



心血管疾病

# 犬充血性心力衰竭 (CHF)



心力衰竭是指心脏无法再充分补偿心脏疾病引起的变化时出现的临床症状, 例如肺部或腹部积液。

一旦犬出现充血性心力衰竭, 根据美国兽医内科学会 (ACVIM) 指南、心脏病学研究和饮食史提出的营养建议可以帮助管理心脏健康。

重要信息

## CHF 患犬的营养建议包括:

- 考虑到临床症状和患宠反应, 适度限钠有助于控制水肿和充血。<sup>1-3</sup>
  - 过量限钠可能会导致不良反应, 包括肾素-血管收缩素-醛固酮系统过度激活。
  - 少盐饮食通常适口性较差, 而保持食欲和瘦体重也很重要。
- 补充 Omega-3 脂肪酸 (例如 DHA 和 EPA) 可能有助于减少炎症介质和氧化应激, 稳定心律失常, 降低血压和减少心脏重塑。Omega-3 还可能有助于预防恶液质, 这是 CHF 患犬经常发生的肌肉萎缩症状。<sup>4-6</sup>
- 监测钾和镁的水平。
  - 心脏药物可能导致钾过量或缺乏。
  - 镁在健康心脏功能中起着许多作用, 包括抗心律失常和抗氧化作用, 而低镁血症也与人类患者心力衰竭风险增加有关。<sup>7</sup>
- 维持蛋白质和卡路里摄入量, 以避免体重下降。<sup>1</sup>
- 维生素 C 和 E 等抗氧化剂有助于预防活性氧造成的损伤, 而这种损伤在 CHF 患犬中呈增加趋势。<sup>8,9</sup>

## 您知道吗?

用于提供宠物药物的犬零食或餐桌食品中的钠可累加起来:  
1 片切达奶酪含有约 180 mg 钠; 1 片白面包含有约 100 mg 钠; 1 汤匙普通细滑花生酱含有约 70 mg 钠。

(接下页)

## 重要信息 (续)

详细的饮食史记录对于 CHF 患犬十分重要。

■ 高钠食物和零食, 或少量人类食物, 可能会无意中给犬的饮食增加过量的钠。<sup>10</sup>

在某些易因扩张型心肌病 (DCM) 引起心力衰竭的犬种中, 补充牛磺酸和/或肉碱可能有助于改善左心室大小和功能。<sup>11-13</sup>

■ 左旋肉碱心肌缺乏症与拳师犬和杜宾犬中的 DCM 存在关联。<sup>11,12</sup>

■ 美国可卡犬和金毛犬较为容易出现牛磺酸缺乏。<sup>14,15</sup>

## 参考文献

1. Keene, B. W., Atkins, C. E., Bonagura, J. D., Fox, P. R., Häggström, J., Fuentes, V. L., Oyama, M. A., Rush, J. E., Stepien, R., & Uechi, M. (2019). ACVIM consensus guidelines for the diagnosis and treatment of myxomatous mitral valve disease in dogs. *Journal of Veterinary Internal Medicine*, 33(3), 1127–1140.
2. Rush, J. E., Freeman, L. M., Brown, D. J., Brewer, B. P., Ross, J. N., Jr., & Markwell, P. J. (2000). Clinical, echocardiographic, and neurohormonal effects of a sodium-restricted diet in dogs with heart failure. *Journal of Veterinary Internal Medicine*, 14(5), 513–520. doi: 10.1111/j.1939-1676.2000.tb02269.x
3. Strickland, K. N. (2016). Pathophysiology and therapy of heart failure. In F. W. K. Smith, Jr., L. P. Tilley, M. A. Oyama, & M. M. Sleeper (Eds.), *Manual of canine and feline cardiology* (5th ed., pp. 287–312). Elsevier.
4. Freeman, L. M., Rush, J. E., Kehayias, J. J., Ross, J. N., Jr., Meydani, S. N., Brown, D. J., Dolnikowski, G. G., Marmor, B. N., White, M. E., Dinarello, C. A., & Roubenoff, R. (1998). Nutritional alterations and the effect of fish oil supplementation in dogs with heart failure. *Journal of Veterinary Internal Medicine*, 12(6), 440–448. doi: 10.1111/j.1939-1676.1998.tb02148.x
5. Freeman, L. M. (2010). Beneficial effects of omega-3 fatty acids in cardiovascular disease. *Journal of Small Animal Practice*, 51(9), 462–470.
6. Laurent, G., Moe, G., Hu, X., Holub, B., Leong-Poi, H., Trogadis, J., Connelly, K., Courtman, D., Strauss, B. H., & Dorian, P. (2008). Long chain n-3 polyunsaturated fatty acids reduce atrial vulnerability in a novel canine pacing model. *Cardiovascular Research*, 77(1), 89–97.
7. Del Gobbo, L. C., Imamura, F., Wu, J. H., de Oliveira Otto, M. C., Chiuve, S. E., & Mozaffarian, D. (2013). Circulating and dietary magnesium and risk of cardiovascular disease: A systematic review and meta-analysis of prospective studies. *American Journal of Clinical Nutrition*, 98(1), 160–173.
8. Michalek, M., Tabiš, A., Cepiel, A., & Noszczyk-Nowak, A. (2020). Antioxidative enzyme activity and total antioxidant capacity in serum of dogs with degenerative mitral valve disease. *Canadian Journal of Veterinary Research*, 84(1), 67–73.
9. Sozen, E., Demirel, T., & Ozer, N. K. (2019). Vitamin E: Regulatory role in the cardiovascular system. *International Union of Biochemistry and Molecular Biology Life*, 71(4), 507–515.
10. Freeman, L. (2016). Nutrition and cardiovascular disease. In F. W. K. Smith, Jr., L. P. Tilley, M. A. Oyama, & M. M. Sleeper (Eds.), *Manual of canine and feline cardiology* (5th ed., pp. 394–404). Elsevier.
11. Keene, B. W. (1991). L-carnitine supplementation in the therapy of canine dilated cardiomyopathy. *The Veterinary Clinics of North America: Small Animal Practice*, 21(5), 1005–1009. doi: 10.1016/s0195-5616(91)50108-x
12. Oyama, M. A. (2016). Canine cardiomyopathy. In F. W. K. Smith, Jr., L. P. Tilley, M. A. Oyama, & M. M. Sleeper (Eds.), *Manual of canine and feline cardiology* (5th ed., pp. 141–152). Elsevier.
13. Sanderson, S. L. (2006). Taurine and carnitine in canine cardiomyopathy. *The Veterinary Clinics of North America: Small Animal Practice*, 36(6), 1325–1343. doi: 10.1016/j.cvsm.2006.08.010
14. Bélanger, M. C., Ouellet, M., Queney, G., & Moreau, M. (2005). Taurine-deficient dilated cardiomyopathy in a family of golden retrievers. *Journal of the American Animal Hospital Association*, 41(5), 284–291. doi: 10.5326/0410284
15. Kittleston, M. D., Keene, B., Pion, P. D., & Loyer, C. G. (1997). Results of the multicenter spaniel trial (MUST): Taurine- and carnitine-responsive dilated cardiomyopathy in American cocker spaniels with decreased plasma taurine concentration. *Journal of Veterinary Internal Medicine*, 11(4), 204–211. doi: 10.1111/j.1939-1676.1997.tb00092.x

Purina Institute 提供易于掌握的科学信息, 帮助宠物活得更长寿、更健康, 促进人们在讨论宠物健康时将营养放在第一位。