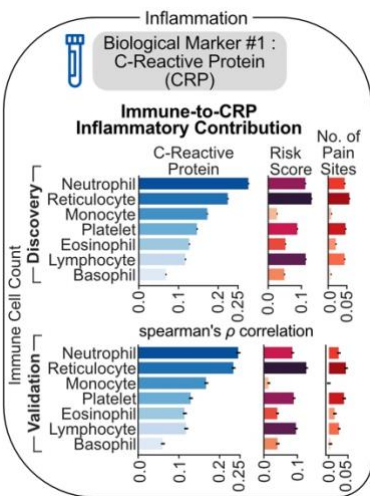
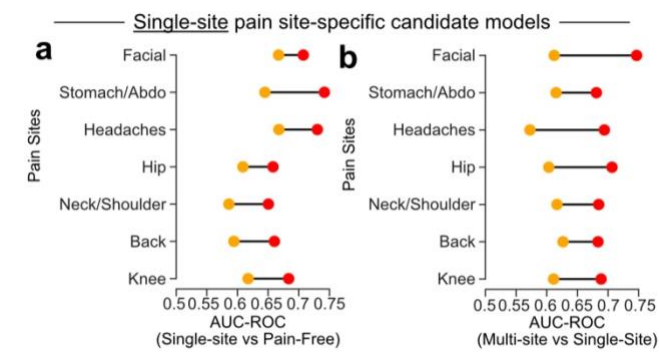
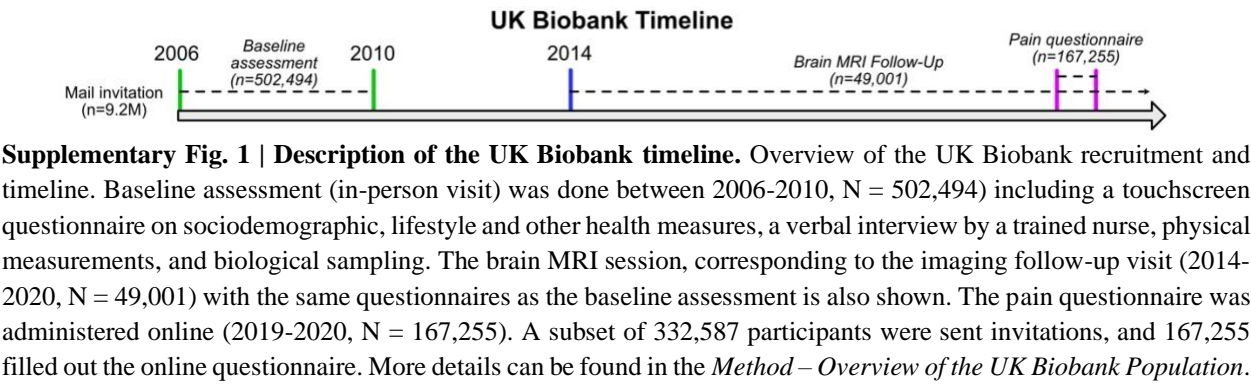
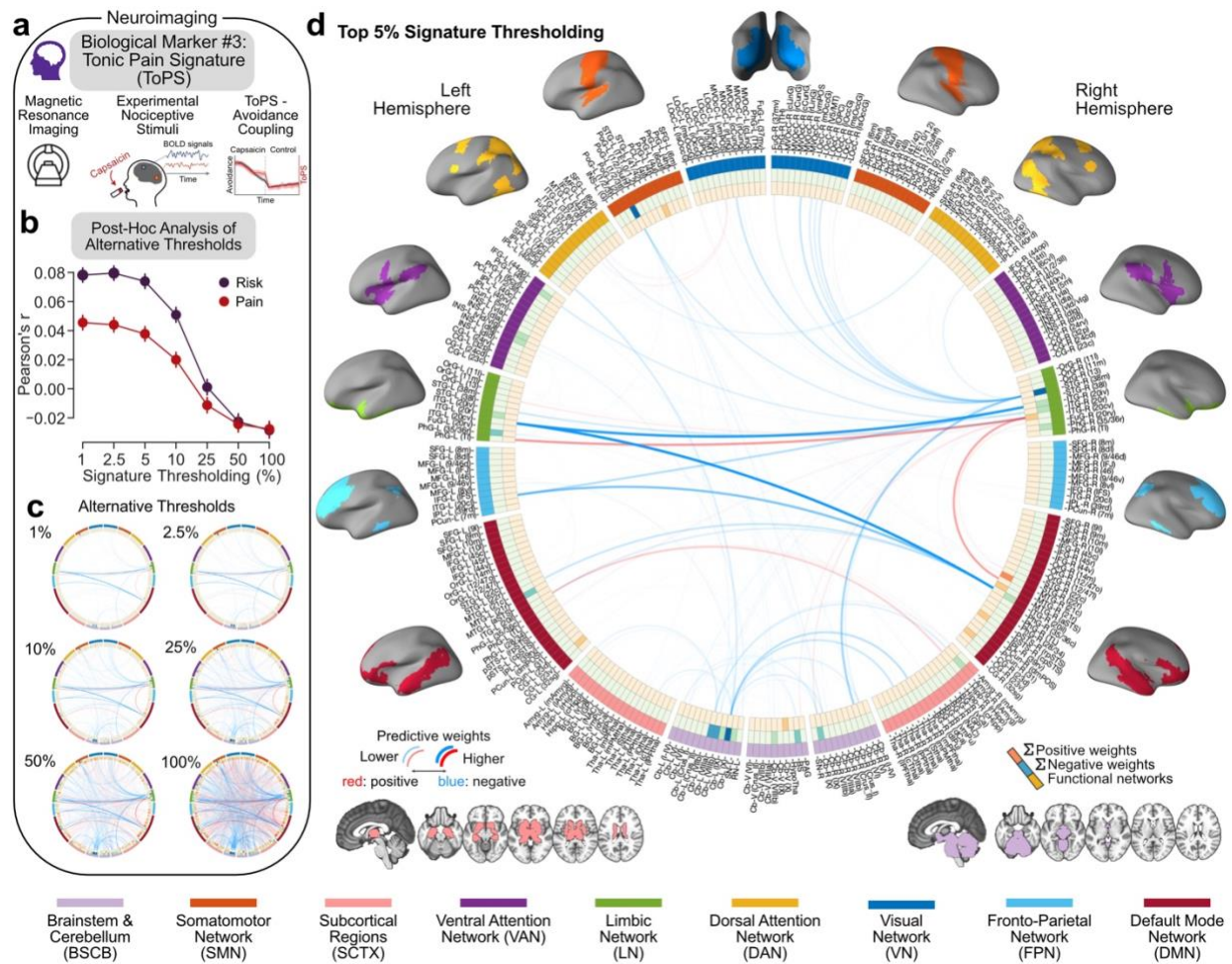


A prognostic risk score for development and spread of chronic pain

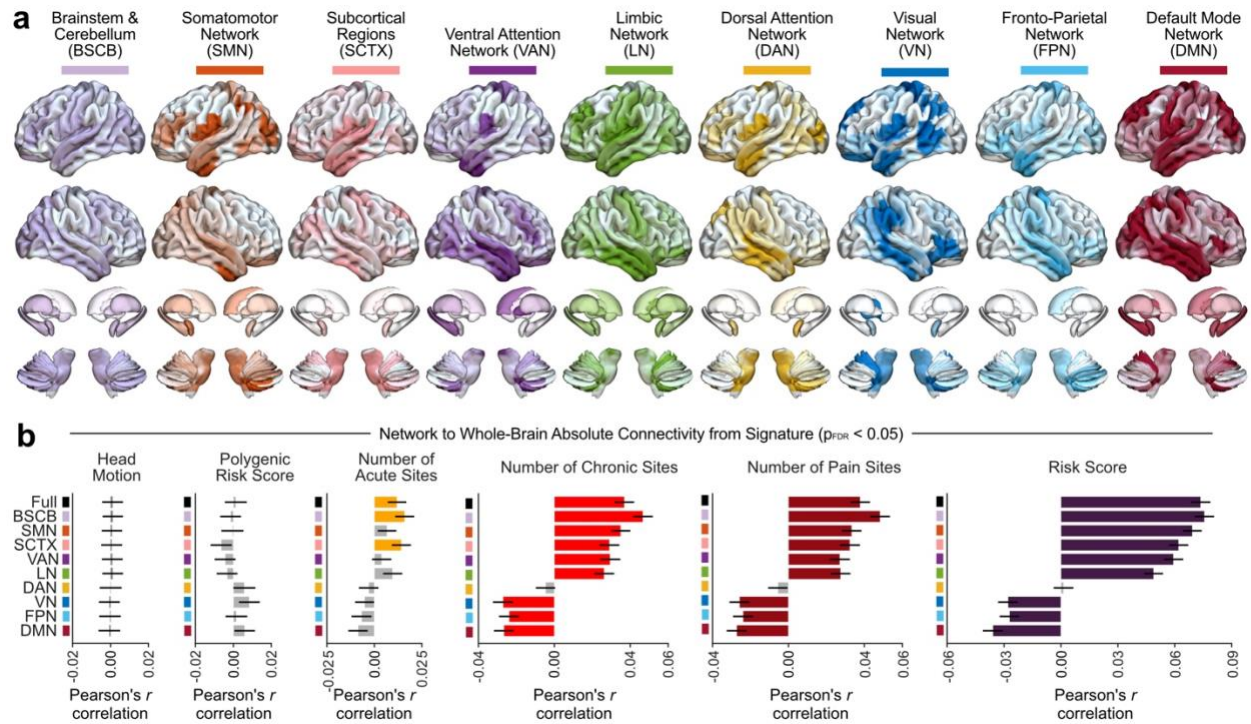
In the format provided by the
authors and unedited

SUPPLEMENTARY RESULTS





Supplementary Fig. 4 | Tonic Pain Signature (ToPS) neuroimaging marker. **a.** Tonic Pain Signature (ToPS) was used to capture blood oxygenation level dependant fluctuation following a capsaicin-induced sustained pain. Top 5% weights of the signature were used. Alternative thresholds and the top 5% thresholds shown in **b.** with their associations with the risk score and number of pain sites and **c.** with their respective connectivity patterns of alternative ToPS thresholds from the top 5% signature across each major networks. **d.** Connectivity pattern of the ToPS used in the study across each major brain networks. Each cell represents a brain region of interest colored based on the density of positive (in red) and negative (in blue) edges. Abbreviations: Brainstem and Cerebellum (BSCB); Somatosensory Network (SMN); Subcortex (SCTX); Ventral attention Network (VAN); Limbic Network (LN); Dorsal Attention Network (DAN); Visual Network (VN); Fronto-Parietal Network (FPN); Default Mode Network (DMN).



Supplementary Fig. 5 | Analysis of distinct network connectivity patterns from the ToPS. a. Visualization of the absolute connectivity network-to-whole brain expressed in the ToPS across each of the major networks. Network-to-whole brain connectivity measured using the sum of normalized dynamic conditional correlation connectivity across each parcel (max = 100). **b.** The association with head motion, our selected polygenic risk score, the number of acute, chronic, and combined pain sites as well as our risk score with each network. Error bars were estimated from 1,000 bootstrap samples. Significance was obtained from a two-tailed Pearson's r correlation and comparisons were FDR-corrected. Abbreviations: False Discovery Rate (FDR); Brainstem and Cerebellum (BSCB); Somatosensory Network (SMN); Subcortex (SCTX); Ventral attention Network (VAN); Limbic Network (LN); Dorsal Attention Network (DAN); Visual Network (VN); Fronto-Parietal Network (FPN); Default Mode Network (DMN)