



Calf play as an indicator for weaning and separation stress in CCC systems

Anina Vogt
Thünen Institute of Organic Farming



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor REA can be held responsible for them.



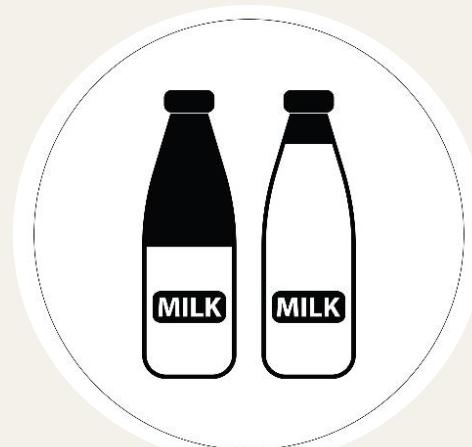
Play as welfare indicator in calves



Play is sensitive to pain, low energy intake and poor health:



Mintline et al., 2013



Krachun et al., 2010, Rushen et al., 2016,
Jensen et al., 2015



Bertelsen and Jensen, 2019

→ *animals that do not feel well will play less*

Play as welfare indicator in calves



- Calves show a **rebound of locomotor play** after being unable to perform it
(Jensen, 1999; Jensen and Kyhn, 2000; Jensen, 2001)
- Social play in calves is modulated by **internal opioids** (Sutherland et al., 2019)

→ Play is likely a self-rewarding, pleasurable experience

→ *Animals that play, have likely not only neutral, but positive welfare*

Play as welfare indicator in calves



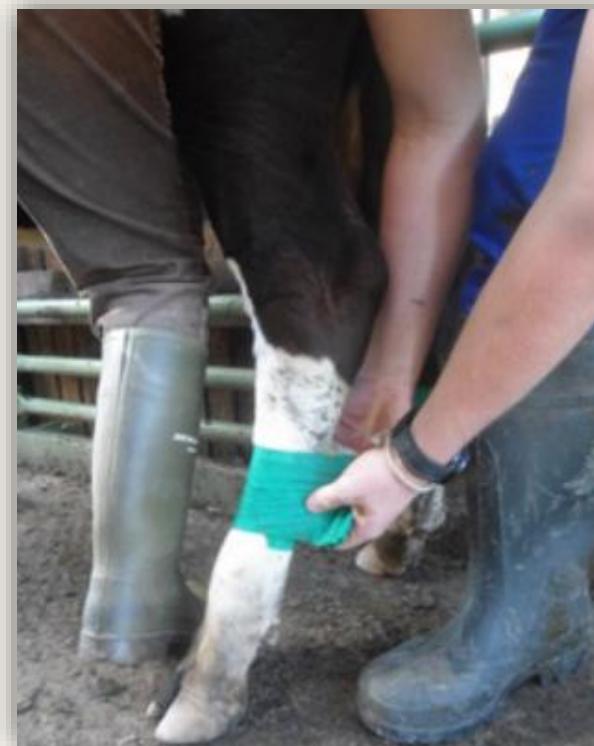
© Thünen Institut | Jens Reckert



Transform
Dairy
Net

How can we measure play?

Automatic recording of calves' locomotor play with accelerometers

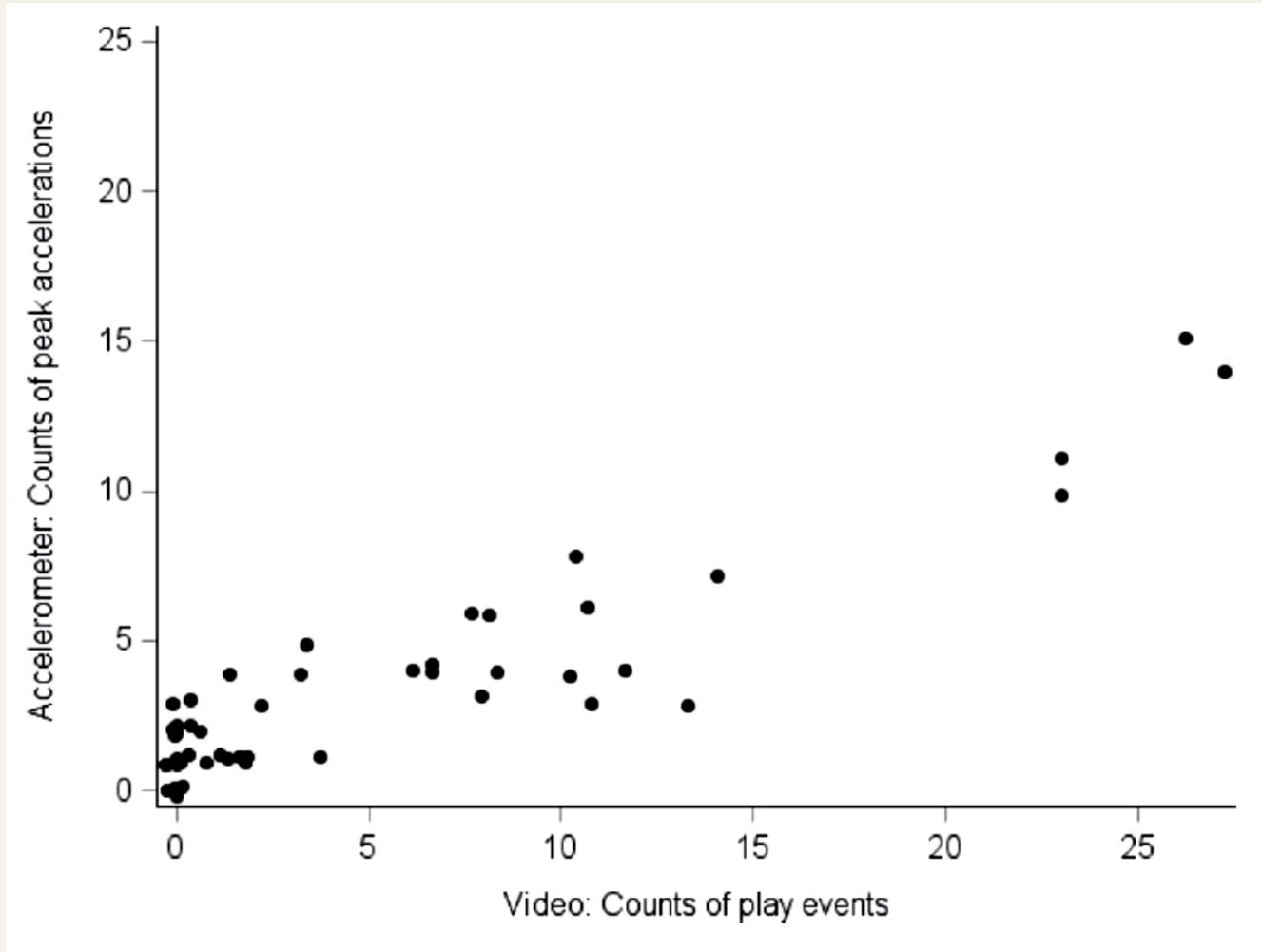


©Johanna Krebs



Transform
Dairy
Net

How can we measure play?



Play behaviour during weaning and separation



Transform
Dairy
Net

Comparison of calves' stress responses when separated with

Nose flap (NF)



or

Gradual reduction of cow-calf contact time (GR)



©Thünen Institut | J. Felix



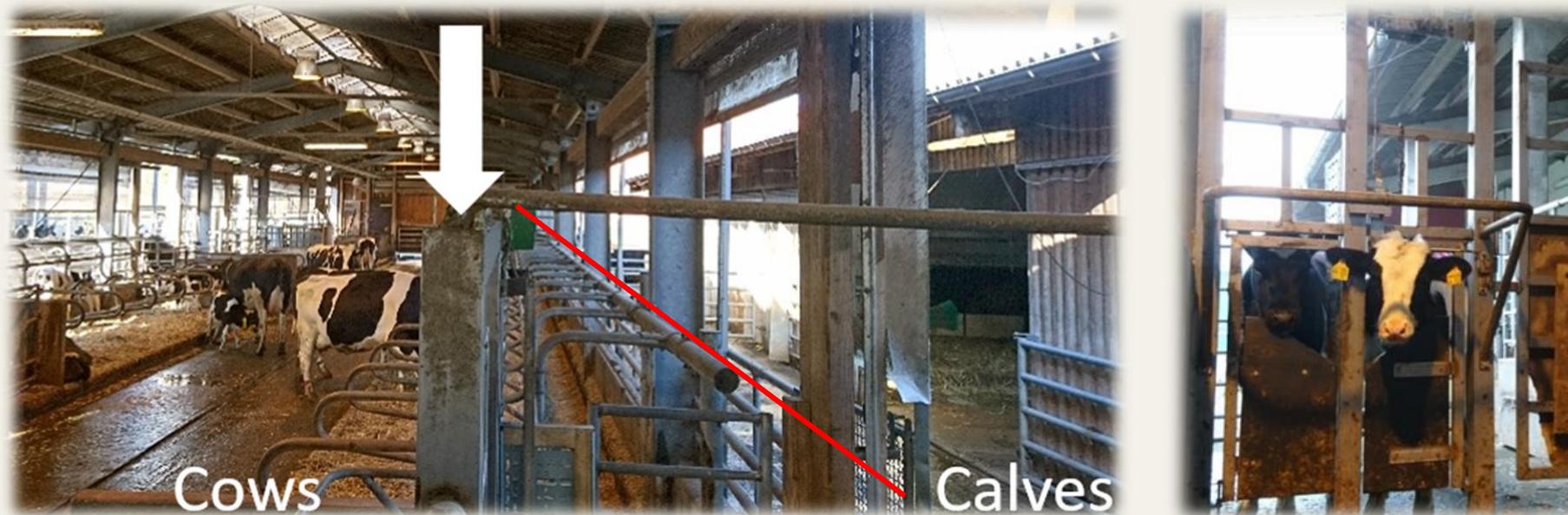
Transform
Dairy
Net

Methods

3 months old

WEANING AND SEPARATION START													TOTAL SEPARATION																							
Day relative to treatment start	...	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
NF Treatment	Full time cow-calf contact													Full-time contact with nose flap													Fence-line contact	Calf moved to Youngstock barn								
GR Treatment	Full time cow-calf contact													Half-day contact (8:30 a.m. - 3:30 p.m.)			Morning contact (08:30 a.m. - 12:00 p.m.)			Fence-line contact			Calf moved to Youngstock barn													

over 3 weeks



Cows

Calves

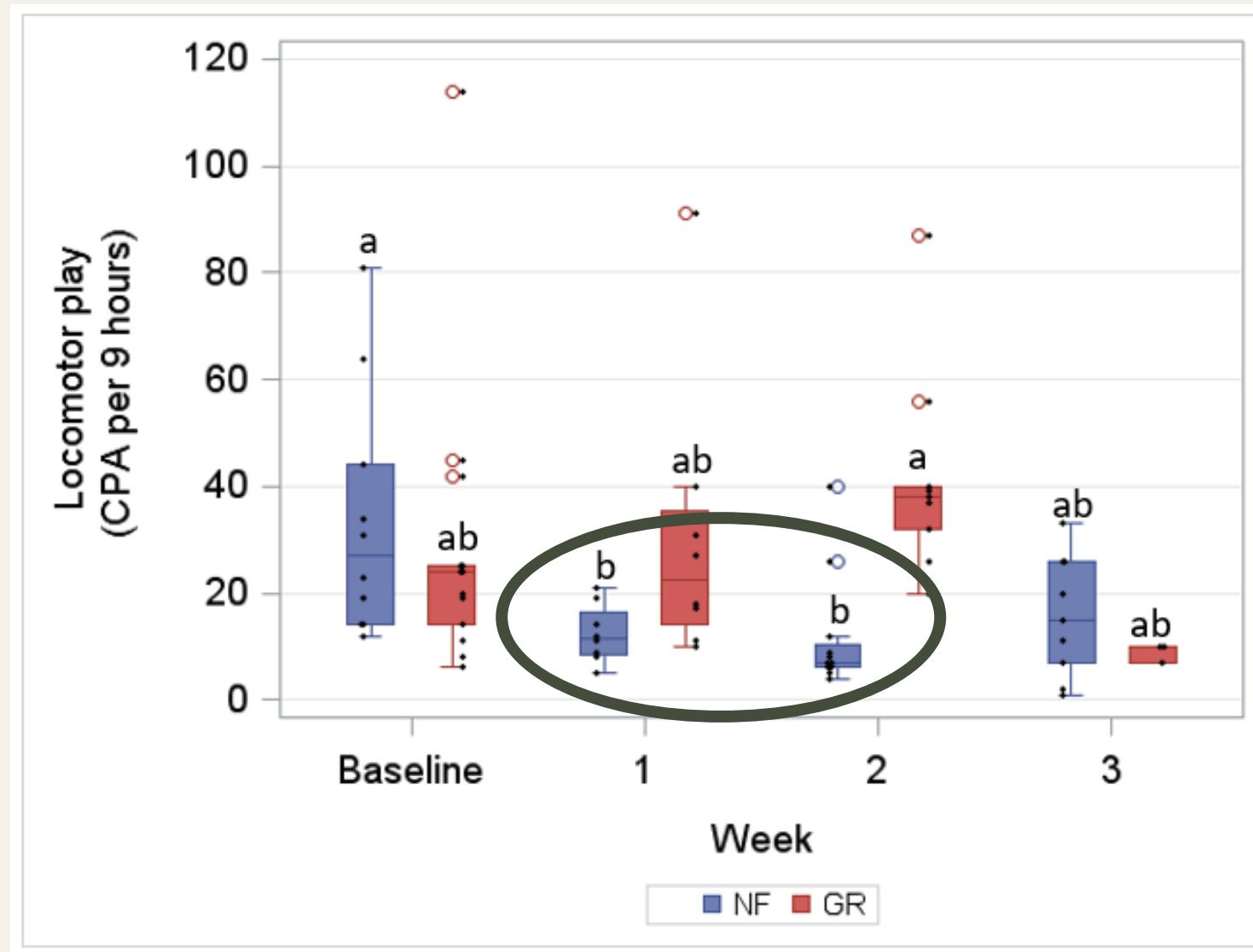
Results: Locomotor play

Measured:

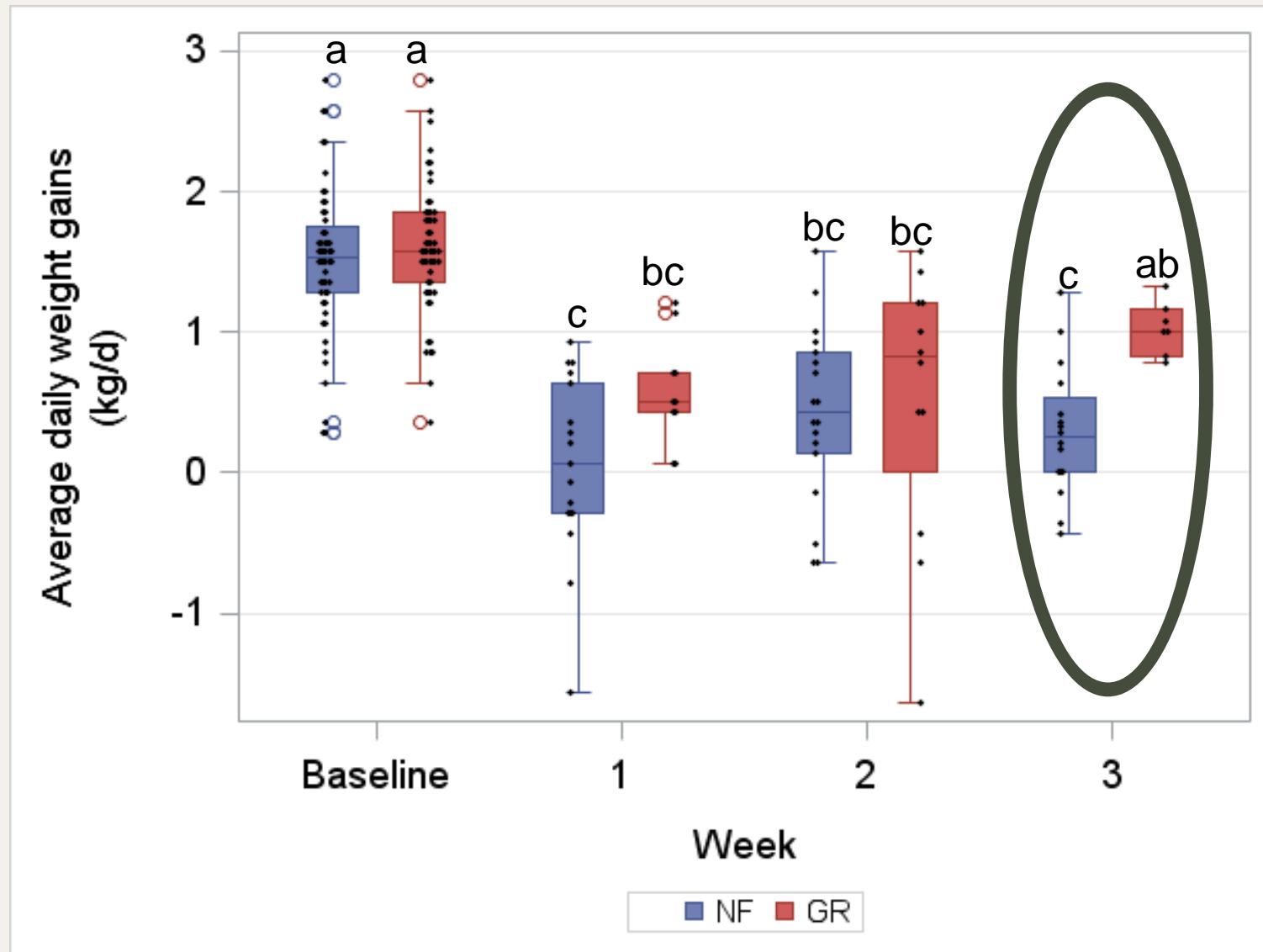
1 day per week
for 9 hours



Transform
Dairy
Net



Results: Weight gains



Transform
Dairy
Net

Conclusions

- Weaning has a negative effect on the amount of locomotor play in 3-month-old calves
- Play can be used as an indicator for (weaning) stress



Transform
Dairy
Net

Thank you for your attention



Transform
Dairy
Net