Date of MRI (m m/dd/yyyy):

## T2 lesions analysis

1. Total volume of brain lesions on T2W image (cc)\*\*:
2. Change in T2 lesion(s) volume (mL)\*\*:
   1. Total number of T2 lesions:
3. Number of new or enlarging non-enhancing T2 lesions\*\*:
   1. Number of periventricular lesions:
   2. Number of juxtacortical lesions:
   3. Number of posterior fossa lesions:
   4. Number of cortical lesions:
   5. Number of thalamus lesions:
   6. Number of basal ganglia lesions:
   7. Number of other lesions whose type is not specified\*\*\*:
4. Technique reference for new lesions (i.e. literature citation(s), MRI Acquisition Manual or Analysis Manual. May also include visual observation, detection, etc.):

## Gd-enhancing lesions analysis

1. Total number of Gd-enhancing lesions:
2. Number of NEW Gd-enhancing lesions\*\*:
3. Total volume of all Gd-enhancing lesions (cc):
4. Change in volume of all Gd-enhancing lesions (cc):
5. Technique reference (i.e. literature citation(s), MRI Acquisition Manual or Analysis Manual):

## Combined Unique Active lesions

1. Number of CUA lesions compared to previous time-point:
2. Technique reference for new lesions (i.e. literature citation(s), MRI Acquisition Manual or Analysis Manual. May also include visual observation, detection, etc.):

## T1 hypointense lesions analysis

1. Total number of T1 hypointense lesions:
2. Number of new T1 hypointense lesions:
3. Total volume of T1 hypointense lesions (mL):
4. Change in volume of T1 hypointense lesions (mL):
5. Technique reference (i.e. literature citation(s), MRI Acquisition Manual or Analysis Manual):

## Change in brain volume analysis

Answer either question 1 or 2, but not both.

1. Brain volume (mL)\*\*:  Not answered
   1. Change in brain volume (mL)\*\*:

mL  %

1. Brain volume fraction\*\*:  Not answered
   1. Change in brain volume fraction (%):

## Change in ventricular volume analysis

Answer either question 1 or 2, but not both.

1. Ventricular volume (mL):  Not answered
   1. Change in brain volume (mL):

mL  %

1. Ventricular volume fraction:  Not answered
   1. Change in brain volume (mL):

mL  %

## Gray matter volume analysis

Answer either question 1 or 2, but not both.

1. Gray matter volume (mL)\*\*\*:  Not answered
   1. Change in gray matter volume (%)\*\*\*:
2. Gray matter volume fraction\*\*\*:  Not answered
   1. Change in gray matter volume fraction (%)\*\*\*:

## Gray matter lesions analysis

1. Number of new gray matter lesions:
2. Total number of gray matter lesions:
3. Total volume of gray matter lesions (mL):
4. Change in volume of gray matter lesions (mL)\*\*\*:
5. Technique reference for new lesions (i.e. literature citation(s), MRI Acquisition Manual or Analysis Manual. May also include visual observation, detection, etc.):

## White matter volume analysis

Answer either question 1 or 2, but not both.

1. White matter volume (mL)\*\*\*:  Not answered
   1. Change in white matter volume (%)\*\*\*:
2. White matter volume fraction\*\*\*:  Not answered
   1. Change in white matter volume fraction (%)\*\*\*:
3. Change in normal appearing white matter - complete as many times as needed (%)\*\*\*:
   1. Timepoint\*\*\*: [Add protocol-specific options]

## Regional volumetric analysis

1. Central cerebral volume (mL):
   1. Change in central cerebral volume (mL):
2. Cortical thickness (mm):
   1. Change in cortical thickness (mm):
3. Brain structure volumes
   1. Hippocampus (mL):
      1. Change in hippocampus (mL):
   2. Thalamus (mL):
      1. Change in thalamus (mL):

## Spinal cord lesions analysis

1. Total number of spinal cord lesions\*\*\*:
2. Spinal cord lesion region (choose all that apply)\*\*\*:

C1-C7  T1-T12  L1-L5

1. Spinal cord lesions location (choose all that apply)\*\*\*:

Anterior  Posterior  Lateral

1. Spinal cord measurement\*\*\*:

Area (mm2):  Volume (mL):

1. Technique reference (i.e. literature citation(s), MRI Acquisition Manual or Analysis Manual):

## Tissue Integrity Measures

MTR – specify units and values Table

| Intentionally left blank | Units | Whole brain | Normal-appearing GM | Normal-appearing WM |
| --- | --- | --- | --- | --- |
| Mean MTR | Data to be entered by site | Data to be entered by site | Data to be entered by site | Data to be entered by site |
| MTR histogram peak position | Data to be entered by site | Data to be entered by site | Data to be entered by site | Data to be entered by site |
| MTR histogram peak height | Data to be entered by site | Data to be entered by site | Data to be entered by site | Data to be entered by site |

DTI – specify units and values Table

| Intentionally left blank. | Units | Whole brain | Normal-appearing GM | Normal-appearing WM |
| --- | --- | --- | --- | --- |
| Mean FA | Data to be entered by site | Data to be entered by site | Data to be entered by site | Data to be entered by site |
| Mean ADC | Data to be entered by site | Data to be entered by site | Data to be entered by site | Data to be entered by site |
| Mean axial diffusivity | Data to be entered by site | Data to be entered by site | Data to be entered by site | Data to be entered by site |
| Mean radial diffusivity | Data to be entered by site | Data to be entered by site | Data to be entered by site | Data to be entered by site |

## General Instructions

This CRF Module is designed to be used in conjunction with the MRI and Imaging Analysis Technique and Results – Baseline CRF Modules.

Investigators should support use of the MS Imaging CRF Modules with detailed procedure, such as may be contained in the SOPs of their individual intuitions, with particular attention to software versions.

All elements on this CRF are classified as Supplemental unless otherwise indicated by an asterisk (\*) and should be collected if the research team considers them appropriate for their study.

\*\*These elements are considered Supplemental – Highly Recommended.

\*\*\* These elements are considered Exploratory.

## Specific Instructions

Please see the Data Dictionary for definitions for each of the data elements included in this CRF Module.