**The Weill Cornell Hip Pain Appropriate Use Criteria (AUC) addresses nine clinical conditions common to patients presenting with Neck Pain and makes recommendations to optimize diagnostic effectiveness.**

|  |  |
| --- | --- |
| **Common Clinical Conditions** | |
| 0 | Not Neck Pain |
| 1 | Neck Pain, Compression Fracture - Suspected or Known, No Trauma |
| 2 | Neck Pain, Greater than 6 weeks, No Additional Pathology |
| 3 | Neck Pain, History of C-Spine Surgery |
| 4 | Neck Pain, Infection - Suspected or Known |
| 5 | Neck Pain, Neck Trauma, NEXUS criteria met Low Risk for C-Spine Fracture |
| 6 | Neck Pain, Neck Trauma, NEXUS criteria not met, High Risk for C-Spine Fracture |
| 7 | Neck Pain, Neoplasm - Suspected or Known |
| 8 | Neck Pain, Neurologic Impairment |
| 9 | Neck Pain, Patient Age less than 18 |

**The Neck Pain AUC is activated when a user orders one of the following twelve Advanced Imaging Procedures.**

|  |  |
| --- | --- |
| **Advanced Imaging Procedures** | |
| 1 | CT Cervical Spine without Contrast |
| 2 | CT Cervical Spine with Contrast |
| 3 | CT Cervical Spine with and without Contrast |
| 4 | MR Cervical Spine without contrast |
| 5 | MR Cervical Spine with Contrast |
| 6 | MR Cervical Spine with and Without Contrast |
| 7 | CT Neck Soft Tissue without Contrast |
| 8 | CT Neck Soft Tissue with Contrast |
| 9 | CT Neck Soft Tissue with and without Contrast |
| 10 | MR Neck without Contrast |
| 11 | MR Neck with Contrast |
| 12 | MR Neck with and without Contrast |

**The Neck Pain AUC recommends one of the following fourteen Imaging Procedures based on the clinical condition.**

|  |  |
| --- | --- |
| **Recommended Imaging Procedures** | |
| 1 | CT Cervical Spine without Contrast |
| 2 | CT Cervical Spine with Contrast |
| 3 | CT Cervical Spine with and without Contrast |
| 4 | MR Cervical Spine without contrast |
| 5 | MR Cervical Spine with Contrast |
| 6 | MR Cervical Spine with and Without Contrast |
| 7 | CT Neck Soft Tissue without Contrast |
| 8 | CT Neck Soft Tissue with Contrast |
| 9 | CT Neck Soft Tissue with and without Contrast |
| 10 | MR Neck without Contrast |
| 11 | MR Neck with Contrast |
| 12 | MR Neck with and without Contrast |
| 13 | XR Cervical Spine |

**Nexus Criteria**

**The Neck Pain AUC logic utilizes five Nexus Criteria.**

**Cervical spine radiography is indicated for patients with neck trauma unless they meet all the Nexus Criteria**

|  |  |
| --- | --- |
| **NEXUS Criteria** | |
| 1 | No Posterior Midline Cervical-Spine Tenderness |
| 2 | No Evidence of Intoxication |
| 3 | A Normal Level of Alertness (15 on the Glasgow Coma Scale) |
| 4 | No Focal Neurologic Deficit |
| 5 | No Painful Distracting Injuries |

**Logic Tables**

**The following Clinical Condition Logic Tables provide the Neck Pain AUC logic for each clinical condition.**

**The logic incorporates prior imaging studies and contrast contraindications where applicable.**

**Key**

|  |  |
| --- | --- |
| Value | Score |
| Blank | No Score Assigned |
| 0 | AUC Not Applicable – Allows User to Proceed with Original Order |
| 1 | Inappropriate |
| 2 | Contact Radiology |
| 3 | Appropriate |
| 4 | Appropriate Preferred |

**Condition 0 – Not Neck Pain - AUC Logic Activated, AUC Not Applicable**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Condition | Priors | Contraindications | CT C-sp wo | CT C-sp w | CT C-sp wwo | MR C-sp wo | MR C-sp w | MR C-sp wwo | XR C-sp | CT Neck wo | CT Neck w | CT Neck wwo | MR Neck wo | MR Neck w | MR Neck wwo |
| Not for neck pain |  |  | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 |

**Condition 1 - Neck Pain, Compression Fracture - Suspected or Known, No Trauma**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Condition | Priors | Contraindications | CT C-sp wo | CT C-sp w | CT C-sp wwo | MR C-sp wo | MR C-sp w | MR C-sp wwo | XR C-sp | CT Neck wo | CT Neck w | CT Neck wwo | MR Neck wo | MR Neck w | MR Neck wwo |
| Neck Pain, Compression Fracture - Suspected or Known, No Trauma |  |  | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Compression Fracture - Suspected or Known, No Trauma | XR |  | 4 | 1 | 1 | 3 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Compression Fracture - Suspected or Known, No Trauma | XR | MR | 4 | 1 | 1 | 1 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |

**Condition 2 - Neck Pain, Greater than 6 weeks, No Additional Pathology**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Condition | Contraindications | CT C-sp wo | CT C-sp w | CT C-sp wwo | MR C-sp wo | MR C-sp w | MR C-sp wwo | XR C-sp | CT Neck wo | CT Neck w | CT Neck wwo | MR Neck wo | MR Neck w | MR Neck wwo |
| Neck Pain > 6 weeks no Additional Pathology |  | 1 | 1 | 1 | 4 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain > 6 weeks no Additional Pathology | MR | 4 | 1 | 1 | 1 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |

**Condition 3 – Neck Pain, History of C-Spine Surgery**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Condition | CT C-sp wo | CT C-sp w | CT C-sp wwo | MR C-sp wo | MR C-sp w | MR C-sp wwo | XR C-sp | CT Neck wo | CT Neck w | CT Neck wwo | MR Neck wo | MR Neck w | MR Neck wwo |
| Neck Pain Hx of C-Spine Surgery | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 |

**Condition 4 – Neck Pain, Infection - Suspected or Known**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Condition | Contraindications | CT C-sp wo | CT C-sp w | CT C-sp wwo | MR C-sp wo | MR C-sp w | MR C-sp wwo | XR C-sp | CT Neck wo | CT Neck w | CT Neck wwo | MR Neck wo | MR Neck w | MR Neck wwo |
| Neck Pain, Infection - Suspected or Known |  | 3 | 3 | 1 | 3 | 1 | 4 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Infection - Suspected or Known | GAD | 3 | 3 | 1 | 4 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Infection - Suspected or Known | IOD | 3 | 1 | 1 | 3 | 1 | 4 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Infection - Suspected or Known | MR | 4 | 3 | 1 | 1 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Infection - Suspected or Known | GAD  IOD | 3 | 1 | 1 | 4 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Infection - Suspected or Known | MR  IOD | 4 | 1 | 1 | 1 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |

**Condition 5 – Neck Pain, Neck Trauma, NEXUS criteria met Low Risk for C-Spine Fracture**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Condition | CT C-sp wo | CT C-sp w | CT C-sp wwo | MR C-sp wo | MR C-sp w | MR C-sp wwo | XR C-sp | CT Neck wo | CT Neck w | CT Neck wwo | MR Neck wo | MR Neck w | MR Neck wwo |
| Neck pain, Neck Trauma, NEXUS criteria met (Low Risk for C-Spine Fracture) | 1 | 1 | 1 | 1 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |

**Condition 6 – Neck Pain, Neck Trauma, NEXUS criteria not met, High Risk for C-Spine Fracture**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Condition | Contraindications | CT C-sp wo | CT C-sp w | CT C-sp wwo | MR C-sp wo | MR C-sp w | MR C-sp wwo | XR C-sp | CT Neck wo | CT Neck w | CT Neck wwo | MR Neck wo | MR Neck w | MR Neck wwo |
| Neck Pain, Neck Trauma, NEXUS criteria not met - High Risk for C-Spine Fracture |  | 4 | 1 | 1 | 3 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Neck Trauma, NEXUS criteria not met - High Risk for C-Spine Fracture | MR | 4 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |

**Condition 7 – Neck Pain, Neoplasm - Suspected or Known**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Condition | Contraindications | CT C-sp wo | CT C-sp w | CT C-sp wwo | MR C-sp wo | MR C-sp w | MR C-sp wwo | XR C-sp | CT Neck wo | CT Neck w | CT Neck wwo | MR Neck wo | MR Neck w | MR Neck wwo |
| Neck Pain, Neoplasm, Suspected or Known |  | 3 | 3 | 1 | 3 | 1 | 4 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Neoplasm, Suspected or Known | GAD | 3 | 3 | 1 | 4 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Neoplasm, Suspected or Known | IOD | 3 | 1 | 1 | 3 | 1 | 4 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Neoplasm, Suspected or Known | MR | 4 | 3 | 1 | 1 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Neoplasm, Suspected or Known | GAD  IOD | 3 | 1 | 1 | 4 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Infection - Suspected or Known | MR  IOD | 4 | 1 | 1 | 1 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |

**Condition 8 – Neck Pain, Neurologic Impairment**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Condition | Contraindications | CT C-sp wo | CT C-sp w | CT C-sp wwo | MR C-sp wo | MR C-sp w | MR C-sp wwo | XR C-sp | CT Neck wo | CT Neck w | CT Neck wwo | MR Neck wo | MR Neck w | MR Neck wwo |
| Neck Pain, Neurologic Impairment |  | 1 | 1 | 1 | 4 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Neurologic Impairment | MR | 4 | 4 | 1 | 1 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |
| Neck Pain, Neurologic Impairment | MR IOD | 4 | 1 | 1 | 1 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 |

**Condition 9 – Neck Pain, Patient Age less than 18**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Condition | CT C-sp wo | CT C-sp w | CT C-sp wwo | MR C-sp wo | MR C-sp w | MR C-sp wwo | XR C-sp | CT Neck wo | CT Neck w | CT Neck wwo | MR Neck wo | MR Neck w | MR Neck wwo |
| Patient < 18 years | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 |

**Sources**

**The Hip Pain AUC has been developed by Weill Cornell Medicine utilizing**

**the following published sources and Local Best Practices (LBP).**

|  |  |
| --- | --- |
| **No.** | **Source** |
| 1 | An approach to neck pain for the family physician, Teichtahl AJ, McColl G, An approach to neck pain for the family physician, Australian Family Physician 46(11), 2013. <https://www.ncbi.nlm.nih.gov/pubmed/24217096> |
| 2 | Validity of a set of clinical criteria to rule out injury to the cervical spine in patients with blunt trauma, Hoffman JR et al, Validity of a set of clinical criteria to rule out injury to the cervical spine in patients with blunt trauma, National Emergency X-Radiography Utilization Study Group. N Engl J Med. 2000 Jul 13;343(2):94-9. <https://www.ncbi.nlm.nih.gov/pubmed/10891516> |