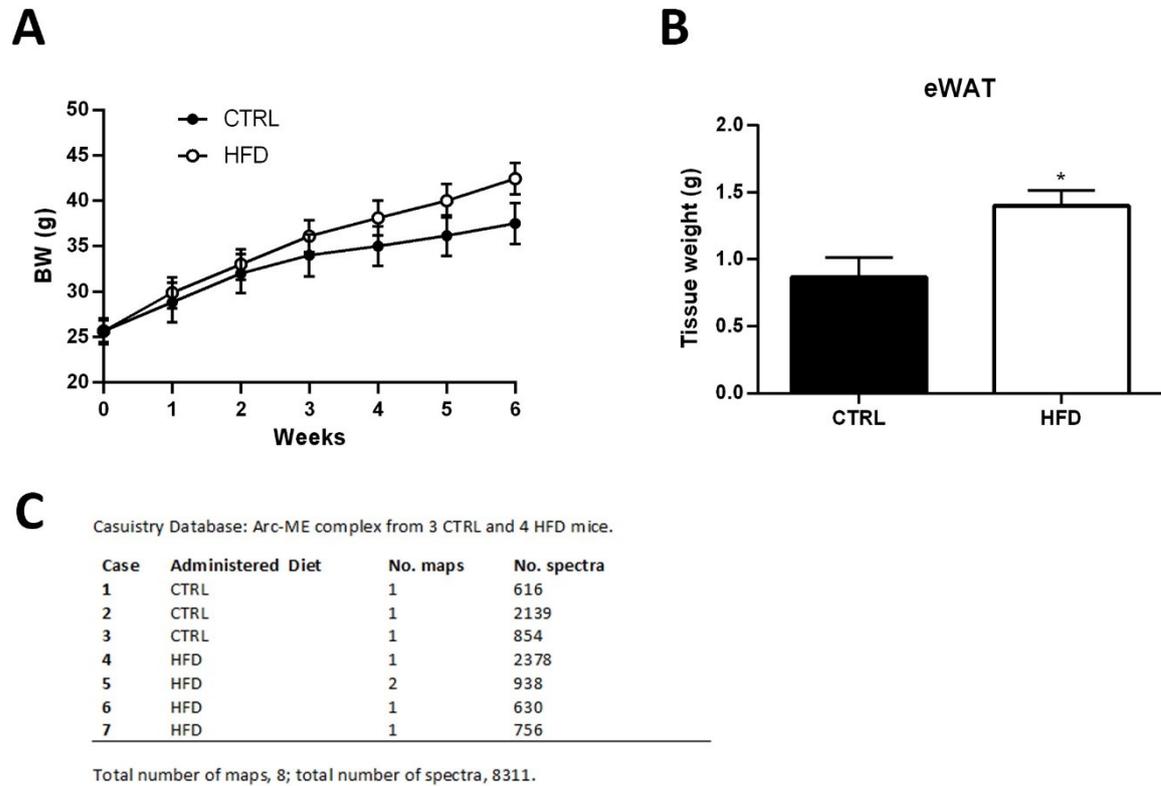
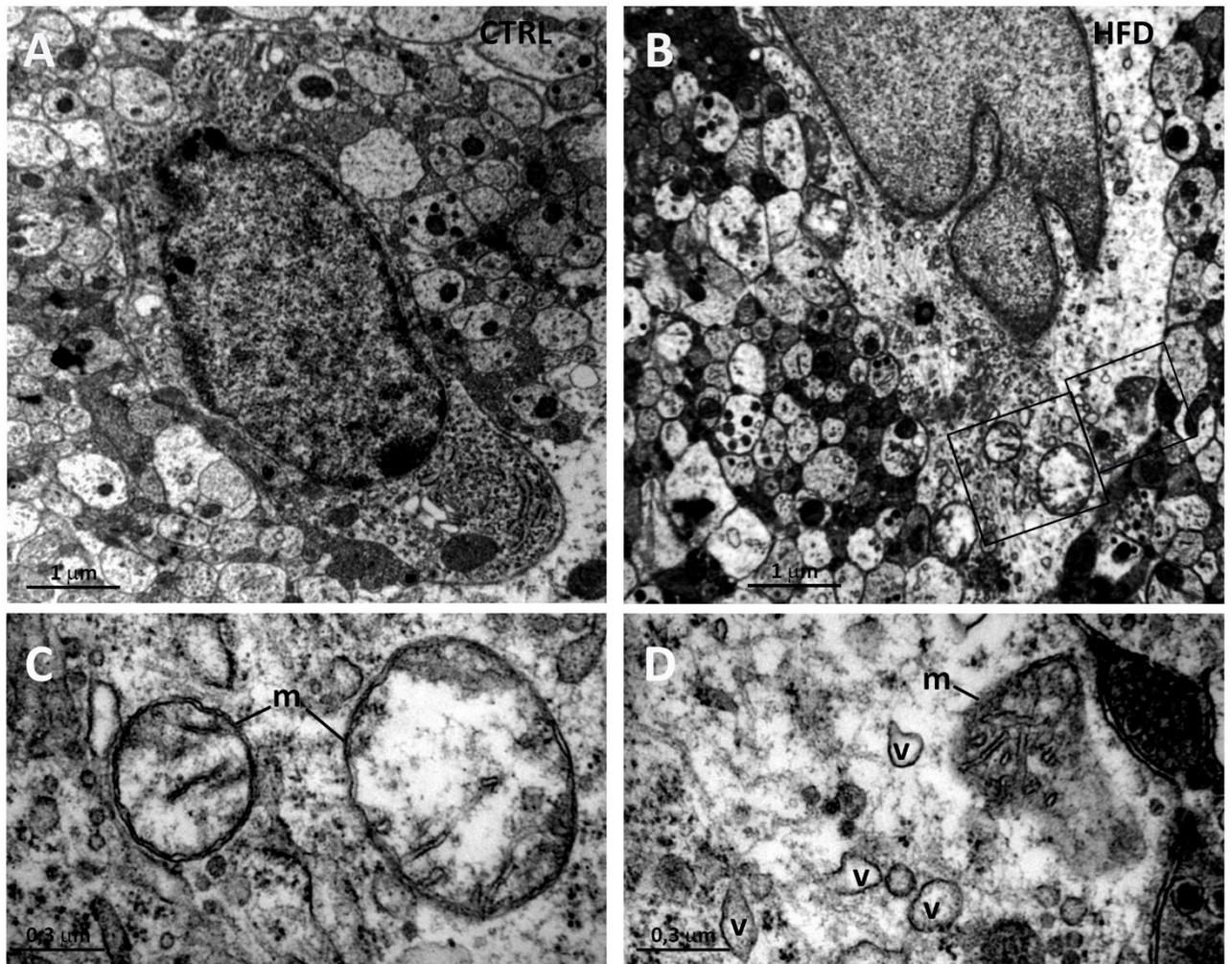


## Supplementary Figure 1



**Supplementary Fig. 1: A and B:** body weight (BW) and epididymal adipose tissue (eWAT) weight in CTRL and HFD mice. Data (n=6 CTRL, n=9 HFD) are mean  $\pm$  standard error, \*p < 0.05 (unpaired student's t-test). **C:** casuistry database for Raman spectroscopy analysis.

## Supplementary Figure 2



**Supplementary Fig. 2:** A and B: transmission electron microscopy of the median eminence subependymal space from a CTRL mouse (A) and from a HFD mouse (B), showing neuronal or glial cell somata surrounded by axonal and dendritic structures. Whereas the cytoplasm of the cell from the CTRL mouse appears electron dense and rich of organelles, the cytoplasm of the cell from the HFD mouse is pale and contains numerous degenerating mitochondria and vesicles. C and D: enlargements of the areas framed in B, showing degenerating mitochondria (m) and vesicles (v).