Effect of Postruminal Glutamine Supplementation on Immune Response and Milk Production in Dairy Cows. By Doepel et al., page 3107. Glutamine, a nonessential amino acid, was abomasally infused at a rate of 300 g/d in lactating dairy cows for 21 d immediately after calving. Glutamine supplementation had limited effects on milk production and immune function. However, it did alter nitrogen metabolism in the cow, causing a reduction in total plasma essential amino acid concentrations and an increase in urea-N concentration.