



Immunosuppression Around Calving: Causes and Consequences

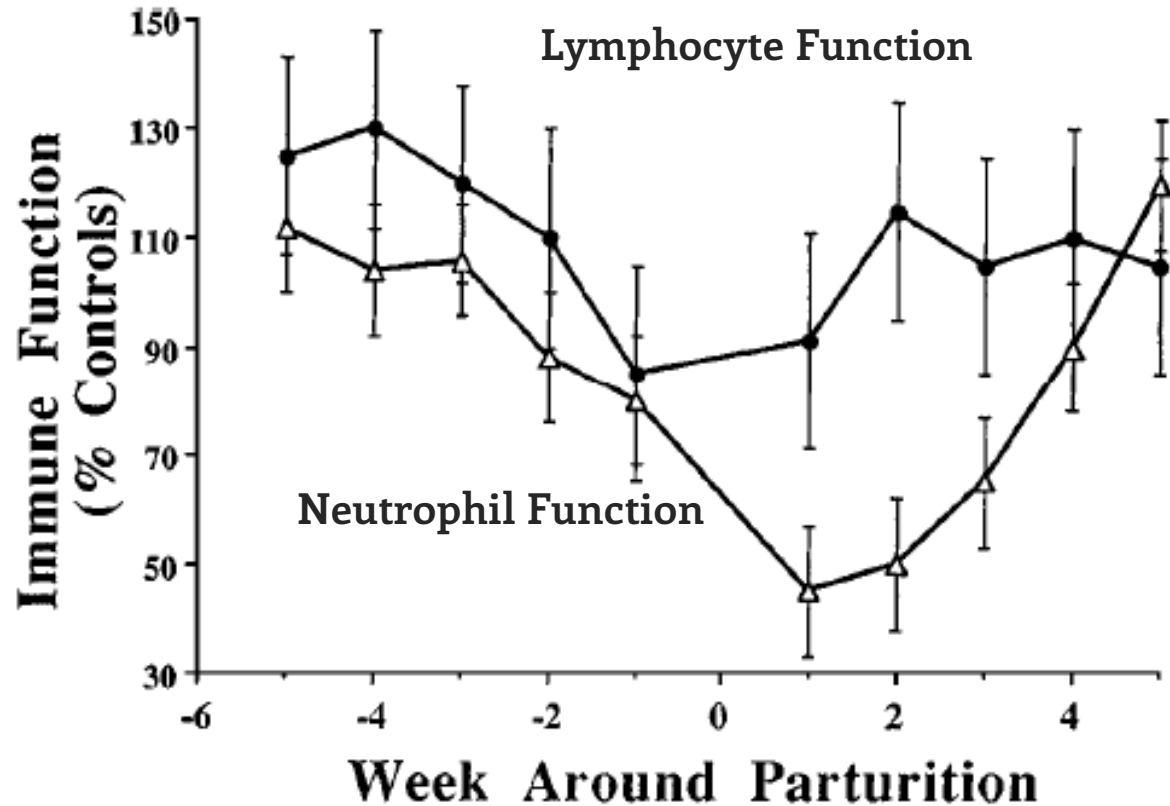
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KANSAS STATE
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IMMUNOSUPPRESSION AROUND CALVING

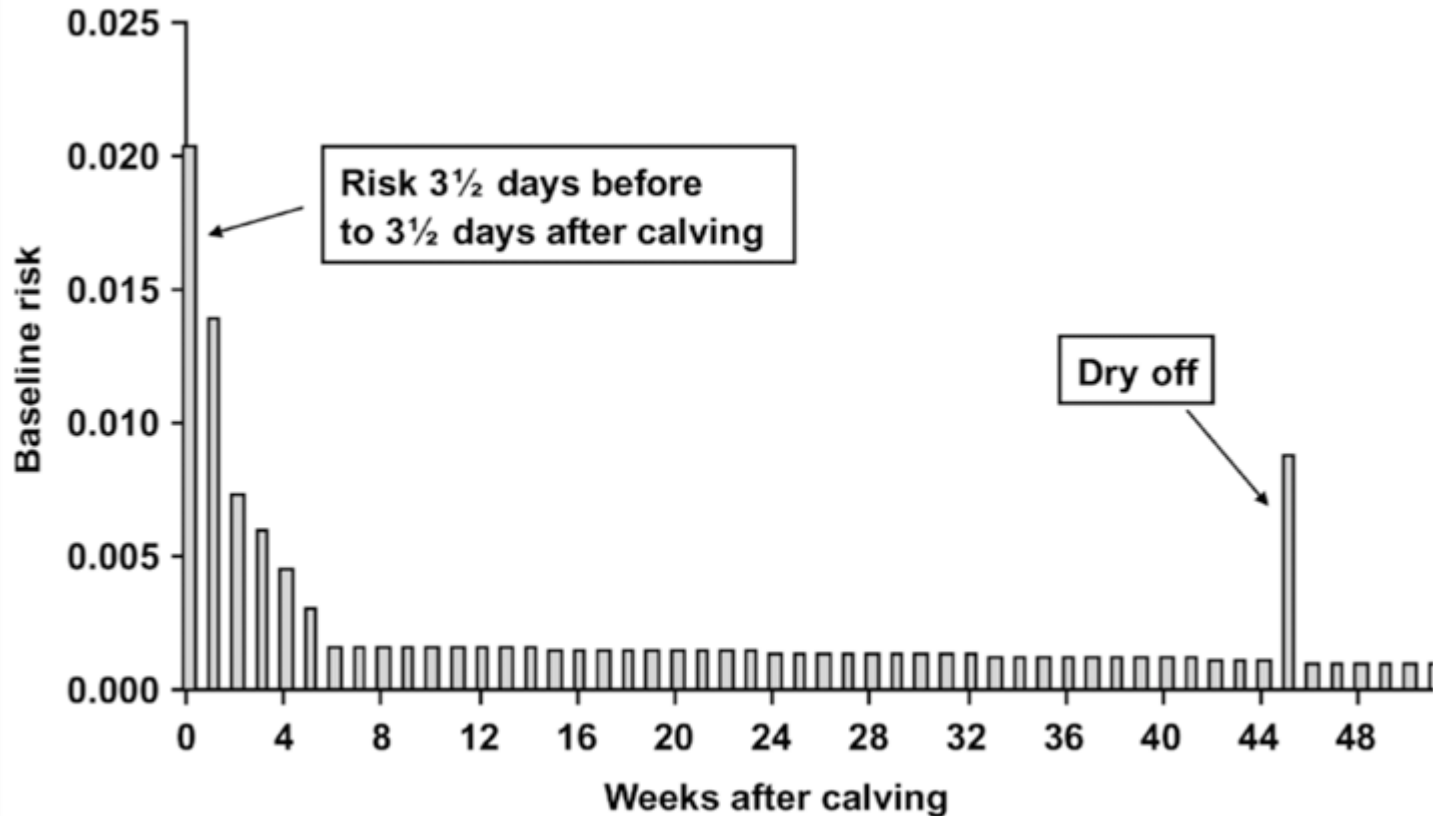
Transition Cows Have Decreased Immune Function





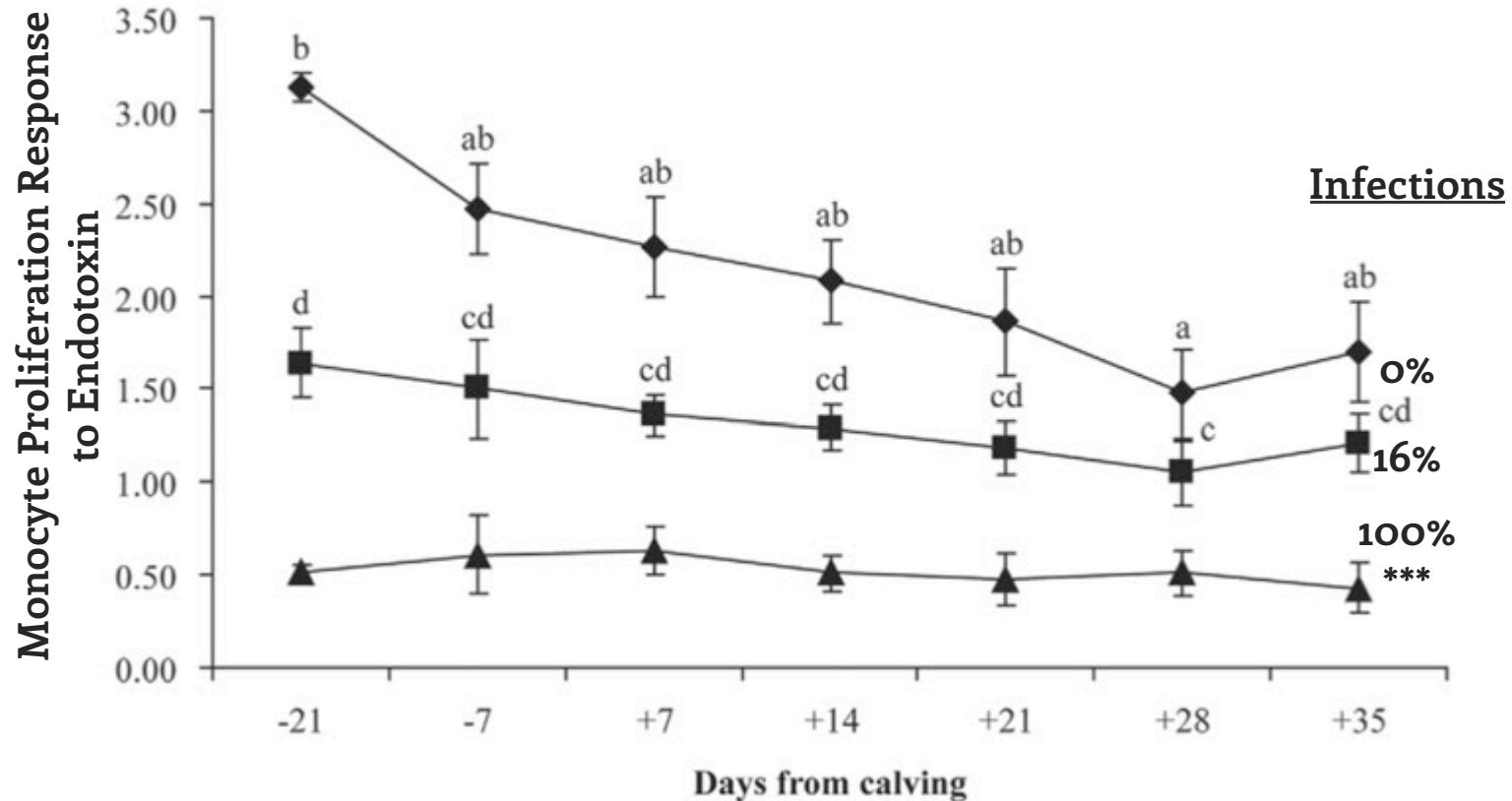
IMMUNOSUPPRESSION AROUND CALVING

...Which Corresponds with Greater Risk of Infection





IMMUNOSUPPRESSION AROUND CALVING ...Which Corresponds with Greater Risk of Infection





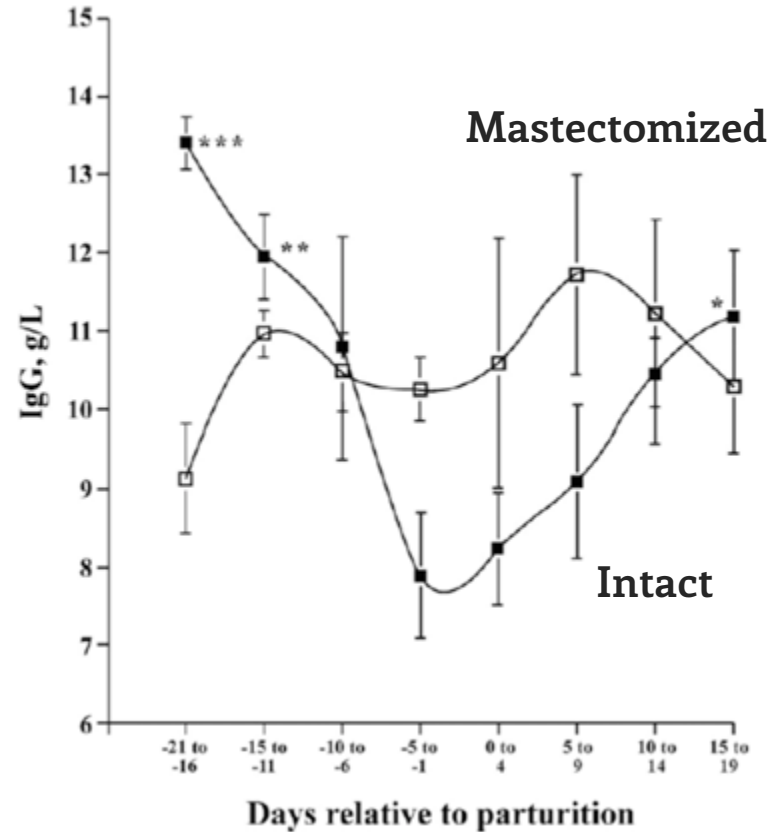
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What Factors Contribute to Poor Immune Function in Transition Cows?



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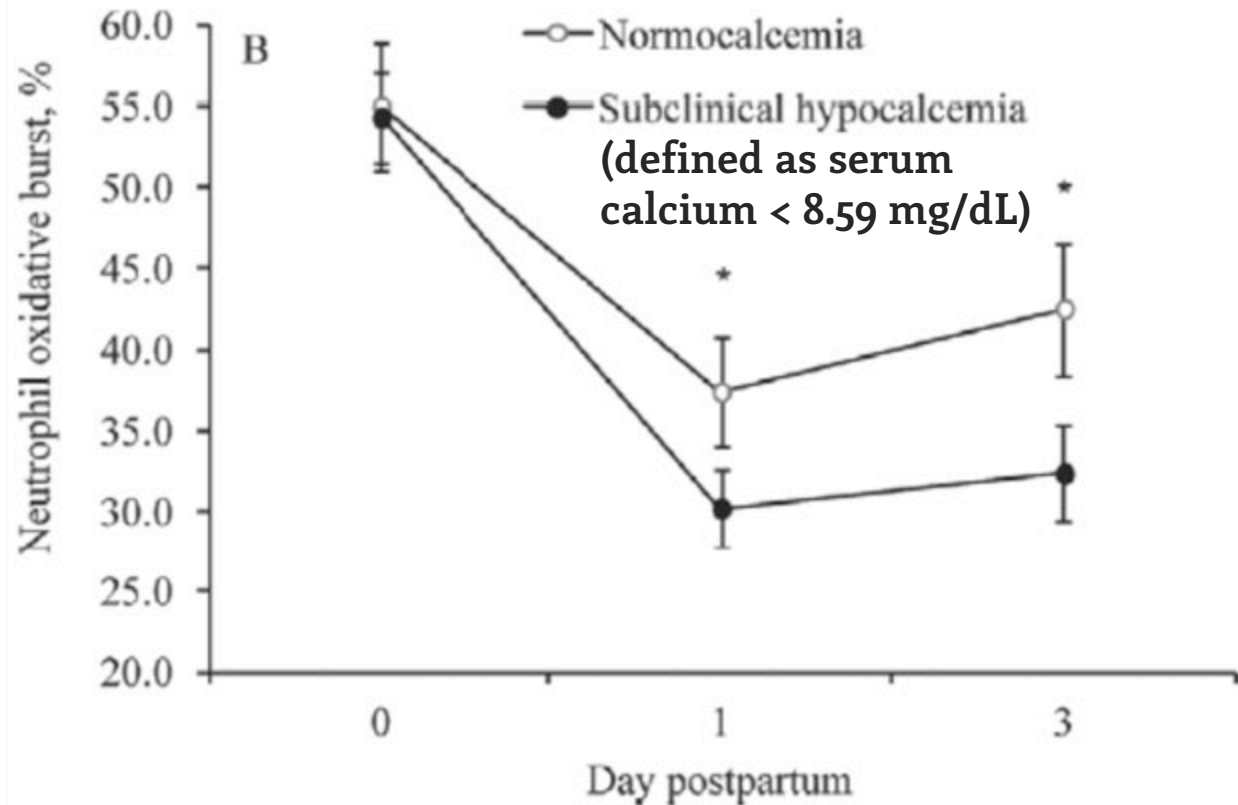
The Mammary Gland is to Blame?





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Hypocalcemia Impairs Immune Function





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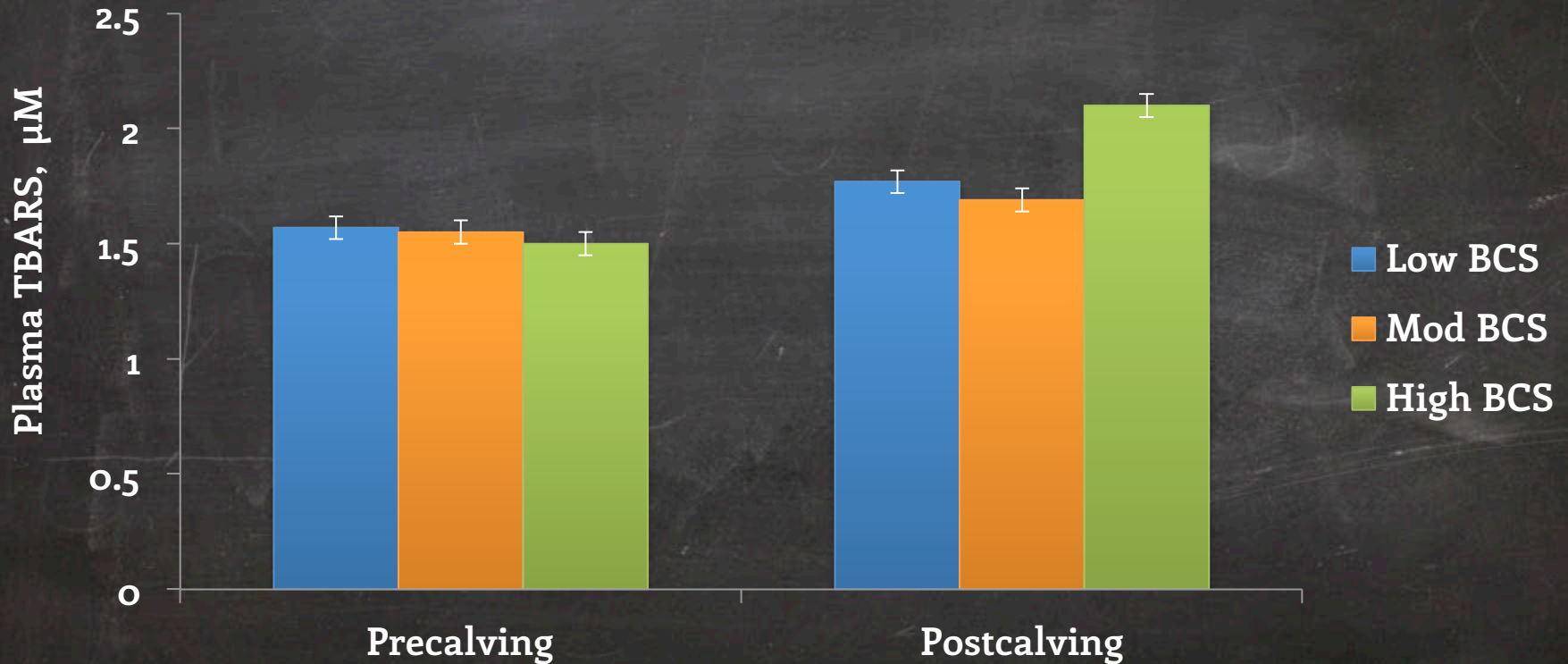
Oxidative Stress

- Lipid peroxide formation increases in the liver in early lactation cows
(Grum et al., 1996)
- Increased reliance on peroxisomal oxidation
- Increased delivery of fatty acids to the liver
 - More dramatic in overweight cows
- Oxidative stress activates inflammatory responses



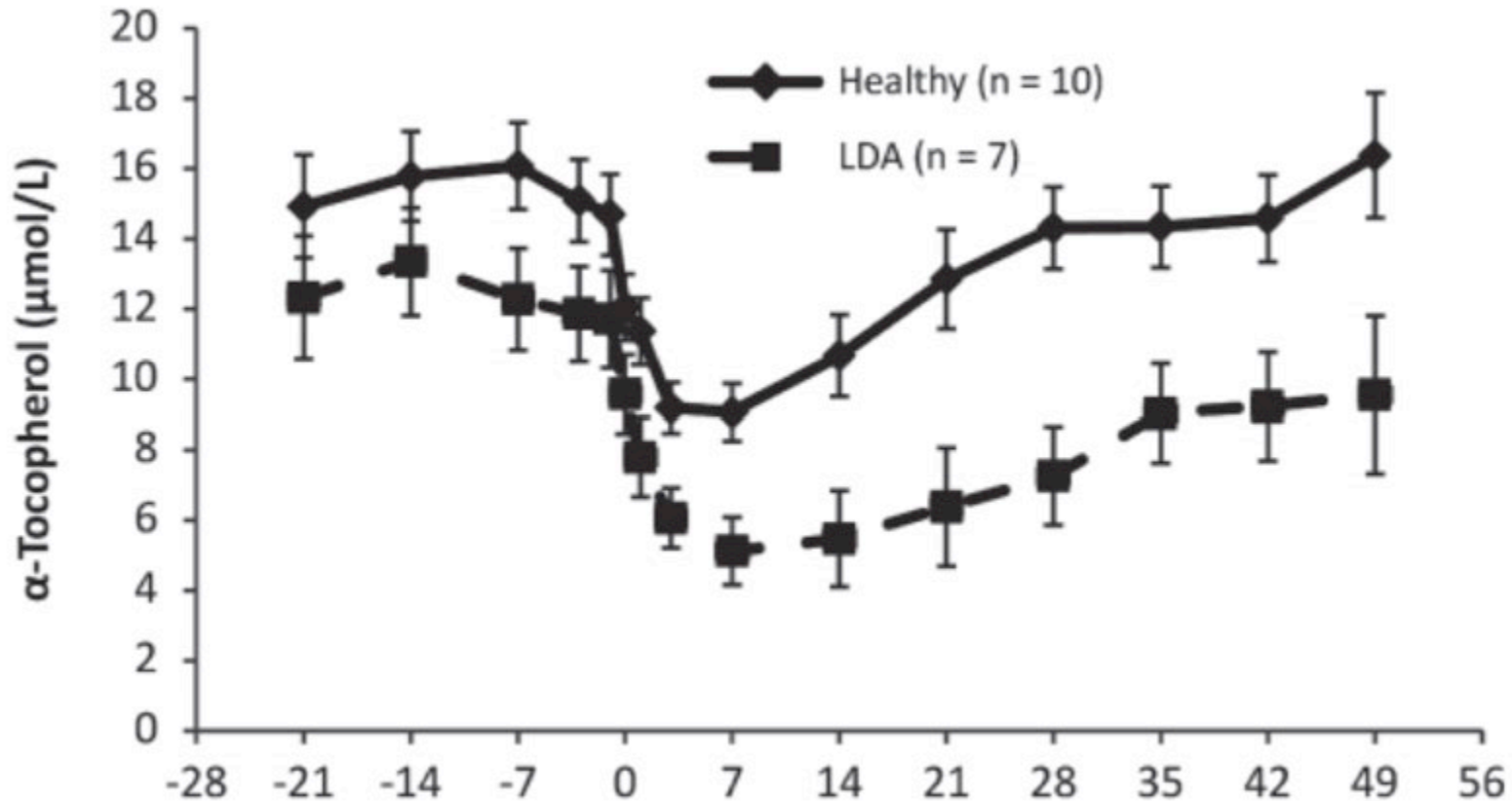
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Oxidative Stress in Overweight Transition Cows



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Vitamin E Status Declines During the Transition Period





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The Vicious Cycle

