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## ACCEPTED MANUSCRIPT

### Re-direction of maternal behaviour in dairy cows

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#### **Highlights:**

- Dairy cows are commonly separated from their calves within 24 hrs of parturition.
- We followed the use of automated brushes by cows across 305 days from the time of calf separation.
- Increased daily duration of brush usage was documented up to 4 weeks from calf separation.
- Increased duration of brush usage was also documented following milking sessions.
- Dairy cows seem to re-direct their need for contact with their calf towards a brush.

#### **Abstract**

In the milk producing industry, most aspects of maternal behaviour are discouraged, but milk production is actively maintained in the absence of the calf. The process of milk let down, is mediated, at least partly, by oxytocin, which has been shown to play a central role in facilitating maternal bonding. Here we show that cows express an elevated need for tactile stimulation, as shown by high utilization of automated

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