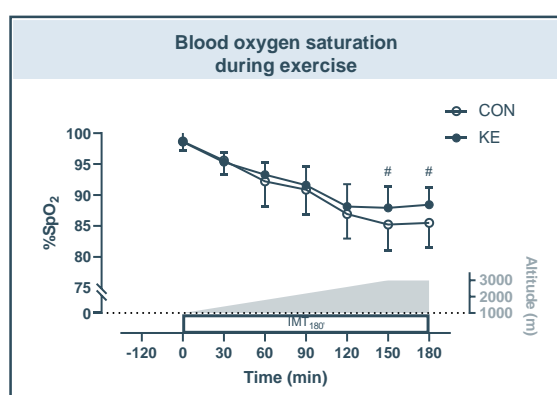
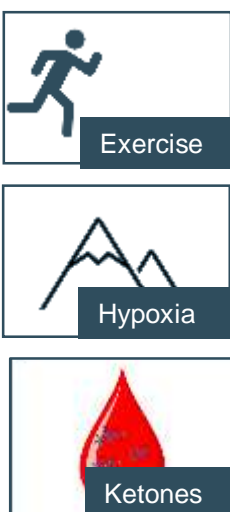


Ketones attenuate hypoxemia at altitude and prevent acute mountain sickness

1. Introduction



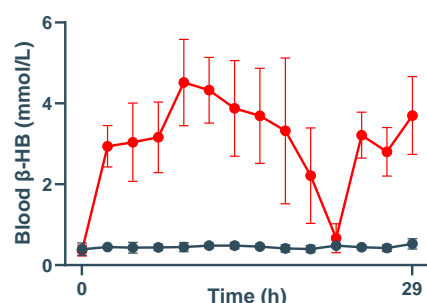
Poffé, C., et al., Am. J. Physiol. Integr. Comp. Physiol. (2021).

2. Protocol

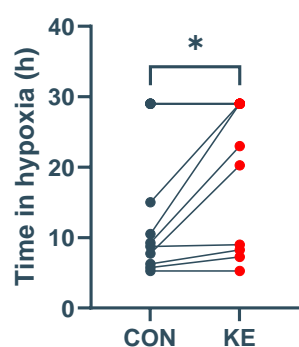
Schematic representation of the 29h normobaric hypoxic protocol.



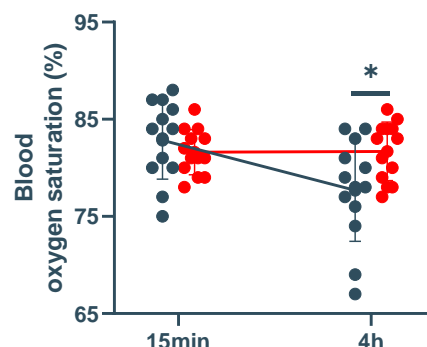
3. Results



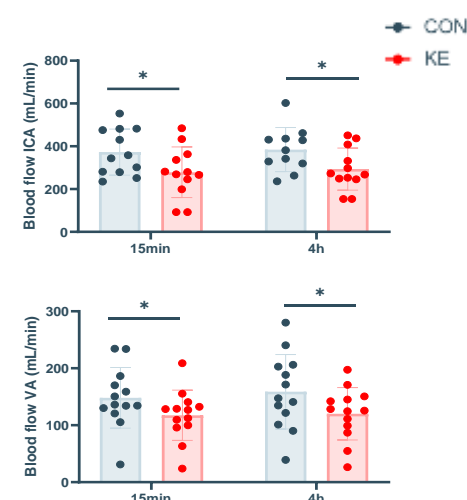
KE ingestion induced a stable ketosis.



Time in hypoxia increased by 32% (KE vs. CON) in all subjects and doubled in AMS-sensitive subjects.



After 15min: SpO₂ was similar in KE vs. CON. After 4h: SpO₂ had dropped in CON by ~5% (remained stable in KE).



Blood flow through the ICA and VA was consistently 21-25% lower in KE.

4. Discussion & conclusion

Exogenous ketone ester intake attenuates development of AMS by:

- improving arterial oxygenation
- increasing cerebral and muscular oxygenation
- lowering cerebral blood flow
- increasing sympathetic drive.

Higher cerebral oxygenation combined with lower cerebral oxygen supply indicates that ketosis can lower cerebral oxygen demand and consumption at high altitude.