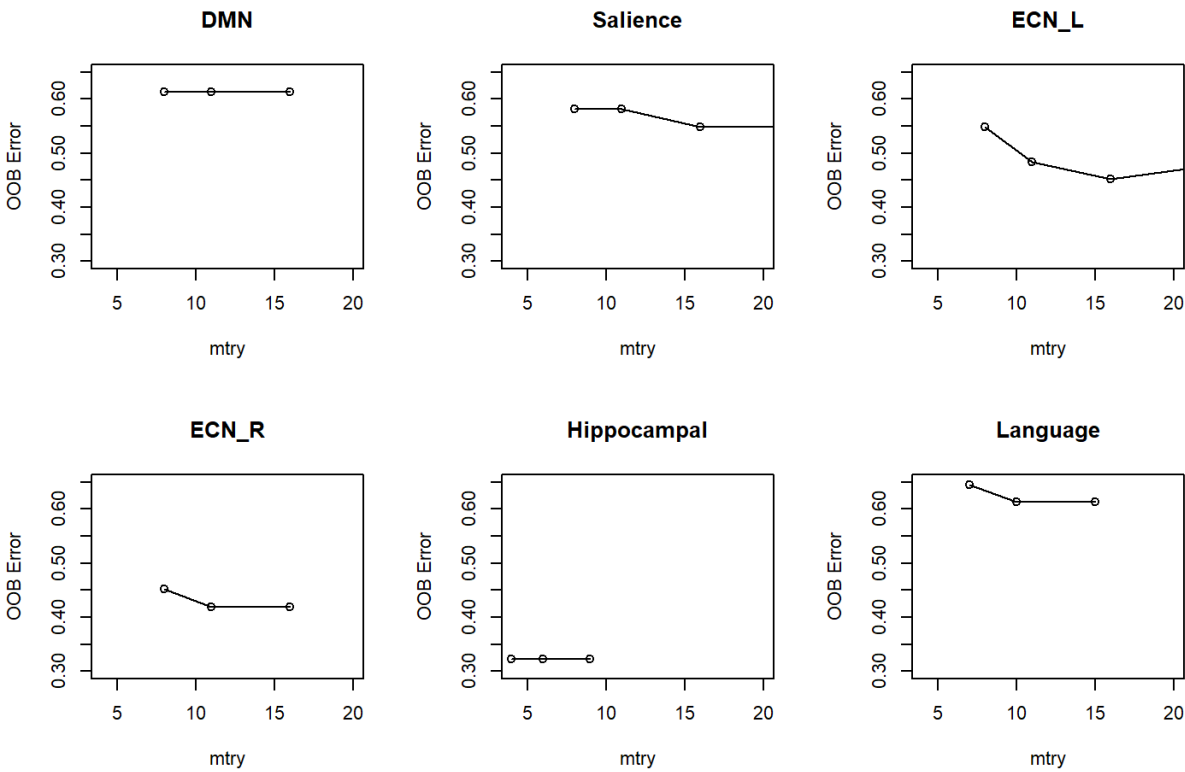
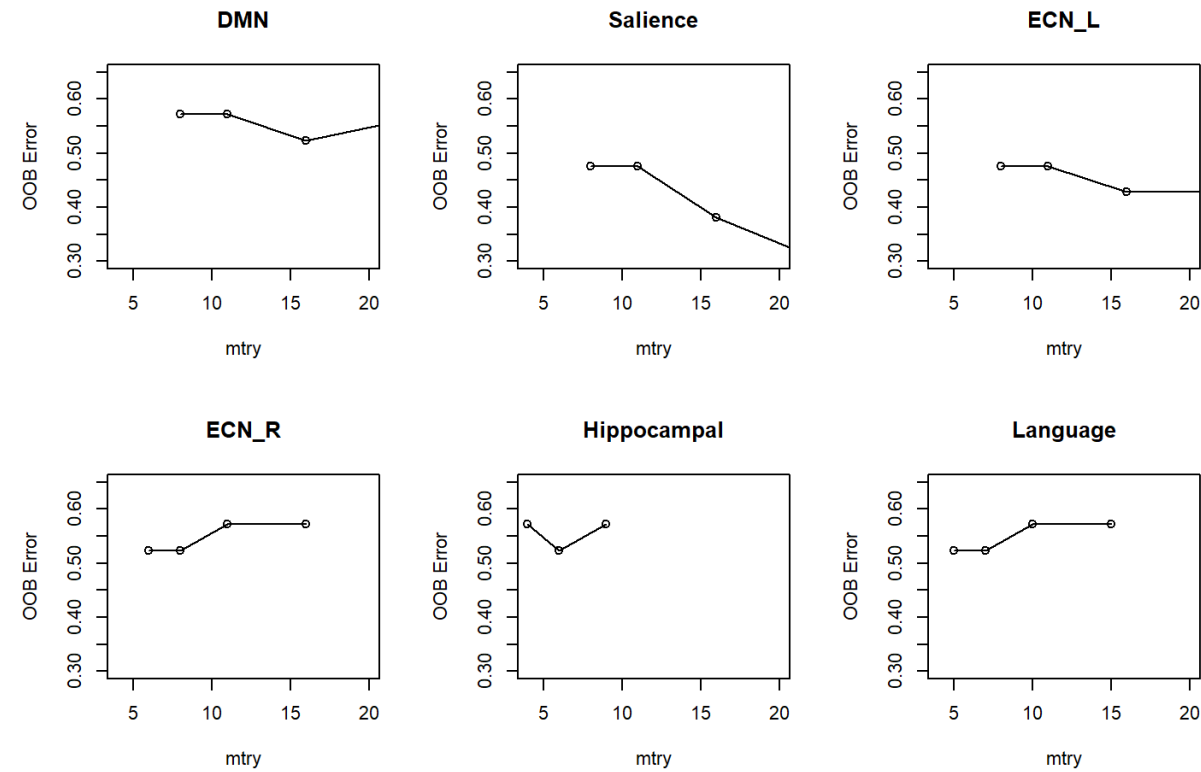


Supplementary Figure 1

Tuning *mtry* on 3T data



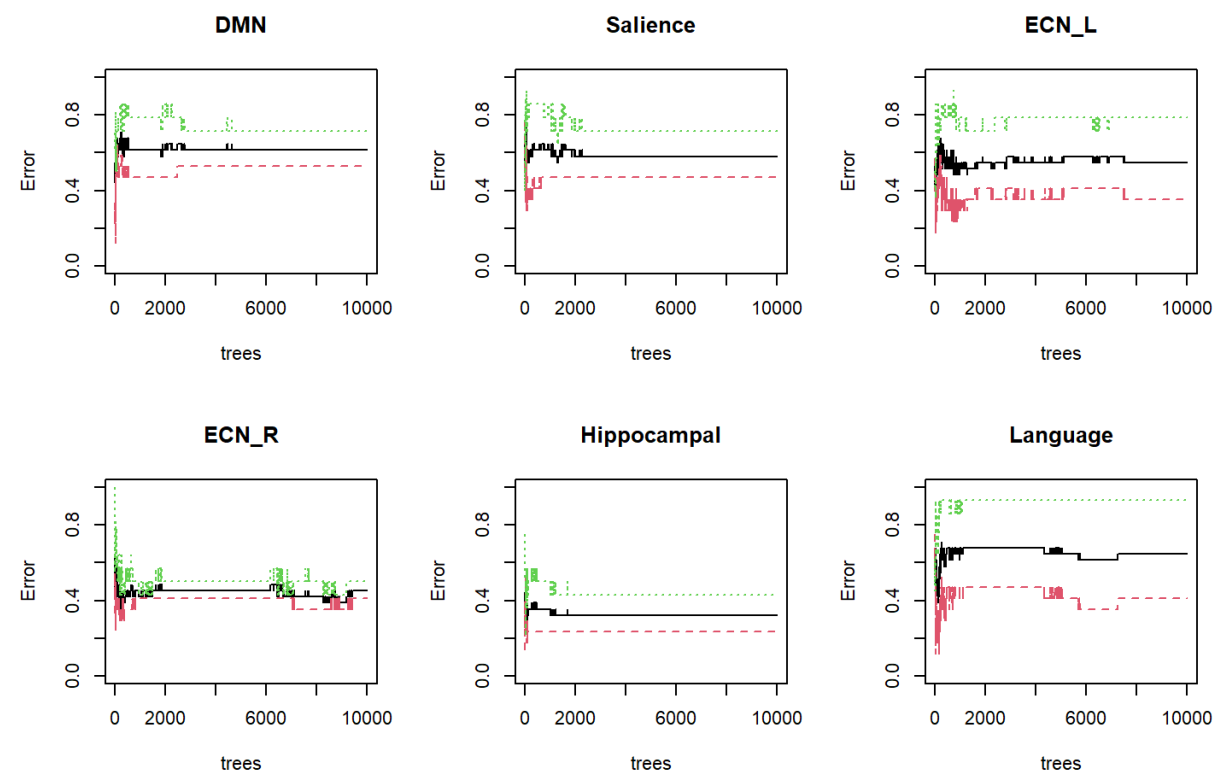
Tuning *mtry* on 7T data



Legend: Plots of Out-of-Bag (OOB) error rate against *mtry*. The number of variables selected at each tree for both data sets.

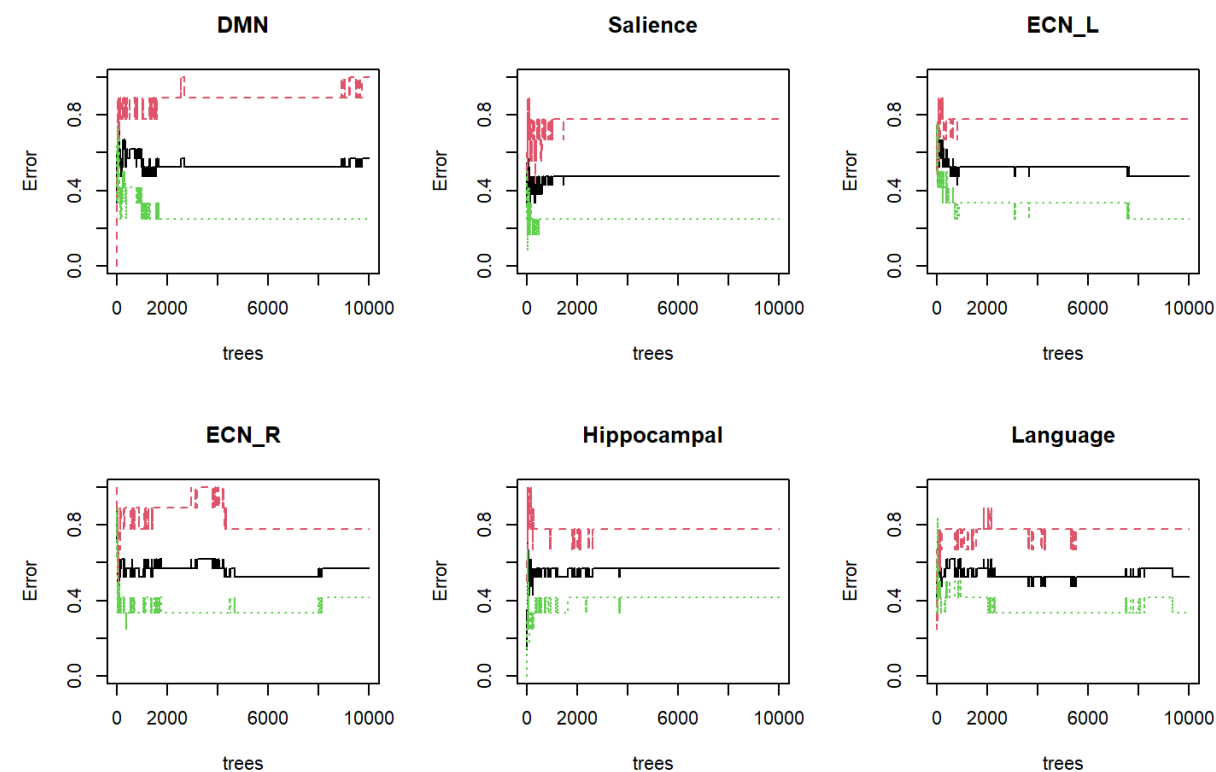
Supplementary Figure 2-a

Tuning *mtry* on 3T data



Supplementary Figure 2-b

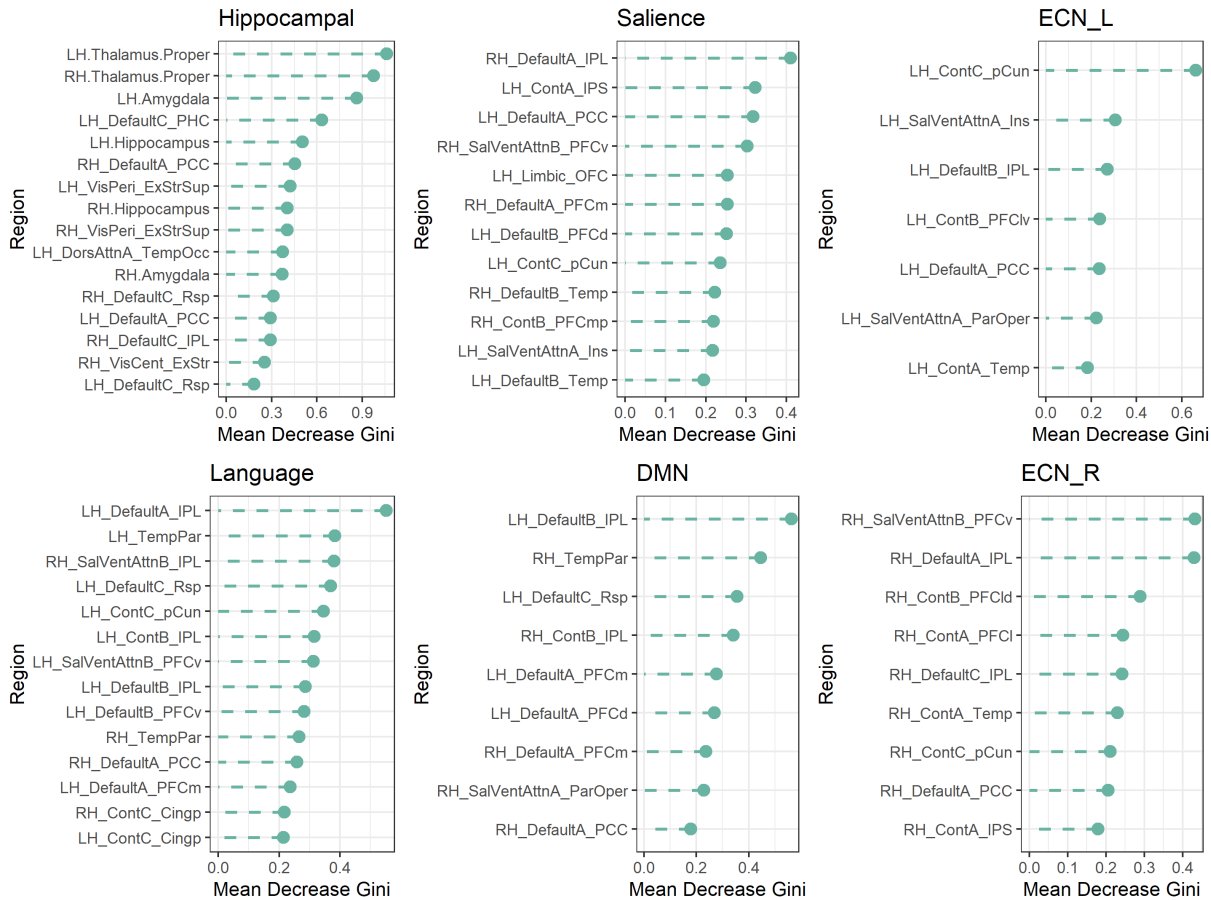
Tuning *mtry* on 7T data



Legend: The error rate plotted as a function of number of trees (ntree) for all networks in the 3T and 7T datasets. The x-axis is number of trees. The green line represents the Out-of-Bag OOB error rate. The black line represents the error rate on both training and testing sets. The red line represents error rate on the testing set.

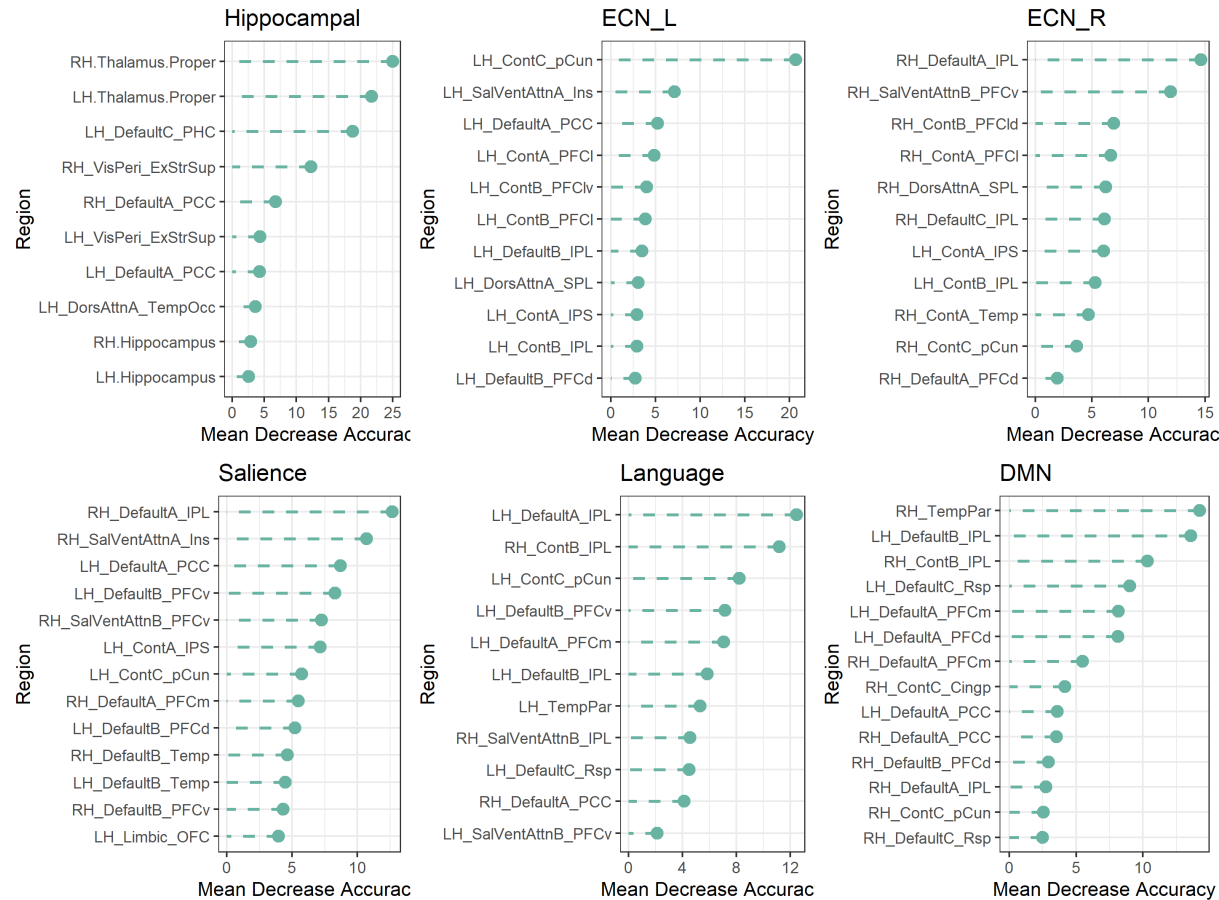
Supplementary Figure 3-a

3T most important nodes by MDG in preselected networks



Supplemental Figure 3-b

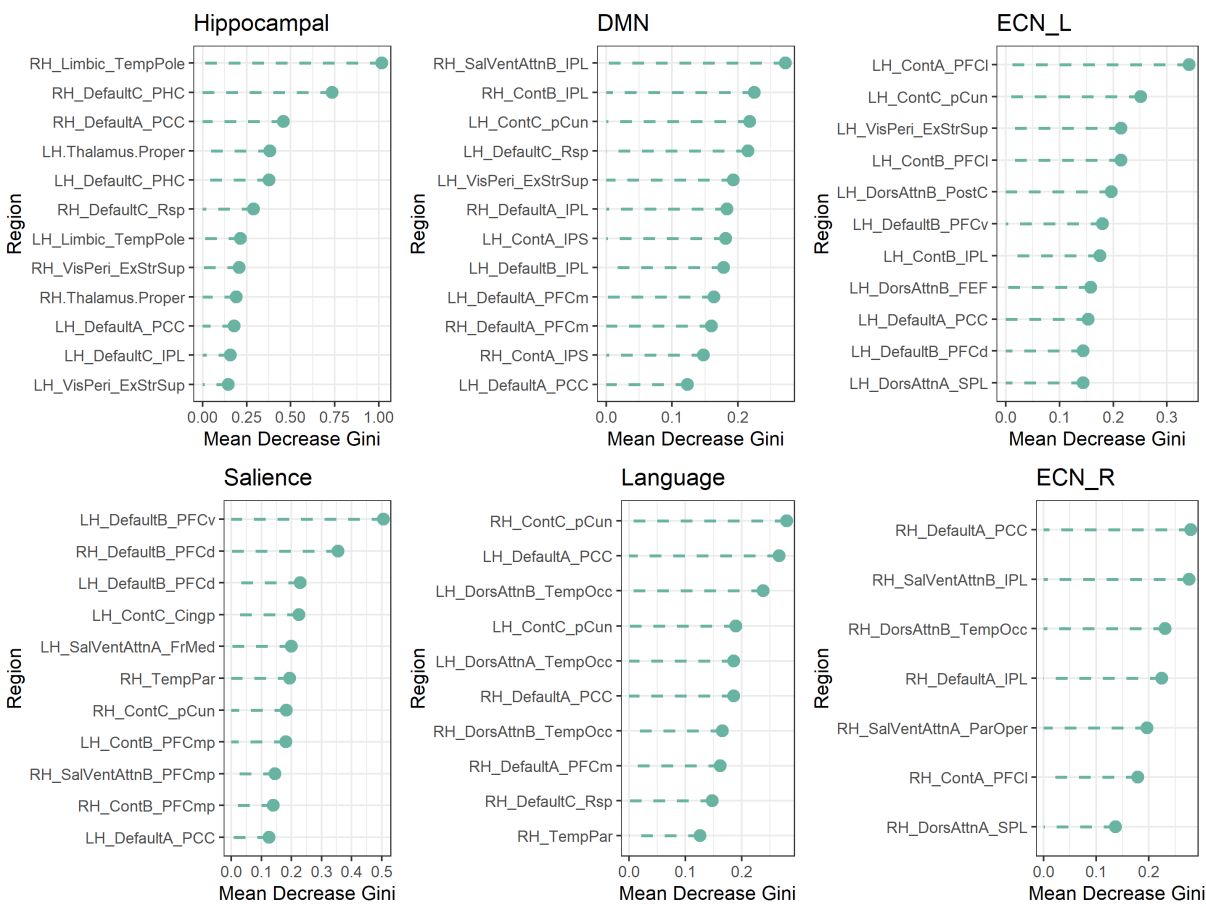
3T most important nodes by MDA in preselected networks



Legend: The lollipop plots show the most important nodes after RF selected by MDA and MDG for the 3T dataset. The most important nodes are defined as MDA 1 SD above the average.

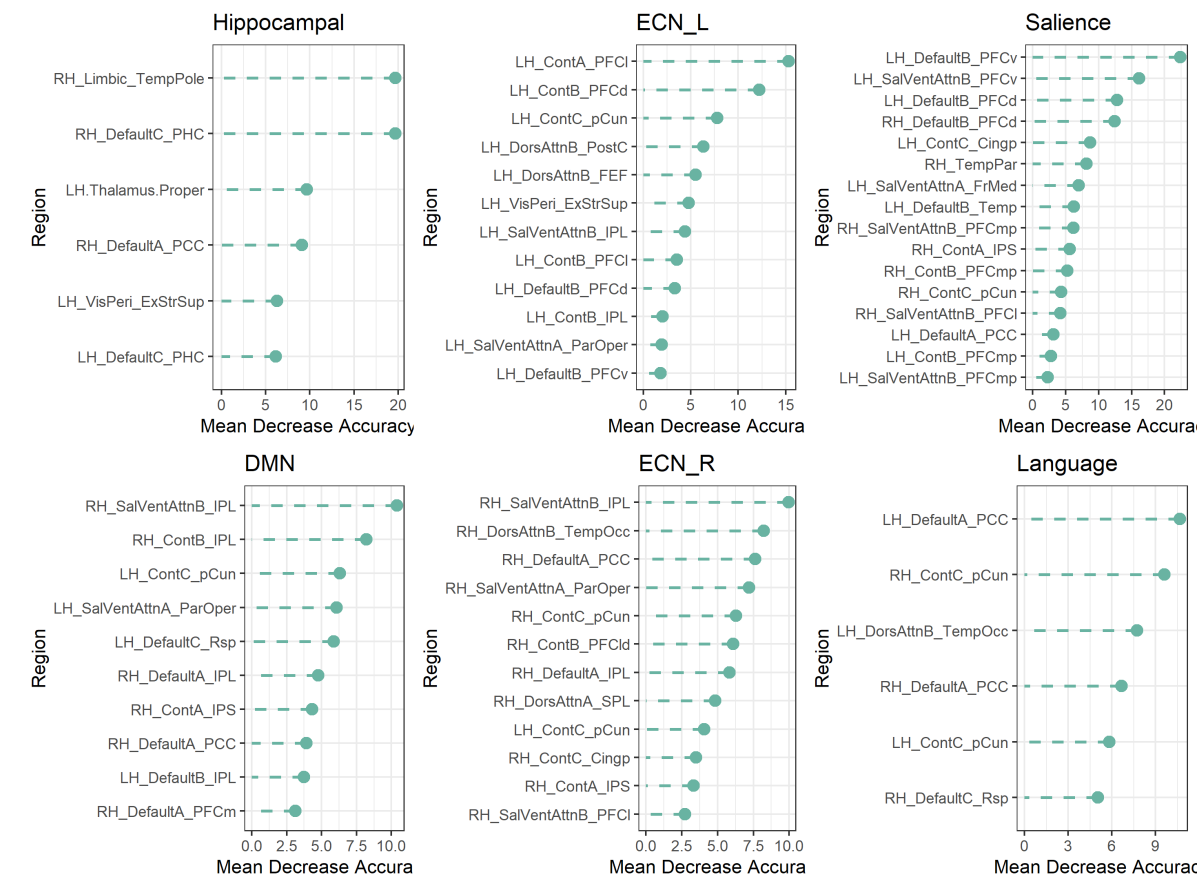
Supplementary Figure 4-a

7T most important nodes by MDG in preselected networks



Supplemental Figure 4-b

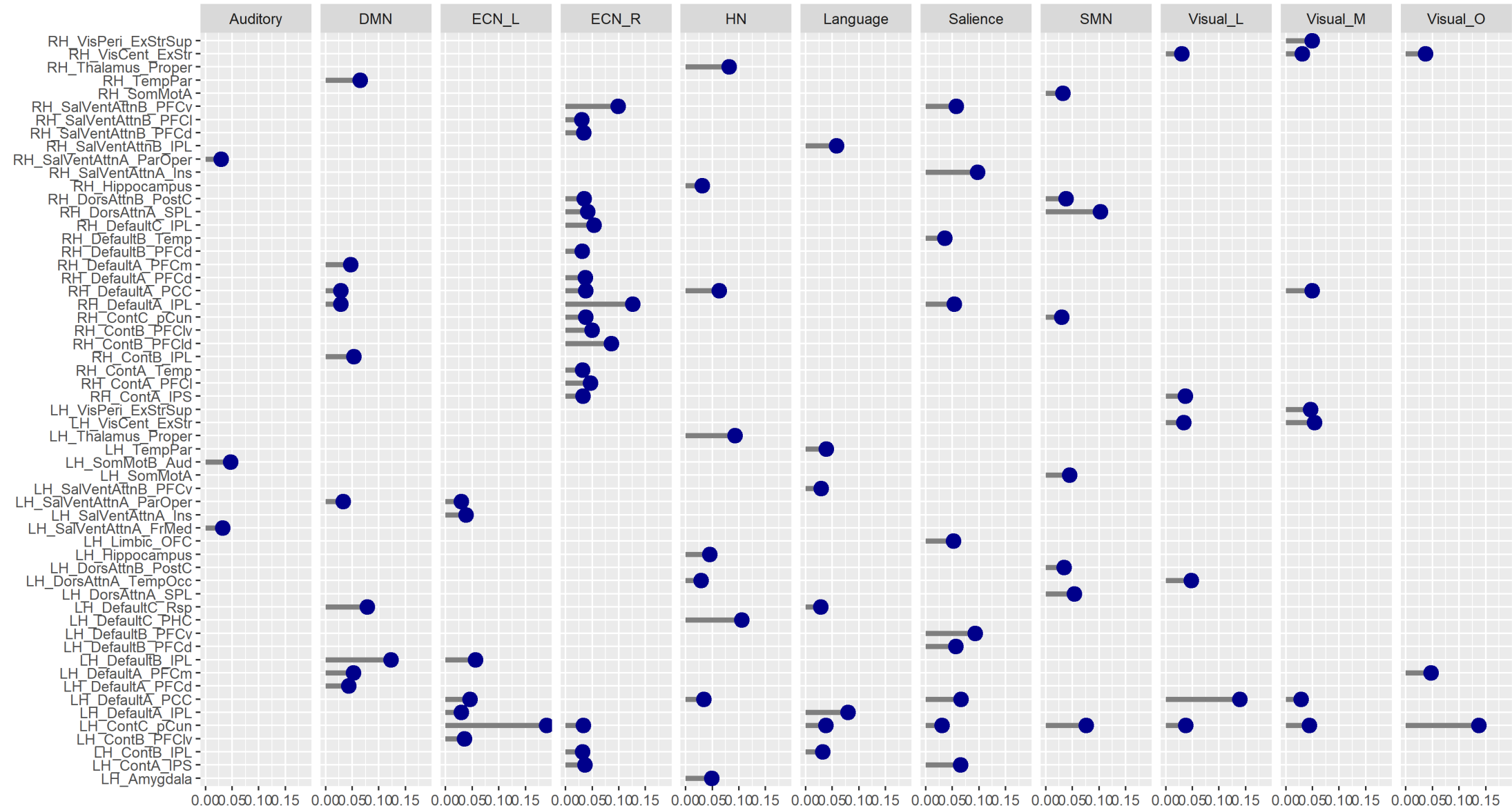
7T most important nodes by MDA in preselected networks



Legend: The lollipop plots show the most important nodes after RF selected by MDA and MDG for the 7T dataset. The most important nodes are defined as MDA 1 SD above the average.

Supplementary Figure 5-a

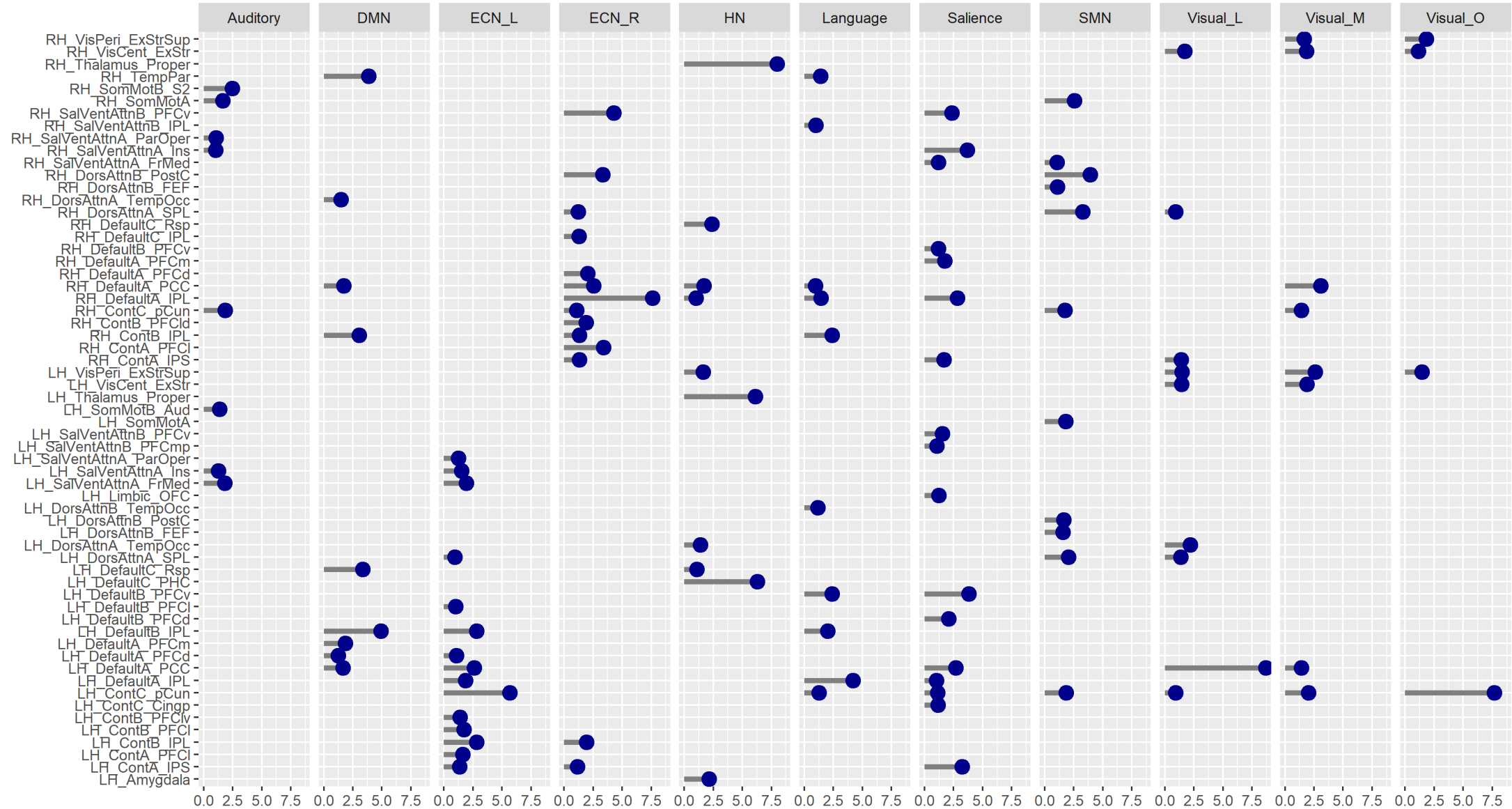
3T most important nodes by MDG after first RF in whole brain networks



Legend: The lollipop plots show the most important nodes after the first run of RF selected by MDG for the 3T dataset. The most important nodes are defined as MDA 1 SD above the average.

Supplementary Figure 5-b

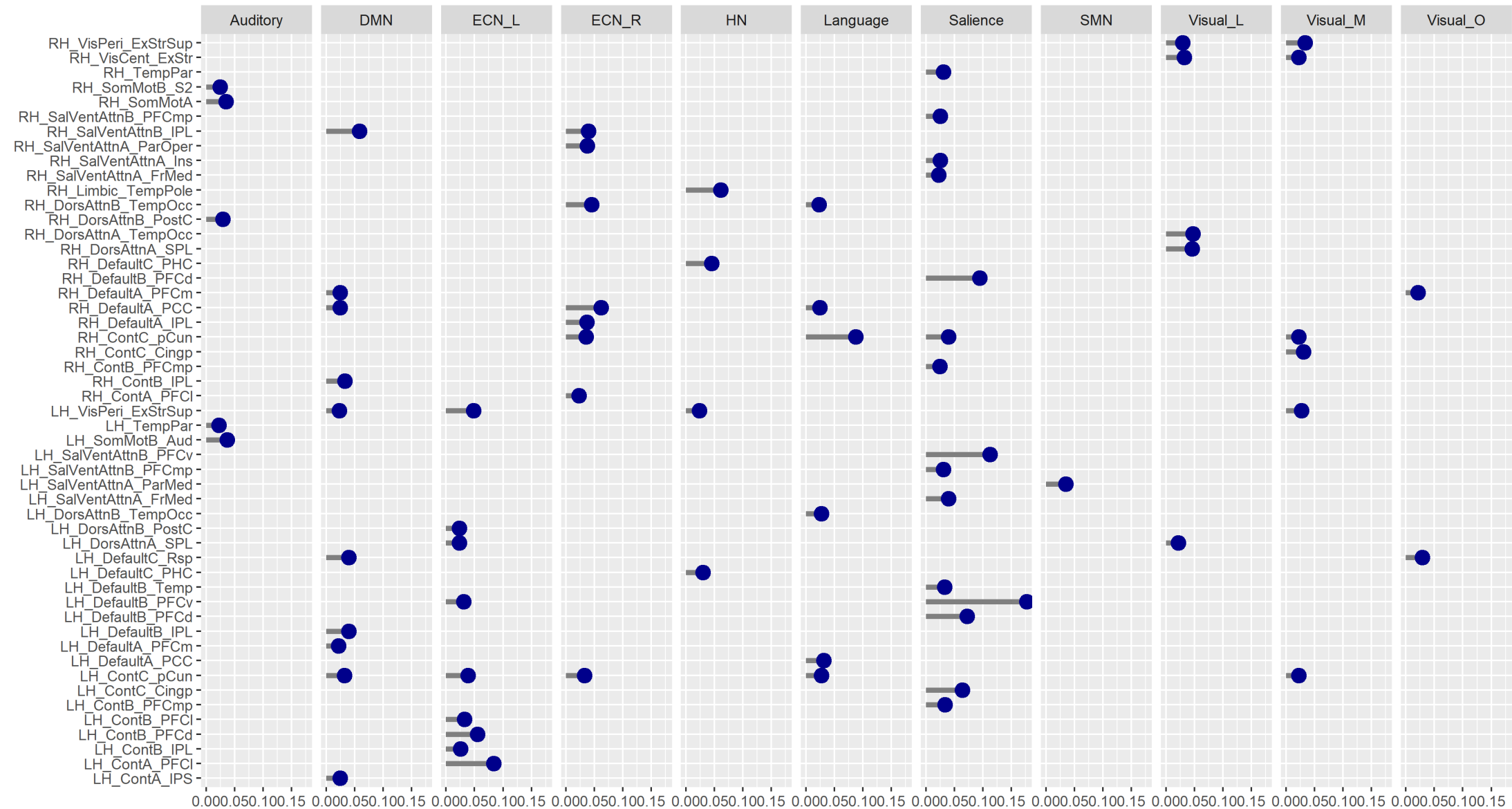
3T most important nodes by MDA after first RF in whole brain networks



Legend: The lollipop plots show the most important nodes after the first run of RF selected by MDA for the 3T dataset. The most important nodes are defined as MDA 1 SD above the average.

Supplementary Figure 6-a

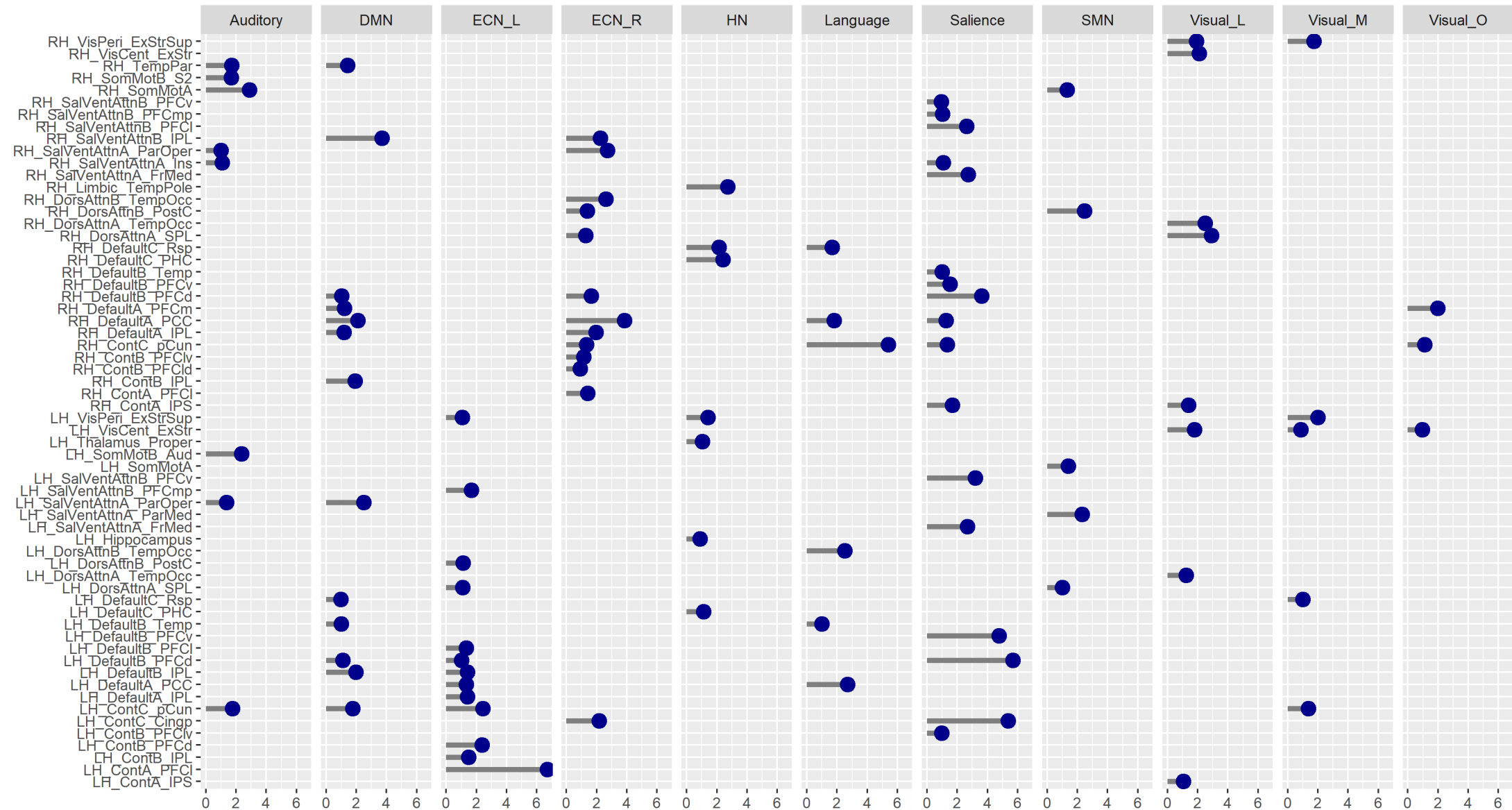
7T most important nodes by MDG after first RF in whole brain networks



Legend: The lollipop plots show the most important nodes after the first run of RF selected by MDG for the 7T dataset. The most important nodes are defined as MDA 1 SD above the average.

Supplementary Figure 6-b

7T most important nodes by MDA after first RF in whole brain networks



Legend: The lollipop plots show the most important nodes after the first run of RF selected by MDA for the 7T dataset. The most important nodes are defined as MDA 1 SD above the average.