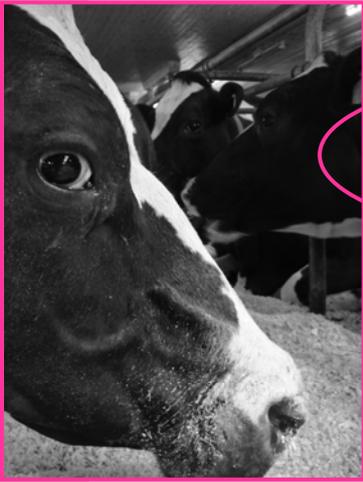


Blood parameters in periparturient dairy cows with or without disease

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Aim
 To investigate associations between periparturient health status and blood parameters

Conclusions
 Cows with "other diseases" had elevated levels of NEFA, BHB and AST at calving.
 Cows with "other diseases" had a lower level of GD than the other groups.
 Non-healthy cows had mildly elevated levels of haptoglobin.



Materials and Methods

Periparturient cows in 40 Swedish dairy herds were blood sampled and clinically examined. Cows were classified as healthy (n=667), with mastitis (n=19) or "other diseases" (n=12) within ± 5 days of sampling or with disturbed general condition on the day of sampling (n=36). Associations between health status and concentrations of glucose, insulin, cholesterol, haptoglobin, glutamate dehydrogenase (GD), nonesterified fatty acids (NEFA), betahydroxybutyrate (BHB), aspartate aminotransferase (AST) and fructosamine were assessed by linear mixed models. Other predictors were parity (1, 2, 3 or more), breed (Swedish Red, Swedish Holstein, others) and time period (-4 to -2 w ap, -1 w ap, at calving ± 1 day, 1 w pp, 2 w pp, 3-4 w pp and 5-7 w pp). Herd was included as a random effect. 30 herds were held in loose houses, 9 in tie-stalls and 1 in both systems.

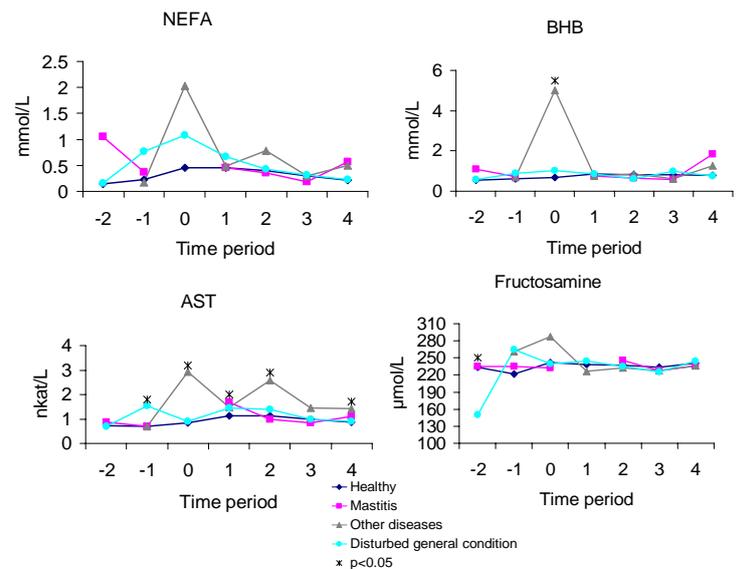


Table 1 Least squares-means for the different classes

	Healthy	Mastitis	Other diseases*	Disturbed general condition
Glucose (mmol/L)	3.2 ^a	3.5 ^a	3.4	3.3
Insulin (μ m/L)	8.4	9.6	9.2	7.6
Cholesterol (mmol/L)	3.0 ^a	3.1 ^b	2.5 ^{ab}	2.8
Haptoglobin (g/L)	0.07 ^{abc}	0.12 ^a	0.12 ^b	0.09 ^c
GD (nkat/L)	63 ^a	58 ^b	101 ^{abc}	57 ^c

^{abc} Same superscript indicates significant differences within parameter, $p < 0.05$.

*Other diseases included metabolic and infectious diseases.

Figure 1 Least squares-means for classes over time periods

Table 2. Median and interquartile range (IQR) for milk yield and herd size

	Median	IQR
Milk yield, kg ECM/cowyear	9732	9100-10 500
Herd size	100	65-158

