

## CHANGES IN FEEDING BEHAVIOUR IDENTIFY COWS AT RISK FOR SUBCLINICAL KETOSIS

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Subclinical ketosis (SCK) in the week after calving has been associated with increased risk of disease as well as reduced pregnancy rates. SCK after calving is linked with prolonged periods of negative energy balance during the transition period. The aim of this experiment was to determine if changes in dry matter intake (DMI) can identify cows at risk of developing SCK after calving. Feeding behavior and individual DMI of 32 primiparous and 69 multiparous Holstein cows was recorded from 2wks before until 3wks after calving using the INSENTEC feed intake system. Animals were housed in pre-partum freestall pens and fed a close-up TMR for approximately 3wks before calving, after which they were moved to a post-partum freestall pen and switched to a post-partum TMR. In both pens, feed was delivered twice daily at approximately 0800 and 1600 h. Body weights were measured on 3 consecutive d at entry into the trial, calving and 3wks post partum. Every 3d after calving until +21d, cows were subjected to clinical health exams. Blood samples and rectal temperatures were also taken during these exams. Nine multiparous and 1 primiparous cow were identified as having SCK by at least 1 serum sample during wk+1 with a BHBA ( $\beta$ -hydroxybutyrate) level greater than  $1000\mu\text{mol/L}$ . Cows with BHBA above  $1,400\mu\text{mol/L}$  in wk+2 or wk+3, or showing any signs of disease were not included. SCK animals were match paired by parity with 10 healthy animals (no signs of SCK or other diseases). In wk -1, cows with SCK ate less DM than healthy cows ( $13.7 \pm 0.83$  vs.  $16.5 \pm 0.83$  kg/d,  $P \leq 0.05$ ; Figure 1), a difference that remained until 2 wks after calving (wk+1:  $12.7 \pm 0.83$  vs.  $17.2 \pm 0.83$  kg/d,  $P \leq 0.05$ ; wk+2:  $14.7 \pm 0.83$  vs.  $18.4 \pm 0.83$  kg/d,  $P \leq 0.05$ ). Logistic regression indicated that the odds of a cow having normal BHBA in wk+1 increased by 10.5 for every 1kg increase in DMI during wk-1 ( $P_{\text{Wald}} = 0.02$ ;  $\text{CI}_{95} = 1.4-4.9$ ). These results indicate that dairy cattle that have higher DMI during wk-1 are less likely to develop SCK after calving. These results add to the growing body of evidence that measures of feeding behavior and DMI can be useful predictors of disease in transition dairy cows.

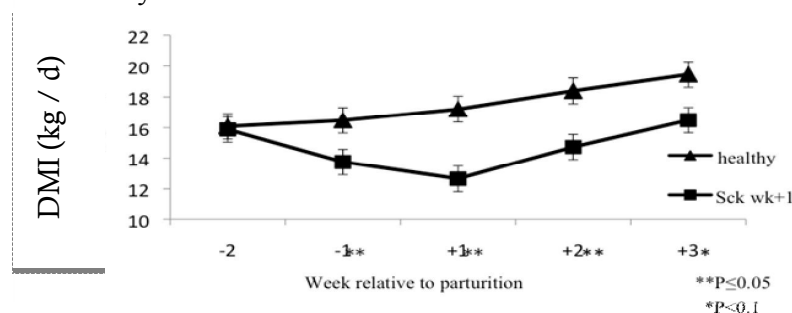


Figure 1: Dry matter intake of Holstein cows diagnosed as healthy or with sub-clinical ketosis at wk +1 (n=10 cows per treatment)