

## **Description of Additional Supplementary Files**

**Supplementary Data 1:** Baseline characteristics of imaging sample by serum urate quintile

**Supplementary Data 2:** Associations between serum urate and image-derived phenotypes (IDPs) amongst highest two groups of household income

**Supplementary Data 3:** Time-dependent coefficients for gout on all cause dementia incidence accounting for the competing risk of death

**Supplementary Data 4:** Instrumental variables for gout and urate.

**Supplementary Data 5:** Robust Mendelian randomization estimates