Imaging functional brain connectivity : pharmacological modulation, aging and Alzheimer's disease

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Stellingen behorend bij het proefschrift

Imaging functional brain connectivity

Pharmacological modulation, aging and Alzheimer's disease

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1. Resting state fMRI is a relatively sensitive measure of serotonergic and cholinergic modulation, compared to cognitive tests and subjective scales (this thesis).
2. Understanding the mechanisms of action of extensive neurotransmitter systems requires examination of large-scale network interactions instead of isolated brain regions (this thesis).
3. Studying brain connectivity after pharmacological challenges offers insight into age- and dementia-related neurotransmitter system decline (this thesis).
4. The observed variation in brain connectivity after placebo administration emphasizes the value of a placebo-controlled design with repeated measures (this thesis).
5. The difficulty in selecting people in a preclinical stage of Alzheimer's disease complicates effective research on novel pharmacological treatment.
6. The application of a standardized method for resting state fMRI data analysis benefits the comparability between studies and interpretation of their results.
7. Concepts as connections, communication and cooperation are not only of importance for efficient neural function, but also for successful planning and execution of scientific projects.
8. A future challenge for pharmacological fMRI research is to develop appropriate statistical models (PK/PD modeling) to investigate concentration-dependent modulation of resting state functional connectivity.
9. The integrity of brain networks is comparable to a musical orchestra, consisting of numerous instruments that generate a synchronized melody (adapted from Oliver Sacks, Musicophilia).
10. The best remedy for a restless state of mind is a long run.