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**comment:** We thank the correspondents for their comments on the design and the conclusions of our study (Vander Heyden and others 2013) and welcome the opportunity to respond to the issues raised.

Our aim was certainly not to discourage horse breeders from feeding 'appropriate

concentrates' to pregnant mares and we regret if this is the conclusion that someone may draw from our study. Our study identified the feeding of concentrates to the mare as a potential risk factor for developing osteochondritis dissecans (OCD) in the foal. This finding should incite new studies to identify the possible link between feeding of the mare and OCD in the foal. The underlying mechanism has not been investigated in the present study. Studies from human medicine and from various animal models give insight into the vast domain of fetal programming. The embryo or fetus is exposed to the uterine environment, which is influenced by the mother. Even subtle changes of this environment, and not necessarily extreme endocrine dysfunction, may predispose the offspring to the development of diseases later in life. Numerous studies in people show that maternal under- and overnutrition may increase the risk of even adult-onset diseases in the offspring. We recently showed that postnatal glucose homeostasis is altered in an equine model of fetal overnutrition (Peugnet and others 2012).

We do agree that the term 'concentrates' lacks precision and that the classification 'concentrates yes or no' does not give an idea about the actual nutrient or energy

intake. Our work was largely inspired by the work of Lepeule and others (2009), who defined 'concentrate feeding' as 'every food except forage, including native feeds or ready mixed diet'. Although this group evaluated the quantities distributed to the mares, their analysis did not identify the mean daily amount of concentrates distributed to the mare as a risk factor, but the duration of the period during which any amount of concentrates were given to the mare. Mares that received concentrates for a period longer than five months during the eighth month of gestation until the weaning of the foal were at higher risk of producing a foal with OCD.

Before running the three logistic regressions, we verified the independency between groups, within and across the three periods. Some (expected) interactions were found between groups (eg, among a foal's housing between and after weaning), but none that could have affected the results. To respond to the concern about the possible confounding between gestation in the first period and housing in another, we found no interaction between feeding groups during gestation and housing of the foals. We should have specified this in the material and methods section of the article. We agree that the goal of our statistical analyses was not to prove causality, but only to show whether or not an association can be found between the events. Further studies are needed to confirm our findings and to investigate the underlying mechanisms.

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## References

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