

Special needs housing from the cow's perspective

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What do I mean by 'special needs'?

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The maternity
pen

What happens in a natural setting?



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What happens in a natural setting?



Lidfors et al., 1994



Photo courtesy of Gosia Zobel

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What about indoors?



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What do we currently do?



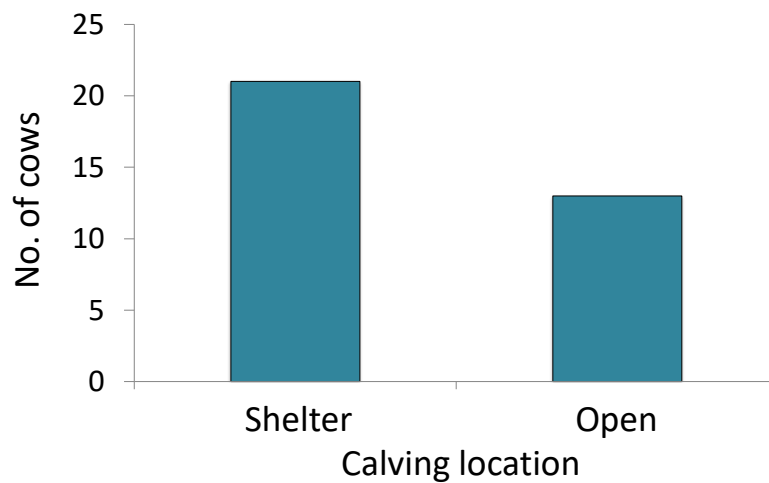
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Single-housed cows preferred the shelter

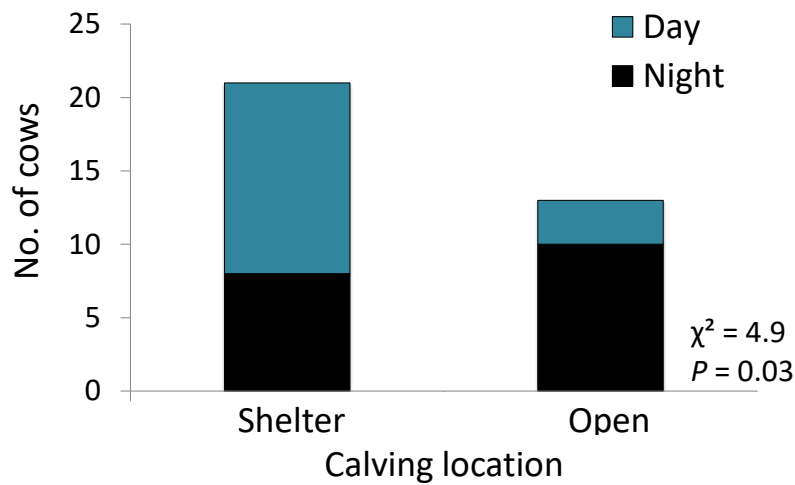


Proudfoot et al., 2014

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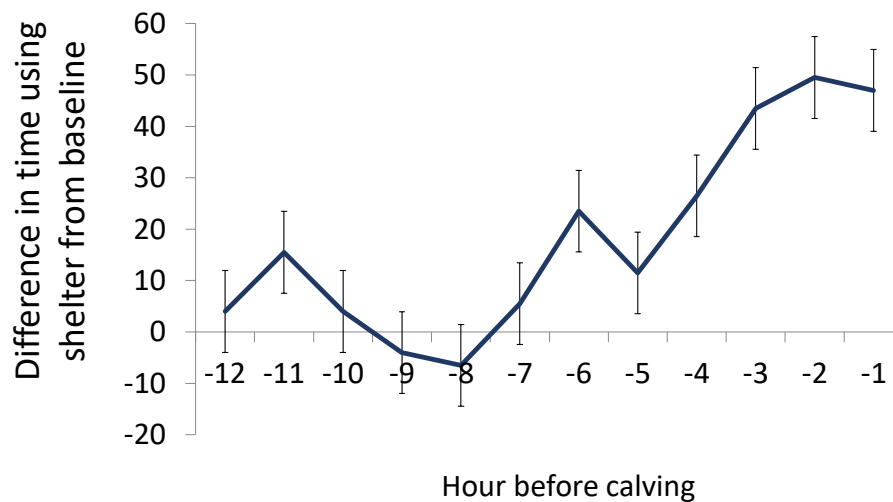


Preference was strongest during the day



Proudfoot et al., 2014

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Proudfoot et al., 2014

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More practical?



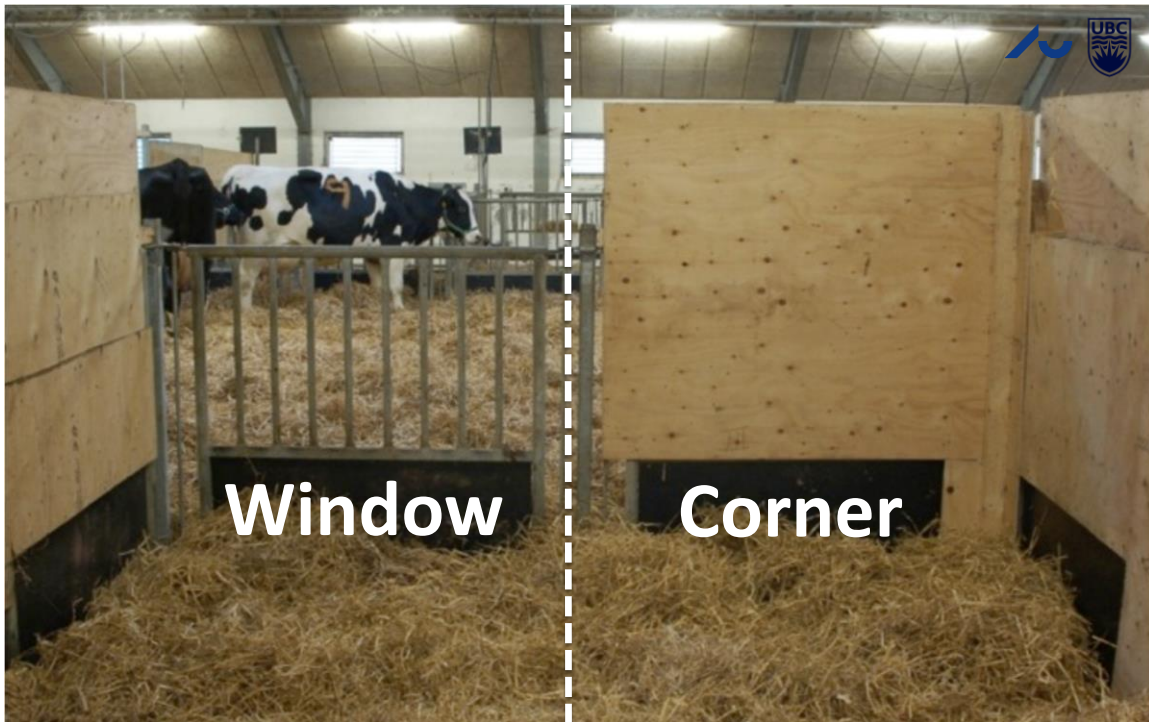
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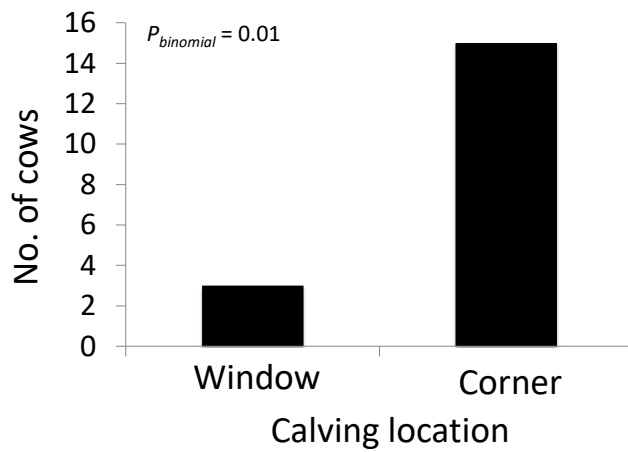
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Cows preferred to calve in the corner



Proudfoot et al., 2014

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What about groups?



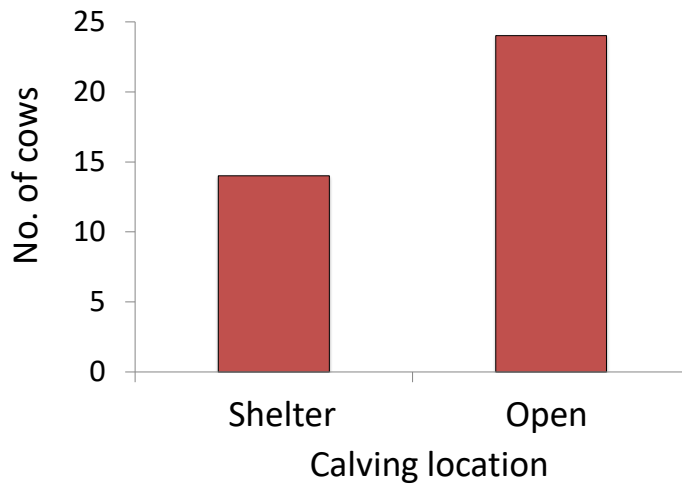
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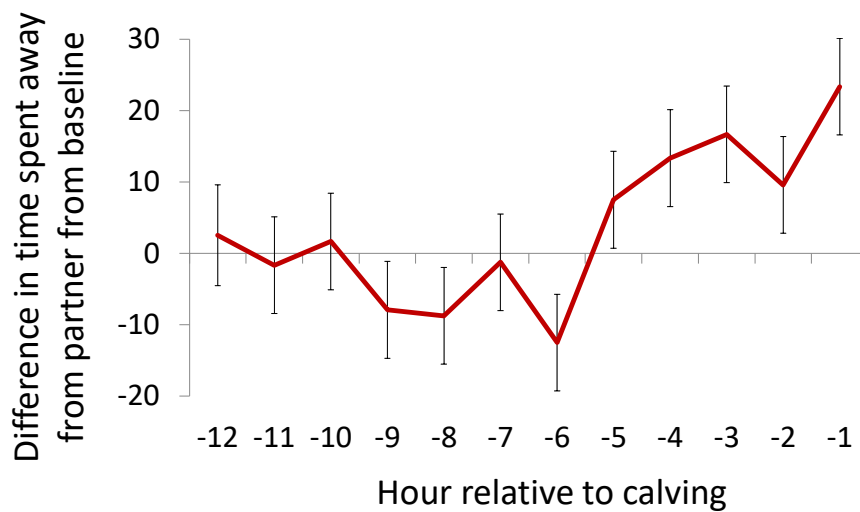


Pair-housed cows avoided the shelter



Proudfoot et al., 2014

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Proudfoot et al., 2014

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Creating seclusion in group pens?

1. Provide space
2. Provide a physical barrier
3. Limit competition for the barrier

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Provide space?



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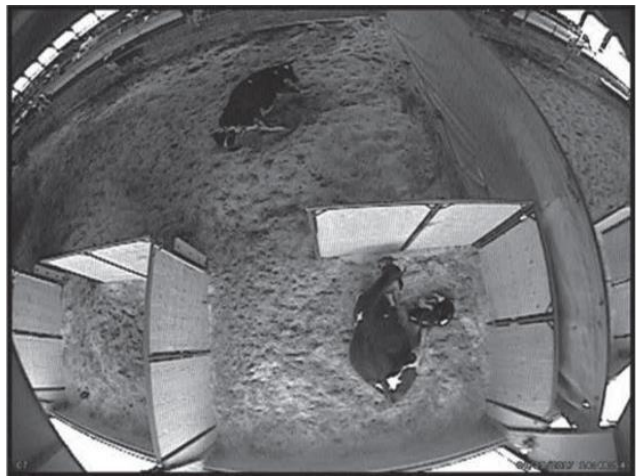


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Provide physical barrier?



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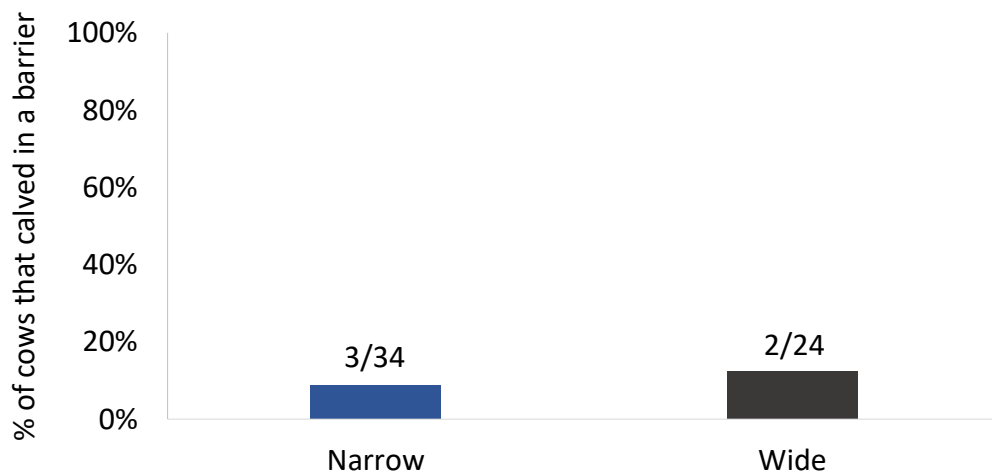
Provide physical barrier?



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Cows generally avoided the barriers

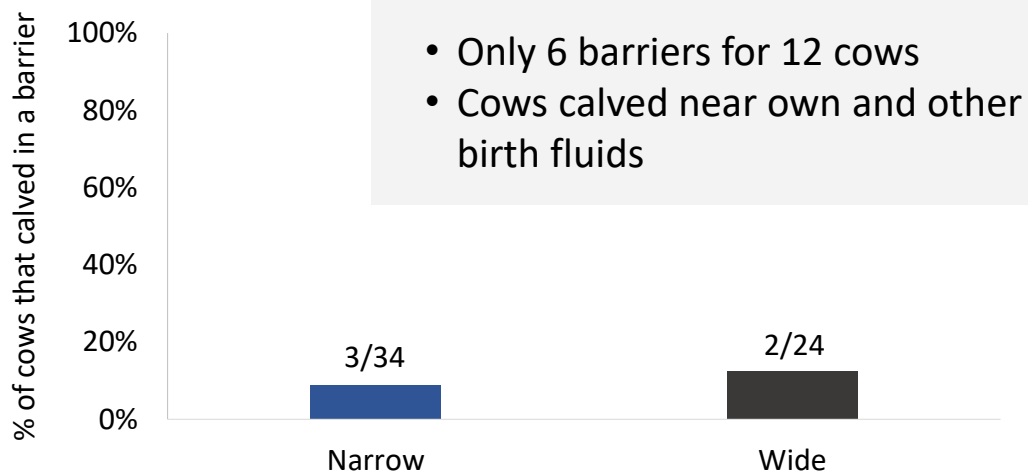


Jensen and Rørvang, 2018

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Cows generally avoided the barriers



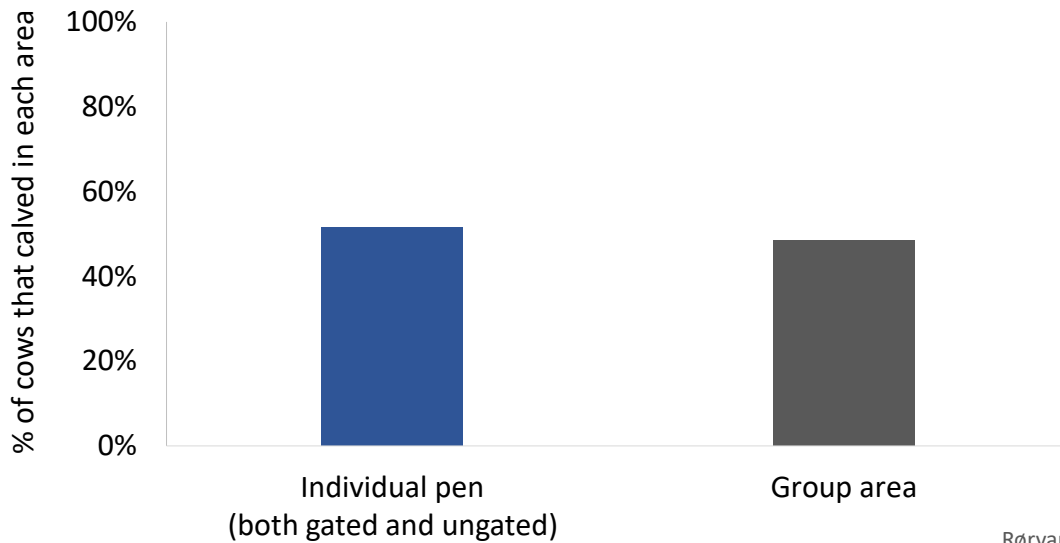
Jensen and Rørvang, 2018

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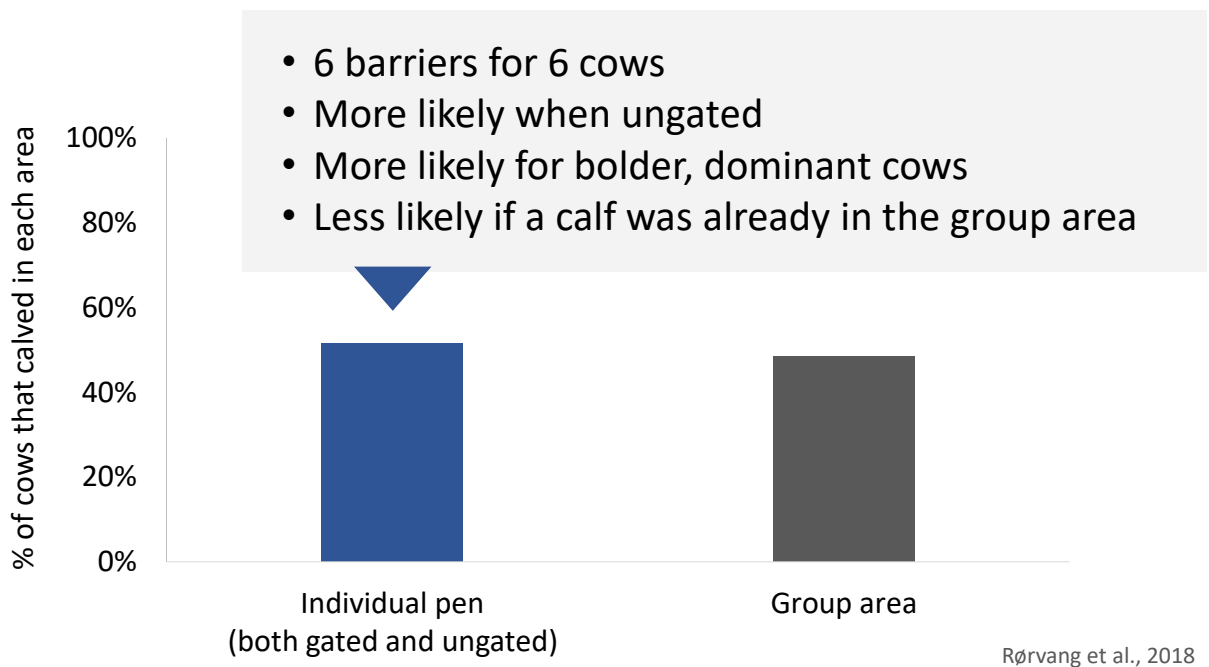
Self-isolation?



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On-farm application

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Photo courtesy of Ken Nordlund

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Photo courtesy of Kayla Chapman and Vander Made Dairy, Ohio

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The hospital pen



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What behaviors change when dairy cows become ill?

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“Sickness behaviors” in dairy cows

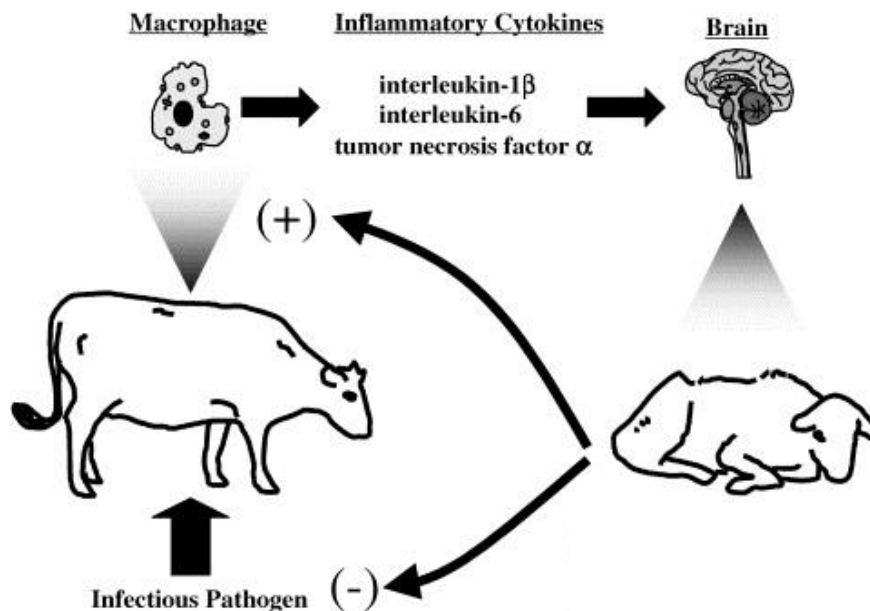
- ↓ Appetite, feeding behavior and rumination time
- ↑ Lying time (except cows with mastitis)
- ↑ Lethargy/fatigue/sleepiness
- ↓ Locomotor activity
- ↑ Pain sensitivity (hyperalgesia)
- ↓ Grooming (including brush use)
- ↓ Exploration and social behavior
- ↓ Less likely to use a robot milker

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Function of sickness behaviors

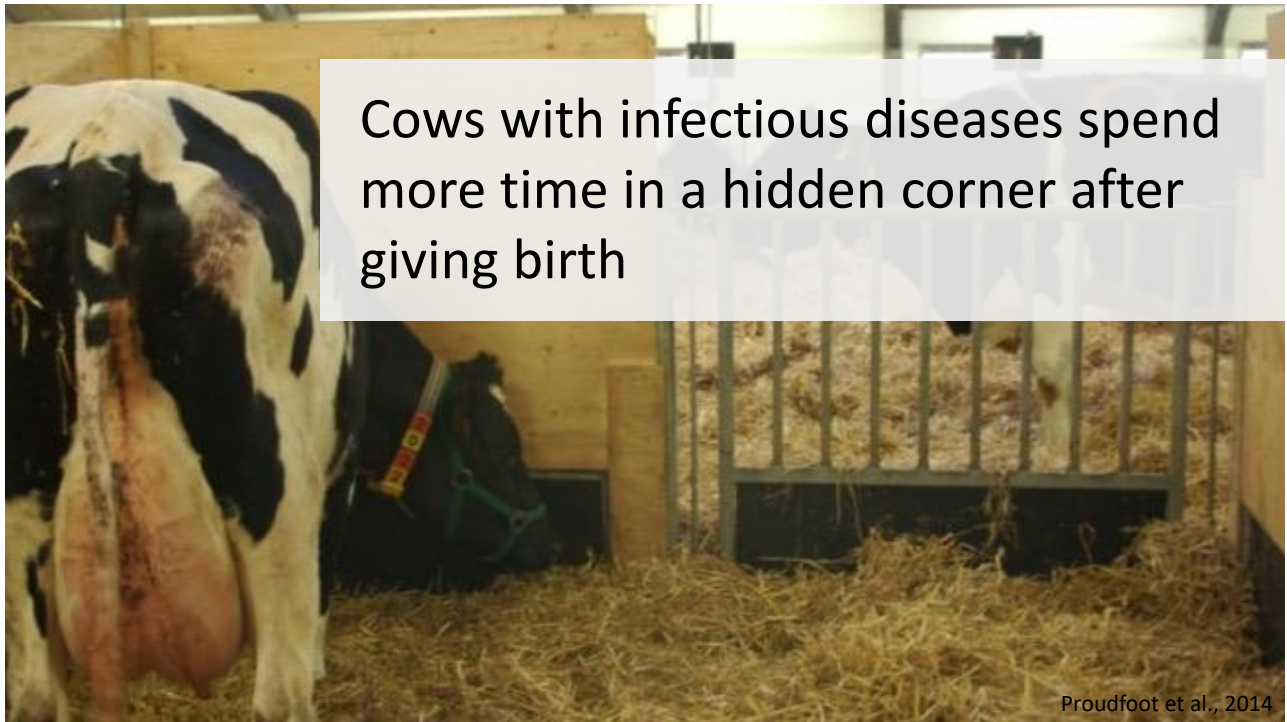
- **Energy-saving** behaviors to help mount a fever and immune response
- Coordinated by communication between the brain and immune system (**pro-inflammatory cytokines**)
- Essential for **disease recovery**

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Adapted from Johnson, 2002

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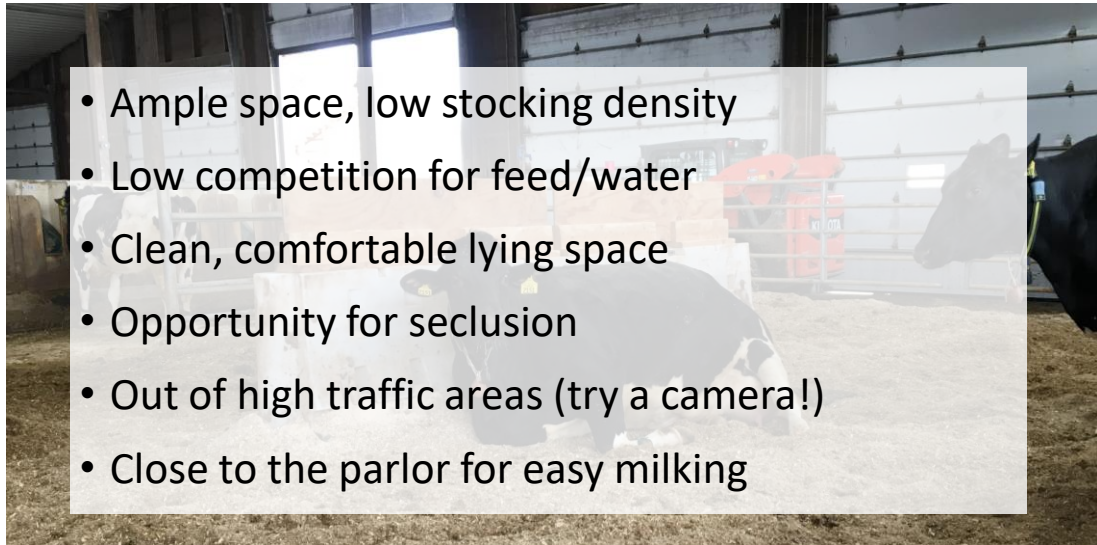


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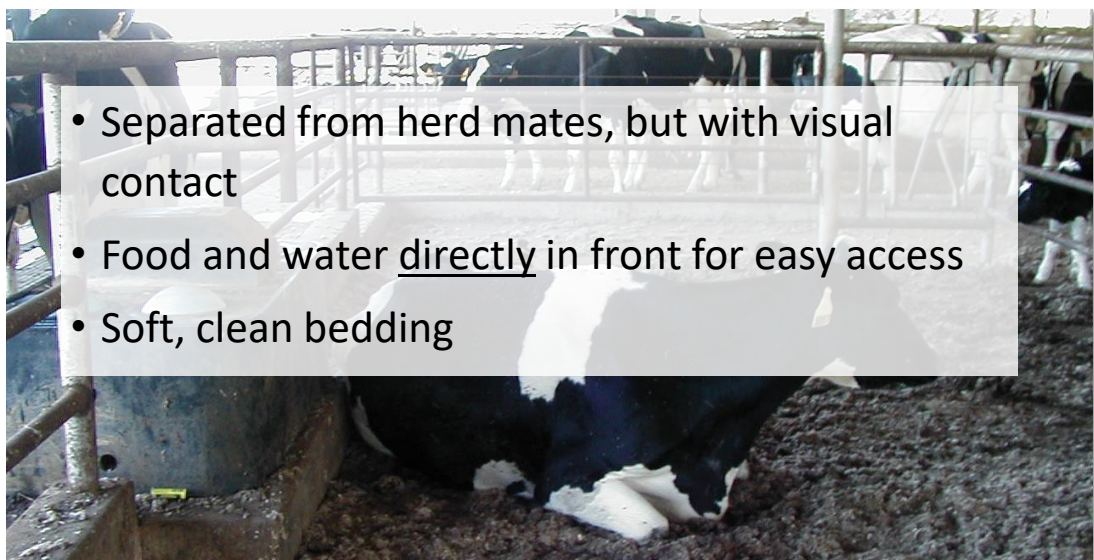
Create better maternity/hospital pens



- Ample space, low stocking density
- Low competition for feed/water
- Clean, comfortable lying space
- Opportunity for seclusion
- Out of high traffic areas (try a camera!)
- Close to the parlor for easy milking

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Non-ambulatory animals



- Separated from herd mates, but with visual contact
- Food and water directly in front for easy access
- Soft, clean bedding

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Thank You!

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