

## Data Preparation for WHIMS MRI Re-readings Data Sets June 2017

### Introduction

This release includes re-reads of the MRI 1 and MRI 2 data. These include a subset of WHIMS participants who underwent a brain scan.

Timing of Data Collection

Phase	Beginning and end dates
MRI-1	2004-2006
MRI-2	2008-2010

### **Magnetic Resonance Imaging (MRI)**

The WHIMS-MRI study entitled Effects of Hormone Therapy on Subclinical Neurological Pathology was a cross-sectional magnetic resonance imaging substudy in women from the WHIMS Post-Trial Extension. Women who consented underwent a single MRI scan.

The data consist of total brain volume data and ischemic lesion volume data presented by brain region. These data are re-reading of the MRI scans (not the original baseline MRI readings). The re-readings were highly correlated, but not identical, to the original baseline readings and were not done on a handful of women. About half the women did not undergo follow-up MRIs (MRI-2). For analyses involving estimates of longitudinal change, a refined image processing approach is used that accounts for both time points to improve accuracy at each step in the analysis. This approach includes tissue classification and normalization to a standard atlas. Use of this refined image analysis approach yields somewhat different numerical values than the original or longitudinal image reports alone. However, when all MRI time points are reanalyzed in this framework, the resulting numerical values are internally consistent.

Also included in this release is an ICV dataset containing approximate ICV (brain+cerebellum), reported in cc. The "QC\_EXCLUDE" variable suggests the exclusion of ID's because of bias/no contrast in the input baseline image. This was detected in the latest QC on these images. The reading center reported ROI's for these ID's and suggest either excluding these ID's and redoing analyses or checking if these ID's change results significantly.

### **Data Sets Description**

Data sets for each component are described below.

- MRI1a\_totalvol (Total volume by region)
- MRI1a\_abnormalvol (Abnormal volume by region)
- MRI2a\_totalvol (Total volume by region)

- MRI2a\_abnormalvol (Abnormal volume by region)
- MRI\_ICV (Approximate ICV (brain+cerebellum))

## **2. Data File Setup**

Each SAS data set is version 9.4. The identifying variables in each file are Participant ID, 'ID' (referred to as the "common ID" in the WHI documentation) and visit (1-first MRI , 2-second MRI).