

feeding excellence
Newsfeed

**Protect the value
of your foal: reduce
the risk of OCD**



Scientific proven ...

... especially for foals during their first year

Pavo Podo[®]Care

Nutritional supplement for young foals up to the age of 12 months

Breeders:

Win a chance to get the foal of your dreams!

Interview Dr. Counotte

Between March of 2009 and September of 2011, Pavo, in cooperation with the Animal Health Service (Deventer, NL) and the University of Veterinary Medicine (Utrecht, NL), has carried out a large-scale research project on the topic of OC / OCD.

Horse experts

Statements of:
• Alfons Baumann
• Christoph Hinkel
• Hans van Tartwijk



Pavo Podo[®]Care

Nutritional supplement:
• Reduced OC / OCD risk
• Scientifically proven effectiveness
• Supports the bone metabolism

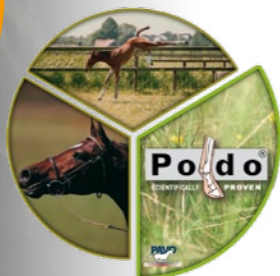
Protect the value of your foal: reduce the risk of OCD

During the first weeks of its life, the warmblood foal grows swiftly and gains approximately 1 kg per day. That is an average of 500 grams per day during the first twelve months. Because of this fast development, healthy bone growth is not guaranteed and has to be managed carefully.

The quick growth of our modern horses and the relatively early use in competitions cause serious risks to horses to suffer from OC or OCD. In addition, sports horses have to show perfect legs, especially in horses used for breeding. Therefore, it is necessary to provide **additional support** during the development phase.

Osteochondrosis (OC) and osteochondritis dissecans (OCD) are bone diseases that can affect animals and humans alike. The term OC is used when tiny cracks develop in the cartilage of the bone and the term OCD is used when fragments of the bony cartilage begin to separate. This can be painful for the horse and lead to lameness. The value of a horse with OC/OCD is significantly reduced.

Various factors play a role in the formation of cartilage into bone. In addition to **genetic factors**, mainly **nutrition and physical activity** affect the optimum development of the bones.



Energy supply (see information box concerning starch) as well as minerals and trace elements play an important role in nutrition.

The most important substances for healthy bone grow are:

- Minerals such as calcium, phosphorus, magnesium
- Trace elements such as copper, zinc, manganese
- Vitamins such as D and K

Mare's milk cannot be changed

The nutrients in the mare's milk are almost 100% genetically determined. Therefore, this is not a possibility to control feeding. For this reason, it is extremely important to support the young foal from the start.



React on time

Any defects in the foal's joints can only be corrected while the growth plates are not yet closed. These growth plates close first in the bones of the legs and last in the mid-section. This process is more or less completed at the age of two.

Micro-trauma

It is normal for horses to sustain **micro-trauma** in the joints. A micro-trauma is a tiny defect in the joint that could occur when the foal gets up awkwardly or when it leaps in the field. In many cases, the body repairs these growth disorders. Despite this, around **45% of foals** have OC / OCD.



The Pavo Podo® Recipe for Success

This recipe for success of Pavo Podo® has existed for 15 years. It is based on worldwide research results and it is continuously improved. The secret of Pavo Podo® is the ratio and availability of macro-minerals. Bones are built with the support of calcium, phosphorus, and magnesium. However, it is not the quantity that is important for healthy bone development but rather the right combination.

The hypothesis of the research was: „Horses receive sufficient calcium through their diet. The problem is with the supply of phosphorus and magnesium“. Therefore, we have produced a nutritional supplement that contains readily available magnesium and phosphorus sources (as an organic compound), the ratio of which is perfectly balanced for the needs of a young horse.

Scientifically proven effectiveness: especially for foals during their first year

Between March of 2009 and September of 2011, Pavo, in cooperation with the Animal Health Service (Deventer, NL) and the University of Veterinary Medicine (Utrecht, NL), has carried out a large-scale research project on the topic of OC / OCD.

The main question of the study was as follows: Is it possible to reduce the chance of young foals developing OC / OCD by giving them nutritional supplements during their first year of life?

The research project was divided into

- **Study 1:** 63 Warmblood foals, age group 0-5 months
- **Study 2:** 52 Warmblood foals, age group 5-12 months

The foals were at six different centres. In each of the centres, half of the foals (random group) received a nutritional supplement and the other half did not. The foals were X-rayed and scored for OC / OCD.

The results of the OC / OCD research

- Adding nutritional supplements lowers the probability of the development osteochondrosis by a factor of four at an age of twelve months (odds ratio).

Comment on the result: Several factors besides nutrition play a role in the development of OC / OCD. Therefore, one always talks about „the probability (or chance) of OC / OCD“ developing.

✓ Study 1: 63 Warmblood foals (Age group 0-5 months)

Without Pavo Podo®Care: 45% of foals showed OC / OCD in one of the joints.

With Pavo Podo®Care: Only 25% of foals that received the Pavo Podo®Care supplement showed OC / OCD in one of the joints. This shows that with Pavo Podo®Care the probability of developing OC / OCD can be reduced by 20%.

During this time, the growth plates are not yet closed. Therefore, the body can correct any minor growth disorders. Study 2 was conducted on foals between the ages of five to twelve months to find out to what extent the bone metabolism of older foals can be influenced. This study resulted in the following numbers: Start: on average 45 % of foals showed an OC / OCD in one of the joints at the age of five months.

✓ Study 2: 52 Warmblood foals (age group 5-12 months)

Without Pavo Podo®Care: The probability that a foal shows OC / OCD at the age of twelve months is still 45%.

With Pavo Podo®Care: If the nutritional supplement is given then the chance that a foal develops OC / OCD at the age of twelve months is only 30%.

„We found what we hoped to find.“



Interview with the man who stands behind the OCD research:
Dr. Guillaume Counotte



Guillaume Counotte
Toxicologist at Animal Health Service in Deventer, Holland

“Of course, you would like to prove the hypothesis but it amazes me every time you are successful and I am pleasantly surprised!”

Dr. Guillaume Counotte, toxicologist at Animal Health Service in Deventer, Holland, was the head of the research team that carried out the OCD study.

What is GD?

“GD is the Animal Health Service. It was established in 1919 to promote animal health. It is not a government agency but an independent organization that offers support and advice to veterinarians and animal owners alike. In addition, research is conducted to improve the knowledge in veterinary medicine continuously. It is mostly done in cooperation with universities. We often receive precise commissions. However, sometimes a community development such as an up-and-coming animal disease, which is significant for the Netherlands, can be the reason. We analyse millions of blood, feed, water, and fertilizer samples in our laboratories. In addition, we are specialized in the autopsy and examination of sperm”.

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What is your specialty?

“I am a toxicologist and I deal with the chemical aspect of biology. In other words, I deal less with viruses and bacteria and more with the impact that other substances contained in feed and water have on health. I deal for example with the growth of bones. The assumption that bones are a type of concrete is widespread but utterly wrong. Bones are a living organism, which can be greatly influenced by nutrition. How this is accomplished is for example one question which I am concerned with”.

What is the most exciting result of the OCD research?

“This supplement is effective. After taking blood samples from foals, we had hoped to find biomarkers based on which we can find out exactly what nutrients a foal at the age of six to eight weeks needs. Unfortunately, this was not possible. We can correct bone growth but we cannot determine precisely the effect the supplement has on various animals”.

How dependable are these study results?

“Absolutely dependable; the research was conducted scientifically on various foals in different circumstances and with double-blind studies. Half of the animals received a paste that contained the nutrients of the dietary supplement, the other half received the paste but as a placebo. All samples and X-ray images were evaluated anonymously”.

What does the study result mean for the owners of horses?

“According to this new information, horse owners have the opportunity to reduce the probability of their horse getting OCD by feeding this supplement early. The effectiveness is not guaranteed because there is also a genetic component that plays a role in the development of OCD. In addition, the horse needs sufficient physical activity. However, the study results are a good step in the right direction”.

Magnesium in the blood

Foals at the age of eight weeks with OC / OCD show lower magnesium levels in the blood than foals without the disease.

The study proves that the magnesium level in the blood can be influenced significantly by feeding Pavo Podo®Care. Magnesium is not only needed for the bone growth but also for relaxing the muscles and it improves the general circulation in the body.

The largest effect is in the knees

If we look at the study results a bit more closely, it becomes apparent that the largest improvement in the second study with five to twelve-month old foals was noticeable in the knee joint. This effect could possibly be explained by the fact that the growth plates close in the knees at that age. This is a significant finding because OC / OCD are very difficult to operate in the knee joint.

What does this mean for the horse owner?

Pavo recommends:

- Ensure your foal moves around a lot. That is healthy! Movement improves circulation and therefore, it improves the supply of cartilage, bones, ligaments, and tendons.
- Support your foal with Pavo Podo®Care
- Start as early as possible.

Provide the supplement as early as possible.

The first six months in the life of your foal are the most important months (see information box concerning bone metabolism) in terms of a possible development of OC / OCD. Foals are curious and they begin to take some food from about six weeks of age. You should use this opportunity and start as early as possible to feed Pavo Podo®Care. From the third month on, they can have 200g of the supplement per day.

- Once your foal is six weeks old, you can give it a hand full of Pavo Podo®Care every day.
- If your foal is three months old, you can increase the ration to 200g a day.
- Feed 200g each day up to the age of 12 to 15 months.
- If hard feed becomes necessary begin with Pavo Podo®Start.
- Feed 1 kg Pavo Podo®Start each day. You can stop feeding Pavo Podo®Care.
- You should not stop feeding Pavo Podo®Care, if your foal receives a concentrated feed other than Podo®Start.

The horse breeder knows:

The proper diet forms the basis for healthy development. Mares in foal or lactating mares need additional support during this intensive period. Foals, yearlings, and young horses need certain nutrients, vitamins, and minerals in larger (or smaller) portions than adult horses. The Pavo Breeders assortment covers all the needs of brood mares, foals, and developing horses and it provides the best possible start for a healthy life!

NEW



Pavo Podo®Lac - for the mare



Pavo Podo®Care - for young foals up to the age of 12 months



Pavo Podo®Start - for the young foal



Pavo Podo®Grow - for the developing horse

Don't forget your mare

The milk of the lactating mare provides the foal with large quantities of calcium and phosphorus. The mare loses a lot of minerals because of this so-called „drain.“ Do not forget to balance this loss in order to prevent weakening of the mare's bone tissue.

Not too much starch

For young animals, protein is an important building block during the growth phase. However, avoid an excess of energy. Feeding too much starch (such as wheat) is not recommended because it accelerates the growth of the young foal. This in turn has a negative effect on the bone development.

Regular bone regeneration

During the first months, the foals' bone metabolism is strictly geared for growth. Bone is formed nearly exclusively. At the age of twelve months, the bone metabolism has reached the adult level. Now, bones are generated and broken down. The outer 4 mm of a bone are flexible and it is completely replaced every 120 days.

Das sagen Pferde-Experten...

Alfons Baumann, successful breeder of warm blood horses, Germany:

„I put my trust in the range of Pavo Podo® and I am absolutely sure that by doing so, I take care of my horses in an optimum way.“

Christoph Hinkel, Breeding expert at Paul Schockemöhle's Service Station and Stud:

„We have been co-operating with Pavo for more than 10 years and we are fully satisfied with the results. In order to ensure that the offspring of our top stallions grow up as healthy and sound as possible, we recommend Pavo's Podo® range to our clients.“

Hans van Tartwijk, member advisory breeding council of the KWPN:

The Royal Dutch Sport Horse association (KWPN) has shown by means of a scientific population evaluation that genetic predisposition plays a significant role in the forming of OCD. In addition Pavo has now discovered with its research sound scientific proof that the forming of OCD can be influenced actively by the nutrition the foal receives. This is a real breakthrough.

I have been informed about this research and it has been very thoroughly done. In addition to taking measures with regard to the breeding program, we can also decrease the occurrence of OCD in the Royal Dutch Sport Horse population by means of nutrition and decreasing the occurrence of OCD is what it is all about.



Working for over 15 Years together



Feeding schedule

Feeding recommendation for mares in their late stages of pregnancy or during lactation and foals (adult 600 kg)

For ponies and foals of ponies use only half the dosage.

Mare from the 9th month of pregnancy

- Roughage ad libitum (hay or haylage) or pasture grass
- 9th month of pregnancy up to foaling approx. 2 kg / day of Pavo Podo®Lac. During this time, the feed quantity should be increased by 100g each week
- Lactation 1st to 4th month, approx. 3-4 kg/day of Pavo Podo®Lac
- Lactation 5th to 6th months, approx. 2.5-1.5 kg/day Pavo Podo®Lac; reduce the feed quantity slowly during this time

Foals from the 4th week of life until the age of 8 months

- Pasture grass + mare's milk
- After the 4th week of life, feed 200 g/day of Pavo Podo®Care (start with small amounts of feed)
- From the 8th week of life, feed approx. 0.75-1.5 kg/day of Pavo Podo®Start (start with small amounts of feed)
- Once the feed reaches 1 kg Pavo Podo®Start each day, the supplemental feeding with Pavo Podo®Care is no longer necessary
- If no concentrated feed (with Podo®) is fed then 200g of Pavo Podo®Care should be fed daily until the age of 12 months.

Foals after weaning

- Roughage ad libitum (hay or haylage) or pasture grass
- From month 6 to 7, approx. 1.5-2.5 kg/day of Pavo Podo®Start
- From month 8 to 12, approx. 1.5-2.5 kg/day of Pavo Podo®Grow
- From month 13 to 18, approx. 0.75-1.5 kg/day of Pavo Podo®Grow
- From month 19 to 30, approx. 1.0-2.0 kg/day of Pavo Podo®Grow
- If no concentrated feed (with Podo®) is fed then 200g of Pavo Podo®Care should be given daily until the age of 1 year.

Tip

If the foal grows too quickly and the mare loses weight because of the high quantities of milk then you can switch to Pavo EnergyControl. The mare remains healthy and the foal does not grow too quickly. This is healthier for the both of them.

Know what your foal eats

Hard feed or a nutritional supplement is always added to the total food ration. Therefore, you should know exactly what your foal eats all day. It makes sense to have your roughage regularly analysed -- only then can you feed purposefully.

Personal advice from the Pavo-GroomingTeam®

Would you like personal advice from our feeding experts? Then contact our GroomingTeam®. These are experts in horses and their feeding and they are happy to help you!



Feeding advice

Once the mare and the foal are taken to their stable in the evening, you can feed your foal with a special foal feeder. The opening of these feeders is large enough for the foal's mouth but too small for the mare.

For foals that stay outdoors, one area of the field can be separated and an opening can be left large enough only for the foal.



JFC Ringfort Foal Feeder, JFC Ireland, www.jfc.ie



NEW



CONTENT PER KG PRODUCT

Crude protein	13,80 %
Crude fat	2,30 %
Crude fibre	16,70 %
Crude ash	15,80 %
Calcium	0,86 %
Phosphorus	1,42 %
Magnesium	2,30 %
Vitamin A	30.000 IE / kg
Vitamin D3	20.000 IE / kg
Vitamin E	1.250 mg / kg
Vitamin K3	20 mg / kg
Vitamin C	4000 mg / kg
D-Biotin	3.500 mcg / kg
Copper	280 mg / kg
Iron	650 mg / kg
Zinc	800 mg / kg
Manganese	500 mg / kg
Cobalt	2,5 mg / kg
Selenium	1,25 mg / kg

- chelated minerals
- highly digestible



Pavo Podo® Care

Nutritional supplement for young foals up to the age of 12 months

- Reduced OC / OCD risk
- Scientifically proven effectiveness
- Supports the bone metabolism

This nutritional supplement with Podo® minerals was specifically developed for young foals of up to 12 months. The effect is scientifically proven*. Pavo Podo® Care supports the bone metabolism and therefore, it reduces the risk of OC / OCD by a factor of four! The secret is in the proper ratio of calcium, magnesium, and phosphorus as well as the special form to make them bioavailable. In addition, Pavo Podo® Care ensures balanced growth and improves circulation. This supplement provides your foal with the best possible start to become a healthy horse.

*** In 2011, this study was conducted by the Animal Health Service (Deventer) in cooperation with the faculty of veterinary medicine in Utrecht.**

Guaranteed a tasty supplement

Pavo Podo® Care is part of the nutritional supplement line of Pavo that does not only provide healthy but also tasty solutions. Pavo recommends feeding Pavo Podo® Care as early as possible. The nutritional supplement is eaten well only from the age of approx. three months. If your foals don't like the food against all expectations, we are happy to **pay you back the entire purchase price**. More Informations - www.pavo.net



**Breeders:
WIN a chance to get the foal of
your dreams!**

Pavo is giving away three coverings worth 1,500.00 Euro each! The winners can decide themselves, which stallion is best for their mare and they can choose from which sire they would like to receive sperm. For the list of the participating stallion owners go to www.pavo.net

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