# p-053

# Thursday

## Progressive white matter changes in MAPT-related frontotemporal dementia: results from the GENFI study

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**State of the art.**

*MAPT* mutations are associated with frontotemporal dementia (FTD), but little is known about the progression of white matter changes in the presymptomatic period. We aimed to investigate the presence of early white matter abnormalities in *MAPT* mutation carriers.

**Methodology.**

We extracted FA and MD indexes in 18 white matter tracts from diffusion-weighted images acquired on 3T-MRI scanners for 43 *MAPT* mutation carriers [14 symptomatic: mean(SD) age 60(6) years; 29 presymptomatic: 39(9) years] from the Genetic FTD Initiative (GENFI). Presymptomatic carriers were divided into two groups based on their estimated years to symptom onset: early (>-10 years) and late (<-10 years). w-scores for diffusion indexes were computed from a regression model on 47 healthy non-carriers [43(14) years], adjusting for age, sex, total intracranial volumes, and scanner type. w-scores were considered abnormal when below the 25th percentile of controls.

**Results.**

Abnormal w-scores were found in a considerable percentage of mutation carriers, even in the earliest stages. Specifically, in the uncinate fasciculus (FA: early-presymptomatic[48%], late- presymptomatic[38%], symptomatic[86%]; MD: early[19%], late[50%], symptomatic[100%]), fornix (FA: early[29%], late[25%], symptomatic[93%]), anterior corona radiata (FA: early[19%], late[38%], symptomatic [86%]), stria terminalis (MD: early[19%], late[50%], symptomatic[100%]), and body of the corpus callosum (FA: early[33%], late[25%], symptomatic[57%]).

**Conclusion.**

The uncinate fasciculus is a key tract involved in *MAPT*-associated FTD, showing frequent early changes in integrity presymptomatically. Other tracts linking the limbic, frontal, temporal and subcortical regions are also affected before symptoms, suggesting white matter changes may be a marker of early structural change in this group.

# Conflicts of interest

N/A