

Introduction

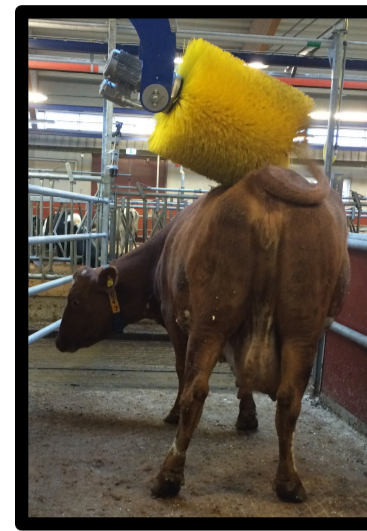
Self-grooming behaviour has been seen to be affected during experienced stress and discomfort among various mammals, including the domestic cow. Recording brush use could be a good addition to existing parameters used when investigating welfare in dairy cow stalls.

Sudden changes in an individual's brush use could be early signs of stress or discomfort. Although, observation of mere frequencies of

brush use may not be enough wherefore effects of stress and discomfort was investigated in several parameters of brushing behaviour in present study.

How does stress and discomfort affect

- **Brushing duration and number of brush bouts?**
- **Brushing intensity?**
- **The proportion of brushed body regions?**



Method

At Lövsta Research Center, 12 dry dairy cows of the breed Swedish Red were all exposed to the same three treatments.

The three treatments

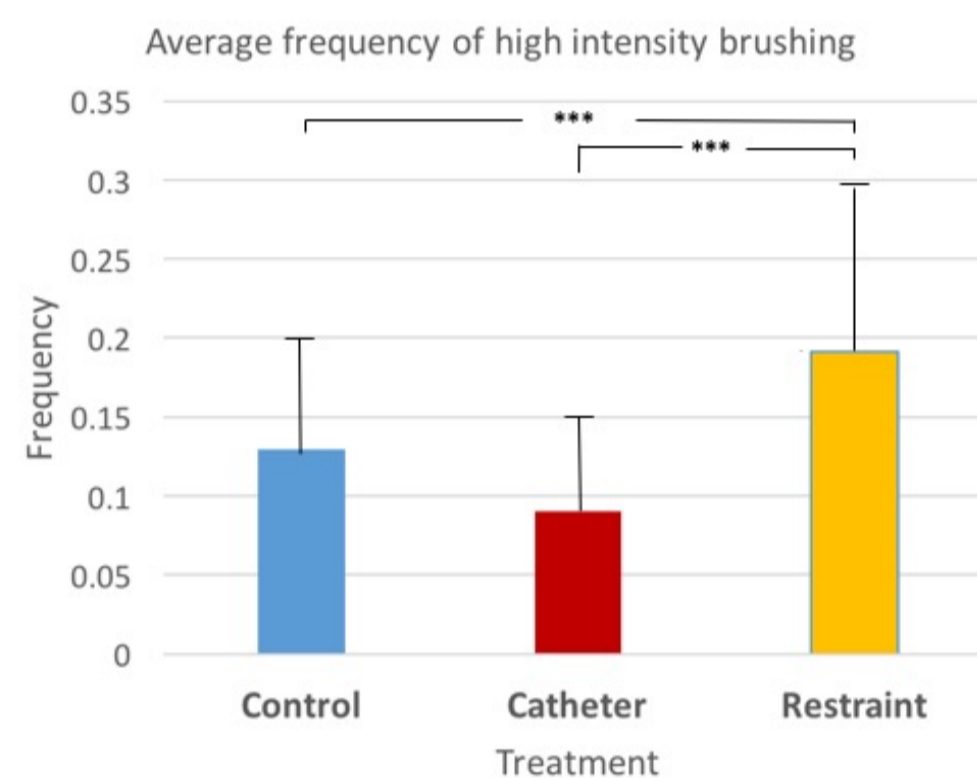
- **Restraint** – One minute restraint of the head
- **Catheter** – Semi-permanent catheter placed in the neck region
- **Control**

The cows use of a mechanical swinging brush in each treatment where observed and compared.

Results

The effect of the restraint and the catheterization on:

- **Brush duration and number of brush bouts** – No significant effects
- **Brushing intensity** – High intensity brushing, when the body movements of the cow manipulated the movement of the brush, were performed significantly more following restraint compared with following no restraint (see figure).



- **Brushed body regions** – Following restraint and catheterization, cows performed significantly less brushing of the withers (see picture).

Other factors found to effect brushing behaviour in the present study

- **Lactation number** – The number of lactation periods a cow had gone through were seen to have significant effect on all parameters of brushing investigated.
- **Time spent brushing** – Time spent brushing during a brush visit was found to have significant effect of brushing intensity by declining the intensity over time and also by decreasing brushing on the neck region over time.

Conclusions

Information about cows' emotional states could be found in the way the cows are using the brush, such as brushing intensity and which regions they brush. Mere registration of duration or number of brushing events may not be enough if wanting to see early signs of stress or discomfort.

- An increase of brushing the withers could be a sign of a more positive state before using the brush
- An increase of high intensity brushing (manipulation of the brush movement) could be connected with increased stress hormone levels
- Lactation number and time spent brushing affect cows' brushing behaviour

