

Working group: Imaging

Imaging recommendations: The following parameters/measurements are used to quantify findings on radiographic images. Using the methods described above, our group has determined that these measurements are the most pertinent for quantifying and describing the anatomic abnormalities associated with the Chiari I malformation. Only the position of the cerebellar tonsils is considered a 'Core' measurement, as this defines the Chiari I malformation. We have used published definitions of each measurement when available. When multiple published definitions were available, the group determined which was most appropriate using the method above. If no published definition was available, the group defined the measurement, again using the above method for reaching consensus.

CDE Name	Domain	Subdomain	Classification
Lowest tonsillar position	Assessments and Examinations	Imaging Diagnostics	Core
Position of right cerebellar tonsillar position	Assessments and Examinations	Imaging Diagnostics	Core
Position of left cerebellar tonsillar position	Assessments and Examinations	Imaging Diagnostics	Core
Shape of cerebellar tonsils	Assessments and Examinations	Imaging Diagnostics	Supplemental
Soft Tissue Clivo-axial Angle (CXA)	Assessments and Examinations	Imaging Diagnostics	Supplemental
Bone Clivo-axial Angle (CXA)	Assessments and Examinations	Imaging Diagnostics	Supplemental
pB-C2	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Presence of Syrxinx	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Width of Syrxinx	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Length of Syrxinx	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Imaging syrxinx highest level spinal segment	Assessments and	Imaging	Supplemental – Highly Recommended

	Examinations	Diagnostics	
Imaging syrinx lowest level spina segment	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Clivus Length	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Supraoccipital Length	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Foramen Magnum Diameter	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Superior Posterior Fossa Length	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Distance from pons to foramen magnum	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Distance from pontomedullary junction to foramen magnum	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Tentorial angle	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Basal angle	Assessments and Examinations	Imaging Diagnostics	Supplemental – Highly Recommended
Basion Axial Interval (BAI) (Harris Measurement)	Assessments and Examinations	Imaging Diagnostics	Supplemental
BAI in extension	Assessments and Examinations	Imaging Diagnostics	Supplemental
BAI in flexion	Assessments and Examinations	Imaging Diagnostics	Supplemental
Basion Dens Interval (BDI)	Assessments and Examinations	Imaging Diagnostics	Supplemental
BDI in extension	Assessments and Examinations	Imaging Diagnostics	Supplemental
BDI in flexion	Assessments	Imaging	Supplemental

	and Examinations	Diagnostics	
Medullary beak	Assessments and Examinations	Imaging Diagnostics	Supplemental
Congenital Fusion of cervical vertebrae	Assessments and Examinations	Imaging Diagnostics	Supplemental
Atlas assimilation	Assessments and Examinations	Imaging Diagnostics	Supplemental
Presence of other craniocervical abnormalities	Assessments and Examinations	Imaging Diagnostics	Supplemental
Incidental imaging findings	Assessments and Examinations	Imaging Diagnostics	Supplemental
Tethered cord	Assessments and Examinations	Imaging Diagnostics	Supplemental
Spinal dysraphism	Assessments and Examinations	Imaging Diagnostics	Supplemental
Spinal dysraphism type	Assessments and Examinations	Imaging Diagnostics	Supplemental
Hydrocephalus/ventriculomegaly	Assessments and Examinations	Imaging Diagnostics	Supplemental

Comparison to other Chiari I malformation standards

There are few notable differences in these Common Data Elements (CDEs) compared to previous Chiari I malformation measurement/imaging standards. In large part, there has not been any previous standard measurement technique or definition established prior to this effort. Our group has been careful to capture the measurements and imaging-related variables that are thought to be relevant to stakeholders caring for patients with Chiari I malformation and performing research on this topic.