



1

Content

- Nutrition
- Health Status
- Environment
- Body Condition Scoring



2

Overview

- The safety and well-being of a dog are determined by a variety of factors. The easiest factors to address and quantify are:
 - (1) nutrition
 - (2) health status, and
 - (3) environment.
- Significant deficiencies in any one or more of these factors can have a detrimental impact on the dog's health and wellbeing.



3

Nutrition



4

Feeding

- Dogs should be provided food at least once each day (unless otherwise indicated by a veterinarian).
- The food should be uncontaminated, wholesome, palatable, and of sufficient quantity and nutritive value to maintain the normal condition and weight of the dog.
- The diet should be appropriate for the individual dog's age, condition, and activity level.



5

Hydration

- If potable water is not continually available to a dog, it must be offered as often as necessary to ensure its health and well-being, but not less than twice daily for at least one hour each time (unless restricted by a veterinarian).
- Factors such as warm temperatures, lactation, and illnesses can significantly increase the amount of water necessary to maintain dogs in good health.



6

Hydration, *cont.*

- Water is essential for temperature regulation, functioning of cells, circulation, digestion, and removal of toxins/waste products.
- Dehydration can lead to overheating, circulatory issues, and buildup of toxins. Severe dehydration can lead to death; this can occur within a few days of water deprivation.



7

Hydration, *cont.*

- Indicators of dehydration:
 - Decreased skin elasticity (skin “tent test”)
 - Dry, sticky gums
 - Decreased activity
 - Weakness/difficulty standing



- Shivering
- Loss of consciousness
- Death



8



9

Elimination

- Adult dogs need the opportunity to urinate a minimum of three times per day. Adult dogs typically defecate once or twice a day.
- Adult dogs should not go more than eight hours without the opportunity to urinate/defecate.
- Puppies require much more frequent opportunities to eliminate, as often as every two hours.
- Both adult dogs and puppies should have the opportunity to eliminate approximately 20 minutes after a meal.



10

Elimination, *cont.*

- The dog or puppy's opportunity to eliminate should be in an area away from its primary shelter and food and water sources.
- Steps should be taken to prevent elimination from occurring in these areas, and any unintentional acts of elimination should be cleaned up thoroughly in a timely manner.



11

Health Status



12

Skin/Fur

- Skin/fur disorders cause discomfort to the dog and increase the opportunity for infection of the skin.
- Any type of infection left untreated can increase the nutritional needs of the dog, decrease its ability to fend off additional bacterial, viral, or fungal infections, and can potentially become spread throughout the dog's body.
- Once an infection spreads, it is very difficult to fight off; this significantly increases the likelihood the dog will succumb to the infection.



13

Pressure Sores

- Can occur when dogs spend too much time lying on a hard surface. These sores are typically seen over bony areas like elbows, ankles, and hips.
- Pressure sores are more common in dogs that:
 - Have trouble walking
 - Are older
 - Have a low body condition score
 - Are large and giant breeds
 - Have thin skin or little hair for protection



14

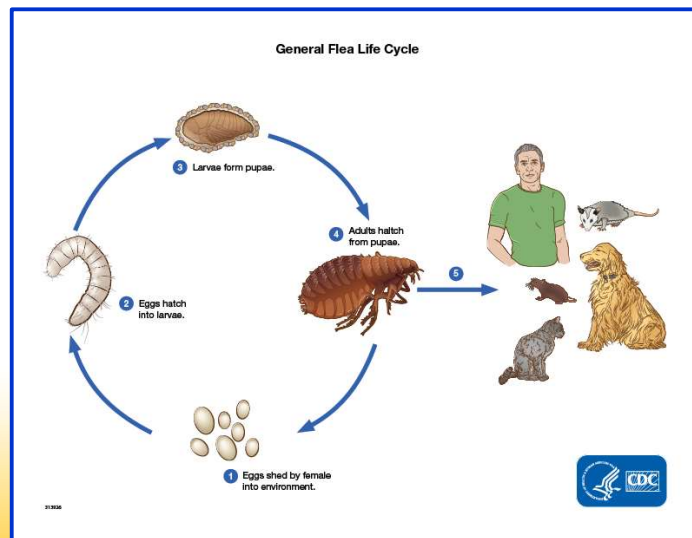
Pressure Sores, *cont.*

- Signs of a pressure sore include:
 - Loss of hair/exposed skin
 - Excessive licking
 - Skin calluses or discoloration that, if left untreated, can develop into open wounds.
- They are challenging to treat since dogs continue to need to lie down and do so on these delicate body parts.



15

Fleas



16

Fleas

- The presence of fleas leads to a variety of health issues for dogs. These include:
 - Flea allergy dermatitis
 - Transmission of tape worm larva, and
 - Transmission of significant diseases, such as plague, if they are present in the area.



17

Fleas, *cont.*

- While flea infestation has a negative impact on any dog, the presence of fleas can have a much greater impact on puppies because they have little natural immunity to fight the parasite and very little reserve to counterbalance the nutritional loss and direct debilitating effects of a flea infestation.
- Since fleas ingest blood from the dog, significant anemia can result in small puppies which could result in death of the animal.



18

Fleas, *cont.*

- Flea allergy dermatitis is caused by an allergic reaction the dog has to the saliva of the flea. The resulting inflammatory response causes:
 - Redness
 - Swelling
 - Itching, and/or
 - Pain
- Dogs with flea allergy dermatitis will often scratch at the affected area, causing additional damage, such as hair loss and sores.



19

★ Matting

- Extreme matting of the hair coat can be uncomfortable for the pet and eventually lead to irritation and inflammation of the skin beneath the matting.
- This condition could cause a break in the skin where bacteria could enter, resulting in infection. In addition, breaks in the skin can attract flies and lead to a maggot infestation.
- Matting of the hair also reduces the insulating properties of the hair coat.



20

Matting, *cont.*

- Matted hair may encircle body parts, restricting blood flow. If such a mat is not removed, the tissue below the mat may die and become gangrenous. This may result in the loss of use or of the body part.
- Matted hair may occlude the prepuce, vulva, and/or anus. Such occlusion results in urine and/or feces being held against the body. This can lead to skin irritation and damage. It may also prevent elimination. An animal that cannot eliminate urine or feces is in immediate jeopardy.



21



22



23

Ringworm

- Ringworm is typically a superficial skin infection.

Clinical signs include:

- Hair loss
- Scaling
- Crusting
- Redness
- Papules
- Hyperpigmentation
- Itching



24

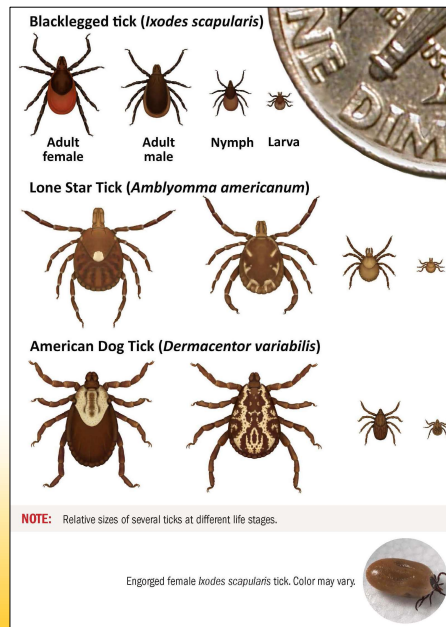
Ringworm, *cont.*

- Infection in young or debilitated dogs may be persistent and widespread.
- Ringworm spreads via contact with infected animals or contaminated objects.
- Ringworm is also zoonotic (can be transmitted to people).



25

Ticks



26

Ticks, *cont.*

- Worldwide, they are second only to mosquitoes in terms of their public health and veterinary importance.
- A partial list of diseases ticks can carry include:
 - Lyme disease
 - Q fever
 - Tularemi
 - Rocky Mountain spotted fever (now known as spotted fever rickettsiosis)
 - Ehrlichiosis



27

Ticks, *cont.*

- Ticks can also harm their hosts directly by inducing toxicosis caused by toxins in their salivary fluids, which can lead to a condition called tick paralysis. Severe tick infestation can lead to anemia and death.
- ★ A tick takes approximately 72 hours to become engorged after attachment. The length of time an infected tick must be attached to the host before it spreads disease is dependent on the disease.



28

Mange/Mites

- **Sarcoptic mange**
 - This mite burrows under the skin causing significant inflammation and opening the opportunity for secondary bacterial infections. Dogs with chronic, generalized disease develop seborrhea, severe thickening of the skin with fold formation and crust buildup, enlarged lymph nodes, and emaciation. Dogs infected with sarcoptic mange are extremely itchy.
 - Sarcoptic mange is also zoonotic (can be transmitted to people).



29

Mange/Mites, *cont.*

- **Demodectic mange**
 - The mite lives in the hair follicles on dogs' skin. Good immunity typically prevents the mites from causing any problems. Immune-compromised animals, like the very young, very old, or otherwise compromised, may not be able to mount an effective immune response to the mites. This could lead to overpopulation of the mites, which results in clinical signs, such as hair loss, redness of the skin, and/or swelling of the skin.



30

Mange/Mites, *cont.*

- **Localized demodectic mange**
 - Generally heals on its own. Signs include hair loss, redness, hyper-pigmentation, and pustules, with minimal to no itchiness.
- **Generalized demodectic mange**
 - Does not heal on its own and requires treatment. The generalized form also weakens the barrier established by the skin, increasing the likelihood of secondary bacterial infections. Lesions with the generalized form include involvement of the feet, generally enlarged lymph nodes, lethargy, possibly fever, and possible secondary skin infection.



31



32

Teeth

- Dental disease causes discomfort for the dog and leads to bacteria entering the blood system and can result in the loss of teeth. If caught in time, dental disease can typically be prevented or corrected with proper dental care, including dental cleaning by a licensed veterinarian.
- BOAH veterinarians use a dental scoring system that was developed by referencing the USDA Animal Plant and Health Inspection Services “Monitoring for Periodontal Disease (PD) in Dogs” handout.



33

Stage 0

No sign of plaque or tartar. Dental care by the owner is needed to maintain healthy teeth and gums. Products available will help make dental care by the owner easier.



Stage 1

Mild gingivitis: Reversible stage; the margin of the attached gum is inflamed and swollen. Plaque can be seen on the teeth. Dental care by the owner is needed. If no improvement with owner care, then professional veterinary dental cleaning may be needed to remove plaque buildup and prevent progression of dental disease.




Stage 2

Moderate gingivitis: Reversible stage; the entire gum is inflamed and swollen. The mouth is painful and odor is noticeable; tooth roots have lost up to 25% of their attachment. Bacteria begin to impact other body organs. Professional veterinary dental cleaning is needed within 2 months. Dental care by the owner is needed for future prevention.





34

Stage 3
Severe gingivitis: Potentially reversible stage; gums are cherry red and bleeding, damaged by infection and calculus. A sore mouth and bad breath are evident. Heart valves and kidneys are exposed to bacteria and may be experiencing inflammation and damage. Professional veterinary dental cleaning is needed in 2 to 4 weeks, along with antibiotics and pain medications. Extractions are likely. Dental care by the owner will need to be discussed in detail.



Stage 4
End stage periodontal disease: Irreversible stage; chronic infection is destroying the gums, teeth, and bone. Many teeth are loose. Bacteria are spreading through the body. Heart, liver, and kidneys are compromised. Pain is constant. Professional veterinary dental cleaning is needed immediately. Extractions, antibiotics, and pain medications will be necessary. Dental care by the owner is needed for future prevention.





35

Nails

- Overgrowth of nails increases the chance of a nail becoming caught and pulled out, resulting in severe pain for the dog and an open wound allowing bacteria to penetrate the skin and cause infection.
- Overgrowth of nails, especially dew claws, can lead to the nails curling around and penetrating the dog's skin, resulting in the same consequences as when a nail is pulled out.
- Bacterial infection can spread throughout the body if it reaches the blood stream.



36



37

Ears

- Left untreated, simple infections can become chronic in nature which can lead to:
 - Tilting of the head
 - Problems with the dog's balance
 - ★ • Difficulty standing
 - Nausea or vomiting
 - Paralysis of the facial nerves
 - Permanent thickening of the skin in the ear canal, or
 - Calcification of the ear canal



38

Ears, *cont.*

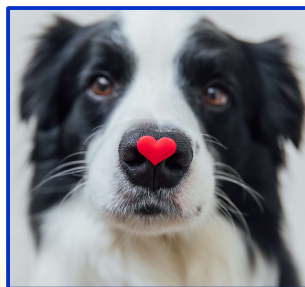
- Underlying allergies can cause the ear to become inflamed and pruritic. As the dog scratches at the ears, chances increase for secondary bacterial and fungal skin infections due to abrasions from their nails and the opportunity for pathogens to enter the compromised skin.



39

Nose

- The skin of the nose should be smooth.
- There should not be any discharge from the nose.
- Flakey or crusty skin and/or discharge from the nostrils indicates an infection or disease process is occurring.



40

Eyes

- Eye conditions can be chronic or acute.
- Some of these conditions can cause:
 - Pain
 - Swelling
 - Discharge from the eye
 - ...resulting in the dog holding the eye slightly closed to protect it from light and minimize discomfort.
- Cataracts, nuclear sclerosis, dry eye, glaucoma, and corneal abrasions are common conditions in older dogs.



41

Common Intestinal Conditions

- Control measures to prevent intestinal conditions caused by parasitism include regularly removing fecal matter from the dog's environment and regular de-worming.
- Puppies are especially sensitive to infection with any type of parasite, as they have little natural immunity to fight the parasite and they have very little reserve to counterbalance the nutritional loss and direct debilitating effects of parasite infestation.



42

Roundworms



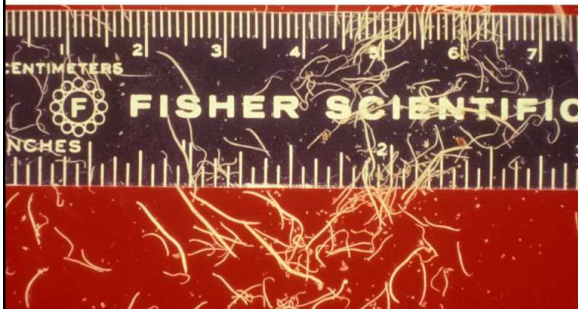
Adult *Toxocara canis*, small intestine, dog

Adult *T. canis* found in the small intestine of a 10-week-old puppy.

Courtesy of Dr. Andrew Peregrine.

43

Hookworms



Adult hookworms, small intestine, dog

Adult hookworms recovered post-mortem from the small intestine of a 10-week old puppy with severe anemia that died.

Courtesy of Dr. Andrew Peregrine.

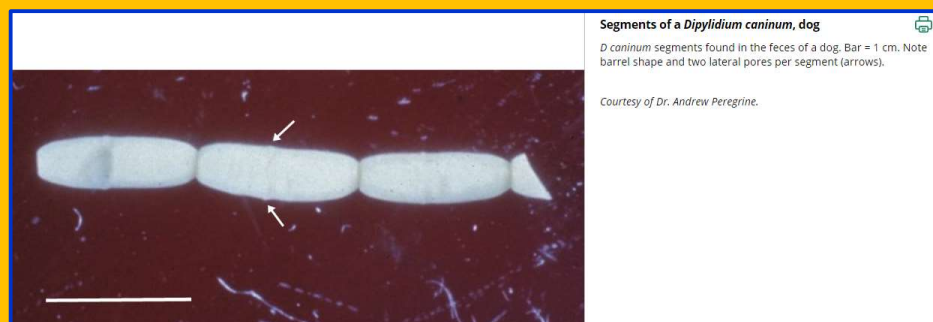
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Whipworms



45

Tapeworms



46

Other Intestinal Conditions

- **Giardia**
 - Intestinal protozoal organism
 - Many infected animals will have no clinical signs at all.
 - Diarrhea in affected animals is usually mucoid, pale, soft, and has a strong odor.
- **Coccidiosis**
 - Very tiny (microscopic) parasites
 - Many infected animals will have no clinical signs at all.
 - Diarrhea may be bloody.



47



48

Environment



49

Thermoneutral Zone

- Temperature range in which an animal does not have to expend additional energy to maintain its body temperature
- ★ • Adult dog's normal body temperature is approximately 100.5 to 102.5 degrees Fahrenheit
- ★ • Adult dog's thermoneutral zone is ~68 to 86 degrees Fahrenheit



50

Shelter

- The dog's shelter, restraint system (if applicable), and general husbandry should be such that it maintains the dog in an appropriate thermoneutral zone and normal body temperature.
- Dogs require shelter for protection from extremes in weather, including but not limited to excessive heat, excessive cold, precipitation, and wind.



51

Shelter, *cont.*

- **Environment (Indoor or Outdoor)**
 - Must be able to prevent injury or escape of the dog.
 - Waste must be removed daily to prevent ammonia buildup and skin problems, and decrease exposure to parasite eggs.
 - Area must be free of clutter and trash to prevent ingestion of dangerous substances, injury, and attracting vermin.
 - The environment must be well-ventilated to prevent irritation of mucous membranes by ammonia.



52

Shelter, *cont.*

- **Environment (Indoor or Outdoor)**
 - Lighting should be sufficient to allow for adequate daily observation of the dogs, preferably following a diurnal (day/night) cycle.
- **Outdoor Environment, *Additional Requirements***
 - Below ~50 degrees Fahrenheit, clean and dry bedding should be supplied to provide insulation from the cold.
 - Below ~35 degrees Fahrenheit, *additional* clean and dry bedding should be supplied.
 - Above ~85 degrees Fahrenheit, additional provisions such as ventilation, additional water, or additional shade should be provided.



53



54

★ Ammonia

- Released from feces and urine
- Severe irritant of the eyes, respiratory tract, and skin
- It may cause burning and tearing of the eyes, runny nose, coughing, chest pain, cessation of respiration, and death.
- Repeated exposure to ammonia may cause chronic irritation of the eyes and upper respiratory tract. This can lead to eye damage/discomfort and make dogs more susceptible to respiratory infections.



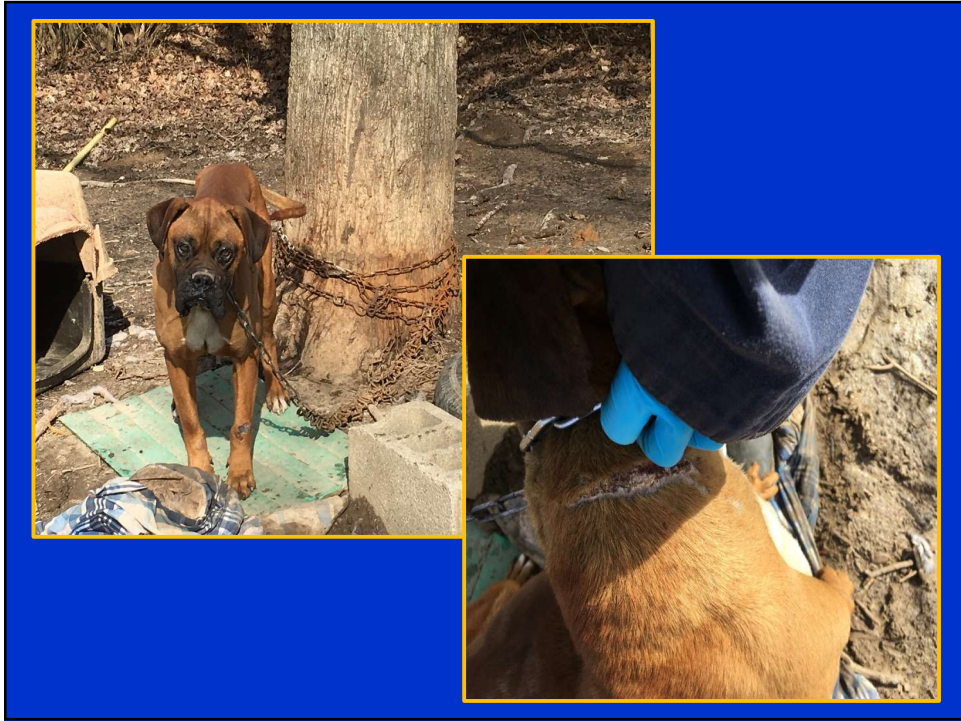
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In General

- Good animal welfare provides animals:
 - Physical good health
 - Freedom from illness and injury
 - Proper growth
 - Natural environment
 - Ability to display normal behaviors
 - Free of fear, pain, hunger, thirst



56



57

Body Condition Scoring

 **BOAH** Indiana State Board of Animal Health

The slide features a white background with a yellow gradient at the bottom. The title "Body Condition Scoring" is centered in a large, bold, blue font. Below the title, the logo for the Indiana State Board of Animal Health (BOAH) is displayed, consisting of a blue outline of the state of Indiana with a white caduceus symbol inside, followed by the text "BOAH Indiana State Board of Animal Health" in a blue, sans-serif font.

58

Body Condition Scoring

- **Objective** reflection of a dog's body condition
- Body condition scoring is used to determine whether the amount of energy and nutrition being provided is adequate to meet the dog's needs.
- A dog below ideal body condition is not receiving adequate energy; a dog above ideal body condition is receiving an excess of energy; and a dog in ideal body condition is receiving an appropriate amount of energy.



59

Purina BCS System










- ★ Scores 1-9
- Can score half points (no 0.5 or 9.5)
- Extremely emaciated: 1
- Extremely overweight: 9
- Optimum: 4-6
- Best to perform hands-on assessment



60

Refer to the handout in your folder.

Nestlé PURINA
BODY CONDITION SYSTEM

TOO THIN	1	Ribs, lumbar vertebrae, pelvic bones and all bony prominences evident from a distance. No discernible body fat. Obvious loss of muscle mass.		1
	2	Ribs, lumbar vertebrae and pelvic bones easily visible. No palpable fat. Some evidence of other bony prominence. Minimal loss of muscle mass.		2
	3	Ribs easily palpated and may be visible with no palpable fat. Tops of lumbar vertebrae visible. Pelvic bones becoming prominent. Obvious waist and abdominal tuck.		3
IDEAL	4	Ribs easily palpable, with minimal fat covering. Waist easily noted, viewed from above. Abdominal tuck evident.		4
	5	Ribs palpable without excess fat covering. Waist observed behind ribs when viewed from above. Abdomen tucked up when viewed from side.		5
TOO HEAVY	6	Ribs palpable with slight excess fat covering. Waist is discernible viewed from above but is not prominent. Abdominal tuck apparent.		6
	7	Ribs palpable with difficulty; heavy fat cover. Noticeable fat deposits over lumbar area and base of tail. Waist absent or barely visible. Abdominal tuck may be present.		7
	8	Ribs not palpable under very heavy fat cover, or palpable only with significant pressure. Heavy fat deposits over lumbar area and base of tail. Waist absent. No abdominal tuck. Obvious abdominal distention may be present.		8
	9	Massive fat deposits over thorax, spine and base of tail. Waist and abdominal tuck absent. Fat deposits on neck and limbs. Obvious abdominal distention.		9

The BODY CONDITION SYSTEM was developed at the Nestlé Purina Pet Care Center and has been adapted to fit the following publications:
Hosley D, Kohnen M, Wilson T, et al. Comparison of body fat estimates by dual energy x-ray absorptiometry and ultrasound to the ribs in older normal dogs. *Compendium* 2012; 34(10): 70
Lafont J. Development and Validation of a Body Condition Score System for Dogs. *Canine Practice* 2012; 33(1): 22-25
Knox J, et al. Effects of Diet Restriction on Life Span and Age-Related Changes in Dogs. *JAMA* 2002; 288(12): 1525-1530
Call 1-800-222-NETS (6387), weekdays, 8:00 a.m. to 4:30 p.m. CT

Nestlé PURINA

61

- BCS 1: Ribs, lumbar vertebrae, pelvic bones and all bony prominences evident from a distance. No discernible body fat. Obvious loss of muscle mass.



62

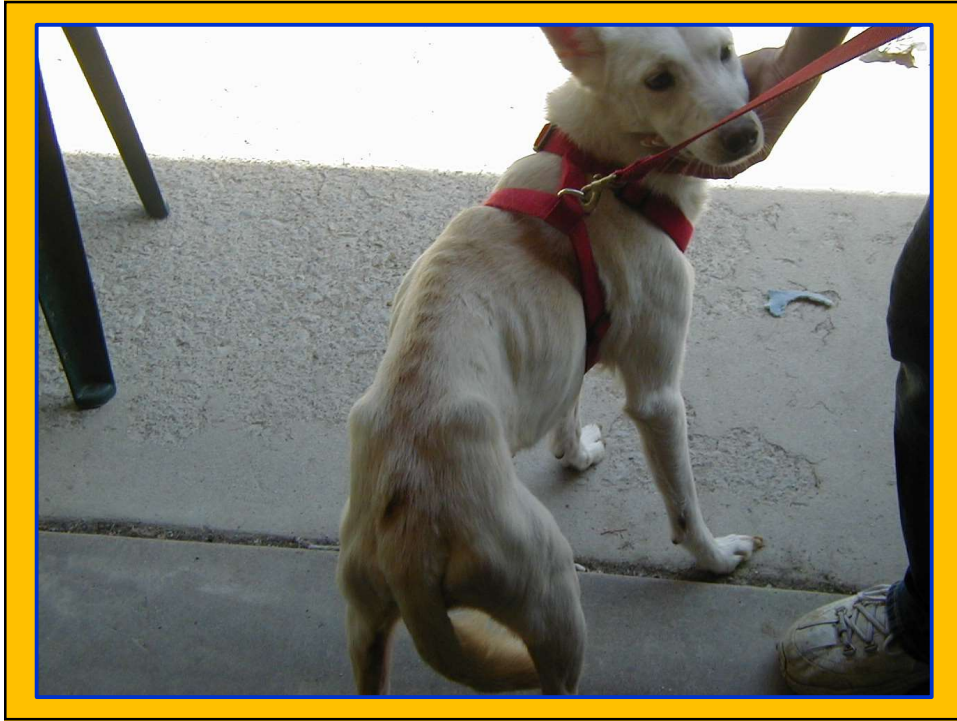


63

- BCS 2: Ribs, lumbar vertebrae pelvic bones easily visible. No palpable fat. Some evidence of other bony prominence. Minimal loss of muscle mass.



64



65

- BCS 3: Ribs easily palpated and may be visible with no palpable fat. Tops of lumbar vertebrae visible; pelvic bones becoming prominent. Obvious waist and abdominal tuck.



66

- BCS 4: Ribs easily palpable, with minimal fat covering. Waist easily noted, viewed from above. Abdominal tuck evident.



67

- BCS 5: Ribs palpable, without excess fat covering. Waist observed behind ribs when viewed from above. Abdomen tucked up when viewed from side.



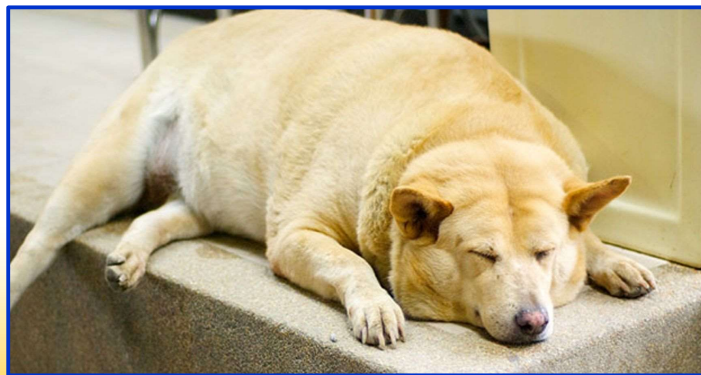
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- BCS 6: Ribs palpable with slight excess fat covering. Waist is discernible viewed from above but is not prominent. Abdominal tuck apparent.
- BCS 7: Ribs palpable with difficulty; heavy fat cover. Noticeable fat deposits over lumbar area and base of tail. Waist absent or barely visible. Abdominal tuck may be present.
- BCS 8: Ribs not palpable under very heavy fat cover, or palpable only with significant pressure. Heavy fat deposits over lumbar area and base of tail. Waist absent. No abdominal tuck. Obvious abdominal distention may be present.

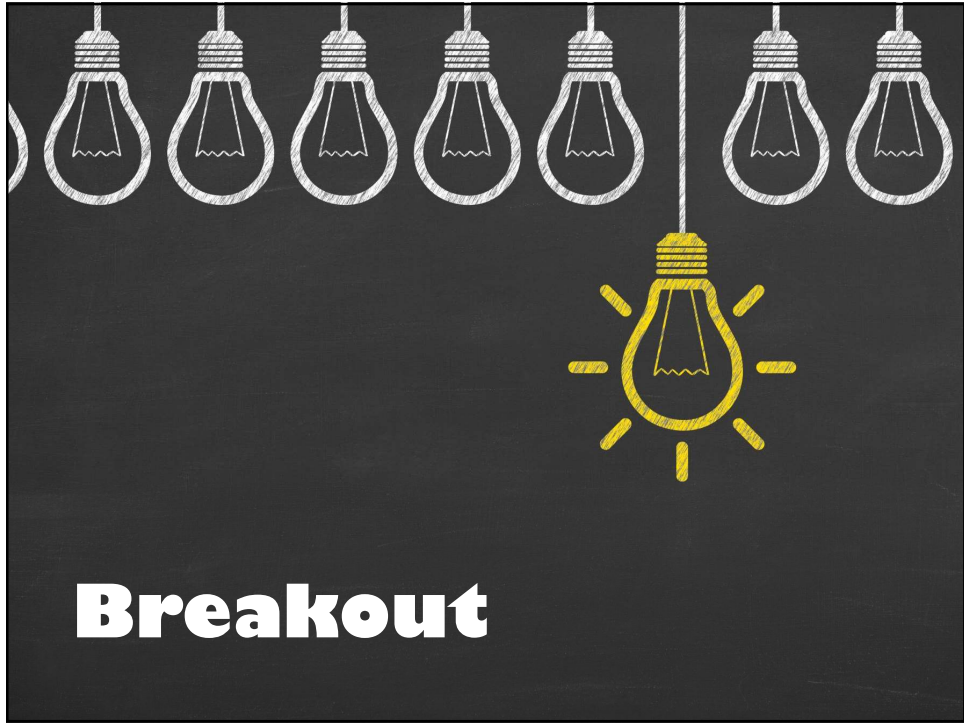


69

- BCS 9: Massive fat deposits over thorax, spine and base of tail. Waist and abdominal tuck absent. Fat deposits on neck and limbs. Obvious abdominal distention.



70



71