



# Halifax Chiropractic Clinic



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## Do I need an Xray, CT scan or MRI? by Dr. Brian S. Seaman, DC, FCCSS(C), FICC

Over the years I have had a number of patients tell me that their x-rays showed a “slipped disc”. This seems to provide a convenient cause, and a diagnosis, of their neck or lower back problems.

### But – guess what?

Regular x-rays (referred to as “plain film x-rays”) cannot show a “slipped disc”. However x-rays will show a variety of things, primarily relating to bone.

Although x-rays will not show a “slipped disc” they can show a “**degenerative disc**” (known as degenerative disc disease or DDD). DDD is characterized by narrowing or reduction of the disc space (which you can see on x-ray although you cannot see the actual disc) often associated with bone spurs or osteophytes. These are most commonly seen, in the mid and lower part of your cervical spine (neck) and in your lower lumbar area (lower back).

Depending upon the degree of change, **osteoarthritis** of the joints can also be seen on regular x-rays. People are generally most familiar with osteoarthritis or degenerative joint disease (DJD) of the hips. If advanced, to a degree that it is significantly affecting a person’s ability to continue with their daily activities, hip replacement surgery may be a consideration. In that situation, a patient would be seen by an orthopedic surgeon in consultation to determine if this would be indicated.

The **discs** in your spine are made up of two types of material. There are the outer fibers (annulus), which are quite strong, but allow a very unique motion of the spine (so we can bend and twist, etc). There is a central core of the disc, which is referred to as the nucleus pulposus, which can protrude through the annulus and cause lower back, buttock and/or leg pain. Depending upon the degree of the disc injury (tears to the annular fibers) a disc can bulge, herniate or perhaps even have a piece of the disc break away (called a disc fragment); but they don’t actually “slip”.

These various types of disc injuries, cannot be seen on x-ray. A diagnosis of a “slipped disc” (which is a slang term; not a diagnostic term) is usually made based on patient’s history, symptoms and findings on examination (such as a loss of reflex, diminished or decreased sensation in the leg in a certain pattern, or a weak muscle group).

Depending upon the case, a **CT scan** or an **MRI** (magnetic resonance imaging; which does not use any radiation) may be needed to confirm the diagnosis and the extent of the disc injury. Many patients recall myelograms being used in the past. Myelograms are still used in certain situations, and involve injecting dye into the spine. In years past, the dye would be injected, at which time the x-rays would be taken of the spine. This would help to show the indentation into the spinal cord or where the nerve was being compressed, which would confirm the location of the disc injury.

### So what else can an x-ray show?

Aside from degenerative discs and osteoarthritis, there are various types of bone conditions which can be diagnosed. In reviewing the x-rays, a general impression of the bone density can sometimes be arrived at. This may lead to a comment that the bone is demineralized, or **osteopenic**. Osteopenia denotes a decreased bone density but not yet considered osteoporosis. Depending upon the degree of demineralization which is visualized on a regular x-ray, it may be recommended that you have a **bone density study (BDS)**. A BDS will confirm as to whether you have osteopenia or osteoporosis.

X-rays can also show a variety of other bone diseases, which can either result in a diagnosis, or provide your health care professional with information to rule out other problems. The vast majority of back pain is considered “mechanical” in origin. This relates to the mobility (or lack thereof) of the joints of the spine, how the muscles function (strength and flexibility) and to a lesser frequency disc problems.

It is estimated that 80% of the population will experience a significant episode of lower back

pain at least once in their life. The down side – it is estimated that if you have a second episode of lower back pain that you are 10 times more likely to have a third. However on a positive note, back pain most often responds to conservative treatment (non-surgical) which can include a variety of therapeutic approaches, including chiropractic and exercise prescription.

### **“Back” to x-ray –**

X-rays show bone as well as the spacing for discs and joints. It can also show density of the bone and may also show **swelling of the soft tissues** (like with a sprained ankle). These are only in special circumstances, and there are actually better ways to view soft tissues such as **diagnostic ultrasound**.

It is also important to remember, that if your health care professional recommends x-rays, that he or she is doing this in your best interest. At times, these x-rays will be able to confirm a diagnosis, or rule out other potential factors or conditions which could be contributing to your problem. Modern day x-ray technology is very safe. The machines used today utilize minimal amounts of radiation and the technology is such that the best images provided, with the least amount of radiation.

### **Other options -**

Depending upon your problem, other types of diagnostic imaging may be arranged by your health care professional to assist in establishing a diagnosis.

When speaking about **diagnostic ultrasound**, most of us think of when this is used for expectant mothers. However it can also be used to diagnose a variety of abdominal problems, check for blockages in arteries (Doppler ultrasound), and also for soft tissue injuries such as a rotator cuff tear.

**Bone scans** are sometimes necessary to rule out certain bone conditions, or inflammation of joints such as would occur with inflammatory arthritis.

**CT scans** and **MRIs** are advanced imaging studies and very specialized. These are used for very specific situations in which more detailed imaging is required.

### **What if my x-ray doesn't show anything?**

If your health care professional explains that your x-ray was “normal” or was reported to be “within normal limits”, what does that mean? Do not dismay. X-rays are not only used to confirm a suspected problem (such as DDD or DJD) but can also rule out other potential causes of your problem. The results may also lead to other testing which would allow your health care professional to not only arrive at the cause of your problem, but also make recommendations as to an appropriate type of treatment.

If you have any questions about the type of investigations that your health care professional is recommending, please do not hesitate to talk to them about it so that you have a better understanding of the process.

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