

## Nursing behaviour in pregnant domestic mares (*Equus caballus*): Can they cope with dual maternal investment?

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Among mammals, lactation is the most energy demanding part of parental care and so parent-offspring conflict should arise over milk provided by the mother. Mother and offspring should disagree over the length and amount of the milk provision. We focused on effect of pregnancy on suckling behaviour variables as indicators of mother-offspring conflict in domestic horses. We presumed shorter suckling bouts and higher rates of ejected and/or terminated suckling in pregnant mares compared to non-pregnant ones. Increasing conflict over amount of maternal investment between mother and her young are to be expected because of her parallel investment into a nursed foal and a foetus. Eight groups of loose housed lactating mares with foals of Kladruby nad Labem (Czech Republic) from deliveries to abrupt weaning (at the age of 127 to 210 days). We recorded 10 848 suckling solicitations of 79 mare-foal pairs, from which 10 607 resulted in a suckling bout. In 41 cases a nursing mare became pregnant during lactation. We found no significant effect of pregnancy either on probability of the mother rejecting suckling solicitation of her foal or probability that she terminated a suckling bout. However the overall effect of mother's pregnancy on suckling bout duration was not significant, there were considerable differences in pregnant and non-pregnant mares according to who terminated a suckling bout, whether the mother or the foal ( $F(1, 9776) = 12.1, P < 0.001$ ). In case it was the mother then the suckling bout was longer if she was pregnant ( $65.36 \pm 1.25$  s) than barren ( $60.55 \pm 1.36$  s). We found no impact of pregnancy on duration of suckling bouts terminated by the foal. Further, nursing a foal during the first two trimesters of pregnancy had no negative impact on birth weight of the foetus. In conclusion, we found not higher, but a lower mother-offspring conflict in pregnant than in non-pregnant lactating mares while expecting just the opposite. We suggest that pregnant mares compensate their nursed foals during intensive

stages of lactation through a relaxed mother-offspring conflict for later decrease in investment due to increasing demands of the foetus and/or for the shorter period of milk supply. Our results (partly published in Bartosova et al. 2011, PLoS ONE 6(8): e22068) are of high importance in horse breeding. One of the main arguments for early weaning of the foals is regeneration of their pregnant mothers before upcoming delivery. Here we present evidence that a pregnant mare "counts" with her dual maternal investment and "employs" evolutionary mechanisms enabling her to rear a vital foetus. From this point of view there is no objective reason for stressful weaning of her nursed offspring practised in conventional breeding.

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