Study Title
Cross-species studies of smoking effects on cognition and neuroinflammation in HIV

Study Summary
This study will examine how smoking affects people living with HIV, specifically the function and performance of the brain. We will examine cognitive performance using tests on the computer and paper-and-pencil tests, such as memory, concentration, etc. We will also study changes in the brain related to smoking using a PET scanner. This involves having an injection of a “radiotracer” that the scanner can detect and reveals information about inflammation in the brain.

Study Eligibility
• Four groups of participants, (n=27 per group for a total of 108 participants) will be recruited:
  o Group 1: cigarette smoker, HIV+
  o Group 2: cigarette smoker, HIV-
  o Group 3: non-smoker, HIV+
  o Group 4: non-smoker, HIV-

Inclusion Criteria
1. Aged 18 and older
2. Possess the capacity to provide informed consent to a set of neurobehavioral, neuromedical and neuroimaging assessment procedures or, if lacking such capacity, to give their assent and to have a representative with legal standing under applicable state law who will consent as a surrogate.
3. Nicotine exposure status of either:
   a. Current smokers: currently smokes 10 or more cigarettes per day, or
   b. Never or Past Smokers: abstinence from tobacco or other forms of nicotine exposure for at least 1 year.

Exclusion Criteria
1. The principal sources of exclusion will be neurocognitive morbidity that likely to confound attribution of observed impairment to HIV. These include a history of head trauma, severe psychiatric disorders, history of CNS tumor or infections, or history of dependence or current intoxication with substances. In general, confounding exclusions fall into the following categories:
   a. Neurologic: e.g., head injury with loss of consciousness for greater than 30 minutes or resulting in neurologic complications; currently uncontrolled or past severe seizure disorders; history of CNS infections or neoplasms;
   b. Psychiatric: Unstable Axis I disorders or recent psychotropic medications changes (&lt; 30 days) at the time of study participation; severe diagnoses (e.g., psychosis) or treatment with psychotropic medications that impair cognition;
   c. Substance use: For substances other than tobacco, substance dependence within the past
6 months, substance abuse within the past 6 months, or current intoxication or active occasional substance use that exceeds the threshold of once per week which would confound attribution of impairment to HIV;

d. Pregnancy or breast feeding, due to the theoretical risk of radiation from a PET scan for the fetus/child.

2. Comorbid Medical Conditions: These include comorbid medical conditions such as unstable hypertension, unstable angina, unstable diabetes mellitus, unstable cardiac arrhythmias, TIAs, severe CAD, severe PVD, severe hepato-gastro-intestinal disease, and migraine; subjects taking medications that significantly affect the hemodynamic response should not have changed medication or dosage for at least 30 days prior to the scan session: some of these medications include antihypertensives, antibiotics, oral antidiabetics, insulin, and thyroid medications.

3. Magnetic Resonance Imaging Contraindications: Contraindications to MRI include: cardiac pacemaker; metal fragments in eyes/skin/body (shrapnel); subjects who have ever been a metal worker/welder; history of eye surgery/eyes washed out because of metal; aortic/aneurysm clips; prosthesis; by-pass surgery/coronary artery clips; hearing aid; heart valve replacement; pregnancy; subjects with an I.U.D. (birth control device); a shunt (ventricular or spinal); electrodes; metal plates/pins/screws/wires; neuro/bio-stimulators (TENS unit); vision problems uncorrectable with lenses; claustrophobia; inability to lie still on one’s back for approximately two hours; prior neurosurgery; older tattoos with metal dyes; unwillingness to remove nose, ear, tongue, or face rings. Any implants will be reviewed for safety based on a comprehensive list that can be found at http://www.mrisafety.com/home.asp.

Study Enrollment Dates
7/1/2017 - 5/31/2022

URL for information on study and/or enrollment
https://hnrp.hivresearch.ucsd.edu/index.php/research/studies/current-research

Contact Name
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