

The Medicine Chest

1. Nonsteroidal anti-inflammatory drugs (NSAIDs)

► **Common examples:** phenylbutazone, flunixin meglumine (Banamine), aspirin

► **Action:** NSAIDs disrupt the action of COX-1 and COX-2 enzymes, which produce inflammatory mediators such as prostaglandins. In addition to reducing inflammation, NSAIDs also control pain and fever.

► **Used to treat:** pain, either musculoskeletal (such as arthritis) or visceral (such as colic); fever and generalized body aches related to systemic illness

► **Potential side effects:** NSAIDs can disrupt some of the beneficial actions

of COX-1 enzymes. For instance, certain prostaglandins protect the lining of the stomach, so overdose or long-term use of NSAIDs can lead to the development of gastric ulcers. Some NSAIDs reduce the blood's clotting ability. If administered to a dehydrated horse, NSAIDs can cause liver and kidney damage.

► **Note:** A relatively new subclass of NSAIDs targets only COX-2 enzymes, limiting the potential gastrointestinal side effects. The sole selective COX-2 inhibitor approved for use in horses in the United States is firocoxib, marketed as Equioxx.

2. Corticosteroids

► **Common examples:** dexamethasone, triamcinolone

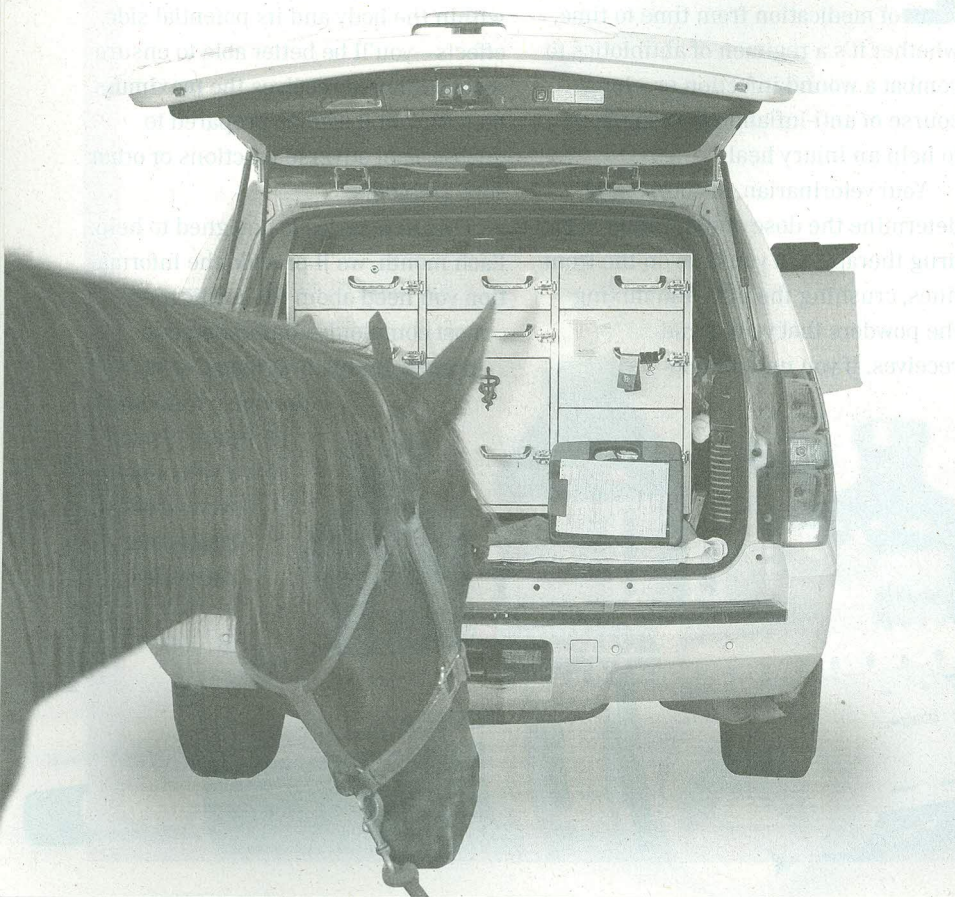
► **Action:** Corticosteroids mimic the action of a natural hormone called cortisol. They suppress some immune system activity and reduce inflammation. Their anti-inflammatory effects tend to be more powerful than those of NSAIDs.

► **Used to treat:** severe systemic inflammation, allergic reactions and immune-mediated diseases such as uveitis

► **Potential side effects:** The most significant risk of corticosteroid use in horses is laminitis. Although a connection between these medications and the devastating hoof condition has not been clearly demonstrated scientifically, the anecdotal evidence is strong enough to leave veterinarians cautious about their use. Because these drugs suppress immune function, prolonged use of corticosteroids could also leave the horse at risk of infection.

► **Note:** As long as the horse receives corticosteroids, his body will reduce or cease production of cortisol. Stopping the medication abruptly can lead to an adrenal crisis marked by fatigue, weight loss and even collapse.

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3. Analgesics

► **Common examples:** lidocaine, butorphanol

► **Action:** These medications disrupt the transmission of pain impulses along neurological pathways. They do not reduce inflammation, but their pain-controlling action often contributes to the healing process.

► **Used to treat:** pain from severe injury or surgery

► **Potential side effects:** Although powerful analgesics are generally considered safe—particularly if given for limited periods—they can cause ataxia^o and muscle tremors in some horses. These drugs can also stress the liver of horses who are dehydrated or otherwise ill.

4. Antibiotics

► **Common examples:** penicillin, trimethoprim/sulfadiazine

► **Action:** Antibiotics inhibit bacterial growth, either by killing the organisms outright or by interfering with their ability to reproduce. “Broad spectrum” antibiotics kill a wide variety of bacteria; other products are effective only against specific organisms. Bacteria can become resistant to an antibiotic, so a veterinarian may run tests to determine which drug will be most effective against a horse’s specific infection.

► **Used to treat:** localized or systemic bacterial infection

► **Potential side effects:** In addition to killing bacteria that cause illness or infection, antibiotics may reduce the populations of beneficial bacteria in the digestive tract. This usually causes nothing more than mild diarrhea, but severe cases may require the administration of probiotics to restore the bacterial balance in the gut.

► **Note:** Although antibiotics are only effective against bacteria, they may be prescribed for a horse with a viral respiratory infection to prevent a secondary bacterial infection from taking root.

5. Bronchodilators

► **Common examples:** albuterol, clenbuterol

► **Action:** These drugs work by relaxing the muscles surrounding the small airways of the lungs, which makes it easier for the horse to breathe.

► **Used to treat:** recurrent airway obstruction (RAO or heaves) as well as more transient respiratory conditions

► **Potential side effects:** Occasionally a horse given a bronchodilator will develop an elevated heart rate, begin to sweat and become agitated. These usually pass within two hours and can be avoided by giving that horse a slightly lower dose of the medication.

► **Note:** Bronchodilators are often given to horses in conjunction with corticosteroids.

Note: You’ll notice we have not included sedatives and tranquilizers among these groups. Although these drugs can be very useful in veterinary medicine, they are not used as treatments themselves as much as a way to facilitate other treatment, such as quieting a horse to suture a wound. In addition, other drugs commonly given to horses do not neatly fit into these categories. These medications are typically given for specific conditions—the Cushing’s medication pergolide^o is just one example. Despite the fact that such medications aren’t neatly classified, they will be included in The Medicine Chest. 🐾

