Effect of urea supplementation on urea kinetics and splanchnic flux of amino acids in dairy cows.

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It has been suggested that large absorption of ammonia would impose a penalty to the ruminant by increasing hepatic removal of amino acids to support increased synthesis of urea. The aim of this project was to determine, in lactating dairy cows, whether increased hepatic ureagenesis would affect hepatic removal of amino acids. Hepatic ureagenesis accounted for all whole body urea production and both increased with urea supplementation. Neither liver removal of essential amino acids nor milk protein yield was affected by urea supplementation. Recycling of urea into the gut and its partition between anabolic and catabolic fates were also unaltered by treatment. Saliva contributed to 0.31 to 0.50 of urea gut entry rate. In cows producing 32 kg/d of milk and fed a diet supplying 157g CP/kg DM, increased hepatic ureagenesis did not result in decreased post-liver supply of essential amino acids and subsequent milk protein yield.