

# PHENYLBUTAZONE: ITS ACTIONS, EFFECTS, AND ROLE IN EQUINE MEDICINE

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Phenylbutazone is a member of the "non-steroidal anti-inflammatory" group of drugs, and is the member of this group most commonly used in horses. The principal drug of this group with which you are familiar is aspirin. While aspirin is so readily and easily available that most people do not think of it as a drug, it is, in fact, the original member of the phenylbutazone group of drugs, and produces much the same effect in man as phenylbutazone does in the horse. If you wish to keep phenylbutazone in the horse in perspective, it is often useful to think of it as being basically just horse aspirin.

As a member of the aspirin-like group of drugs, phenylbutazone has essentially little effect on normal pain perception. What it does affect, however, is pain associated with inflammatory responses. It turns out that chemicals called prostaglandins are synthesized in inflamed tissues and act to hypersensitize inflamed areas to pain. Anybody who has had anything as simple as a sunburn is familiar with the problem of hypersensitivity to pain in sunburned skin. What drugs like aspirin and phenylbutazone do, is act to block the synthesis of prostaglandins and therefore reduce the hypersensitivity of the inflamed tissue to pain, eventually normalizing inflamed tissue. It is important to remember that these drugs have essentially no "numbing" effect on anything other than inflamed areas, any more than the aspirin that you take for a headache will numb your hands or legs.

Phenylbutazone is not thought to be stimulant in horses — no more than aspirin is stimulant in man. While phenylbutazone will enable a sore horse to perform up to his natural or "innate" ability, it is not thought of as having any stimulant action or enabling a horse to "excel" himself. Phenylbutazone is no more capable of stimulating an exceptional or unusual performance in the horse than aspirin is in man.

It is important to distinguish between the actions of phenylbutazone in the horse and the local anesthetics. Local anesthetics are injected into a nerve or joint, and "numb" a specific area. Such treatment blocks both pain perception and what is called "proprioception." Since proprioception is in fact the horse's awareness of where his leg is and what it is doing, a horse treated with a local anesthetic loses much more than simple pain perception. Because of the loss of proprioception with local anesthetics, the horse is not quite sure of where his leg is, and his risk of a misstep and breakdown is thought to be increased. It is important to remember that phenylbutazone does not affect normal pain or proprioception in an area, and its actions are therefore completely different from the local anesthetics.

Phenylbutazone is also quite different from the narcotic analgesics, which act to reduce pain perception in the brain. They do this by dissociating an individual emotionally from pain and also

by inducing euphoria. Beyond this, the narcotic analgesics or morphine-like drugs also stimulate running activity in the horse. As one might expect, phenylbutazone — an aspirin-like drug — has none of these effects and does not suppress pain perception in the brain or induce euphoria or running behavior.

What phenylbutazone very simply does is suppress inflammatory responses and, at the same time, reduce the hypersensitivity to pain that goes with the inflammatory response. This has led to the argument that horses treated with phenylbutazone will run on injured joints or tendons and will therefore be more likely to break down. This is rather like suggesting that people who take aspirin are more likely to go out and break a leg. In general, the statistics of racetrack breakdowns do not support this argument. For example, the statistics from California show that the incidence of breakdowns requiring destruction of Thoroughbred racehorses stayed constant during the 1970's, during which period the use of phenylbutazone in racing horses was legalized and the percentages of horses running on phenylbutazone increased. All in all, the data does not appear to bear out the hypothesis that use of phenylbutazone leads to increased breakdowns and deaths in racing horses.

Another charge sometimes laid against phenylbutazone is that its presence in urine samples makes the detection of other illegal drugs more difficult. This ability of "bute" to make the detection of other drugs in urine more difficult is spoken of as the "masking" problem. By and large, masking is not a scientific issue, but rather a political or "pseudo-issue." In our hands, in Kentucky, the levels of phenylbutazone which we "see" in our post-race samples has caused no significant analytical problems. Kentucky, further, has one of the highest "positive" call rates for illegal drugs of any racing state.

In summary, phenylbutazone is a member of the aspirin-like group of anti-inflammatory agents, and phenylbutazone in the horse is the approximate equivalent of aspirin in man. It has no direct effects to numb tissues, affect proprioception, or reduce pain perception in the brain. Its action is simply to reduce the hypersensitivity to pain or normalize inflamed areas, and aids the horseman in fielding racing sound horses. Its use does not appear to give rise to an increased incidence of breakdowns, nor does it significantly interfere with testing for illegal drugs. Phenylbutazone has become controversial largely because it is misunderstood. Phenylbutazone is, by and large, the horse's equivalent of aspirin, and is about as likely to damage horses or stimulate unusual performances as aspirin in man.

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Next month *PROFESSIONAL PLATFORM* will feature an article contrasting the viewpoint of Dr. Tobin.