



## Supplementary: Predicting Disease in Transition Dairy Cattle Based on Behaviors Measured Before Calving

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**Table S1.** Results from the multivariable model assessing water intake data for multi- and primiparous cows combined. Estimates of slope, SE, *P*-value, odds ratio (OR) and 95% confidence interval (CI) are reported. Odds ratios for actor behavior at water bins, and liters of water intake are calculated based on units of 6 actor behaviors, and 1 liter of water intake.

Variable Name	Slope	SE	<b>P-value</b>	OR (95% CI)
Multi- and primiparous cows				
Actor behavior at water bins	-0.334	0.161	0.03	0.72 (0.52–0.98)
Liters of water intake	-0.023	0.009	< 0.01	0.98 (0.96-0.99)

**Table S2.** Results pertaining to the predictive ability of the model reported in Table S1 are shown. Sensitivity, Specificity, PPV<sup>1</sup>, NPV<sup>2</sup>, area under the ROC<sup>3</sup> curve, and overall accuracy were calculated for both, the training<sup>4</sup> and the testing<sup>5</sup> datasets.

Dataset	Sensitivity	Specificity	PPV	NPV	ROC	Overall Accuracy
Training dataset for multi- and primiparous cows	68.04	46.74	68.04	46.74	64.2	57.67
Testing dataset for multi- and primiparous cows	42.86	62.16	42.86	62.16	54.7	52.78

<sup>1</sup> Positive predictive value; <sup>2</sup> Negative predictive value; <sup>3</sup> Receiver operating characteristic; <sup>4</sup> The dataset used for training the model; <sup>5</sup>The dataset used for testing the model.