

Importance of motherhood: how motivated are dairy cows (*Bos taurus taurus*) to nurse their calves?

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Prolonged contact between dam and calf has animal welfare benefits, and part-time cow-calf- contact is suggested to be a feasible solution. One of the challenges of cow-calf-contact is separating the two before the natural weaning age, and stepwise weaning, i.e. reducing nursing before complete separation, may mitigate separation stress. Therefore, this study aims to investigate the effect of gradually reduced calf contact on dairy cows' motivation to nurse their calves. Cows and calves were housed together with either full-time (23h/24h) or part-time (10h/24h) contact until the end of week 7 after calving. At week 8, cow-calf pairs were assigned to one of two weaning treatments: gradually increased fence-line separation over two weeks (IFS) or unchanged contact (UC) until complete separation at week 10. During week 8, IFS cows' opportunity to nurse (but not their opportunity to sniff and lick) their calves was reduced by 50%. The cows' motivation to nurse was assessed using pneumatic weighted gates. The cow was presented with a choice of either full access (nursing possible for 10 min) or partial contact to her calf (only sniffing and licking possible for 10 min). The weight on the pneumatic gate leading to full contact was 30 kg, while the gate leading to partial contact was 22 kg. Here we present preliminary results from 24 cow-calf pairs (6 pairs on each of the contact and weaning treatments). Half of all cows walked through the weighted gate for full contact (13/24 cows), with no difference between full-time and part-time contact treatments (6/12 vs. 7/12 cows, respectively; $X^2_{(df=1)}=0.2$, $P=0.68$). However, more IFS cows walked through for full contact than UC cows (9/12 vs. 4/12, respectively; $X^2_{(df=1)}=4.2$, $P=0.04$). Latency to walk through the 30-kg gate did not differ between IFS (median, IQR: 4.0 s, 4.0-4.0) and UC weaning treatments (6.5 s, 4.8-9.5; $z=1.42$, $P=0.16$). More IFS cows were observed nursing compared to UC cows (8/9 vs. 0/4, respectively; $P<0.01$). These early results suggest that irrespective of full- or part-time contact, cows experiencing increased separation from their calves show higher motivation to regain full contact. The higher tendency of calves to nurse upon reunion could be related to hunger for milk. However, half of all cows did not walk through the weighted gate, suggesting there is individual variation in motivation for reunion with the calf; this may be related to differences in the strength of the cow-calf bond or motivation to nurse.