

WYOMING WORKERS' SAFETY AND COMPENSATION
SPINAL FUSION
DIAGNOSTIC TESTING REFERENCE

●**X-RAYS:** Plain lumbar x-rays should preferably be taken while standing, and should include flexion and extension views on nearly all patients being considered for fusion surgery. Significant findings include: disc space narrowing, spondylosis, spondylolysis, spondylolisthesis, anterolisthesis, retrolisthesis, scoliosis, and mechanical instability. To document the need for a lumbar fusion, other imaging modalities are generally needed.

●**MRI:** Findings that would support the need for a fusion include degenerative disc disease especially with inflammatory endplate changes (Modic changes), recurrent herniated disc, stenosis, and facet joint degenerative joint disease (DJD or arthrosis).

●**CT:** The CT scan shows bone detail better than an MRI. Findings supporting the need for a lumbar fusion would include spondylolysis, disc annular tears, spondylolisthesis, stenosis, recurrent herniated disc, and facet DJD.

●**Myelogram:** A myelogram, especially when coupled with a CT scan, can show fine details of areas of compression of the nerves in the spine.

●**Bone Scan:** A bone scan may be required in a variety of conditions and to clarify findings seen on x-rays, MRI or CT. Positive findings in facet joints and endplates may support the decision to do a lumbar fusion.

●**Electrodiagnostics (EMG's):** An EMG may be required to determine the cause of symptoms such as leg pain. Positive findings may help to pinpoint the symptomatic level in the spine.

●**Laboratory tests:** Lab tests may be needed to rule out infection or other causes of back pain in the presence of various "red flag" symptoms or when an MRI or other tests have questionable results. Findings indicating an infection or inflammatory process, such as a high WBC count or a high sedimentation rate should prompt further investigation before proceeding with fusion.

●**Discogram:** A discogram is used to determine if a disc is actually causing a patient's pain. It is also frequently used to determine if other levels in the spine are painful. If the patient is blinded to which disc is being tested each time, it can also be helpful to judge patient validity. Interpretation of discograms is subjective and the test is controversial. It is the surgeon's decision whether or not to require a discogram prior to surgery.

●**Diagnostic Injections:** Various injections may be used to confirm the symptomatic level including epidural steroid injections, selective nerve root blocks (also called transforaminal injections) and facet injections.