

# Multimodal, multilayer brain network topology correlates of healthy aging and executive functioning

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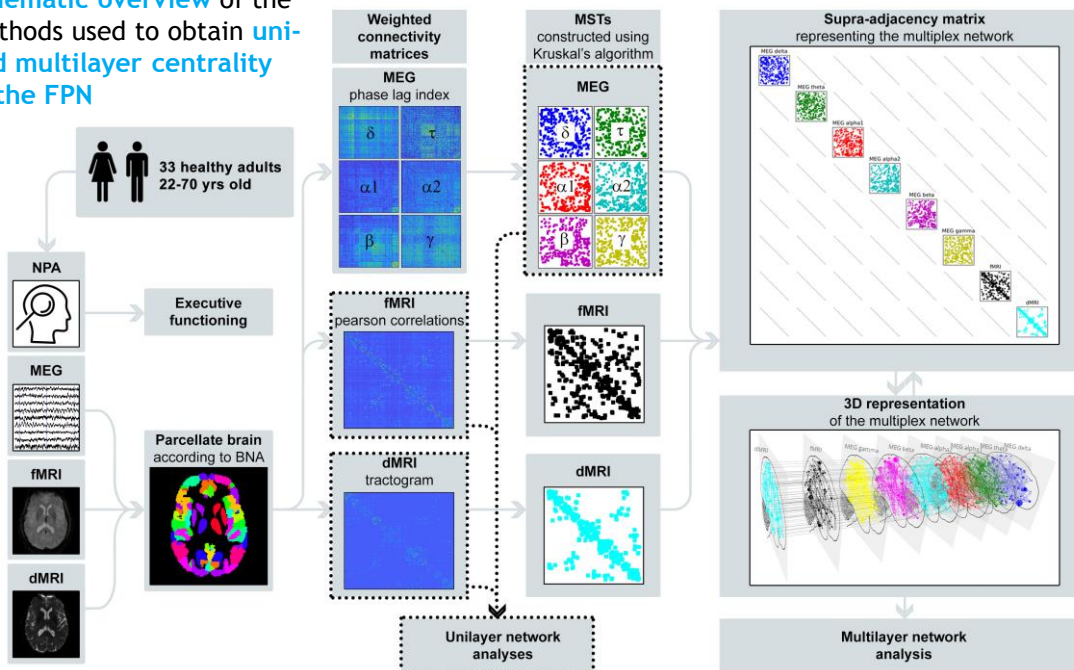
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## Background

- Network theory is used to **understand executive functioning (EF)**
- So far **mostly unimodal, unilayer** work: MEG or rsfMRI or dMRI
- **Multilayer network theory** allows for integration of multiple modalities
- We explored the relation between **multilayer network centrality of the frontoparietal network (FPN) and EF and age**

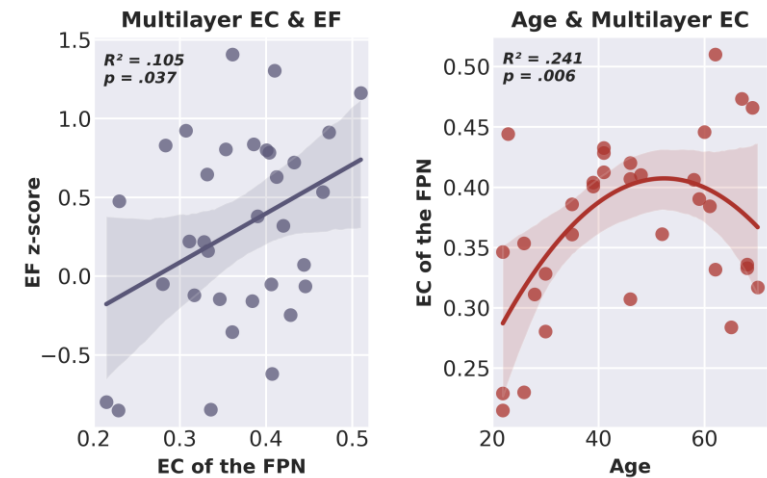
## Methods

- **Schematic overview** of the methods used to obtain **uni- and multilayer centrality of the FPN**



## Results

- **We found:**
  - A **positive** relation between **multilayer EC of the FPN & EF**
  - A **quadratic** relation between **age & multilayer EC of the FPN**



## Discussion

- **Higher multilayer network centrality** of the FPN **related significantly to better EF**
- None of the unilayer network centralities of the FPN significantly related to EF
- Multilayer FPN centrality **increases with age, plateaus around middle age, then decreases**, potentially reflecting the rise and fall of brain network efficiency
- This study shows the **relevance of a multimodal, multilayer view of the brain as a correlate of EF**