1. Scanner (Manufacturer and Model):

Siemens

Model:

Philips

Model:

GE

Model:

Other, specify:

Model:

1. Field strength:

1.5 T  3.0 T  7.0 T  Other, specify:

1. Scanner software version:
2. Raw data format saved and available:  Yes  No
3. Study done during an acute metabolic crisis?  Yes  No
4. Single-voxel spectroscopy (SVS) – (Voxel 1):
   1. Yes  No
   2. PRESS  STEAM  (s)LASER  Other, specify:
   3. Repetition time (TR) ms:
   4. Echo time (TE) ms:
   5. Number of averages:
   6. Shimming procedure:  Active  Global  Interactive  Local  3D  Other, specify:
   7. Was a similar corresponding water unsuppressed spectrum acquired?  Yes  No
   8. Voxel size (mm x mm x mm):
   9. Voxel location:  Basal ganglia  Occipitoparietal gray matter  Parietal white matter

Frontal white matter  Other, specify:

* 1. Voxel over area with signal abnormality:  Yes  No
  2. Voxel over area with reduced (restricted) diffusion:  Yes  No
  3. If intermediate TE (130-150ms) at 3Tesla, was an adiabatic excitation pulse (e.g., LASER, semi-LASER) used?  Yes  No
  4. Visual spectral quality assessment:  Adequate  Inadequate quality

1. Single-voxel spectroscopy (SVS) – (Voxel 2, if applicable):
   1. Yes  No
   2. PRESS  STEAM  (s)LASER  Other, specify:
   3. Repetition time (TR) ms:
   4. Echo time (TE) ms:
   5. Number of averages:
   6. Shimming procedure:  Active  Global  Interactive  Local  3D  Other, specify:
   7. Was a similar corresponding water unsuppressed spectrum acquired?  Yes  No
   8. Voxel size (mm x mm x mm):
   9. Voxel location:  Basal ganglia  Occipitoparietal gray matter  Parietal white matter

Frontal white matter  Other, specify:

* 1. Same voxel location as voxel number one?  Yes  No
  2. Voxel over area with signal abnormality:  Yes  No
  3. Voxel over area with reduced (restricted) diffusion:  Yes  No
  4. If intermediate TE (130-150ms) at 3Tesla, was an adiabatic excitation pulse (e.g., LASER, semi-LASER) used?  Yes  No
  5. Visual spectral quality assessment:  Adequate  Inadequate quality

1. Multivoxel spectroscopy:
   1. Yes  No
   2. 2D-CSI  3D-CSI
   3. PRESS  STEAM  (s)LASER  Other, specify:
   4. Repetition time (TR) ms:
   5. Echo time (TE) ms:
   6. Number of averages:
   7. Shimming procedure:  Active  Global  Interactive  Local  3D  Other, specify:
   8. Was a similar corresponding water unsuppressed spectrum acquired?  Yes  No
   9. Slab/slice thickness (mm):
   10. Slab/slice level:  Basal ganglia  Other, specify:
   11. Voxel over area with signal abnormality:  Yes  No
   12. Voxel over area with reduced (restricted) diffusion:  Yes  No
   13. If intermediate TE (130-150ms) at 3Tesla, was an adiabatic excitation pulse (e.g., LASER, semi-LASER) used?  Yes  No
   14. Visual spectral quality assessment:  Adequate  Inadequate quality
2. Was absolute metabolite quantification procedure performed:  Yes  No
   1. Quantification tool (software):

**Table 1: MRS Metabolites**

| Metabolite | Levels (for age) |
| --- | --- |
| NAA | Normal  Elevated  Decreased |
| Choline | Normal  Elevated  Decreased |
| Creatine | Normal  Elevated  Decreased |
| Lipid/lactate (short TE) | Normal  Elevated (mild)  Elevated (marked) |
| Lactate (intermediate/long TE) | Normal  Elevated (mild)  Elevated (marked) |
| Myo-inositol (short TE) | Normal  Elevated |
| Other, specify: | Level: |

Recorder Signature: Date:

## General Instructions

This CRF contains data that would be collected when an imaging study is performed to visualize both function and anatomy in the brain.

The Imaging Guidance for CDE Use documentincludes information on processing, quality control, and result analysis.

Important note: None of the data elements included on this CRF Module are classified as Core (i.e., strongly recommended for all mitochondrial disease clinical studies to collect). All data elements are classified as Supplemental – Highly Recommended (i.e., essential information for specified conditions, study types, or designs) and should be collected if imaging studies are performed.

Please see the Data Dictionary for element classifications.

## Specific Instructions

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

* Date – Date/time should be recorded to the level of granularity known (e.g., year, year and month, complete date plus hours and minutes, etc.) and in an unambiguous format acceptable to the study database like DD-MMM-YYYY. When date/time data are prepared for aggregation or sharing, they should be converted to the format specified by [ISO 8601](https://www.iso.org/iso-8601-date-and-time-format.html); YYYY-MM-DD T:hh:mm:ss.