

# Metabolic Bone Disease in Nondomestic Cats



Metabolic bone disease (MBD) is a general term for conditions that cause weak bones. MBD is common in cats fed calcium-deficient diets such as boneless or ground turkey, beef, or chicken without appropriate supplements. This is especially true in young cats fed these diets when they are weaned from formula or mother's milk to solid food. Diets deficient in calcium do not promote strong bones in growing animals.

## WHAT ARE THE SIGNS OF MBD?

### Early Signs:

- Lameness
- Reluctance to move
- Bowed front legs (more often seen in lions and tigers)



### Advanced Signs:

- Inability to stand or walk
- Vertebral fractures (bobcats and lynx)
- Long bone fractures (more common in lions, tigers, and other big cats)
- Stunted growth and misshapen limbs
- Neurological problems (loss of coordination or paralysis from spinal fractures)
- Constipation (due to a collapsed pelvis)
- Death



## HOW IS MBD DIAGNOSED?

X-rays are usually the most helpful tool, followed by tests for blood calcium levels. A history of a diet deficient in calcium or vitamin D also supports the diagnosis. Losses in bone density (thinning bones) are most visible on x-rays of the limbs and feet of lions and tigers and the spine of bobcats and lynx.



## PREVENTING MBD WITH A BALANCED DIET

Your veterinarian or a veterinary nutritionist are your best resources to help you develop an optimal diet.



### EXAMPLES OF BALANCED DIETS:

- Nutritionally complete commercial diets formulated for the species
- Whole prey diet (feeding cats whole animals, including bones, organs, intestines, and skin)
- Bone-in meat and vitamin supplements (the meat offers enough calcium as long as the bones are eaten, but cats still need other vitamins)
- Homemade meat diets (boneless or bone-in) that include the right amount of calcium and vitamin supplements



### DID YOU KNOW?

When there is not enough dietary calcium, the body will remove calcium from bones so that normal blood calcium levels are maintained to support critical bodily functions. Thinning bones will be noticeable on x-rays often before calcium levels in the blood appear too low.

### PRACTICAL TIP



Commercial supplements designed to help create nutritionally balanced homemade cat diets are available.

If your cat does not like them at first, you can make the supplements more palatable by mixing them with beef or chicken blood.

This Animal Care Aid is part of a series developed to provide information about nondomestic cat health and husbandry. Refer to the other topics covered in the series for more information on nondomestic cat care.

Questions? Email us at [CenterforAnimalWelfare@usda.gov](mailto:CenterforAnimalWelfare@usda.gov)

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