Blood oxygen depletion in California sea lions
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Virtually all marine mammals dive as a natural part of their foraging behavior. Understanding the rate and magnitude of O₂ store depletion during diving is therefore important if we are to interpret and understand the physiological limits of dive performance and foraging ecology. We investigated blood O₂ depletion in the California sea lion, using a backpack partial pressure of O₂ recorder during maternal foraging trips. The sea lions exhibited greater tolerance to hypoxemia than predicted and venous PₐO₂ consistently increased during ascent from deep dives. It is hypothesized that blood O₂ uptake from the re-expanded lung during the “ascent tachycardia” will increase arterial and venous PₐO₂, contributing to the prevention of shallow water black out during the final ascent from deep dives.

Monday Sept 12th at 11.15 at Zoophysiology