

SEPTEMBER IS CHIARI AWARENESS MONTH

Imaging Technology

Chiari, somewhat arbitrarily, is of course defined as herniation of the cerebellar tonsils of at least 3-5mm past the foramen magnum (opening of the skull). This is a radiographic definition, meaning it is based on an imaging technology, in this case MRIs. One problem (of several) with a narrow definition like this is that there are many sources of error that can occur in the measurement process. MRIs vary from machine to machine, and even from time to time in the same machine. That means that the same person's scans can look different taken at different times (depending on machine brand, settings, head position, movement, etc.). Next the person doing the measuring has to select an image to measure. The MRI images are built up from slices, like layers, but the slices can be 5mm apart! Therefore, the most representative image is not always available. Finally, the anatomical landmarks to define the line from which the herniation is measured are not always clearly visible. Unpublished research from the CCRC found that even among Chiari experts, there was a significant amount of variation in measuring the same image sets. Conquer Chiari hopes to improve this situation by developing tools to quickly provide doctors with several different, precise measurements (not just one) that are important in Chiari cases, which can help them make clinical decisions and improve patient experiences and outcomes.