PROTOCOL

Title:	A Comparative Performance Study between High and Standard Resolution Positron Emission Tomography Camera using [^{18}F]DPA-714 in Prodromal and Manifest Parkinson's Disease **(Dual PET DPA-714 in PD)**
Sponsor:	The Michael J. Fox Foundation for Parkinson's Research
Principal Investigator:	Neha Prakash, MBBS
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PROTOCOL APPROVAL

Version 1.0 dated 24 Nov 2025

A Comparative Performance Study between High and Standard Resolution Positron Emission Tomography Camera using [^{18}F] DPA- 714 in Prodromal and Manifest Parkinson's Disease (Dual PET DPA-714 in PD)

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1. PURPOSE OF STUDY

The Parkinson's Progression Marker Initiative (PPMI) is a longitudinal, observational, international, and multi-center study designed to establish biomarkers for Parkinson's Disease (PD) with the overarching goal to catapult understanding of the disease pathophysiology and disease modifying therapeutic development (Marek et al., 2018). PPMI 019 is a PPMI imaging sub study aimed to evaluate the effective binding pattern of [^{18}F]DPA-714 as an in vivo marker of neuroinflammation in people with PD and those at risk for PD. The collaboration between the Institute for Neurodegenerative Disorders (INDD) and XingImaging, LLC (XI) offers the unique opportunity to image the PPMI 019 sub study [^{18}F]DPA-714 participants with the high resolution NeuroEXPLORER (NX) PET camera in addition to the standard Siemens Biograph PET. We propose to compare the performance of PET imaging and [^{18}F]DPA-714 in the PPMI 019 study with the high resolution NX to the standard resolution Siemens Biograph to investigate whether NX imaging will enable earlier detection of neuroinflammation and detect longitudinal change.

1.1 Primary Objectives

- To compare the [^{18}F]DPA-714 binding in all brain regions including cortical, sub-cortical, and midbrain regions in all participants acquired from the NX and conventional PET (Siemens Biograph mCT) camera.

1.2 Secondary Objectives

- To compare the longitudinal regional change in [^{18}F]DPA-714 images acquired with NX PET and Siemens Biograph PET in all participants at 12- and 24-months follow-up
- To correlate longitudinal regional change in [^{18}F]DPA-714 and NX PET to clinical and biomarker change in all participants.

2. STUDY OUTCOMES

2.1 Primary Outcomes

- To compare [^{18}F]DPA-714 Standard Uptake Value Ratio (SUVR) in all brain regions including, cortical, striatal, and midbrain for images acquired with NX compared to Siemens Biograph in all participants

2.2 Secondary Outcomes

- To compare the longitudinal regional change in [^{18}F]DPA-714 SUVR in images acquired with NX PET and Siemens Biograph PET in all participants over 24 months
- To compare longitudinal change in [^{18}F]DPA-714 with NX SUVR in different brain regions to clinical change over 24 months
- To compare longitudinal change in [^{18}F]DPA-714 with NX SUVR in different brain regions to change in CSF and plasma biomarkers over 24 months

3. BACKGROUND AND RATIONALE

Emerging evidence suggests neuroinflammation plays a role in early PD and its progression (Schonhoff et al., 2020; Williams et al., 2018). Neuropathological studies highlight the evidence for inflammatory activation in PD with histological evidence of activation of microglia, infiltration of T cells into the brain, and deposition of immunoglobulins. As such, identification of peripheral and central biomarkers of neuroinflammation in PD could not only address key gaps in knowledge but also aid in the potential therapeutic development. There is evidence for

inflammation in PD detectable outside the brain, with increased cytokines and chemokines in blood and CSF (Zimmermann & Brockmann, 2022). While several circulating inflammatory markers have been identified (Garretti et al., 2022; Sulzer et al., 2017; Munoz-Delgado et al., 2021), they lack specificity for PD and are also observed in other disorders. To date, no blood or CSF markers have demonstrated the characteristics of a desirable biomarker.

[^{18}F]DPA-714 is a novel second generation radiotracer that binds selectively to Translocator protein (TSPO), predominantly expressed within inflammatory cells in the brain (Yacoubian et al., 2023). Radiotracer binding to TSPO presents an opportunity to image in vivo neuroinflammation and evaluate its association to clinical characteristics.

To date, studies have shown increased [^{18}F]DPA-714 binding in Parkinson's disease (PD) across different stages, with higher binding associated with cognitive changes (Lavisse et al., 2021;Yacoubian et al., 2023). TSPO binding is primarily localized to the midbrain, basal ganglia with extension across cortical regions. Associations with cognitive function have been mapped to smaller nuclei, such as the thalamus (Yacoubian et al., 2023). This finding underscores the need for enhanced in vivo imaging resolution to elucidate the extent of pathology and the role of different brain regions in PD.

The Parkinson's Progression Marker Initiative (PPMI) is an observational, international, multi-center study designed to establish biomarker defined cohorts and to identify PD progression biomarkers to improve understanding of disease etiology and enhance the likelihood of success of PD disease modifying therapeutic trials (ClinicalTrials.gov Identifier: NCT01141023). PPMI 019 is a PPMI imaging sub study aimed to evaluate the effective binding pattern of [^{18}F]DPA-714 as an in vivo marker of neuroinflammation in people with PD and those at risk for PD. Only individuals identified as high affinity binders at the known TSPO gene polymorphism (rs6971) will be included in PPMI 019 study.

XingImaging, LLC (XI) in New Haven, CT has acquired (with support from MJFF and Bayshore) a state-of-the-art high resolution PET camera called NeuroEXPLORER (NX) manufactured by United Imaging (Li et al., 2024). The technical advancements in NX offer substantially enhanced resolution sensitivity and automated motion detection. The NX will enable visualization of radiotracer binding in smaller nuclei such as the substantia nigra and locus coeruleus. The partnership between the Institute for Neurodegenerative Disorders (INDD) and XI provides a unique opportunity to leverage NX to expand the scope of the PPMI 019 project.

We plan to compare the [^{18}F]DPA-714 on both the NX and standard PET camera in study participants enrolled at the INDD site in the PPMI 019 sub study. We hypothesize that the NX camera will allow for enhanced visualization of TSPO binding with detection of degeneration in smaller nuclei compared to the standard resolution PET camera, Siemens Biograph mCT. We also hypothesize that NX will be superior for detecting longitudinal changes.

4. STUDY DESIGN

This study is a single-center, longitudinal study and will be conducted at the INDD Site in New Haven, CT. This study aims to recruit participants from the ongoing DPA-714 PET Imaging

sub study (PPMI 019) to obtain a second comparison imaging scan. In addition to being imaged with the standard PET camera after the [^{18}F]DPA-714 injection in the PPMI 019 sub study, participants agreeing to a second scan will be imaged with the NX PET camera per this protocol.

This study will enroll approximately 15 participants at the INDD site. The dual PET scans will be completed at baseline, 1-and 2- years follow up. Participants may be asked to undergo further longitudinal scans based on the acquired study data.

All participants will have longitudinal clinical, biomarker, and genetic data for correlation analyses to imaging data from the PPMI Clinical study.

5. STUDY POPULATION

Approximately 15 participants (10 Prodromal and Manifest PD and 5 Healthy volunteers) will be recruited from the ongoing PPMI 019 sub study and undergo additional NX camera scan to compare image quality and quantification across PET systems.

6. PARTICIPANT ELIGIBILITY

Participants must meet the following criteria to enroll:

6.1 Inclusion Criteria

a) A prodromal PD, PD or Healthy participant enrolled in the PPMI 019 sub study.
b) Able to provide informed consent.

6.2 Exclusion Criteria

a) Any other medical or psychiatric condition or lab abnormality that precludes participation per Investigator's judgement.

7. OBTAINING INFORMED CONSENT

Potential participants deemed eligible for and enrolled in the PPMI 019 sub study will be asked to provide informed consent to participate in this study. Participants will complete the additional activities under this protocol.

7.1 Obtaining Informed Consent

The procedures and requirements of the study, together with any potential hazards/risks, and the freedom to withdraw from participation in the study at any time, will be explained to each potential participant as part of the consent process. The consent process will take place in a space that allows for privacy and confidentiality and should allow for enough time for the individual to consider participation and ask any questions. Consent will be obtained by the study Investigator or delegated study staff, as applicable. Each participant will sign such an informed consent to document agreement to participate in the study, as well as to document HIPAA authorization. The signed informed consent will be uploaded to a secure portal for remote monitoring, if possible.

It is the responsibility of the Investigator (or as delegated to the person obtaining consent) to make sure that the participant understands what she/he is agreeing to and that written informed consent is obtained before the participant is involved in any protocol-defined procedures. Each participant will be provided with a copy of the consent form.

8. PARTICIPANT ID ASSIGNMENT

All participants will use their assigned PPMI study ID. The PPMI Participant ID number will be used to identify a participant on all study-related documentation (e.g., clinical database, imaging data).

9. STUDY PROCEDURES

The Baseline visit will be considered Day 0. Once all Baseline activities have been completed and the Investigator determines that all eligibility criteria have been met, the participant may be considered enrolled into the study. Annual visits should be completed within ±45 days of the target visit date. Out of window visits will not be considered a protocol deviation but will be monitored throughout the study for each site.

Assessments that require completion by the Site Investigator (or trained designee) include the following:

- Informed Consent
- Review Inclusion/Exclusion criteria

9.1 Baseline Visit (Day 0)

Refer to the Schedule of Activities (see Appendix) for the activities to be conducted at the Baseline visit.

Eligible participants consented for the PPMI DPA-714 PET Imaging sub study (PPMI 019), interested in completing additional scans under this study will be asked to complete the Dual PET DPA-714 (PPMI 034) sub study consent and complete any additional assessments as part of the study.

Once all Baseline activities for this protocol have been completed and the Investigator determines that all eligibility criteria have been met, the participant may be considered enrolled into this sub study. The combined visit with the PPMI DPA-714 PET Imaging (PPMI 019) sub study is anticipated to take about 8 hours.

9.2 Follow Up Visits- 12 and 24 Month

Refer to the Schedule of Activities (see Appendix) for the activities to be conducted at the Baseline visit.

All participants will be evaluated at 12 and 24 months. Annual visits in combination with the PPMI DPA-714 PET Imaging (PMI 019) sub study are anticipated to take about 6-8 hours.

9.3 Withdrawal from the Study

If a participant withdraws from the study, the study team will complete the Conclusion of Participation Case Report Form (CRF) under the last completed visit, with withdrawal reason.

10. CLINICAL ASSESSMENTS

Additional clinical assessments will be completed under the PPMI Clinical protocol. Information collected from those assessments will be combined with the imaging data and any additional information collected for this protocol.

11. SAFETY ASSESSMENTS

All applicable safety assessments, including the routine Screening clinical lab tests, will be completed for enrolled participants under the PPMI Clinical protocol. Pregnancy test prior to radiotracer injection will be completed as part of the PPMI 019 sub study which will be used as reference for this study.

12. DUAL PET IMAGING WITH [^{18}F]DPA-714

For this study, participants will undergo imaging with the NX camera after the [^{18}F]DPA-714 tracer injection completed under the PPMI 019 sub study procedures.

Since [^{18}F]DPA-714 imaging is still investigational, it cannot provide definite information about a clinical diagnosis. Participants will be monitored for adverse events by the study personnel on the day that a dual PET scan is obtained. A safety follow-up will also be conducted where the participants will be contacted by phone 2 to 3 business days following the injection/scan to assess for adverse events. Identified adverse events will be reported by the site investigator to the site's Institutional Review/Ethics Boards and to his/her Radiation Safety Committee to meet the reporting requirements. In addition, all adverse events will be reported in the applicable clinical databases and reported to FDA, as required.

12.1 Imaging Procedures

- Participants will undergo PET image acquisition on the two PET camera within 90 minutes of injection of the [^{18}F]DPA-714 tracer, as per the PPMI 019 protocol. Imaging will be completed on the NX and the Biograph camera for this study in accordance with the Image Acquisition Protocol (IAP). After completing imaging on one camera, the participant will be moved to the second camera. The sequence of cameras is detailed in the IAP and can be adjusted based on interim data analysis. Breaks will be provided for the participants as needed and when requested. Participants completing both the NX and conventional PET scanning will be imaged for up to 70 minutes under both the cameras.
- Safety and tolerability will be assessed throughout the imaging visit. Vital signs will be monitored pre- and post-injection and recorded as part of the PPMI 019 sub study. This will be used as a reference for this study. Adverse events will be recorded in the adverse events log in each respective clinical database.
- XingImaging will be responsible for imaging site training, data quality, and data analysis. The data and quality assurance procedures to be employed in this study are described in the Image Acquisition Protocol (IAP).

13. CONCOMITANT MEDICATIONS

Concomitant medications, including over-the-counter (OTC), or prescriptions, are permitted except as restricted by the PPMI Clinical protocol. All concomitant medications reported (per instruction in PPMI Clinical Assessments Manual) at the time of the PET Imaging visit are recorded on the study medication log in the PPMI database.

14. PARTICIPATION IN CLINICAL TRIALS

It is preferred that participants do not participate in clinical trials of investigational study drugs during participation in this study. The investigator will document the study drug dosage, if

applicable, and, if unknown, will report on the identity of any study drug and the dosage after it is unmasked.

15. RISK TO PARTICIPANTS

15.1 Risks Due to PET Imaging

Radiation risk

There is minimal additional risk due to CT scan performed for head positioning in the PET camera.

Claustrophobia or Discomfort During the Scan:

Participants will need to lie still in the scanners for up to 70 minutes. Some individuals may feel discomfort or anxiety due to the confined space or length of the scan. Breaks will be provided as needed or requested by the participant. The participant can ask for the imaging to be stopped at any time if uncomfortable. Staff are highly trained in working with people with neurodegenerative disorders and as such, are in tune to their needs and will ensure a comfortable visit.

Unknown Risks:

In addition to the known risks listed above, the imaging procedures in this study may cause unknown risks to the participant, or a developing embryo or fetus or possible risks to the future offspring of male participants not yet established.

The device (NX PET camera) is not intended as an implant that presents a potential for serious risk to the health, safety, or welfare of a participant; is not for a use in supporting or sustaining human life that presents a potential for serious risk to the health, safety, or welfare of a participant, is not for a use of substantial importance in diagnosing, curing, mitigating, treating disease, or otherwise preventing impairment of human health that presents a potential for serious risk to the health, safety, or welfare of a participant, or otherwise presents a potential for serious risk to the health, safety, or welfare of a participant.

16. POTENTIAL BENEFITS TO PARTICIPANTS

There are no direct anticipated benefits to study participants in this study. However, new information may be generated by the study that will support development of better treatments for Parkinson's disease.

17. COST FOR PARTICIPATION

All research travel, assessments and tests will be provided at no cost to the study participant.

18. PAYMENT FOR PARTICIPATION

Participants will receive a stipend of $100.00 for completing each study visit.

19. PARTICIPANT WITHDRAWALS

Study participants will be informed during the consent process that they have the right to withdraw from the study at any time without prejudice and may be withdrawn at the Site Investigator's or Sponsor's discretion at any time. Withdrawal does not impact participation in any other PPMI studies. Any information that has already been collected prior to the study participant's withdrawal will not be removed.

20. ADVERSE EVENTS

20.1 Adverse Event Reporting Requirements

Study Investigators and coordinators will be instructed to assess for adverse events at the study visit when DPA-714 PET Imaging is conducted, as well as by telephone 2 to 3 business days following such activity. Adverse experiences, whether observed by the investigator, or elicited from or volunteered by the participant, should be recorded on the Adverse Event Log. Events occurring outside of the study procedure adverse event reporting period defined above do not require documentation for study purposes (i.e., will not be listed on the Adverse Event Log). Given the overlap with the PPMI 019 sub study, adverse events will be recorded for both studies separately.

Any adverse event ongoing at the 2 to 3 business day reporting telephone visit should be followed until resolution or stabilization. Adverse events reported following a premature withdrawal or conclusion of participation visit should be followed not more than 30 days from [^{18}F]DPA-714 PET imaging.

Adverse events will be reported by the site as required by the site's Institutional Review/Ethics Board and to the Radiation Safety Committee, as applicable.

20.2 Serious Adverse Event Reporting Requirements

Serious adverse events pertaining to [^{18}F]DPA-714 PET imaging will be reported as follows:

a. Any serious and unexpected adverse event occurring within 48 hours following the PET scan, regardless of relatedness to [^{18}F]DPA-714, will be documented on the Adverse Event Log within the EDC and reported by the site to the Site Management Core (SMC) using the PPMI 034 SAE Report Form.

b. The SMC, or as delegated, will report any serious and unexpected adverse events to the FDA as soon as possible, but no later than within 15 calendar days of first being notified of the event, as well as additional regulatory and Sponsor entities per respective reporting requirements.

c. The Investigator will comply with his/her local Institutional Review Board (IRB)/Ethics Board, and Radiation Safety Committee (as applicable), regarding the reporting of adverse experiences.

20.3 Adverse Event Definitions

Adverse Events (AE)

An AE is any undesirable experience occurring to a participant during study participation, whether or not considered related to the study procedure.

Serious Adverse Event (SAE)

An SAE is an AE that is fatal or life-threatening, or results in hospitalization, prolongation of hospitalization, persistent or significant disability/incapacity, or a congenital anomaly/birth defect. A life-threatening AE is an AE that, in the view of the Study Investigator, places the participant at immediate risk of death from the reaction, as it

occurred. Important medical events that may not result in death, be life-threatening, or require hospitalization may be considered an SAE when, based upon appropriate medical judgment, they may jeopardize the participant and may require medical or surgical intervention to prevent one of the outcomes listed in this definition.

Inpatient admission in the absence of a precipitating, treatment emergent, clinical adverse event is not subject to immediate reporting. For example:

- Admission for treatment of a pre-existing condition not associated with the development of a new adverse event.
- Social admission (e.g., participant has no place to sleep).
- Protocol specific admission during a clinical study (e.g., for a procedure required by another study protocol).
- Optional admission not associated with a precipitating clinical adverse event (e.g., for elective cosmetic surgery).

Inpatient admission does not include the following:

- Emergency Room/Accident and Emergency/Casualty Department visits
- Outpatient/same day/ambulatory procedures
- Observation/short stay units
- Rehabilitation facilities
- Hospice facilities
- Respite care (e.g., caregiver relief)
- Skilled nursing facilities
- Nursing homes
- Custodial care facilities

20.4 Assessing Relationship of Adverse Events

The assessment of the relationship of an AE to the [^{18}F]DPA-714 PET imaging procedure and/or PET tracer is a clinical decision based on all available information at the time the event is being documented. The following definitions of the relationship between the AE (including SAEs) and the study procedure should be considered:

- Unrelated - No possible relationship
  The temporal relationship between study procedure or drug and the adverse event onset/course is unreasonable or incompatible, or a causal relationship to study procedure is implausible.
- Unlikely - Not reasonably related, although a causal relationship cannot be ruled out
  While the temporal relationship between study procedure or drug and the adverse event onset/course does not preclude causality, there is a clear alternate cause that is more likely to have caused the adverse event than the study procedure or drug.
- Possible - Causal relationship is uncertain
  The temporal relationship between study procedure or drug and the adverse event onset/course is reasonable or unknown, and while other potential causes may not exist, a causal relationship to the study procedure or drug does not appear probable.
- Probable - High degree of certainty for causal relationship

The temporal relationship between study procedure or drug and the adverse event onset/course is reasonable and other causes have been eliminated or are unlikely.

- Definite - Causal relationship is certain
  The temporal relationship between study procedure or drug and the adverse event onset/course is reasonable and other causes have been eliminated.

20.5 Assessing Intensity/Severity of Adverse Events

In addition to assessing the relationship of the adverse event to the study procedure or drug, an assessment is required of the intensity (severity) of the event. The following classifications should be used:

- *Mild:*
  A mild AE is an AE, usually transient in nature and generally not interfering with normal activities.
- *Moderate:*
  A moderate AE is an AE that is sufficiently discomforting to interfere with normal activities.
- *Severe:*
  A severe AE is an AE that incapacitates the participant and prevents normal activities. Note that a severe event is not necessarily a serious event. Nor must a serious event necessarily be severe.

21. STUDY MONITORING AND SITE MANAGEMENT

The PPMI Steering Committee has the responsibility to monitor all procedures for safety, GCP, and regulatory compliance. The study sites will be managed and overseen in an ongoing manner to verify:

(a) The rights and well-being of human participants are protected.
(b) The reported study data are accurate, complete, and attributable.
(c) The conduct of the study follows the currently approved protocol/amendment(s), with GCP, and with the applicable regulatory requirement(s).

22. PRIVACY AND CONFIDENTIALITY

Privacy of participants will be protected in that each person will have the option to voluntarily choose whether to participate in this study. It is the responsibility of the Site Investigator to consider the participant's privacy and confidentiality when completing study visits and related protocol activities.

The Site Investigator must assure that the confidentiality of participants, including their personal identity and personal medical information, will be maintained at all times. U.S. sites have additional confidentiality obligations to study participants under the Health Insurance Portability and Accountability Act (HIPAA). Participants will be identified by participant ID numbers on data forms and other study materials.

The Site Investigator will permit the study monitor or designated Site Management Core (SMC) representative to review signed informed consent(s) and that portion of the participant's medical record that is directly related to the study (or provide certified copies of source documentation upon request, if possible and consistent with site policies and procedures). This

shall include all study relevant documentation including participant medical history to verify eligibility, laboratory test result reports, admission/discharge summaries for hospital admissions occurring while the participant is in the study, and autopsy reports for deaths occurring during the study (when available). In addition, electronic document storage will be maintained with the Florence electronic trial master file, as consistent with the site's internal policies. Identifiable participant information may be stored within this system, which has been validated and deemed compatible with 21 CFR Part 11 requirements. Only study staff requiring access to related study documentation will have permission to view identifiable information.

23. DATA SHARING AND STORAGE FOR FUTURE USE

Data collected for this study will be maintained and stored indefinitely at respective study Cores on secure, password protected systems. All study information (data) will be accessed only by those who require access as pertains to the individual's role on the study. All organizations responsible for data storage and review will observe the highest precautions to ensure data integrity and security.

Data collected for this study may be transferred and shared across participating PPMI Cores including the Clinical Trials Statistical and Data Management Core (CTSDMC) at the University of Iowa, Indiana University PPMI Cores (Indianapolis, IN), the Site Management Core and Data Systems and Technology Operations at the Institute for Neurodegenerative Disorders (New Haven, CT) for conducting analyses as pertains to the study including, but not limited to, enrollment, compliance, study outcomes and, in combination from the data received from PPMI Program studies, to enable modifications to the predictive Prodromal eligibility criteria. All PPMI data will be incorporated into the PPMI database to create a fully harmonized PPMI database.

All data obtained during the conduct of this study will be sent to the Laboratory of Neuro Imaging (LONI) in Los Angeles, California to be stored indefinitely for research purposes. Research data will be made available to researchers to conduct analyses related to PD and other disorders. Researchers will be required to comply with the PPMI data agreement to receive data. All personally identifiable information will be removed before it is shared outside the study.

24. ANALYSIS PLAN

This is an exploratory study and therefore no formal sample size estimates are provided.

Information summarizing planned analyses is described below

- Compare baseline [^{18}F]DPA-714 SUVR obtained from both the NX and Siemens Biograph to explore [^{18}F]DPA-714 SUVR binding in regions of interest.
- Determine and compare the longitudinal change of [^{18}F]DPA-714 SUVR from both the NX and Siemens Biograph over 24 months in striatum and relevant regions of interest. The change in each imaging outcome will be compared at 12 and 24 months.
- Compare baseline and longitudinal [^{18}F]DPA-714 SUVR obtained via NX camera with biological and clinical biomarkers to correlate imaging markers with other markers of

disease progression.

- Compare baseline visual binding of [^{18}F]DPA-714 in small nuclei of the brain in images obtained from NX to Siemens Biograph where SUVR calculation is not possible with standard PET.

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27. APPENDIX 1- DUAL PET DPA-714 in PPMI Schedule of Activities

	Visit Number	Baseline (BL)	V01	V02
Assessment	**[**]Timepoint**	**0**	**12 months (Y1)**	**24 months (Y2)**
Consent Activities				
Dual PET DPA-714 in PD Imaging Documentation of Informed Consent		X		
Dual PET DPA-714 in PD Imaging Informed Consent Tracking Log		X	As Needed	
Additional Protocol Specific Activities				
Dual PET DPA-714 in PD Inclusion/Exclusion Criteria		I		
Dual PET DPA-714 in PD PET Imaging[a]		X	X	X
Dual PET DPA-714 in PD Imaging Conclusion of Study Participation			As Needed	
Safety and General Health				
[#] Dual PET DPA-714 in PD Adverse Event In-Clinic Assessment		X	X	X
[#] Dual PET DPA-714 in PD Adverse Event Telephone Assessment		X	X	X
Dual PET DPA-714 in PD Report of Pregnancy		As Needed		

**Window of ±45 days either side of Target Visit Date

I = Investigator (or trained designee) completed assessment

X = Investigator or Coordinator completed assessment (or as otherwise delegated)

a = Participants will receive the [^{18}F]DPA-714 injection as part of the PPMI 019 sub-study; no additional injections will be administered under this protocol. The urine pregnancy test for women of childbearing potential will also be conducted under PPMI 019 sub-study and will be used to meet the requirements for this study. Site staff will confirm completion of the test prior to imaging. If not already done, the test must be performed before proceeding with any tracer injection.

#Adverse events collected day of and 2-3 business days post Dual PET imaging visit per protocol.