

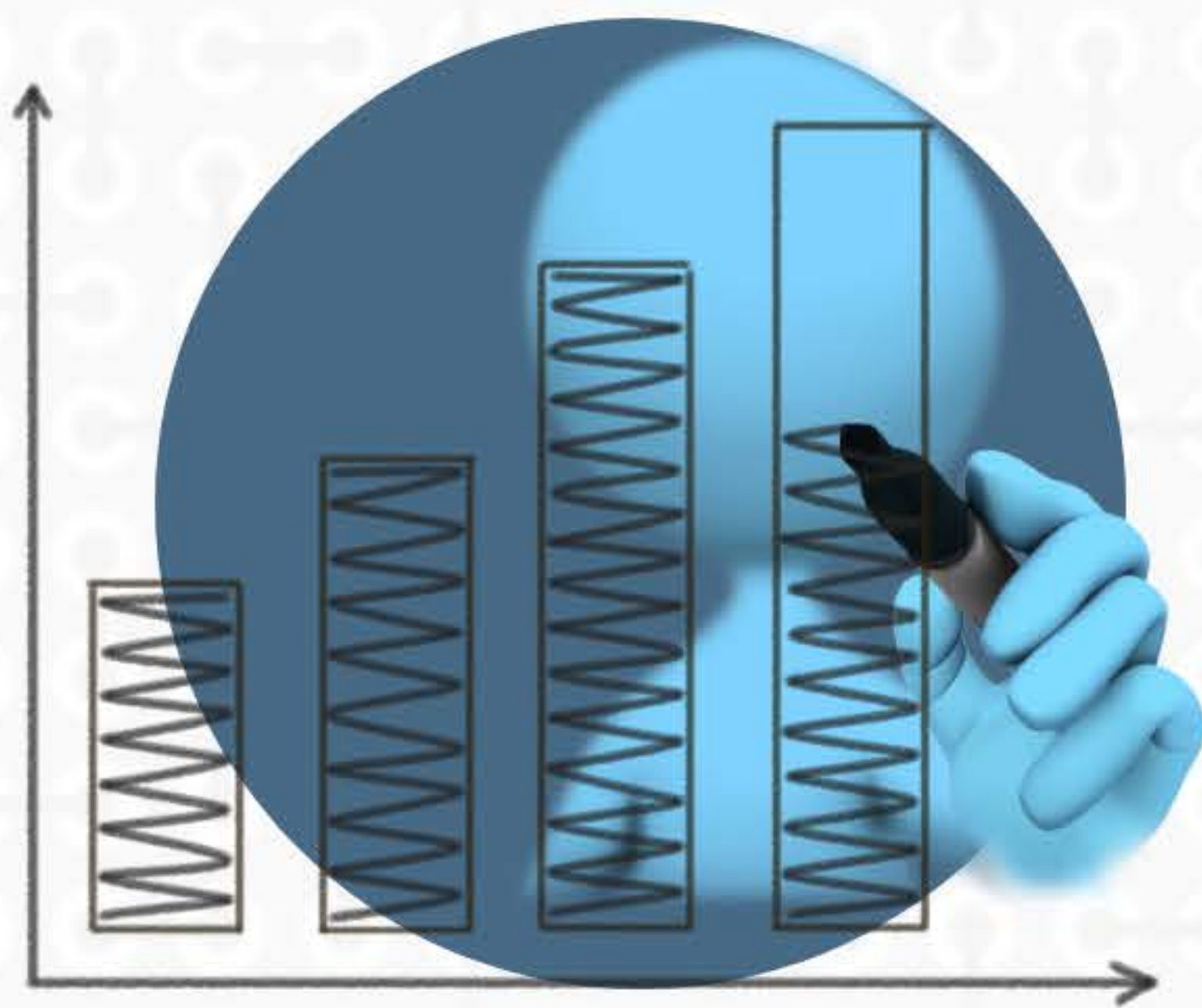
# Carbohydrate Timing, Metabolism & Fatigue

Reference: Menzies et al. IJSNEM 2020

Designed by @YLM Sport Science

6 well-trained runners were tested during prolonged treadmill running to exhaustion performed into 2 conditions

## FREQUENT



Ingestion of a 5g CHO-dose every 5 min during the first 75 min

## LATE BOLUS

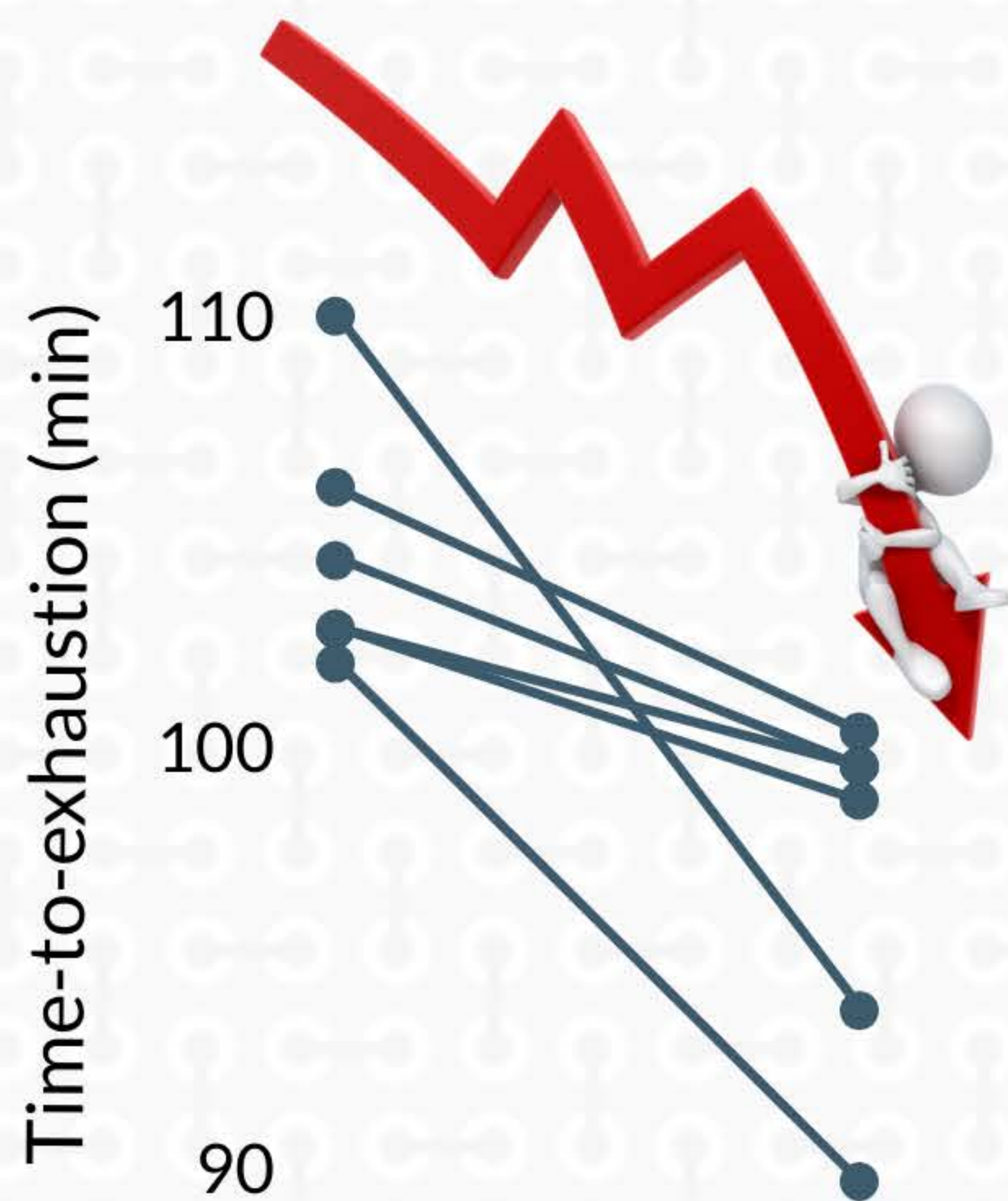


Ingestion of a single dose of 75 g after 75 min



Images provided by PresenterMedia

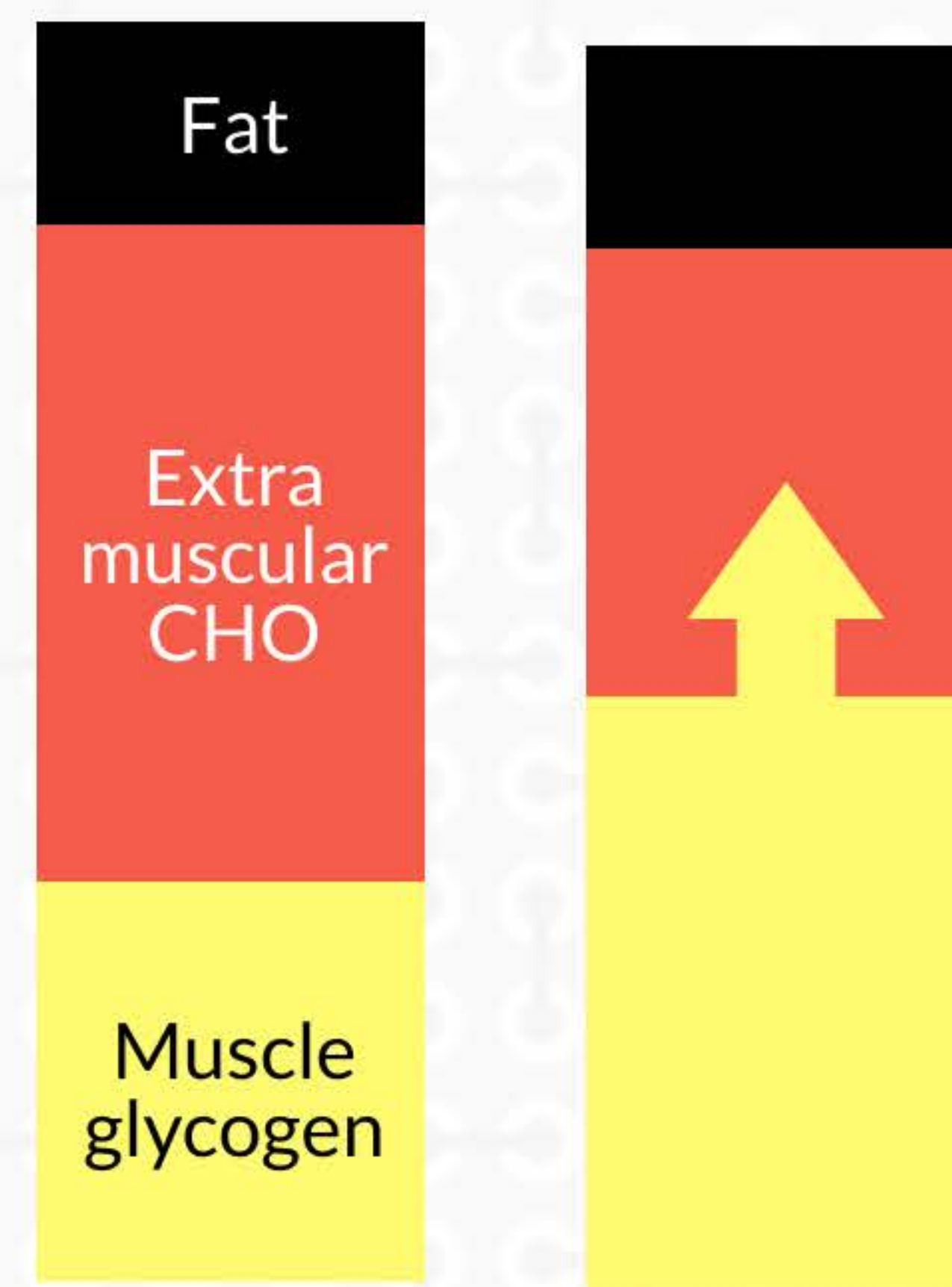
## RESULTS



Frequent

Bolus

Energy expenditure up to 75min



Frequent

Bolus

- 1 The muscle glycogen utilization rate was lower in every participant over the first 75 min of running when carbohydrate had been ingested frequently from the start of exercise
- 2 All of them were also able to run for longer compared with when carbohydrate was ingested as a single bolus toward the end of exercise
- 3 A moderate positive correlation was apparent between the magnitude of glycogen sparing over the first 75min and the improvement in running capacity

## CONCLUSION

Endurance runners should ingest carbohydrates in small, frequent doses and from the outset of prolonged running to spare muscle glycogen and to improve their performance

