During exercise, blood levels of several hormones increase acutely. We hypothesized that consumption of a specific combination of amino acids (arginine, alanine, and phenylalanine; A-mix) may be involved in secretion of glucagon, and when combined with exercise may promote fat catabolism. Ten healthy male volunteers were randomized in a crossover study to ingest either A-mix (3 g/dose) or placebo (3 g of dextrin/dose). Thirty minutes after ingesting, each condition subsequently performed workload trials on a cycle ergometer at 50% of maximal oxygen consumption for 1 h. After oral intake of A-mix, the concentrations of plasma ketone bodies and adrenalin during and post-exercise were significantly increased. The area under the curve for glycerol and glucagon was significantly increased in the post-exercise by A-mix administration. These results suggest that pre-exercise ingestion of A-mix causes a shift of energy source from carbohydrate to fat combustion by increasing secretion of adrenalin and glucagon.

Here, Ueda et al. propose that pre-exercise ingestion of A-mix, Ala-Arg-Phe mixture, increased fat catabolism during and post-exercise.