

NEURO CT PROTOCOLS

BRAIN

Brain 1 – Basic

- Indications
 - Trauma, Screen for altered mental status, dementia, psychiatric disorder, headaches, hydrocephalus
- Sequences
 - Axial sections without contrast
- Comments
 - Scans should be parallel to the cantho-meatal line.
 - Scan from foramen magnum to the vertex.
 - Process images with both standard and bone algorithms.

Brain 2 – Plain & Contrast

- Indications
 - Screen for tumor, abscess/encephalitis/meningitis, new-onset seizure
- Sequences
 - Axial sections without contrast
 - Axial sections with contrast
- Comments
 - Scans should be parallel to the cantho-meatal line.
 - Scan from foramen magnum to the vertex.
 - For suspected metastatic disease, process images with both standard and bone algorithms.

Brain 3

- Indications
 - Acute stroke, Dissection
- Sequences
 - Axial sections without contrast
- Optional
 - Perfusion
 - CTA of circle of Willis
 - Neck CTA
- Comments
 - Scans should be parallel to the cantho-meatal line.
 - Scan from foramen magnum to the vertex.
 - Consult with Neurology, Neurosurgery or Neurointerventional services regarding optional sequences.

Brain 4

- Indications
 - Subarachnoid or cerebral hemorrhage, Suspected aneurysm or vascular malformation
- Sequences
 - Axial sections without contrast
- Optional
 - CTA of circle of Willis
 - Follow CTA with repeat axial sections (contrast scan)
- Comments
 - Scans should be parallel to the cantho-meatal line.
 - Scan from foramen magnum to the vertex.
 - Consult with Neurology, Neurosurgery or Neurointerventional services regarding optional sequences.

Brain – Lab Protocol

- Indications
 - Pre-surgical planning
- Sequences
 - Thin-section axial scans with contrast
- Comments
 - Scans should be parallel to the cantho-meatal line.
 - Scan from foramen magnum to the vertex.
 - Process images with standard algorithm.

Sella

- Indications
 - Pituitary tumor, cavernous sinus (if MRI contraindicated)
- Sequences
 - Axial sections without contrast
 - Coronal sections without contrast
 - Coronal sections with contrast
 - Axial sections with contrast
- Comments
 - Scans should be parallel & perpendicular to the planum sphenoidale.

Temporal Bone

- Indications
 - Cholesteatoma, ear anomaly, conductive hearing loss, trauma
- Sequences
 - Axial sections without contrast
 - Coronal sections without contrast
- Comments
 - Scans should be parallel & perpendicular to the hard palate.

- Process right/left temporal bones separately with bone algorithm.

Orbit 1

- Indications
 - Tumor, infection, inflammation, vascular lesion
- Sequences
 - Axial sections with contrast
 - Coronal sections with contrast
- Comments
 - Scans should be parallel & perpendicular to the cantho-meatal line.
 - Coronal scans from orbital rim to sella.
 - Process images with both standard and bone algorithms.

Orbit 2

- Indications
 - Trauma, gun-shot injury, foreign body, blow-out fracture
- Sequences
 - Axial sections without contrast
 - Coronal sections without contrast
- Comments
 - Scans should be parallel & perpendicular to the cantho-meatal line.
 - Coronal scans from orbital rim to sella.
 - Process images with both standard and bone algorithms.
 - For trauma obtain 3-D surface rendering of the facial bones with frontal and both oblique views.

Maxillo-facial 1

- Indications
 - Trauma, gun-shot injury
- Sequences
 - Axial sections without contrast
 - Coronal sections without contrast
- Comments
 - Scans should be parallel & perpendicular to the hard palate.
 - Axial scans from frontal sinus to mandible.
 - Coronal scans from anterior maxilla to sella.
 - Process images with both standard and bone algorithms.
 - For trauma obtain 3-D surface rendering of the facial bones with frontal and both oblique views.

Maxillo-facial 2

- Indications
 - Tumor, infection
- Sequences
 - Axial sections with contrast

- Coronal sections with contrast
- Comments
 - Scans should be parallel & perpendicular to the hard palate.
 - Axial scans from frontal sinus to mandible.
 - Additional axial scans angled to teeth.
 - Coronal scans from anterior maxilla to sella.
 - Process images with both standard and bone algorithms.

Sinuses – Limited

- Indications
 - Anosmia, allergic sinusitis
- Sequences
 - Coronal sections without contrast
- Comments
 - Scans should be perpendicular to the hard palate.
 - Coronal scans from anterior maxilla to sella.
 - Process images with bone algorithm.

Sinuses – Landmark Protocol

- Indications
 - Pre-surgical planning
- Sequences
 - Thin-section axial scans without contrast
- Comments
 - Scans should be parallel to the hard palate.
 - Process images with bone algorithm.

Neck

- Indications
 - Tumor, infection
- Sequences
 - Axial sections with contrast
- Comments
 - Axial scans from skull base to clavicles.
 - Process images with both standard and bone algorithms.

Larynx

- Indications
 - Tumor, infection, trauma
- Sequences
 - First do neck protocol
 - Additional 1 mm axial sections from hyoid bone through larynx
- Comments
 - Process images with both standard and bone algorithms.
 - Reformat 1 mm sections into coronal and sagittal planes.

