

MUSCULAR TROUBLES

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Did you know that 3 to 12% of all horses (depending on their discipline and their level of use) will suffer from muscular troubles during their career? These troubles, also called myopathies, are usually effort-related. The symptoms are stiffness, excessive perspiration and stubbornness of the horses that resist running or contracting their back.

The causes of these symptoms are multiple and can be classified as follows:

- Overtraining or intense effort without suitable preparation
- Heat exposure
- Inappropriate feeding
- Inappropriate dealing with electrolytes
- Genetic factors (such an accumulation of glycogen disorders in the intracellular calcium metabolism of the horses)

A simultaneous combination of some of these causes may lead to the development of myopathies in horses; whereby a lame or tense horse will show the pathology



Daily needs of a thoroughbred in training and suffering from muscular troubles:

much earlier than healthier horses. Dealing with myopathies requires not only a clinical diagnosis but also an investigation of markers of muscular damage in the blood of the horses. Generally, these are enzymes such as CPK (creatine phosphokinase), AST (aspartate transaminase) and LDH (lactate dehydrogenase). These enzymes are found in muscles where they are necessary for normal function; but in cases of tissue lesion, they are released from the cells into the blood stream. Their ratio after effort gives more or less a precise idea of the extent of the muscular degeneration. In cases of uncontrollable recurrent myopathies, a biopsy diagnosis can be used.

The figure opposite shows the evolution of the concentration of muscular enzymes in the blood after efforts leading to a moderate myopathy.

The prevention of myopathies requires a flawless management of warm-ups and effort of horses, as well as appropriate handling of any lameness and a good genetic selection. However, all these measures are only efficient in combination with a balanced feeding of the horses! A horse needs daily (in addition to the whole range of vitamins and of basic micronutrients) at least 1,000 mg vitamin E, 3.5 mg selenium and 30 g electrolytes.

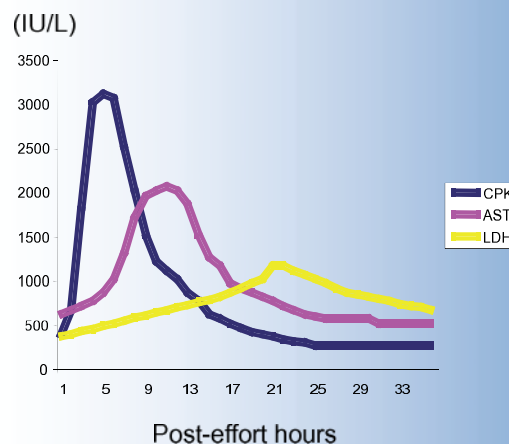
For recurrent myopathies, feeds rich in fibres and fats but poor in cereals should be preferred. The following table shows a recapitulation of the nutritional needs of horses suffering from that type of myopathy.

FAT SOLUBLE VITAMINS			WATER SOLUBLE VITAMINS		
Vitamin A	IU	60000	Thiamin (B ₁)	mg	84
Vitamin D ₃	IU	6000	Riboflavin (B ₂)	mg	35
Vitamin E	IU	7000	Pyridoxine (B ₆)	mg	30
Vitamin K	mg	10	B ₁₂	mg	1.5
			Niacin	mg	100
+ Beta carotene	mg	300	Pantothenic acid	mg	45
			Biotin (H)	mg	1.5
			Folic acid	mg	145
			Choline	mg	800
			Ascorbic acid (C)	mg	10000
MICRONUTRIENTS			MACRONUTRIENTS		
Copper	mg	187	Salt (NaCl)	g	30 to 50
Iron	mg	600	Magnesium	g	12
Manganese	mg	300	Potassium	g	55
Zinc	mg	770			
Cobalt	mg	3.75			
Iodine	mg	5			
Selenium	mg	5			

TWYDIL® PROTECT PLUS has proved reliable for many years now as a feed supplement that can help to keep oxidative stress, as well as some risk factors caused by muscular failure of horses, under control.

A combination of TWYDIL® ELECTROLYTES with TWYDIL® PROTECT PLUS will be an advantage since the protective effects will be enhanced through the beneficial influence of TWYDIL® ELECTROLYTES on the hydro-ionic balance.

Muscular enzymes curve evolution after a moderate myopathy on a horse in training



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