

## Additional file 1: Details of the model

The model for observation  $Y_{ijk}$  ( $j$ th measure of subject  $k$  in group  $i$ ) was  $Y_{ijk} = \mu + \alpha_i + \beta_j + (\alpha\beta)_{ij} + U_{ik} + \text{covariates} + \epsilon_{ijk}$ ,  $i = 1, 2$ ;  $j = 1, \dots, 5(3)$ ;  $k = 1, \dots, n_i$ , with  $\alpha_i$  as the  $i$ th group effect (time averaged group difference),  $\beta_j$  as the  $j$ th time effect (group averaged time differences),  $(\alpha\beta)_{ij}$  as the  $ij$ th group-time interaction (difference between the within-group changes, equivalent to the treatment effect),  $U_{ik}$  as the random intercept of subject  $k$  in group  $i$  and  $\epsilon_{ijk}$  as measurement error. For our LLM, we assumed that the  $U_{ik}$  and the  $\epsilon_{ijk}$  are each independent and normally distributed with between-subject variance  $v^2$  and within-subject variance  $\tau^2$ , respectively, leading to a uniform within-subject correlation between two different measurements on the same subject.