Clinical Dataset

Presenting features triggering referral				
Age of onset of presenting symptoms				
☐ Prenatal			☐ Juvenile (>5-16 years)	
☐ Neonatal (Birth to 28 days)			☐ Early adult (>16 years)	
☐ Infantile (> 28 days month to 1 year)				
☐ Childhood (>1 to 5 years)				
Evolution of symptoms				
☐ Slowly progressive (> 6 months)				
☐ Rapidly progressive (< 6months)				
☐ Acute-episodic (relapsing-remitting)				
Deterioration with:				
☐ Head injury				
☐ Infection / Inflammation				
☐ Anaesthetic				
☐ Non- progressive				
Pregnancy and Neonatal History				
Prenatal				
i. Pregnancy	☐ Normal	☐ Abnormal	☐ Unknown	
Details:				
a) Foetal movements	☐ Normal	☐ Abnormal		
b) Foetal dysmorphology	☐ Yes	☐ No		
c) Polyhydramnios	☐ Yes	☐ No		
d) IUGR	☐ Yes	☐ No		
ii. Labour	☐ Normal	☐ Abnormal	☐ Unknown	
Specify: - eg CTG abnormalities? Meconium stained liquor?				
Neonatal				
i. Ventilatory support	☐ Yes	☐ No		
a) Improved over time?	☐ Yes	☐ No		
ii. Feeding assistance	☐ Yes	☐ No		
b) Improved over time?	☐ Yes	☐ No		
iii. Delayed head/neck control	☐ Yes	☐ No		
iv. Apgar scores	1 minute	5 minutes		
v. Seizures	☐ Yes	☐ No		
vi. Hypoglycaemia	☐ Yes	☐ No		
Other neonatal issues:				
Delayed early motor milestones	☐ Yes	☐ No		
Delayed social development	☐ Yes	☐ No		
Delayed speech and language developmental	☐ Yes	☐ No		
Intellectual disability	☐ Yes	☐ No	☐ Not Assessed	
a. Severity	☐ Mild	☐ Moderate	☐ Severe	☐ Profound

Plateau of motor skills - age of onset:	☐ Yes ☐ No
Regression of motor skills - age of onset:	☐ Yes ☐ No
Highest motor milestone achieved:	
Regression of cognitive skills - age of onset:	☐ Yes ☐ No
Age at last review:	
Neuropsychiatric or behavioural symptoms - age of onset:	☐ Yes ☐ No
viii. Comment:	
GMFCS	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Not assessed
MACS	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Not assessed
EDACS	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Not assessed
Cognitive assessment/ CFCS	
Epilepsy	
i. Seizure type	☐ Generalised ☐ Focal
ii. Comment:	
Sensorineural deafness	☐ Yes ☐ No ☐ Not Assessed
if present	☐ congenital ☐ later onset
if present	☐ unilateral ☐ bilateral
Audiology	☐ Normal ☐ Abnormal ☐ Not Assessed
Date of test: Audiology common:	
Ophthalmological abnormalities	
i. Cortical blindness	☐ Yes ☐ No ☐ Not Assessed
ii. Optic atrophy/neuropathy	☐ Yes ☐ No ☐ Not Assessed
iii. Retinitis pigmentosa / retinal dystrophy	☐ Yes ☐ No ☐ Not Assessed
iv. Cataracts	☐ Yes ☐ No ☐ Not Assessed
v. Nystagmus	☐ Yes ☐ No ☐ Not Assessed
vi. Cherry red spot	☐ Yes ☐ No ☐ Not Assessed
vii. Glaucoma	☐ Yes ☐ No ☐ Not Assessed
vii. Vascular abnormalities	☐ Yes ☐ No ☐ Not Assessed
viii. Oculomotor apraxia	☐ Yes ☐ No ☐ Not Assessed
Endocrinological abnormalities	
i. Diabetes mellitus	☐ Yes ☐ No ☐ Not Assessed
ii. Diabetes insipidus	☐ Yes ☐ No ☐ Not Assessed
iii. Hypopituitarism	☐ Yes ☐ No ☐ Not Assessed
iv. Hypothyroidism	☐ Yes ☐ No ☐ Not Assessed
vi. Adrenal insufficiency	☐ Yes ☐ No ☐ Not Assessed
v. Hypogonadotrophic hypogonadism	☐ Yes ☐ No ☐ Not Assessed
vi. Growth hormone deficiency	☐ Yes ☐ No ☐ Not Assessed
vii. SIADH	☐ Yes ☐ No ☐ Not Assessed
vii. Ovarian dysfunction	☐ Yes ☐ No ☐ Not Assessed
i. Comment:	
GI Tract abnormalities	
i. Gastro-oesophageal reflux	☐ Yes ☐ No
ii. NG/tube feeding	☐ Yes ☐ No Age at insertion:____
iv. Gall bladder disease	☐ Yes ☐ No

v. Constipation	☐ Yes	☐ No						
vi. Diarrhoea	☐ Yes	☐ No						
vii. Comment:								
Skin								
i. Photosensitivity	☐ Yes	☐ No						
ii. Sensitivity to pressure sores and/or poor wound healing	☐ Yes	☐ No						
Neurological Examination Findings								
Age at Last Assessment:								
Head Size (OFC):								
Cranial Nerves:								
EOM / gaze palsy	☐ Yes	☐ No	Details:					
Bulbar palsy	☐ Yes	☐ No						
Pseudobulbar palsy	☐ Yes	☐ No						
TONE								
i. Axial Hypotonia	☐ Yes	☐ No						
ii. Appendicular hypotonia	☐ Yes	☐ No						
iii. Hypertonia	☐ Yes	☐ No						
Left upper limb	☐ Yes	☐ No						
Left lower limb	☐ Yes	☐ No						
Right upper limb	☐ Yes	☐ No						
Right lower limb	☐ Yes	☐ No						
iv. Details: Dystonia /Spasticity / Mixed (circle)								
Strength								
	LEFT					RIGHT		
i. Upper limb	☐ Normal	☐ Reduced				☐ Normal	☐ Reduced	
ii. Lower limb	☐ Normal	☐ Reduced				☐ Normal	☐ Reduced	
MRC score								
Reflexes								
	LEFT					RIGHT		
i. Upper limb	☐ Normal	☐ Hyper	☐ Hypo	☐ Not elicited		☐ Normal	☐ Hyper	☐ Hypo	☐ Not elicited
ii. Lower limb	☐ Normal	☐ Hyper	☐ Hypo	☐ Not elicited		☐ Normal	☐ Hyper	☐ Hypo	☐ Not elicited
iii. Patellar	☐ Normal	☐ Hyper	☐ Hypo			☐ Normal	☐ Hyper	☐ Hypo	
v. Plantars	☐ Up	☐ Down	☐ Absent			☐ Up	☐ Down	☐ Absent	
vi. Comment:								
Clonus	☐ Yes	☐ No						
Sensation								
Peripheral neuropathy	☐ Yes	☐ No						
Details:								
Other sensory deficits:								
Extrapyramidal Features								
i. Myoclonus	☐ Yes	☐ No						
Pattern:								
ii. Choreathethosis	☐ Yes	☐ No						
Pattern:								
iii. Tremor	☐ Yes	☐ No						
Pattern:								
iv. Parkinsonism	☐ Yes	☐ No						
Pattern:								
Cerebellar Dysfunction								

i. Trunk axial ataxia Pattern:	☐ Yes	☐ No		
ii. Appendicular dysmetria Pattern:	☐ Yes	☐ No		
iii. Autonomic dysfunction Pattern:	☐ Yes	☐ No		
Other Neurological Abnormalities				
Comment:				
General Examination Findings				
HEIGHT: WEIGHT:				
Dysmorphic features	☐ Yes	☐ No	Comment:	
Abnormal pigmentation	☐ Yes	☐ No	Comment:	
Dental abnormalities	☐ Yes	☐ No	Comment:	
Genital abnormalities	☐ Yes	☐ No	Comment:	
Tendinous xanthomas / xanthelasma	☐ Yes	☐ No	Comment:	
Hepatomegaly	☐ Yes	☐ No	Comment:	
Splenomegaly	☐ Yes	☐ No	Comment:	
Skin abnormalities	☐ Yes	☐ No	Comment:	
Hair abnormalities	☐ Yes	☐ No	Comment:	
Joint abnormalities	☐ Yes	☐ No	Comment:	
Cardiac abnormalities	☐ Yes	☐ No	Comment:	
Digital anomalies	☐ Yes	☐ No	Comment:	
Investigations				
Previous Microarray and Genotype Data				
Laboratory Examinations				
TORCH SEROLOGY	☐ Normal	☐ Abnormal	☐ Not Assessed	
Urine CMV	☐ Normal	☐ Abnormal	☐ Not Assessed	
CMV PCR from Guthrie card	☐ Normal	☐ Abnormal	☐ Not Assessed	
Very long chain fatty acids (including phytanic / pristinic)	☐ Normal	☐ Abnormal	☐ Not Assessed	
1. Lysosomal enzymes	☐ Normal	☐ Abnormal	☐ Not Assessed	
2. Plasma amino acids	☐ Normal	☐ Abnormal	☐ Not Assessed	
3. Urine amino acids	☐ Normal	☐ Abnormal	☐ Not Assessed	
4. Urine organic acids	☐ Normal	☐ Abnormal	☐ Not Assessed	
5. Urine GAGs	☐ Normal	☐ Abnormal	☐ Not Assessed	
6. Urine oligosaccharides	☐ Normal	☐ Abnormal	☐ Not Assessed	
7. Urine polyols	☐ Normal	☐ Abnormal	☐ Not Assessed	
8. Urinary sulphatides	☐ Normal	☐ Abnormal	☐ Not Assessed	
9. Vitamin B12	☐ Normal	☐ Abnormal	☐ Not Assessed	
10. Creatine kinase	☐ Normal	☐ Abnormal	☐ Not Assessed	
11. Thyroid function including reverse T3	☐ Normal	☐ Abnormal	☐ Not Assessed	
12. Liver function tests	☐ Normal	☐ Abnormal	☐ Not Assessed	
13. Full blood exam	☐ Normal	☐ Abnormal	☐ Not Assessed	
14. Urine bile acids (Cholestanol)	☐ Normal	☐ Abnormal	☐ Not Assessed	
If abnormal is selected for any test, above, please describe: 15.				

Highest blood lactate _____ mmol/L	_____ normal range	Date of test:	sample – venous / arterial	
[nb: torniquet sample Y/N]				
Venous pyruvate _____ umol/L	_____ normal range	Date of test:		
CSF lactate _____ mmol/L	_____ normal range	Date of test:		
CSF pyruvate _____ umol/L	_____ normal range	Date of test:		
CSF alanine _____ umol/L	_____ normal range	Date of test:		
CSF glycine _____ umol/L	_____ normal range	Date of test:		
CSF protein _____ g/L	_____ normal range	Date of test:		
CSF folate _____ nmol/L	_____ normal range	Date of test:		
CSF microscopy WCC_____	RCC_____			
CSF oligoclonal bands ☐ Present	☐ Absent	☐ Not done		
Paired tests				
Venous lactate & CSF lactate ☐ Yes	☐ No			
Venous pyruvate & CSF pyruvate ☐ Yes	☐ No			
Plasma alanine & CSF alanine ☐ Yes	☐ No			
Other (Biochemical / Histopath / Ultrastructural)				
Neurophysiology Testing				
a. Electromyography (EMG) ☐ Assessed	☐ Not Assessed			
i. Myopathic ☐ Yes ☐ No		iii. Spontaneous activity ☐ Yes ☐ No		
ii. Mixed ☐ Yes ☐ No Which muscle:		iv. Complex discharges ☐ Yes ☐ No		
EMG Comment:				
b. Nerve conduction studies ☐ Assessed	☐ Not Assessed			
Which nerves:	Sensory:			
i. Motor: ☐ Demyelinating	☐ Axonal	☐ Mixed	☐ Normal	☐ Not Assessed
ii. Sensory: ☐ Demyelinating	☐ Axonal	☐ Mixed	☐ Normal	☐ Not Assessed
Comment:				
c. Electroencephalogram				
i. ☐ Normal ☐ Abnormal ☐ Not Assessed	Date of test:			
Findings:				
Skeletal radiographs:				
Psychology / Neuropsychology Assessment				
Comment:				

Imaging Dataset

Imaging Data			
Brain MRI	☐ Yes ☐ No		
Age at first MRI scan	____months / years	1.5T ☐ 3T ☐	
Age at last MRI scan	____ months / years	1.5T ☐ 3T ☐	
Signal Characteristics			
☐ T2 Hyperintensity ☐ T1 Hypointensity ☐ Mild T2 Hyperintensity ☐ T1 Hyperintensity or T1 Isointensity or Mild T1 Hypointensity			
Affected white matter structures 1. ☐ Periventricular 2. ☐ Central 3. ☐ U-Fibres 4. ☐ Other – Specify: _____			
☐ Frontal ☐ Parietal ☐ Occipital ☐ Temporal			
Specify predominance: ☐ Hilus dentate nucleus ☐ Cerebellar peduncles ☐ Brain stem structures			
Is posterior fossa involvement predominant? ☐ Yes ☐ No			
Corpus callosum affected? ☐ Yes ☐ No		☐ Anterior ☐ Middle ☐ Posterior	☐ Inner leaflet ☐ Outer leaflet
Internal capsule affected? ☐ Yes ☐ No		☐ Anterior Limb ☐ Posterior Limb	
External capsule affected? ☐ Yes ☐ No			
Distribution of the white matter signal abnormality ☐ Confluent ☐ Isolated/Multifocal ☐ Homogenous ☐ Symmetrical ☐ Low signal on flair (rarefaction)			
Is there contrast enhancement? ☐ Yes ☐ No ☐ Not done			
Is there restricted diffusion? ☐ Yes ☐ No ☐ DWI not done			
MR Spectroscopy ☐ Normal ☐ Abnormal ☐ Not done Spectroscopy Details_____			

State of myelination:
- ☐ Adequate for age
- ☐ Delayed
- ☐ Arrested
- ☐ Arrested in early stage
- ☐ Abnormal irregular myelination

Grey matter lesions:
- ☐ Cerebral cortex
- ☐ Caudate nucleus
- ☐ Putamen
- ☐ Globus pallidus
- ☐ Thalamus
- ☐ Dentate nucleus
- ☐ Other nuclei, details _____
- ☐ Cerebellar cortex, details _____

Is there atrophy? ☐ Yes ☐ No

Cerebrum:
- ☐ White matter
- ☐ Cortex
- ☐ Ventricular enlargement
- ☐ Enlarged subarachnoid spaces

Cerebellum:
- ☐ Vermis
- ☐ Hemispheres

Extra Elements

Cysts:
- ☐ Subcortical
- ☐ Intraparenchymal
- ☐ Frontal
- ☐ Parietal
- ☐ Occipital
- ☐ Temporal

Evidence of calcification: ☐ Yes ☐ No

Confirmed on CT? ☐ Yes ☐ No ☐ Not Done

Other specify (nature and location)

_____

_____

_____

Spine MRI ☐ Normal ☐ Abnormal ☐ Not done

Spine MRI details:

_____

_____

_____

Change over time

MRI Abnormalities
- ☐ Improving
- ☐ Static
- ☐ Worsening

3T Scan Performed? ☐ Yes ☐ No

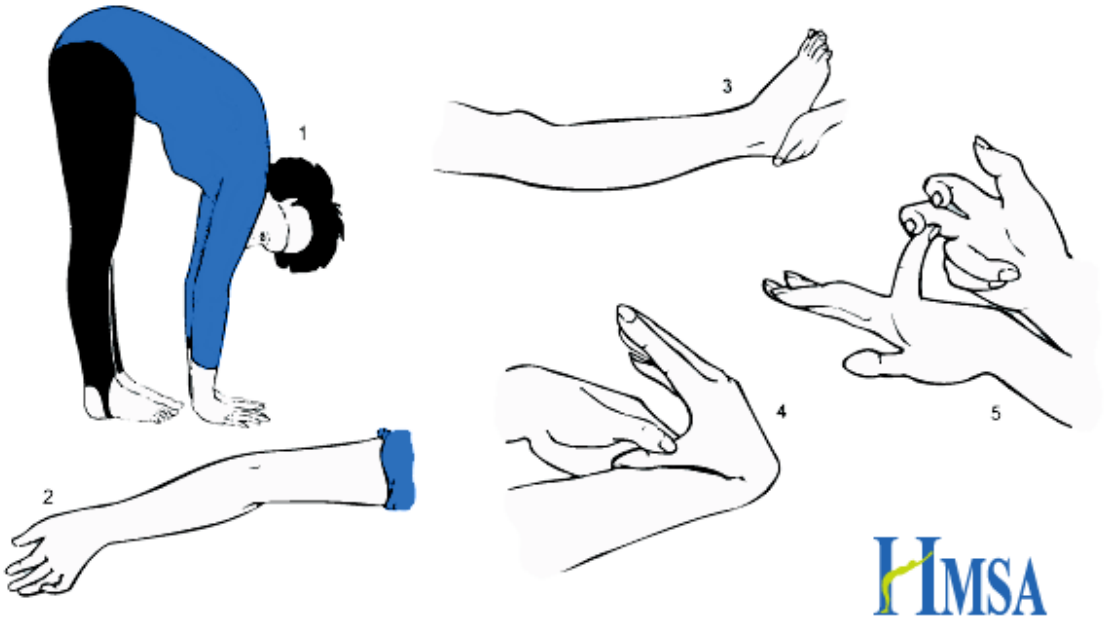
Age at 3T scan _____ Months / Years	
Proton-MRS performed	☐ Yes ☐ No
Best MRI scan quality	☐ Good ☐ Adequate ☐ Poor
Differential diagnosis	_____
Likely genes	_____
General comments	_____

Appendix 1: Beighton Score:

From: http://hypermobility.org/help-advice/hypermobility-syndromes/beighton-score/

The Beighton score is calculated as follows:

1. One point if while standing forward bending you can place palms on the ground with legs straight
2. One point for each elbow that bends backwards
3. One point for each knee that bends backwards
4. One point for each thumb that touches the forearm when bent backwards
5. One point for each little finger that bends backwards beyond 90 degrees.



Appendix 2: Bulbar Vs Pseudobulbar Palsy:

Bulbar palsy – clinical features:

- Gag reflex – absent
- Tongue – wasted, fasciculations
- "wasted, wrinkled, thrown into folds and increasingly motionless".
- Palatal movement – absent.
- Jaw jerk – absent or normal
- Speech – nasal
- "indistinct (flaccid dysarthria), lacks modulation and has a nasal twang"
- Emotions – normal

Pseudobulbar palsy 0 clinical features:

- Gag reflex – increased or normal
- Tongue – spastic
- "it cannot be protruded, lies on the floor of the mouth and is small and tight".
- Palatal movement – absent.
- Jaw jerk – increased
- Speech – spastic: "a monotonous, slurred, high-pitched, 'Donald Duck' dysarthria" that "sounds as if the patient is trying to squeeze out words from tight lips".
- Emotions – labile