**Supplemental Digital Content 3. Doubly-labelled water method.**

The evening before each 10-day EA assessment Phase, a baseline urine sample was collected, followed by administration of a single DLW dose containing 174 mg/kg BW H218O and 70 mg/kg BW 2H2O. Ten consecutive daily urine samples were then collected. Urine was stored at 5ºC for up to 10 days before being returned to MRC Elsie Widdowson Laboratory where they were stored at −20ºC until analysis. Urine samples were analysed for 18O enrichment using the CO2 equilibration method of Roether (1). Briefly, 0.5 ml of sample was transferred into 12 ml vials (Labco Ltd., Lampeter, UK), flush-filled with 5% CO2 in N2 gas and equilibrated overnight whilst agitated on rotators (Stuart, Bibby Scientific). Headspace of the samples was then analysed using a continuous flow isotope ratio mass spectrometer (IRMS) (AP2003, Analytical Precision Ltd, Northwich, Cheshire, UK). For 2H enrichment, 0.4 mL of sample was flush-filled with H2 gas and equilibrated over 6 hours in the presence of a platinum catalyst. Headspace of the samples was then analysed using a dual-inlet IRMS (Isoprime, GV Instruments Ltd, Wythenshawe, Manchester, UK). All samples were measured alongside secondary reference standards previously calibrated against the primary international standards Vienna-Standard Mean Ocean Water (vSMOW) and Vienna-Standard Light Antarctic Precipitate (International Atomic Energy Agency, Vienna, Austria). Sample enrichments were corrected for interference according to Craig (2) and expressed relative to vSMOW. Analytical precision was 0.3 ppm for 2H and 0.5 ppm for 18O. Total production of CO2 was estimated using the multipoint method of Coward (3) and converted to TEE using the equations of Elia and Livesey (4) with an assumed RQ of 0.85.

1. Roether W. Water-CO2 exchange set-up for the routine 18oxygen assay of natural waters. *The International journal of applied radiation and isotopes*. 1970;21(7):379-87.

2. Craig H. Isotopic standards for carbon and oxygen and correction factors for mass-spectrometric analysis of carbon dioxide. *Geochimica et Cosmochimica Acta*. 1957;12(1):133-49.

3. Coward W. The doubly-labelled-water (2 H 2 18 O) method: principles and practice. *Proceedings of the Nutrition Society*. 1988;47(3):209-18.

4. Elia M, Livesey G. Theory and validity of indirect calorimetry during net lipid synthesis. *The American journal of clinical nutrition*. 1988;47(4):591-607.