should be available in a clean dish at all times, as it is an essential element in the diet.
- ◆ Cats will drink more water in hot weather & when semi-moist & dry foods are fed.
- ◆ If a cat is ill, & refuses to eat or drink, it is very important to get it to drink liquids, even if by force, in order to prevent dehydration.

F. Feeding the Growing Kitten

- ◆ Diet plays an important role in kitten development.
- ◆ A kitten requires about 1½ times as much protein & three times the calories per pound of body weight as a mature cat.
- ◆ Kittens should be fed 2 or 3 times a day until they reach about one year of age,

G. Feeding Adult Cats

- ◆ When a kitten reaches 1 year of age, it has completed its rapid growth period, & may be placed on a maintenance diet.
- ◆ Unless the cat is pregnant or lactating, it should remain on a maintenance diet for the rest of its life.
- ◆ If a cat is receiving the proper amount of food, it will eat it all every day without becoming overly thin or fat.

	Calories per pound of body weight	Ounces Per Pound of Body Weight	
		DRY FOOD	CANNED MAINTENANCE FOOD
Kittens:			
10 weeks old	113	1.1 oz.	3.6 oz.
20 weeks old	59	.6	1.8
30 weeks old	45	.45	1.4
40 weeks old	36		1.2
Adults:			
Active	32	.36	1.2
Pregnant	45	.45	1.4
Lactating	56-145	1.1	3.3
Sedentary	32	.32	1.1
Obese	22	.26	.84

H. Feeding Senior Cats

- ◆ Better food & balanced diets are a major factor in cats now having an average life span of 14 years.
- ◆ There are special diets for older cats that address their physiological changes & reduced physical activity.
- ◆ Older cats also should be encouraged to drink sufficient amounts of water as this increases kidney function.

I. Feeding Overweight Cats

- ◆ If a cat's ribs cannot be felt easily, it is probably overweight.
- ◆ The most common cause of obesity is over-feeding & inadequate exercise.
- ◆ Obese cats need fewer calories.
- ◆ An obese cat is much more susceptible to serious illness such as heart disease or diabetes.
- ◆ It may also have physical problems such as arthritis or hip dysplasia.
- ◆ Obesity affects nearly one cat in ten, & is especially common in neuters.
- ◆ To reduce weight, the caloric intake must be reduced & exercise increased. It is much kinder to reduce the amount of food given to the cat, rather than allow it to suffer the poor health that may result from being fat.

IV. EVALUATING YOUR CAT'S CONDITION - BODY CONDITION SCORING

- ◆ It is important to determine the body condition of your cat so you can feed correctly.
- ◆ If your cat is thin, you need to feed more. If your cat is obese or fat, you need to feed it less.
- ◆ The Body Condition Score (BCS) was designed to help cat owners determine the appropriate weight for their cat.
- ◆ If your cat is not at the ideal weight, (BCS 3) you should take steps to achieve ideal weight.

A. Condition Score 1- Very Thin

- ◆ Ribs are prominent & easily felt without any fat cover.
- ◆ The pelvis & shoulder blade can easily be felt.

B. Condition Score 2 - Underweight

- ◆ Bones are raised with minimal tissue between skin & bones.

C. Condition Score 3 – Ideal Weight

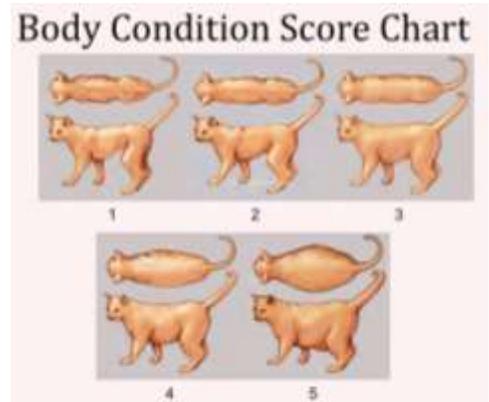
- ◆ Ribs are visible & easily felt.
- ◆ Shoulder and pelvic prominences can be felt but with enough tissue to not make them protrude.

D. Condition Score 4- Overweight

- ◆ Ribs are difficult to see or feel through moderate fat cover.
- ◆ Slightly sagging abdominal fat pad.

E. Condition Score 5 - Obese

- ◆ Ribs are not visible & difficult to feel through thick fat cover.
- ◆ Cat has a prominent sagging abdominal fat pad.



V. THINGS NOT TO FEED YOUR CAT

- ◆ Milk: It can cause diarrhea.
- ◆ Raw Fish: It destroys vitamin B.
- ◆ Raw egg whites: They destroy important nutrients.
- ◆ Bones: They may splinter & damage mouth or stomach. They can cause constipation.
- ◆ Raw meat: It can carry parasites. It is low in calcium.
- ◆ Tuna alone: It can cause a vitamin E deficiency.
- ◆ Dog food: It does not have enough protein & other nutrients.
- ◆ Table scraps: They are not a complete & balanced diet.