



TYING UP & PSSM

Some horses may tie up sporadically due to:

- Over-exertion (exercising beyond the current level of conditioning)
- Exercising in hot, humid conditions (potentially related to electrolyte imbalances)
- Dietary issues. Diets high in soluble fibers (high grain diets), low in selenium/vitamin E, electrolytes and/or minerals
- A recent history of a viral respiratory tract infection (influenza)

PSSM:

Unlike sporadic cases of tying-up, recurrent or continual episodes are most frequently caused by an underlying genetic condition. PSSM or polysaccharide storage myopathy is a disorder that is characterized by the abnormal accumulation of the normal form of sugar stored in muscle (glycogen) as well as an abnormal form of sugar (polysaccharide) in muscle tissue. PSSM affects the horse by keeping an excessive and abnormal storage of sugar (polysaccharide) in their muscle cells due to a mutated gene. There are currently 2 types of PSSM identified with the most common being type 1 which affects over 20 different breeds and 90% of horses.

MANAGEMENT:

If you suspect your horse is tying-up, stop exercising the horse immediately and place him/her in confined area and call your veterinarian. Affected horses should not be moved, walked, or exercised as this may cause further damage and is typically painful for the horse. Place a blanket on your horse if the weather is cool and offer small amounts of water frequently. Electrolytes may be of benefit to your horse as well. Tests are available to determine if your horse may have chronic issues with PSSM, consult your veterinarian to find the best plan to fit your horse's needs.

PREVENTION:

Through diet and exercise most horses will see positive changes and have less occurrences of tying up.

■ **Daily Turnout** – horses with PSSM will especially benefit from this as it enhances their energy metabolism

■ **Exercise** – if your horse has been off an exercise program for any length of time it is important to start back slowly. Horses that have PSSM will benefit from a daily exercise program.

■ **Hay** – diets should consist of low NSC (non-structural carbohydrates) feed and hay. Ideal levels would be 12% or less.

■ **Grain** – feed a low starch, high fat grain if needed. It is believed that you may reduce the glucose uptake into the muscle cells by providing fat for energy instead of sugars.

■ **Supplements** – It is always good to keep electrolytes on hand (MVP's *Electro-Cell II*™ and *Apple-Lyte*™). Research also indicates that diets consisting of vitamin E, selenium and magnesium may help muscle discomfort and aid in the reduction of blood glucose levels.

Signs of Tying Up:

- Muscle stiffness
- Sweating
- Reluctance to move/laziness
- Shifting lameness
- Tense abdomen
- Tremors in the flank area

NUTRITIONAL SUPPORT



A perennial favorite for sore-muscle support. *Horse Journal*, June 2013



E-SE-MAG™

E-SE-MAG™ contains a combination of high levels of Vitamin E, selenium and magnesium. These key ingredients help support healthy muscle function and may ease discomfort associated with daily exercise. It's important to determine total selenium content in ration prior to supplementation; if deficient it can be a major factor in "tying up".

	(PER OZ)
Magnesium, Min	6,000 mg
Selenium, Min4 mg
Vitamin E, Min	2,000 IU



FEEDING INSTRUCTIONS:

(Enclosed measure approximates 1/4 oz based on density of product.)

Adult Horses (900-1,100 lbs): Provide 1/4 to 1/2 oz daily.

Selenium supplementation should not exceed 0.3 ppm (0.3mg/kg) in total diet

E-SE-MAG™

73160150	5 lb	(160 servings).....	\$55.95 FOB
73160160	10 lb	(320 servings).....	\$103.50

Costs approx. 35¢ per serving



VITAMIN E 10,000™

■ Concentrated

GUARANTEED ANALYSIS (Per oz):
Vitamin E.....10,000 IU



VITAMIN E 10,000™

73165120	2lb	(32-64 servings)	\$64.50
73165124	5lb	(80-160 servings)	\$138.25

Costs approx. 86¢ - \$1.73 per serving

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