

**Muscle Condition Assessment**

# USE MUSCLE CONDITION SCORING TO DETECT MUSCLE LOSS IN PATIENTS



The 4-point muscle condition scoring system, available for both cats and dogs, is a practical, hands-on evaluation that can be performed by veterinary health care professionals and pet owners to regularly monitor a pet's muscle mass.

When used in conjunction with body weight and body condition score (BCS), muscle condition score (MCS) can offer a clearer picture of a dog's or cat's body composition, muscle-to-fat ratio and nutritional status.

**Key Messages**

- Maintaining lean body mass (LBM) is important for a pet's overall health and has been associated with longevity in cats and dogs. LBM comprises skeletal muscles, internal organs, bones, skin — every part of the body except fat.
  - Lean body mass serves as an amino acid reservoir from which dogs and cats can build the proteins that are essential components of every cell, including immune cells and red blood cells.
- Lean body mass loss decreases a pet's strength, depresses immune function, and reduces the ability to heal after illness, injury or surgery.
  - Sarcopenia, defined as age-related loss of LBM (particularly muscle) in the absence of disease, is common in older cats and dogs.
  - Loss of LBM also occurs during certain chronic diseases (e.g., congestive heart failure and chronic kidney disease), injury or sudden illness, which is known as cachexia.
  - Loss of lean body mass in sarcopenia is often accompanied by an increase in body fat, so the pet's body weight may remain the same and mask the loss of lean tissue.

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### Key Messages (continued)

- Evaluating muscle mass over the spine, shoulder blades, skull and hips using a 4-point MCS system can help identify LBM losses so steps can be taken to intervene when muscle loss is in an early stage.
- Although age-related sarcopenia cannot be prevented, feeding a higher protein diet may help slow down the loss of lean body mass, including muscle.

### Additional Resources

- Cupp, C. J., Kerr, W. W., Jean-Philippe, C., Patil, A. R., & Perez-Camargo, G. (2008). The role of nutritional interventions in the longevity and maintenance of long-term health in aging cats. *International Journal of Applied Research in Veterinary Medicine*, 6(2), 69–81.
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- Kealy, R. D., Lawler, D. F., Ballam, J. M., Mantz, S. L., Biery, D. N., Greeley, E. H., Lust, G., Segre, M., Smith, G. K., & Stowe, H. D. (2002). Effects of diet restriction on life span and age-related changes in dogs. *Journal of the American Veterinary Medical Association*, 220(9), 1315–1320. doi: 10.2460/javma.2002.220.1315
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- Penell, J. C., Morgan, D. M., Watson, P., Carmichael, S., & Adams, V. J. (2019). Body weight at 10 years of age and change in body composition between 8 and 10 years of age were related to survival in a longitudinal study of 39 Labrador retriever dogs. *Acta Veterinaria Scandinavica*, 61(1), 42. doi: 10.1186/s13028-019-0477-x

The Purina Institute aims to help put nutrition at the forefront of pet health discussions by providing user-friendly, science-based information that helps pets live longer, healthier lives.