UR Animal Resource SOP# D-11 **Title:** HOW TO ASSESS AN ANIMAL'S BODY CONDITION SCORE

Original Date: 4/25/07	Original Composer: Angelina Williams, DVM Wendy Bates, DVM
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Date of Current Revision: 6/4/20	Revised By: Dana LeMoine, DVM
Departmental Approval:	Reviewed by/date:

PURPOSE

To standardize evaluation of the overall physical condition of commonly housed animals by assigning a numerical value to fat and muscle deposition as it occurs in various places on the body.

MATERIALS

N/A

PROCEDURE

1. Physically examine the animal. Except in zebrafish, manual palpation of bony prominences (ribs, lumbar spine, pelvic bones) is required for the most accurate assessment of the body condition score (BCS). Visual examination is permissible when a hands-on exam is not possible.
2. Compare the animal's body condition to the species-specific "Body Condition Scoring" chart attached below and assign the appropriate BCS. Across species, BCS is assigned on a 5-point scale where 3 is ideal, 1 is emaciated and 5 is obese. Half points may be assigned for intermediate scores.
3. Record all observations and BCS in the animal's corresponding case record.

ATTACHMENTS:

Body Condition Scoring Chart for Mice

Body Condition Scoring Chart for Rats

AAHA Body Condition Scoring (BCS) Systems for Dogs and Cats

Body Condition Scoring Chart for NHPs

Adult Zebrafish BCS

Rabbit Size-O-Meter

Bird Size-O-Meter

REFERENCES:

1. Ullman-Cullere MH, Foltz CJ. 1999. Body Condition Scoring: A Rapid and Accurate Method for Assessing Health Status in Mice. Laboratory Animal Science. 49(3): 319- 323.
2. Hickman DL, Swan M. 2010. Use of a Body Condition Score Technique to Assess Health Status in a Rat Model of Polycystic Kidney Disease. JAALAS. 49(2): 155-159.
3. AAHA. 2010. Body Condition Scoring (BCS) Systems. Journal of the American Animal Hospital Association. https://www.aaha.org/globalassets/02-guidelines/weight-management/weightmgmt_bodyconditionscoring.pdf
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5. Clark TS, Pandolfo LM, Marshall CM, Mitra AK, Schech JM. 2018. Body Condition Scoring for Adult Zebrafish (*Danio rerio*). JAALAS. 57(6): 698-702.
6. Pet Food Manufacturers' Association. 2015. Rabbit Size-O-Meter. https://www.pfma.org.uk/rabbit-size-o-meter.
7. Pet Food Manufacturers' Association. 2015. Bird Size-O-Meter. https://www.pfma.org.uk/bird-size-o-meter.

Body Condition Scoring Chart for Mice

BC 1

Mouse is emaciated.

- ***Skeletal structure extremely prominent; little or no flesh cover.***
- ***Vertebrae distinctly segmented.***

BC 2

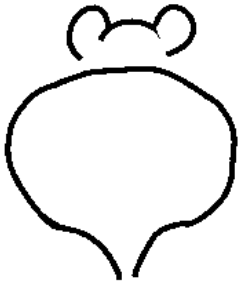
Mouse is underconditioned.

- ***Segmentation of vertebral column evident.***
- ***Dorsal pelvic bones are readily palpable.***

BC 3

Mouse is well-conditioned.

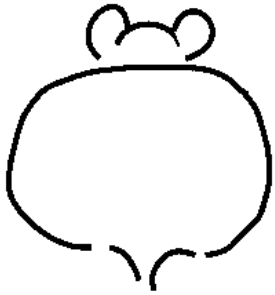
- ***Vertebrae and dorsal pelvis not prominent; palpable with slight pressure.***



BC 4

Mouse is overconditioned.

- ***Spine is a continuous column.***
- ***Vertebrae palpable only with firm pressure.***



BC 5

Mouse is obese.

- ***Mouse is smooth and bulky.***
- ***Bone structure disappears under flesh and subcutaneous fat.***

A "+" or a "-" can be added to the body condition score if additional increments are necessary (i.e. ...2+, 2, 2-...)

Body Condition Scoring Chart for Rats

BC 1

Rat is emaciated

- Segmentation of vertebral column prominent if not visible.
- Little or no flesh cover over dorsal pelvis. Pins prominent if not visible.
- Segmentation of caudal vertebrae prominent.

BC 2

Rat is under conditioned

- Segmentation of vertebral column prominent.
- Thin flesh cover over dorsal pelvis, little subcutaneous fat. Pins easily palpable.
- Thin flesh cover over caudal vertebrae, segmentation palpable with slight pressure.

BC 3

Rat is well-conditioned

- Segmentation of vertebral column easily palpable.
- Moderate subcutaneous fat store over pelvis. Pins easily palpable with slight pressure.
- Moderate fat store around tail base, caudal vertebrae may be palpable but not segmented.

BC 4

Rat is overconditioned

- Segmentation of vertebral column palpable with slight pressure.
- Thick subcutaneous fat store over dorsal pelvis. Pins of pelvis palpable with firm pressure.
- Thick fat store over tail base, caudal vertebrae not palpable.

BC 5

Rat is obese

- Segmentation of vertebral column palpable with firm pressure; may be a continuous column.
- Thick subcutaneous fat store over dorsal pelvis. Pins of pelvis not palpable with firm pressure.
- Thick fat store over tail base, caudal vertebrae not palpable.

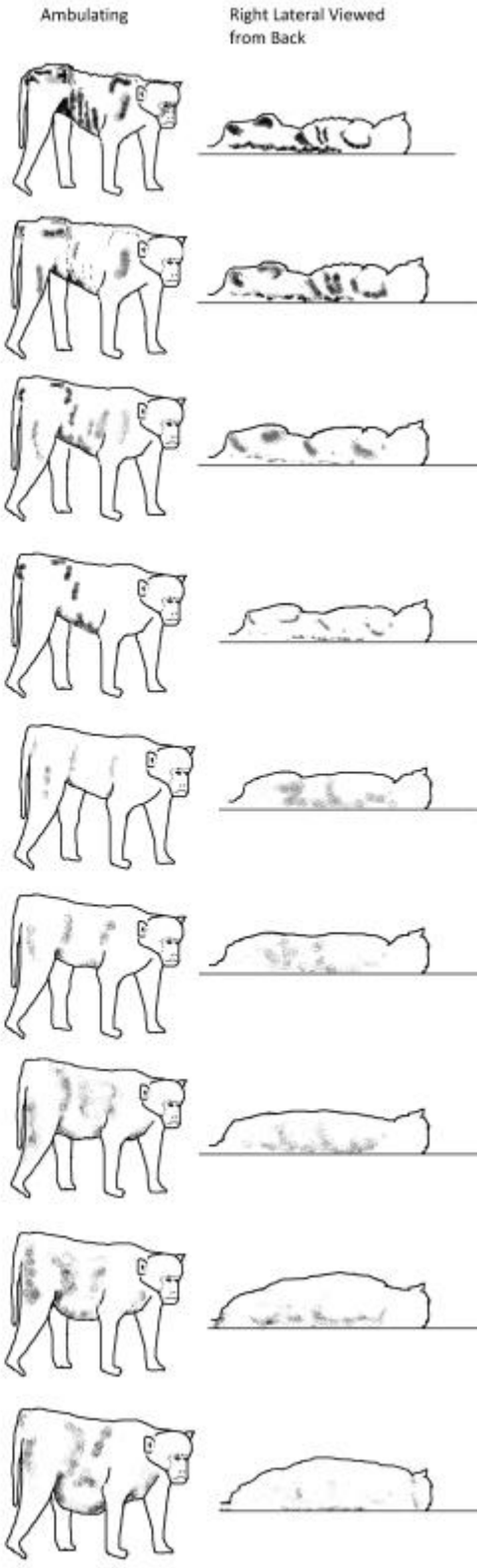
AAHA Body Condition Scoring (BCS) Systems for Dogs and Cats

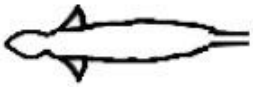
Body Condition Scoring (BCS) Systems

5 Point	9 Point	Description
1/5	1/9	**Dogs:** Ribs, lumbar vertebrae, pelvic bones and all bony prominences evident from a distance. No discernible body fat. Obvious loss of muscle mass.  **Cats:** Ribs visible on short-haired cats; no palpable fat; severe abdominal tuck; lumbar vertebrae and wings of ilia obvious and easily palpable. 
1.5/5	2/9	**Dogs:** Ribs, lumbar vertebrae and pelvic bones easily visible. No palpable fat. Some evidence of other bony prominence. Minimal loss of muscle mass. **Cats:** Shared characteristics of BCS 1 and 3.
2/5	3/9	**Dogs:** Ribs easily palpated and may be visible with no palpable fat. Tops of lumbar vertebrae visible. Pelvic bones becoming prominent. Obvious waist.  **Cats:** Ribs easily palpable with minimal fat covering; lumbar vertebrae obvious; obvious waist behind ribs; minimal abdominal fat. 
2.5/5	4/9	**Dogs:** Ribs easily palpable, with minimal fat covering. Waist easily noted, viewed from above. Abdominal tuck evident. **Cats:** Shared characteristics of BCS 3 and 5.
3/5	5/9	**Dogs:** Ribs palpable without excess fat covering. Waist observed behind ribs when viewed from above. Abdomen tucked up when viewed.  **Cats:** Well proportioned; waist observed behind ribs; ribs palpable with slight fat covering; abdominal fat pad minimal. 
3.5/5	6/9	**Dogs:** Ribs palpable with slight excess fat covering. Waist is discernible viewed from above but is not prominent. Abdominal tuck apparent. **Cats:** Shared characteristics of BCS 5 and 7.
4/5	7/9	**Dogs:** 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.  **Cats:** Ribs not easily palpable with moderate fat covering; waist poorly distensible; obvious rounding of abdomen; moderate abdominal fat pad. 
4.5/5	8/9	**Dogs:** 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 distension may be present. **Cats:** Shared characteristics of BCS 7 and 9.
5/5	9/9	**Dogs:** Massive fat deposits over thorax, spine and base of tail. Waist and abdominal tuck absent. Fat deposits on neck and limbs. Obvious abdominal distention.  **Cats:** Ribs not palpable under heavy fat cover; heavy fat deposits over lumbar area, face and limbs; distention of abdomen with no waist; extensive abdominal fat pad. 

Body Condition Scoring Chart for NHPs

1	**EMACIATED** – Very prominent hip bones (easily palpable and likely visible), prominent facial bones, spinous processes and ribs. Minimal to no muscle mass is palpable over ileum or ischium. Anus may be recessed between ischial callosities. Body is very angular, no subcutaneous fat layer to smooth out prominences.
1.5	**VERY THIN** – Hips, spinous processes, and ribs are prominent. Facial bones may be prominent. There is very little muscle present over the hips and back. Anus may be recessed between ischial callosities. Body is angular, no subcutaneous fat to smooth out prominences
2	**THIN** – Very minimal fat reserves, prominent hip bones and spinous processes. Hips, spinous processes and ribs are easily palpable with only a small amount of muscle mass over hips and lumbar region.
2.5	**LEAN** – Overlying muscle gives hips and spine a more firm feel. Hip bones and spinous processes are readily palpable, but not prominent. Body is less angular because there is a thin layer of subcutaneous fat.
3	**OPTIMUM** –Hip bones, ribs and spinous processes are palpable with gentle pressure but generally not visible. Well developed muscle mass and subcutaneous fat layer gives spine and hips smooth but firm feel. No abdominal, axillary or inguinal fat pads.
3.5	**SLIGHTLY OVERWEIGHT** – Hip bones and spinous processes palpable with firm pressure but are not visible. Bony prominences smooth. Rib contours are smooth and only palpable with firm pressure. Small abdominal fat pad may be present.
4	**HEAVY** – Bony contours are smooth and less well defined. Hip bones, spinous processes and ribs may be difficult to palpate due to more abundant subcutaneous fat layer. May have fat deposits starting to accumulate in the axillary, inguinal or abdominal areas.
4.5	**OBESE** – This animal will often have prominent fat pads in the inguinal, axillary or abdominal region. Abdomen will be pendulous when animal sitting or ambulating. Hip bones and spinous processes difficult to palpate. Bony contours smooth and poorly defined.
5	**GROSSLY OBESE** –Obvious, large fat deposits in the abdominal, inguinal and axillary regions. Abdominal palpation is very difficult due to large amount of mesenteric fat. Pronounced fat deposits may alter posture/ambulation. Hip bones, rib contours and spinous processes only palpable with deep palpation.



Adult Zebrafish BCS		
	Lateral View	Dorsal View
BCS 1: • Head larger than body (big head) • Lateral- concave ventral surface between head and abdomen (narrow abdomen) • Dorsal- body is more narrow than head and linear • **Fish is thin (emaciated)**		
BCS 2: • Head and body equal size • Lateral- flat ventral surface between head and abdomen • Dorsal- head and width of abdomen are equal • **Fish is underconditioned**		
BCS 3: • Body larger than head • Lateral- slight convex ventral surface • Dorsal- head is slight smaller to a fusiform body • **Fish is well-conditioned**		
BCS 4: • Body significantly larger than head • Lateral- body moderately convex ventral surface • Lateral- Symmetrical ventral surface • Dorsal- head visually smaller to a moderately distended abdomen • **Fish is over-conditioned**		
BCS 5: • Body significantly larger than head • Lateral- body significantly convex ventral surface • Lateral- Symmetrical or asymmetrical ventral surface • Dorsal- head visually smaller to a significantly distended abdomen • **Fish is obese (large)**		

Rabbit Size-O-Meter

Size-O-Meter Score:		Characteristics:
1	**Very Thin** More than 20% below ideal body weight	• Hip bones, ribs and spine are very sharp to the touch • Loss of muscle and no fat cover • The rump area curves in
2	**Thin** Between 10-20% below ideal body weight	• Hip bones, ribs and spine are easily felt • Loss of muscle and very little fat cover • Rump area is flat
3	**Ideal**	• Hip bones, ribs and spine easily felt but are rounded, not sharp – Ribs feel like a pocket full of pens! • No abdominal bulge • Rump area is flat
4	**Overweight** 10-15% above ideal body weight	• Pressure is needed to feel the ribs, spine and hip bones • Some fat layers • The rump is rounded
5	**Obese** More than 15% above ideal body weight	• Very hard to feel the spine and hip bones – Ribs can't be felt! • Tummy sags with obvious fat padding • Rump bulges out

- Your pet is a healthy weight
- Seek advice about your pet's weight
- Seek advice as your pet could be at risk

Please note

Getting hands on is the key to this simple system. Whilst the pictures in the Rabbit Size-O-Meter will help, judging whether your pet is the right weight purely by sight alone has its difficulties. A long coat can disguise ribs, hip bones and the spine, while a short coat can make a rabbit's appearance more irregular and highlight these areas. You will need to gentle feel your pet which can be a pleasurable bonding experience for both of you!

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Bird Size-O-Meter

Size-O-Meter Score:		viewed from above	skyline view of breast bone and muscle	Characteristics:
1	Very Thin			• Breast bone is very sharp to the touch • Loss of breast muscle and no fat cover
2	Thin			• Breast bone is easily felt and sharp • Loss of breast muscle and little or no fat cover
3	Ideal			• Breast bone easily felt but not sharp • Breast muscle rounded
4	Overweight			• Pressure is needed to feel the breast bone • Well rounded breast muscle and some fat cover • May see some fat below where breast bone ends
5	Obese			• Very hard or not possible to feel the breast bone • Very rounded muscle and possible to feel or see fat moving under the skin. • Fat also obvious below where the breast bone ends

Produced with assistance and advice from Anna Meredith MRCVS

- Your pet is a healthy weight
- Seek advice about your pet's weight
- Seek advice as your pet could be at risk

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How to check your birds shape

- Getting hands on is key. Not all birds are used to being handled but it is difficult to judge if your bird is the right weight by sight. You will need to gently feel your bird, using restraint if necessary.
- Use bare hands and not gloves to handle birds as then you can judge the tightness of grip. If you need to protect yourself – use a cloth or towel.
- Small birds can be held in one hand with the neck between the first and second finger and the bird's back against the palm so that the wings and body are gently restrained in the closed hand.
- Larger parrots may take two people, one to hold the bird and the other to assess its body condition. A towel or cloth is used over the open hand to grasp the bird firmly behind its head and neck. The towel is then wrapped around the wings and body to prevent flapping. Gently stroking the top of the head and talking to the bird gently will help to calm it.
- Gently run your fingertips down the centre of the front of the bird in the midline over the breast area. You should be able to feel a bony ridge (known as the keel or breast bone). This should be easy to feel but not too prominent.
- Next, run your fingers at right angles to the keel across the breast muscles. If these feel shrunken so that the keel sticks out prominently your bird is too thin. If the breast muscles are just rounded but you can still feel the keel your bird is in good condition. If you cannot feel the keel and the muscles are very rounded or you can feel or see fat moving underneath the skin your bird is overweight.
- The breast muscle can also vary in size depending on how much exercise your bird gets – so if it flies a lot it will have larger firmer breast muscles than a bird who does not fly. However, the same criteria still apply in assessing body condition – prominence of the bony keel and presence of fat underneath the skin.