Minimizing Immune System Dysfunction

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This is the control point of implementing a smooth transition for your dry cows.

The dairy cow's immune system has been shown to decline in responsiveness during the transition period, possibly a result of increased cortisol secretion associated with calving.

A compromised immune system may lead to an inability to properly respond to vaccinations as well as increased incidence of metritis, mastitis, or any other infectious disease process.

Although it is thought that hormonal and metabolic factors may play a primary role in this physiologic immune suppression, it can be further suppressed by nutritional insults.

Energy, protein, microminerals (copper, selenium, zinc) and fat-soluble vitamins A, D, and E are all nutritional mediators of immune function.

As previously discussed, most cows will experience some level of energy and protein deficiency during transition. All microminerals are efficiently transported into the fetus for storage and use after birth.

Both microminerals and vitamins A, D and E are concentrated in colostrum, again for the benefit of the calf. These fetal losses, in addition to reduced intake during transition, may place the cow in a precarious position relative to nutritional support of immune function during this critical period.

In summary, it is absolutely essential that the pregnant cow receive an adequate amount of all minerals and vitamins to support both maternal immune function and fetal development throughout the duration of gestation to minimize deficiency disease problems of either the dam or newborn calf.

Good Nutritional Practices:

- Properly balance dietary mineral and vitamin concentrations to match observed dry matter intake
- Ensure that daily intake for minerals and vitamins meets the new NRC requirements
- The vitamin A and E requirements have been increased for the transition period
- Force feed minerals rather than offer free choice
- Use more highly available mineral sources (chelates, proteinates)
- Minimize stress from overcrowding, transportation, environment and pathogen load