



**Figure 2.** Investigational brain perfusion MRI images from pseudocontinuous arterial spin-labeling (pCASL) scans show slices through the horizontal plane that display aspects of cerebrovascular function that may represent early preclinical markers of cerebrovascular disease risk. Panels **A** and **B** display cerebral blood flow (scale bar represents mL/100g/min). Panel **A** shows resting state cerebral blood flow during normal breathing. Panel **B** shows increased cerebral blood flow during breath hold-induced hypercapnia (high carbon dioxide levels) causing cerebrovascular vasodilation. Panels **C** and **D** display cerebrovascular resistance index (CVRI), the ratio of mean arterial pressure to cerebral blood flow (scale bar represents mmHg/mL/100g/min). Panel **C** shows resting state CVRI during normal breathing. Panel **D** shows greatly increased CVRI during deep breathing-induced hypocapnia (low carbon dioxide levels) causing cerebrovascular vasoconstriction.