

Suspected Spine Trauma

Imaging of the cervical spine (neck) is usually not appropriate in individuals 16 to 65 years old who do not meet high-risk criteria for injury on clinical examination.

For individuals 16 years or older with suspected acute cervical spine blunt trauma who meet high-risk criteria on clinical examination, CT (<https://www.radiologyinfo.org/en/info/spinect>) without intravenous (IV) contrast is usually appropriate; x-rays may also be appropriate. CT without contrast is also appropriate if acute spinal injury is found on x-rays and in cases in which no unstable injury was found at first, but the individual had a neck collar for neck pain.

MRI (<https://www.radiologyinfo.org/en/info/spinemr>) without contrast may also be appropriate in these cases as well as when injury to the ligaments is seen on cervical CT or suspected from clinical examination or if there is reduced alertness even with a negative CT.

MRI without IV contrast is usually appropriate as the next imaging test if a cervical CT shows or suggests a spinal cord or nerve root injury with or without traumatic injury. A CT myelography (<https://www.radiologyinfo.org/en/info/myelography>) (CT with contrast material injected into the spine) may also be appropriate.

If injury to arteries is suspected from cervical CT, CT angiography (<https://www.radiologyinfo.org/en/info/angiact>) with contrast or MR angiography (<https://www.radiologyinfo.org/en/info/angiomr>) with and without contrast is usually appropriate.

In individuals meeting criteria for thoracic and lumbar spine imaging, a CT without IV contrast is usually appropriate. X-rays may be appropriate. If acute injury is detected, the next appropriate imaging test is MRI thoracic and lumbar spine without contrast. CT myelography thoracic and lumbar spine may be appropriate.

— By Susan Anemone and Bruno Policeni, MD, MBA. This information originally appeared in the *Journal of the American College of Radiology*.

Disclaimer

This information is copied from the RadiologyInfo Web site (<http://www.radiologyinfo.org>) which is dedicated to providing the highest quality information. To ensure that, each section is reviewed by a physician with expertise in the area presented. All information contained in the Web site is further reviewed by an ACR (American College of Radiology) - RSNA (Radiological Society of North America) committee, comprising physicians with expertise in several radiologic areas.

However, it is not possible to assure that this Web site contains complete, up-to-date information on any particular subject. Therefore, ACR and RSNA make no representations or warranties about the suitability of this information for use for any particular purpose. All information is provided "as is" without express or implied warranty.

Please visit the RadiologyInfo Web site at <http://www.radiologyinfo.org> to view or download the latest information.

Note: Images may be shown for illustrative purposes. Do not attempt to draw conclusions or make diagnoses by comparing these images to other medical images, particularly your own. Only qualified physicians should interpret images; the radiologist is the physician expert trained in medical imaging.

Copyright

This material is copyrighted by either the Radiological Society of North America (RSNA), 820 Jorie Boulevard, Oak Brook, IL 60523-2251 or the American College of Radiology (ACR), 1891 Preston White Drive, Reston, VA 20191-4397. Commercial reproduction or multiple distribution by any traditional or electronically based reproduction/publication method is prohibited.

Copyright © 2026 Radiological Society of North America, Inc.

