***CHILDREN’S NATIONAL MEDICAL CENTER***

***DEPARTMENT OF RADIOLOGY***

***ULTRASOUND PROTOCOL***

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Issue Date: 9/15/2014 Policy: NEUROSONOGRAPHY**

**Last Revision Date: 9/15/2014**

**Last Review Date: 1/8/2015**

1. **Patient Prep:** No patient prep.

Confirm patient identity using standard hospital protocol using two patient identifiers and verify the physicians order for testing. Staff is required to wash hands prior to patient contact, in addition to utilizing standard & or isolation precautions as appropriate

1. **Protocol:**

**TRANSDUCERS -** 9 MHz linear or higher frequency transducer. 5 MHz curved for full term and older neonates,

**PATIENT POSITIONING**

Supine, prone position with the head lying in either side, upright in older infants.

**SCANNING TECHNIQUE**

**Anterior fontanelle**- minimum 4 images

**Coronal views**: Angle anterior at the level of the eyes include the frontal lobes, anterior horn of the lateral ventricles.

At mid level obtain images of the lateral ventricles, CSP, 3rd ventricle and Corpus Callosum.

Posterior - Glomus of Choroid Plexus in the lateral ventricles and the posterior brain

**Sagittal views**: minimum 5 images

Start midline - CSP, Corpus callosum, 3rd and 4th ventricles and Vermis

Angle Right then left - level of the lateral ventricles, Thalamus, Caudate nucleus, caudothalamic groove, Sylvian fissure and temporal lobe then lateral periventricular white matter.

**Cine** **sweeps** - coronal and sagittal views. Front to back. Right to left

**Doppler -** ACA in the sagittal view- PSV EDV RI PI as ACA courses toward the transducer Angle less than 30 degree

MCAs in the coronal view or transtemperal- PSV EDV RI PI

**Mastoid Views -** cerebellum, 4th ventricle, cisterna magna and posterior fossa.

Both right and left when abnormality seen.

Cine sweep whenever possible.

**Optional Views –**

**Posterior Fonatelle** – to discriminate choroid from blood, evaluate periventricular white matter

**Transtemporal** – Axial view of the ventricles and posterior fossa good for MCA

**References:**

American Institute of Ultrasound in Medicine, A. (2010). Aium practice guideline for the performance of neurosonography in neonates and infants. *Journal of Ultrasound in Medicine*, *29*(1), 151-156. Retrieved from http://www.jultrasoundmed.org/content/29/1/151.full

American College of Radiology, A. (2009). Acr–aium–spr–sru practice guideline for the performance. *American College of Radiology*, 1-6. Retrieved from http://www.acr.org/~/media/ACR/Documents/PGTS/guidelines/US\_Neurosonography.pdf