{rokbox title=|a) Capture, on a barbless hook, of a juvenile Atlantic bluefin tuna (approx. 500g in mass) and placement into a Steffensen-type swim tunnel respirometer (volume 90 L) :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-swimming-respirometry-provides-reglero-2026-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-swimming-respirometry-provides-reglero-2026-et-al.jpg{/rokbox}

David J. McKenzie, John F. Steffensen, **Patricia Reglero**, **Edurne Blanco**,Vincent Kerzerho, Tristan Rouyer, Fernando de la Gándara, Aurelio Ortega,2026.
Swimming respirometry provides insights into the physiological energetics of juvenile Atlantic bluefin tuna Thunnus thynnus
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Abstract: Swimming respirometry was performed on juvenile (age 0+) Atlantic bluefin tuna, mass 565±90 g (mean±s.d., n=6), to measure elements of respiratory metabolism and exercise performance. At 19°C, the mean standard metabolic rate (106±48 mg O2 h−1) maximum metabolic rate (555±51 mg O2 h−1) and absolute aerobic scope (449±83 mg O2 h−1) were lower than mass-corrected rates of adult Pacific bluefin, but considerably higher than values in other active sympatric Mediterranean fishes at similar mass and temperature. The tuna ceased swimming at a speed of 2.0±0.2 body lengths s−1 (BL s−1). Video analysis revealed that the juvenile tuna cruised spontaneously at 3.1±0.6 BL s−1 (n=8) in their rearing tank, significantly faster than achieved in the tunnel. Extrapolation of respirometry data to 3 BL s−1 estimated a routine metabolic rate for swimming of over 650 mg O2 h−1. The results indicate that juvenile Atlantic bluefin tuna are high performance animals with elevated metabolic costs for their lifestyle of ceaseless swimming.

Keywords:Atlantic bluefin tuna,Kinematics,Routine metabolic rate, Spontaneous activity,Standard metabolic rate,Swimming respirometry