The recommended scan parameters for amyloid PET imaging are as follows:

**Acquisition**
- Use the same scanner and protocol for follow-up studies.
- PET should be acquired in listmode format (best) or dynamic.
- Use the same reconstruction method and parameters for all longitudinal scans.
- Use the same tracer for all repeat scans.
- The recommendation is made not to use Point Spread Function (PSF). The QIBA Round 6 grant project examining impact of reconstruction methods upon measured SUVR showed that differences due to PSF were not greater than, and in some cases lower than, differences obtained with other reconstruction methods as parameters. T-tests do not support a null hypothesis for the necessary methods.

**Reconstruction**
- Use the default reconstruction parameters of the scanner.
- The same reconstruction method and parameters are to be used for all longitudinal scans.

**Reference regions**
- The selection of reference structures should be made as per the guidelines for the particular tracer.
- The reference regions should be selected based on a correlation with SUVR, and the values can be generated with a correlation of $r^2 > 0.98$. x

**Evaluation window**
- The evaluation window should be chosen to allow for enough time to evaluate the change in amyloid load for longer times.

**Image analysis**
- The recommendation is to use the same tracer for all repeat scans.
- The recommendation is made not to use Point Spread Function (PSF).
- The QIBA Round 6 grant project examining impact of reconstruction methods upon measured SUVR showed that differences due to PSF were not greater than, and in some cases lower than, differences obtained with other reconstruction methods as parameters. T-tests do not support a null hypothesis for the necessary methods.

**Amyloid: Concordance with Visual Image Reads**

**Qualitative read**
- The recommendation is to use the same tracer for all repeat scans.
- The recommendation is made not to use Point Spread Function (PSF).
- The QIBA Round 6 grant project examining impact of reconstruction methods upon measured SUVR showed that differences due to PSF were not greater than, and in some cases lower than, differences obtained with other reconstruction methods as parameters. T-tests do not support a null hypothesis for the necessary methods.

**Priority**
- In addition, the statement must be made that the same tracer for all repeat scans should be used. The recommendation is made not to use Point Spread Function (PSF).
- The QIBA Round 6 grant project examining impact of reconstruction methods upon measured SUVR showed that differences due to PSF were not greater than, and in some cases lower than, differences obtained with other reconstruction methods as parameters. T-tests do not support a null hypothesis for the necessary methods.

**Recommendations**
- The recommendation is to use the same tracer for all repeat scans.
- The recommendation is made not to use Point Spread Function (PSF).
- The QIBA Round 6 grant project examining impact of reconstruction methods upon measured SUVR showed that differences due to PSF were not greater than, and in some cases lower than, differences obtained with other reconstruction methods as parameters. T-tests do not support a null hypothesis for the necessary methods.

**References**
- Klunk et al. (2015) PET tracers and/or different processing pipelines or measurement methods mapped to a standard range of numeric SUVR values.
to the mathematical model used for warping may be per study specification, and should be uniform across longitudinal analysis. Provide guidance on acceptable sampling models to ensure uniformity across longitudinal studies.

This appears to reference section 3.4.1.2.1.5. For the current statement to reference a comparison of studies, (a) it must be clear that the current statement is comparing different studies; (b) there must be a clear indication of what aspects of the studies are being compared; and (c) the comparison must be based on quantitative data. The current statement does not meet these criteria.

The following text has been added to section 3.4.1.2.2: "The same is true for all other section references. It is possible to make an argument for the use of different models in certain cases, but it is important that this is clearly stated and justified. Providing a reference to the mathematical model used for warping should be uniform across longitudinal analysis. Therefore, if a different model is used, this should be clearly stated and justified."

The following text has been added to section 3.4.3.2.3: "The same is true for all other section references. It is possible to make an argument for the use of different models in certain cases, but it is important that this is clearly stated and justified. Providing a reference to the mathematical model used for warping should be uniform across longitudinal analysis. Therefore, if a different model is used, this should be clearly stated and justified."
Using the term "neurology" could be misunderstood by other clinicians (no neurologists) that are also involved in the treatment of diseases related to the brain. To avoid confusion, it is recommended to use the term "neuroimaging" instead of "neurology" when referring to imaging techniques used in the assessment of neurological conditions. This change is proposed to enhance precision and clarity in medical communication, particularly when discussing imaging procedures and their applications in neurology.

---

**References**


---

**Terminology**

- Radiotracer
- 170 Teran
- 69 M 1080 3.6.4.1 Under Uniformity QC should 3D be included under standard deviation and mean values? Consider stating 3D parameters
- 75 Phantom M 1208-1209 4.1 Incomplete discussion on quality control
- 34 Scanner QC L 86ff 1 Incomplete discussion on quality control
- 82 Radiotracer label
- 18 Scanner QC L 1341

---

**Data Acquisition**

- Injections
- Injection lines.

- Autopsy validation
- And have been approved by the regulatory authorities

- In hours, since most of these tracers are sent from regional radiopharmacies.

- The in vivo concentration (in plasma) is more likely to minimally impact the quantification. Proposed resolution is to not modify.

- As suggested, add a clarification saying "It should be ensured, for both automated and manual injection, that the radiotracer is not being diluted with

---

**References**


---

**Abstracts and Presentations**

- Koeppe R. *Basic Principles and Controversies in PET Amyloid Imaging*. Human Amyloid Imaging Meeting, Miami Beach, Florida, USA, 2012. Online at:

---

**Validation**

- The following language has been added as notice 3.2: "PET/CT scanners not yet officially cleared in the U.S. as of February 2017, for studies outside of the U.S."
The text is focused on improving the reference list, terminology, and relevance of certain sections. It suggests removing sections 3.6.5.3 and 3.6.6. The text also advises updating the reference list to include new references and exclude those that are not relevant. Additionally, it recommends modifying the terminology used, such as changing "measurement" to "measurements" and eliminating redundant terms. The text also discusses the importance of clarity and accuracy in reporting, particularly in the context of longitudinal studies.

In the context of this quantitative Profile, interpretation refers to the way in which the analysis is performed. While the preceding sentence is still clear, it may be preferable to change the reference point from "interpretation" to "analysis" to better reflect the intended meaning. The Profile text has been changed to include statements regarding the labeling implications of the amyloid tracer(s). The text has been updated to reflect the historical axial uniformity tolerance of 10% has the implication that if a subject is imaged in one axial location for one scan, and in a different axial location (e.g. a few cm different) for the next scan, then the slices used to calculate each reference or target region value may change differently. This can introduce error of a few percent to many percent into the longitudinal SUVR change. Selection of the target region value should be made carefully to ensure consistency across scans. Recommendations include:

- For a cross-sectional study wherein the amyloid tracer is used primarily to select amyloid positive subjects, it is important to assess whether the change in amyloid SUVR is a clinically significant change. For the current Profile, which is a longitudinal study, the primary purpose is to assess for change in amyloid load following an intervention; in this case, precision is most important as long as it does not interfere with the interpretation requirements of the study.
- It is important to assess whether the change in amyloid SUVR is a clinically significant change. For the current Profile, which is a longitudinal study, the primary purpose is to assess for change in amyloid load following an intervention; in this case, precision is most important as long as it does not interfere with the interpretation requirements of the study.
- The text has been updated to include statements regarding the labeling implications of the amyloid tracer(s).