

University of Groningen

Quantitative Brain PET Analysis Methods in Dementia Studies

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DOI:
[10.33612/diss.145251614](https://doi.org/10.33612/diss.145251614)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2020

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Peretti, D. (2020). *Quantitative Brain PET Analysis Methods in Dementia Studies*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen. <https://doi.org/10.33612/diss.145251614>

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PROPOSITIONS

Belonging to the PhD thesis

Quantitative Brain PET Analysis Methods in Dementia Studies

Débora Elisa Peretti

1. The selection of model settings for the pharmacokinetic modelling of dynamic PET scans influences the final quantitative parametric images and, thus, should be made with caution.

- Chapter 7
2. Quantitative PET images improve diagnostic performance of PET studies for dementia patients not only in research settings but also in clinical practice.

- Adapted from Chapter 7
3. The use of a single tracer study to assess both amyloid deposition and regional cerebral blood flow is a strong advantage of using pharmacokinetic modelling of dynamic PIB PET scans

- Chapter 5
4. Pharmacokinetic analysis of dynamic PIB PET studies provides high-quality regional cerebral blood flow images comparable with those obtained by FDG standardized uptake value ratio.

Chapter 3
5. Most methodological approaches for image assessment can be translated to other radiotracers and even to quantitative images derived from dynamic PET scans with only small adjustments.

- Chapter 9
6. Automated tools using multivariate analysis techniques, such as SSM/PCA, could offer a more sensitive and objective evaluation of images, from which trials might benefit.

- Chapter 9
7. As much as they deepen our understanding of neurodegenerative, network biomarkers also hold the potential to improve the diagnosis and management of individual patients.

- Katharina A. Schindelbeck, David Eidelberg, 2018
8. One image is worth more than 1000 words. One number is worth more than 1000 images.

- Adriaan Lammertsma
9. When life gives you lemons, don't make lemonade. Make like take the lemons back! Get mad! I don't want your lemons, what am I supposed to do with these? Demand to see life's manager! Make life rue the day it thought it could give [you] lemons!

- Cave Johnson, Portal 2