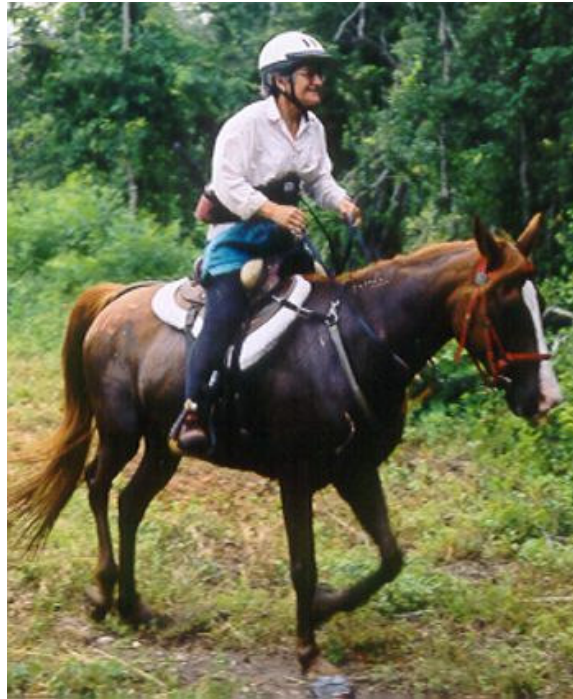


Energex Trial Data



Is there a need for “energy boosting” supplements in endurance?

Energex Trial Data

- Prolonged exercise can result in depletion of muscle and liver glycogen
- When muscle glycogen is depleted the horse can continue to exercise on fat, but at a slower speed
- When liver glycogen is depleted blood glucose cannot be maintained
- When blood glucose drops below ~ 4 mmol/l in people they experience fatigue and dizziness

Energex Trial Data

- In a 160km race ride in temperate conditions in the UK, 40% of horses finished with a blood glucose <4 mmol/l whilst 25% finished with a blood glucose less than 3 mmol/l*
- 18% of the horses completing still had a blood glucose concentration <4 mmol/l 24h after the ride*

* Marlin, unpublished data

Energex Trial Data

Why not just feed glucose, sucrose or fructose or starch?

This was an approach tried by many endurance riders but as we now know the acute increase in plasma glucose is swiftly followed by a rapid increase in insulin and a rapid fall in plasma glucose. At the same time, the increased plasma glucose is essentially unavailable to muscle due to the increased insulin.

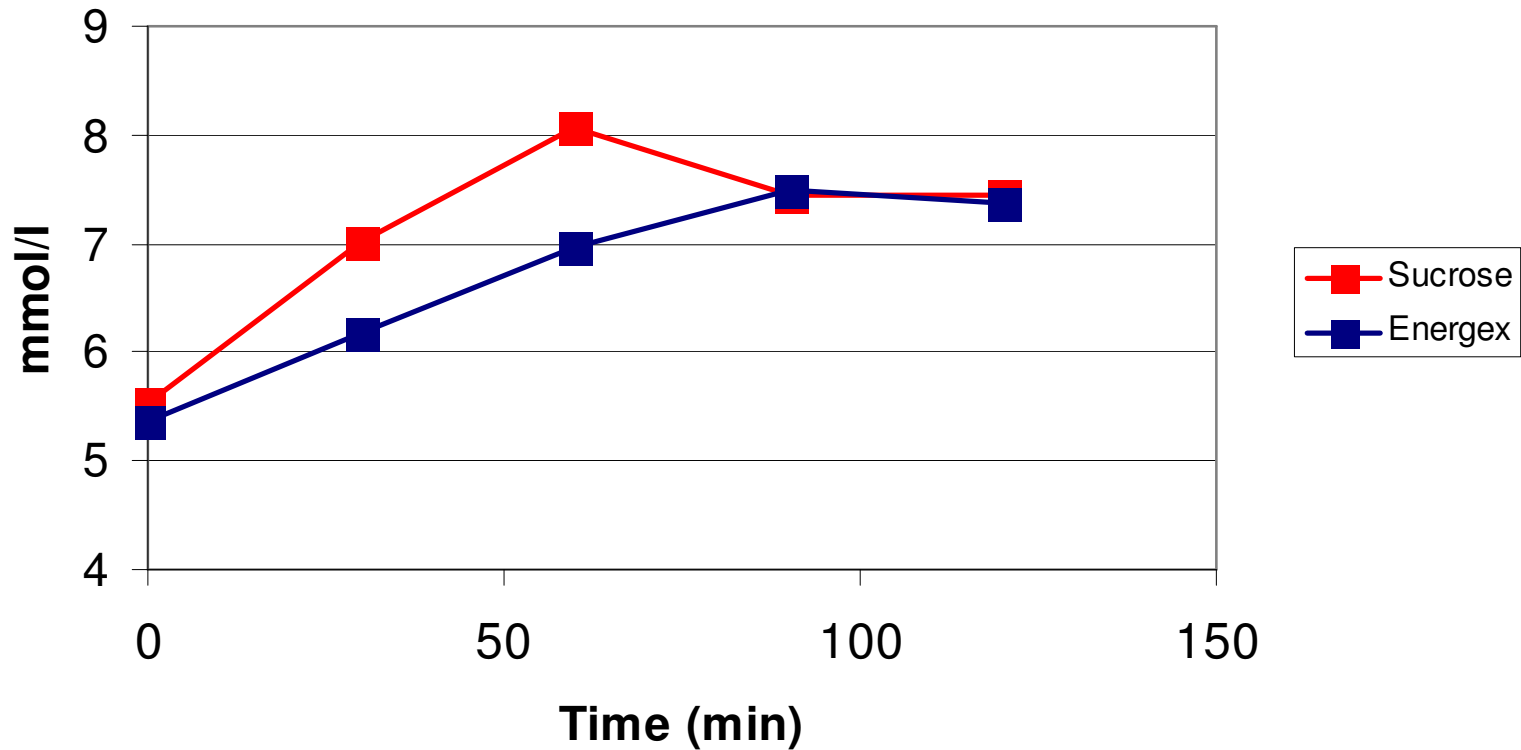
High insulin will also inhibit fat mobilisation and this in turn will limit fat utilisation

Energex Trial Data

- 6 horses were administered either Sucrose or Energex in 2 litres of water by stomach tube at time zero
- Balanced 3 x 3 cross-over design
- Blood samples collected by catheter

Energex Trial Data

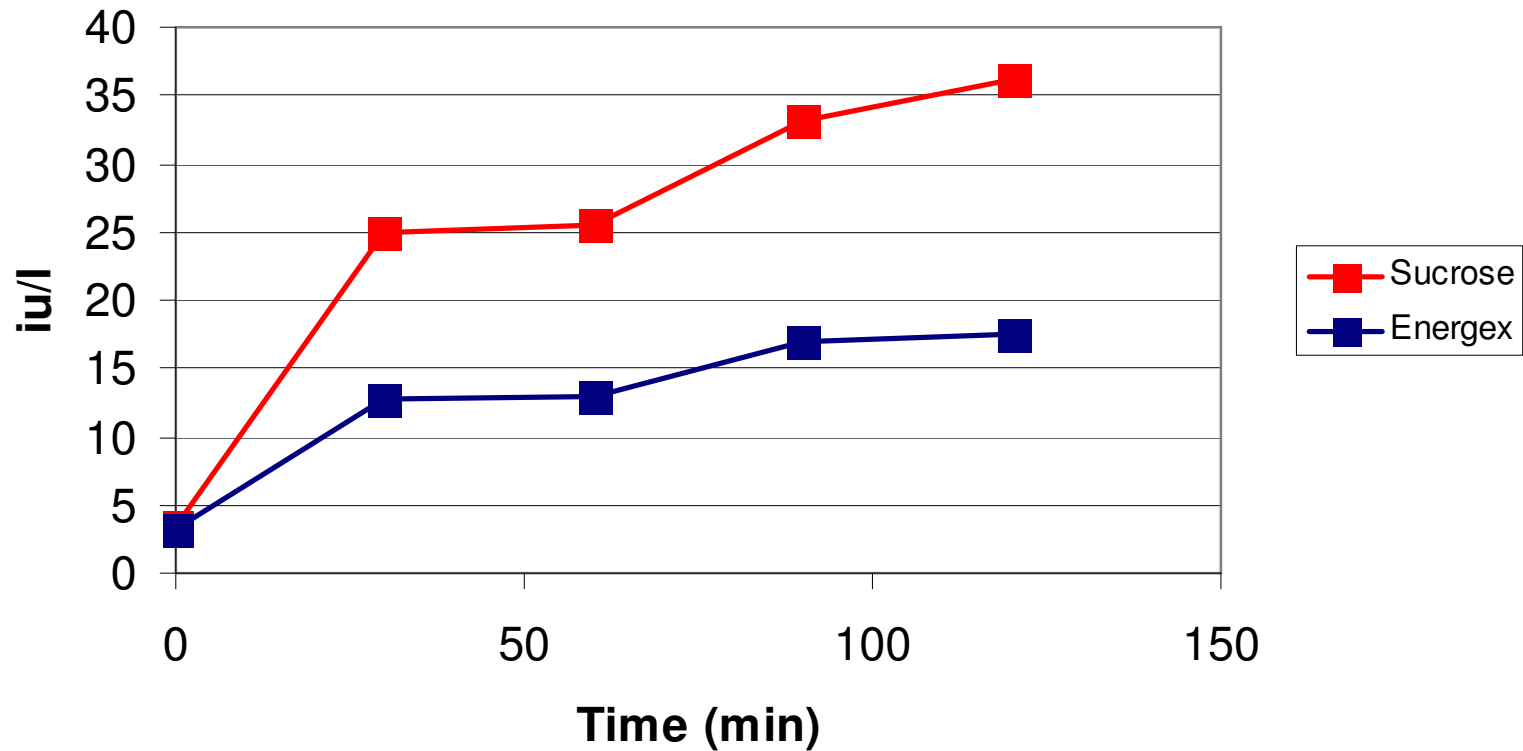
Plasma Glucose



Slower glucose release, lower and later peak with Energex

Energex Trial Data

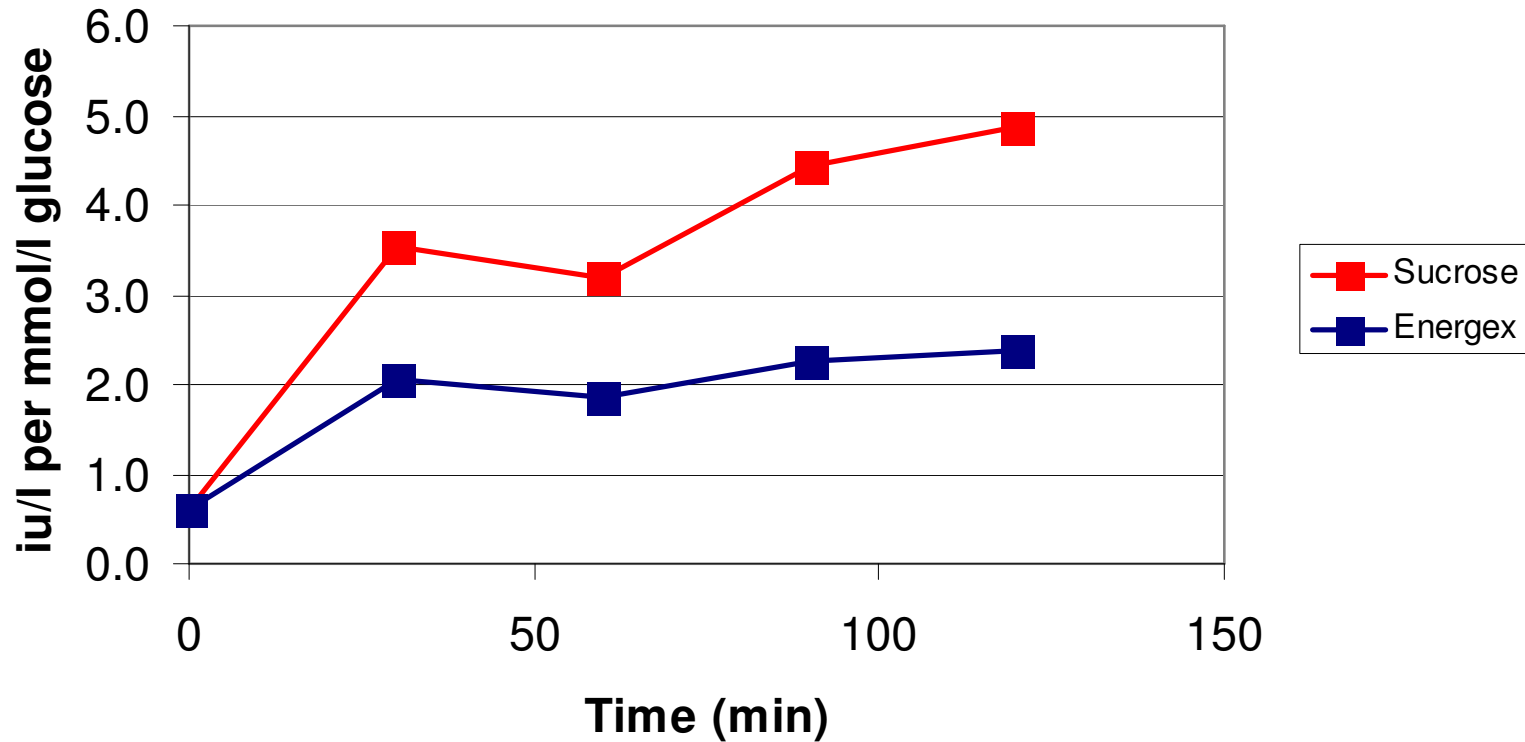
Plasma Insulin



Insulin increase halved with Energex

Energex Trial Data

Insulin/Glucose Ratio



Insulin increase per unit glucose increase halved with Energex

Energex Trial Data

- Energex produced (*compared with sucrose*):
 - A lower rate of increase in plasma glucose
 - A lower peak in plasma glucose
 - A later peak in plasma glucose
 - Half the insulin response of sucrose
 - An insulin increase per unit glucose increase of around half that of sucrose

In conclusion, Energex increases plasma glucose with only a small increase in insulin making the increased glucose available to the muscles and brain both during exercise to aid glycogen sparing and after exercise for optimal glycogen replenishment and recovery