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A Patient's Guide to

Diffuse Idiopathic Skeletal Hyperostosis (DISH)

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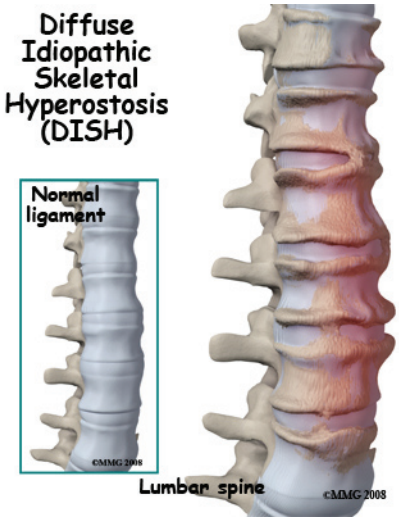


Introduction

Diffuse Idiopathic Skeletal Hyperostosis (DISH) is a phenomenon that more commonly affects older males. It is associated with stiffness and back pain, but often it causes no signs or symptoms.

The most common finding of Diffuse Idiopathic Skeletal Hyperostosis (DISH) is ligaments that turn into bone. It is also known as *Forestier's disease*, after the name of the physician who recognized it. It is most often confirmed by x-ray.

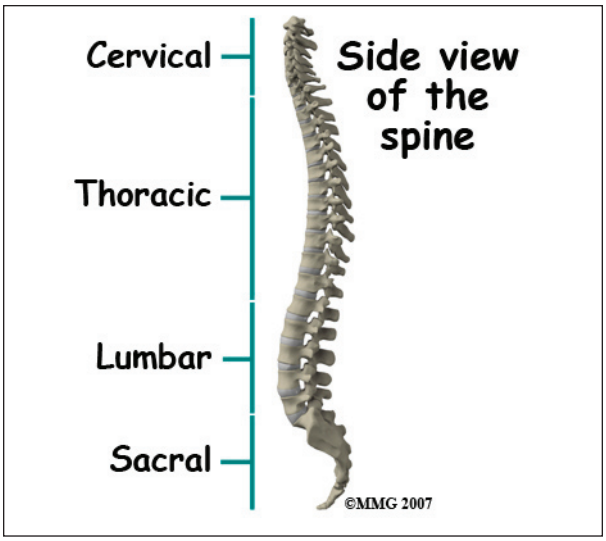
This guide will help you understand

- **what parts make up the spine**
- **what causes this condition**
- **how doctors diagnose this condition**
- **what treatment options are available**

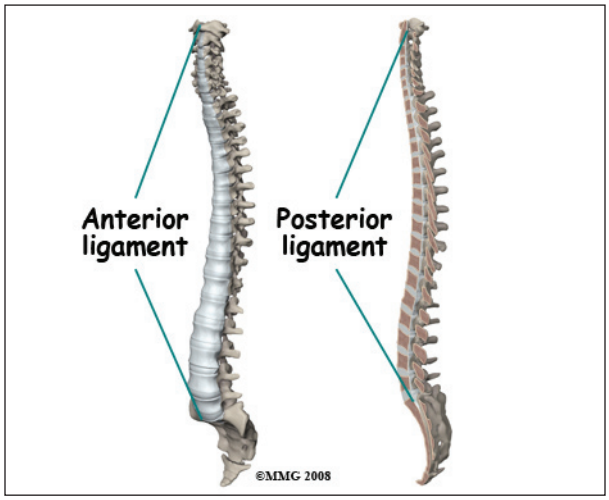
Anatomy

What parts make up the spine?

The spine, or *vertebral column*, is made up of bones that stack on top of one another. These bones are called *vertebrae*. There are five sections of the spine. At the top is the neck, or *cervical* spine, which connects with the skull. Below the neck is the *thoracic* spine or mid-back, which has the ribs attached. The ribs form your chest. Below the thoracic spine is



your *lumbar* spine or low back. The lumbar spine attaches to the *sacrum* which is part of the pelvis. The last section of the spine is the *coccyx*, also know as the tail bone.



There are *ligaments* that help stabilized the spine. The ligament along the front of the spine is called the *anterior longitudinal ligament*. There is another ligament that attaches to the back of the spine called the *posterior longitudinal ligament*. These are the spinal ligaments that can turn into bone in *Diffuse Idiopathic Skeletal Hyperostosis* (DISH).

Causes

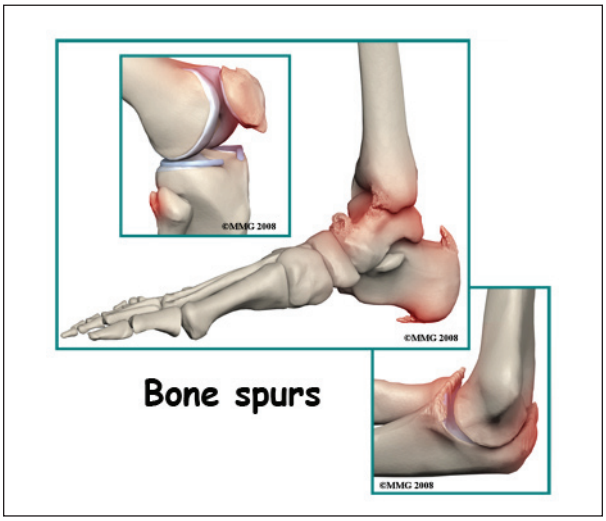
What causes this condition?

Diffuse Idiopathic Skeletal Hyperostosis generally occurs in people between the ages of

50 and 60. It appears more often in men than women. While the cause is unknown, there seems to be a connection with having diabetes, high blood pressure, coronary artery disease, and being over weight.

Some researchers feel that the extra bone is made because of extra blood supply near the spine. Growth factors that effect the formation of calcium likely play a role.

DISH generally affects the ligament in front of the spine called the anterior longitudinal ligament. This is the most common ligament that turns into bone with DISH, but it can affect other ligaments as well. This condition can also affect the ligaments and tendons in the heels, ankle, hips, knees, shoulder, elbows, and hands.



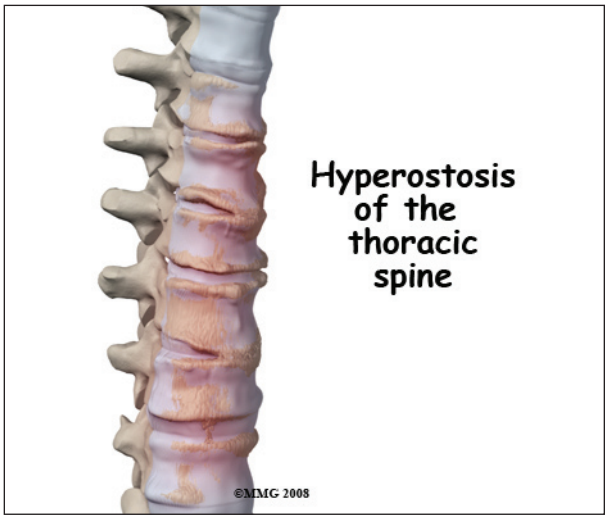
Another common feature of DISH is that it can cause *syndesmophytes* (a bony outgrowth attached to a ligament) and tendonitis at sites other than the spine. These calcification sites are most often in the heels, elbows, ankles, knees, and shoulders. Bone spurs and inflammation develop where the tendon attaches to the bones.

Although DISH is considered a form of osteoarthritis, it is not considered degenerative, from wear or tear. The disc heights and facet joints do not show wear and tear as with other forms of osteoarthritis.

Medications that are used to treat acne may increase your risk of having DISH. These medications are called *retinoids*. They are similar to vitamin A.

Symptoms

What does this condition feel like?



Stiffness and decreased range of motion are the most common symptoms of DISH. The stiffness usually happens in the morning upon waking. It also happens after a long period of rest. Often the decrease in motion in the spine is with side-bending. DISH most commonly affects the mid back, but can also affect the neck and low back. It also seems to affect the right side of the thoracic spine more often than the left side. Pain may be a symptom of DISH, but not always.

In addition to changes in the spine, DISH can also cause stiffness, pain, and inflammation in tendons throughout the body. When DISH affects areas other than the spine, it feels like tendonitis. Ligaments and tendons where they attach to the bone near the joints develop extra bone growth (spurs). Most common joints outside of the spine that can have bone spurs are the joints of the finger, elbow, shoulder, hip, knee, ankle and foot.

Difficulty swallowing (*dysphagia*), or a hoarse voice, can happen when people have DISH in the neck. The bone spurs can put pressure on

your *esophagus* (tube connecting the throat with the stomach), making it difficult to swallow. The pressure can also cause a hoarse voice or difficulty in breathing. In rare cases, this can become serious. This may require surgery to remove the bone spurs.

Neurological problems are rare in DISH. In severe cases, the extra bone growth around the spine can cause problems with the spinal cord or nerves. Squeezing of the spinal cord can cause loss of feeling and paralysis.

Diagnosis

How will my doctor diagnose the condition?

Your doctor will complete a history and physical examination. Your doctor will ask you questions about things such as activity, urination, bowel movements, weakness, and stiffness. Range of motion of the spine is usually evaluated, as well as tenderness of the spine or muscles next to the spine.

Neurological examination usually includes checking reflexes at the knees and ankles (elbows and wrists if your neck is involved), sensation, and muscle strength. Your doctor may ask you to walk on your heels and toes.

Your doctor may ask that you have x-rays of your spine, usually the mid-back. If you have signs of nerve problems, a *magnetic resonance imaging* (MRI) scan, or a *computed tomography* (CT) scan may be ordered.

The MRI allows your doctor to look at slices of the area in question. The MRI machine uses magnetic waves, not x-rays. It shows the soft tissues of the body. This includes the spinal cord, nerves, and discs. It can also show spinal bones.

Computed tomography (CT) is best for evaluating problems with the vertebral bones. It is usually tolerated well but exposes you to radiation.

Extra bone growth along the vertebral column can be identified with any of these imaging tests. The extra bone growth must involve three or more adjacent vertebrae to meet the criteria for DISH. The calcification along the spine has a very unique appearance. Some doctors call it cascading or flowing. It is also sometimes described as appearing like candle wax dripping and oozing down the spine.

Treatment

What treatment options are available?

Nonsurgical Treatment

While there is no cure for DISH, there are treatments that can help the symptoms. Nonsteroidal anti-inflammatory drugs (NSAIDs) may help manage pain or tendonitis-like inflammation. Tylenol™ which is also called *acetaminophen* may also help relieve pain. More severe pain may be treated with corticosteroid injections.

Surgery

Rarely is surgery necessary. However, if the extra bone growth compresses the spinal cord or nerve roots, surgery may be needed. Surgery is done to relieve pressure on the spinal cord or nerve roots. Surgery to take out the extra bone growth (spurs) in the neck may help with symptoms of difficulty swallowing. You should expect to be hospitalized for a brief stay. Initially you may be asked to wear a corset or brace for support.

Rehabilitation

What should I expect after treatment?

Nonsurgical Rehabilitation

Physical therapy may help delay the loss of motion in affected joints. Regular exercise such as walking or stretching is recommended. This helps with the stiffness and pain. Exercises help increase your range of motion in your joints. Heat may also be helpful to areas of your body affected by DISH.

After Surgery

Physical and/or occupational therapy can help you with getting in and out of bed properly, moving, walking, dressing, etc. Initially you will not be allowed to lift more than 10 pounds. At first, using a walker may be more comfortable and safe. Gradually you will be able to return to your normal activities.

Regular exercise such as walking or stretching is recommended. This helps with the stiffness and pain. Exercises help increase your range of motion in your joints. Heat may also be helpful to areas of your body affected by DISH.

Your surgeon will want you to follow up on a regular basis. Repeat examination will include testing of the nerves and spinal cord. Imaging studies will also be repeated.

Notes