BACK PAIN

CT SCAN OF THE LUMBAR SPINE

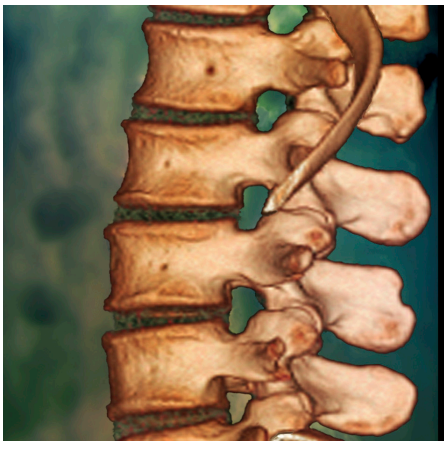
Introduction

Also referred to as a CAT scan, computerized tomography scan, or computer axial tomography scan, a CT scan uses a rotating x-ray beam to produce images of different levels (known as slices) of the lower back. The slices can even be put together to form three-dimensional models.

CT scans can help diagnose a range of medical conditions, including injuries, herniated or slipped discs, bony abnormalities, post-surgical healing complications or scar tissue, and spinal birth defects in children. CT scans are also used as a complement to x-rays of the spinal cord, spinal nerve roots, or spinal discs.[1,2]

In this guide...

Risks associated with CT scans



Individuals considering a CT scan should discuss any concerns about the following risk factors with a doctor before proceeding[1]:

- Radiation exposure: this is greater than that of normal x-rays. Although modern CT scans now offer a faster scanning process and low radiation exposure, the decision to proceed should be discussed with a doctor based on an individual's own clinical needs, risk, and circumstances.
- If you are pregnant, have a discussion with your doctor about the possible risks of harm or birth defects from CT scans. Where possible, an ultrasound or Magnetic Resonance Imaging (MRI) may also be appropriate where clinically indicated.
- Allergies to contrast medium, if used. See below for more information.

Procedure for CT scans

With the exception of possible discomfort caused by the hard surface of the examination table and the need to assume different positions according to the area to be scanned, a CT scan is a painless procedure.

Testing facilities and individual circumstances may vary. In general the procedure is as follows[1,2]:

- You will lie on an examination table and be positioned according to the area that needs to be scanned. The radiographer performing the test will ensure you are as comfortable as possible.
- The examination table moves inside the CT scanner, and the test begins.
- An X-ray beam rotates around the area being scanned, taking pictures that are sent back to the radiographer.
- It is very important to keep as still as possible while the CT scan is being performed in order to prevent blurry images. You might also be asked to hold your breath for short intervals.
- **Duration:** a CT scan takes 10 to 30 minutes in most cases.

Claustrophobia or anxiety

Although there are no physical side effects to CT Scans, people with claustrophobia or anxiety issues may be uncomfortable during the test.
If this is the case, your doctor may prescribe a sedative and you will need to be accompanied to and from the CT scan.
It is normally possible for individuals — especially children — to be accompanied during the exam.

Contrast dyes[1,2,3,4,5]

For certain CT scans, a contrast dye is administered in order to highlight certain areas of the body. This can be done either through an intravenous (IV) line in the hand or forearm, or by spinal cord injection.

Individuals for whom a contrast dye has been recommended should inform their doctor and the radiographer about any previous or possible allergies to injections or iodine, blood clotting problems, diabetes, or kidney conditions.

If a contrast dye is administered, additional precautions for eating, drinking, and medications before and after the test may apply.

Contrast dyes do not generally produce unpleasant side effects apart from IV administration, which may produce symptoms including a slight burning sensation, metallic taste in the mouth, and warm flushing of the body. All of these symptoms are normal and disappear within a few seconds.

Inform the radiographer immediately if you have any itching or hives, lightheadedness, nausea sneezing or nasal congestion, scratchy throat, swelling in your face, or trouble breathing during the test.

The use of a contrast dye may cause the test to take slightly longer.

Important precautions for CT scans

Before proceeding with a CT scan, you must inform your doctor and the facility performing the scan about the any of the following[6,7]:

- Pregnancy
- Any medical conditions or health problems
- Allergies
- Recent surgical interventions
- Medical devices, pacemakers, orthopedic or dental implants, or any metal in your body
- Body weight of over 300 pounds (135 kilograms).[1]

Preparing for an CT scan

Most facilities will provide information and consent forms regarding the safety of a CT scan before the test begins. Individuals will also be given a health questionnaire or be asked questions about their health and medical history to ensure that they are eligible for the procedure.[2,4,7]

Review the following checklist when preparing for your CT Scan[1,2,3,4]:

- Can I take my regular medications as usual?
- Are there any limitations on what I can eat or drink in the hours before the exam?
- Do I have the test order issued by my doctor?
- Do I have something to read or listen to in case I have to wait?
- Am I prepared to remove the following: all jewelry, watches, piercings, hair accessories, wigs, hearing aids, and dentures? Right before the CT scan you will need to change into a gown provided by the test facility.
- Have I left any valuable items at home? There might not be a secure storage area for personal belongings.

After an CT scan

There is no recovery time needed for a CT scan, and individuals can resume their normal activities immediately after the test, with the following precautions[2,3,4]:

- Individuals who have taken a sedative must be accompanied home by an authorized adult and will not be able to drive or drink alcohol for 24 hours after the exam.
- Individuals who have received a contrast dye should follow the instructions given by the test facility for ensuring that the dye is flushed out of their system. This may include precautions such as drinking six to eight glasses of water after the exam.

CT scan results usually take approximately forty eight hours.

CT scan results

Depending on the country and facility performing the test, you or an authorized third party will collect the results of your CT scan from the test facility or they may be sent directly to your doctor. In either case, CT scan images should only be read and interpreted by your doctor or specialist, who can then help you take the appropriate decisions for treatment or further testing, if necessary.

For certain conditions such as herniated spinal discs, CT scans may not detect smaller features and may be complemented with other types of testing.[1] It is also important to bear in mind that imaging studies cannot necessarily provide a definitive diagnosis for lower back pain. In fact, for 85% of back pain cases an exact cause is not discovered.[7] For this reason, individuals are encouraged to undertake a preventive treatment program which includes exercise, nutrition, and stress reduction, among other health and wellbeing practices. For more information on preventing and reducing back pain, please consult our back pain prevention guidesFor more information on preventing and reducing back pain, please consult our back pain prevention guides.

Questions about your diagnosis?

Unsure which treatment is right for you?

Did you know you have access to a free, independent and confidential decision support service?

Discuss your concerns and have your case reviewed by a specialist in your condition.

The decision is yours. And we're with you all the way.

1. Lumbar spine CT scan. MedlinePlus website. https://medlineplus.gov/ency/article/007350.htm. Updated September 5, 2017. Accessed October 4, 2017.
2. CT Scan of the Lumbar Spine. Cedars-Sinai website. https://www.cedars-sinai.edu/Patients/Programs-and-Services/Imaging-Center/For-Patients/Exams-by-Procedure/CT-Scans/CT-Scan-of-the-Lumbar-Spine.aspx. Accessed October 4, 2017.
3. CT Scans. Brain & Spine Foundation website. https://www.brainandspine.org.uk/ct-scans?gclid=CKjo45qH19YCFe2_7QodlHgIaQ. Reviewed September 2015. Accessed October 4, 2017.
4. MRI Scan. NHS Choices website. http://www.nhs.uk/conditions/mri-scan. Reviewed October 7, 2015. Accessed October 4, 2017.
5. X-ray. Mayo Clinic website. http://www.mayoclinic.org/tests-procedures/x-ray/basics/definition/prc-20009519. March 26, 2015. Accessed October 4, 2017.
6. Magnetic Resonance Imaging (MRI) - Spine. Radiological Society of North America website. Magnetic Resonance Imaging (MRI) - Spine. Radiological Society of North America website Reviewed March 1, 2017. Accessed October 4, 2017.
7. The Spine and MRI Scanning. British Association of Spine Surgeons website. http://www.spinesurgeons.ac.uk/patients/patient-information/the-spine-and-mri-scanning. Accessed October 4, 2017.

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