



## INSULIN RESISTANCE IN HORSES

*A serious issue with little knowledge about?!*

**Insulin resistance in horses seems to be a real upcoming concern with diverse clinical presentation and restricted possibilities for treatment. Unfortunately too often insulin resistance is still not recognized as such by neither professionals nor horse owners. The Dutch company Phytonics has conducted a pilot study investigating the impact of a natural health product on horses showing symptoms of insulin resistance, to be able to effectively support horses with this hormonal disorder.**

Insulin is a hormone produced and stored in the pancreas and is the key modulator for the glucose homeostasis, ensuring no elevated blood glucose concentration for elongated periods. Insulin resistance refers to insulin not being able anymore to induce an adequate response in especially skeletal, liver and adipose tissue under normal concentrations or as diminished ability of cells responding appropriately to the insulin signaling. They thus become resistant to insulin, leading to a pathologically elevated insulin concentration and a disruption of the glucose metabolism.

During the last years the awareness towards insulin resistance has increased considerably. This hormonal disorder in horses seems to be more present and serious than actually thought. It suggestively is the underlying factor for several diseases and eventually might affect the whole metabolism in different ways. Especially pasture associated laminitis has been related to an elongated highly elevated insulin concentration. The symptoms and related complaints seem to be very diverse and affect each horse differently. Sure is that obesity plays a major role in this problem, although it is not clear yet whether it is causal or a consequence of insulin resistance. It is most likely that it is a combination of both. However, also lean horses can become insulin resistant and not all obese horses are affected. Besides the diverse clinical picture, substantiated and accurate diagnosis as well as effective treatment is still difficult and challenging. Since obesity seems to be one of the determining factors, current treatment focuses on significant weight loss and increase of exercise.

It has been shown that dietary supplementation can have positive impacts on insulin sensitivity as well.

For his bachelor degree in equine sciences and management at Van Hall Larenstein, university of applied sciences Lennart Denkhaus, conducted together with the Dutch company Phytonics a pilot study in the field of dietary supplementation of insulin resistant horses. A five week lasting, quasi-experimental clinical study has been conducted on 15 horses to investigate the effect of the natural health product Phytonics 'Gluco balance' on horses being suspected of being insulin resistant. The study focused on the assessment of external indicators and the owners' observation on the horses' condition and not on endocrinological measurements testing improvement of insulin sensitivity yet.



The results of the pilot study are in accordance with the experience made by professional practitioners and veterinarians in the field. It is suggested that the product can significantly support and increase weight loss and with that indirectly influencing insulin sensitivity. An overall improvement of complaints of 80% could be observed in the experimental group, with significant differences in decrease of local fat accumulations and bulbs, improvement in shedding and general skin condition, getting into heat, less sweating, better weight control and less irritated behaviour. Strong indications for an improvement of stiffness and

willingness/ability to work were present. Owners reported an obvious change of the horses' condition and behaviour, being more alive and attentive and having less physical complaints.

**"AFTER ONLY A FEW WEEKS I SAW MY HORSE CHANGING INTO A DIFFERENT, MORE ALIVE AND ENERGETIC PERSONALITY, BEGINNING TO SHAPE LIKE A HORSE SHOULD LOOK LIKE"**

Since the clinical picture of insulin resistance is diverse, the potential impact of the product is different for the individual, but general trends are present. It is suggested that the product improves insulin sensitivity and also insulin clearance, so that the hormone level gets balanced again, positively affecting the body and its metabolism in several ways. Insulin resistance thus seems to be a serious issue with diverse causes and potentially severe negative impacts, but unfortunately with too little specific knowledge about yet. However, management adjustments with regards to feeding and training regimes and/or the application of dietary products such as 'Gluco balance' are indeed able so support affected horses and enable them to live a proper life. Nevertheless, affected horses will most likely always stay sensitive and special attention is needed to keep this hormonal imbalance under control.

*Lennart Denkhaus*

For further information about the conducted research and its outcomes please contact Lennart Denkhaus: [lennart.denkhaus@gmail.com](mailto:lennart.denkhaus@gmail.com).  
Further information about the product Gluco balance can be found under: [www.phytonicsmed.com](http://www.phytonicsmed.com)