

**SUPPLEMENTARY FIG. S3.** (A) Model 1 specifies nonlinear modulation by the DMN on both connections between the dSN and CEN, (B) model 2 specifies nonlinear modulation by the dSN on both connections between the DMN and CEN, and (C) model 3 specifies nonlinear modulation by the CEN on both connections between the DMN and dSN. The panels ( $\mathbf{D}$ ,  $\mathbf{E}$ ) display the FFX results in terms of log-evidence and posterior probability in NC group indicating that model 2 has a higher probability than other models. The panels ( $\mathbf{F}$ ,  $\mathbf{G}$ ) display the FFX results in MCI group demonstrating that model 2 no longer has a higher probability; instead it shifted to model 3. CEN, central-executive network; DMN, default-mode network; dSN, dorsal salience network.