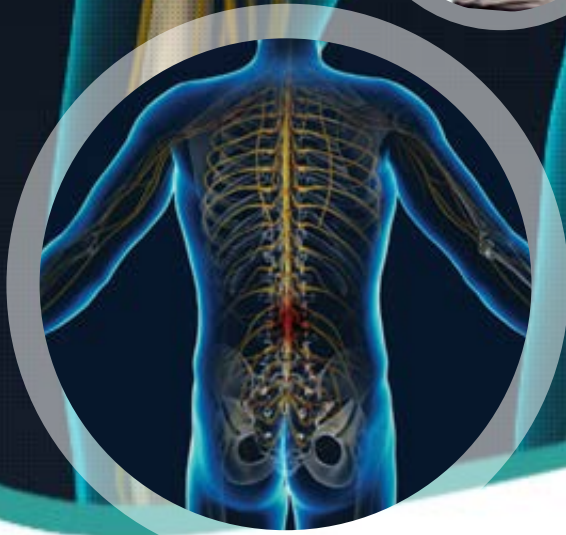


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BACK PAIN

Multimedia Health Education



Disclaimer

This movie is an educational resource only and should not be used to make a decision on **Back Pain**. All decisions about surgery must be made in conjunction with your surgeon or a licensed healthcare provider.

MULTIMEDIA HEALTH EDUCATION MANUAL
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What is Back Pain?

Back pain is one of the most commonly reported medical problems in society as well as the leading cause of job related disability. It is estimated to affect 8 out of 10 people at some point in their lives. Back pain can occur slowly over time due to changes as we age, or can occur suddenly from injury. Back pain can be acute (short term) lasting a few days to a few weeks, or chronic (long term) persisting for more than 3 months. It is important to understand that most back pain will resolve itself within a few weeks.

To learn more about back pain, let us first learn about normal spine anatomy and function.

The Spine

The spine, also called the backbone, is designed to give us stability, smooth movement, as well as providing a corridor of protection for the delicate spinal cord.

It is made up of bony segments called vertebrae and fibrous tissue called intervertebral discs.

The vertebrae and discs form a column from your head to your pelvis providing symmetry and support to the body.

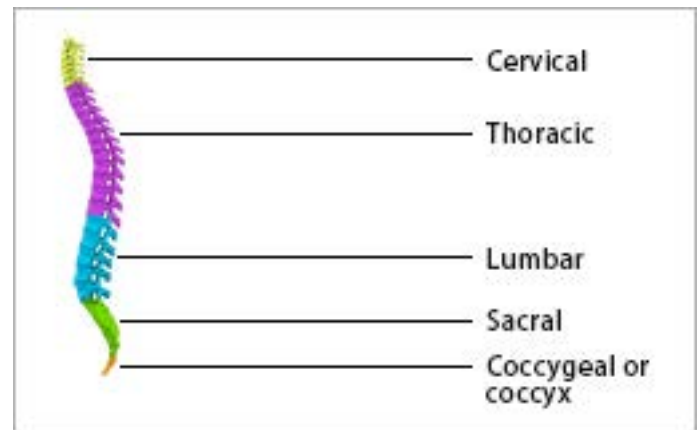
The spine can be divided into 4 parts. The uppermost is the cervical region, consisting of 7 small vertebrae that form the neck.

As we move down the body, the next 12 vertebrae make up the thoracic region or mid back from which the ribs are hinged.

The 5 lumbar vertebrae are the largest of the mobile vertebrae and supports 2/3 of the body's weight.

The lowest region of the spine is the sacrum and coccyx. The sacrum is a triangular plate made up of 5 fused vertebral segments while the 4 coccyxes terminate the bony spine.

(Refer figure. 1)



(Figure. 1)

Vertebra

A single vertebra is made up of two parts; the front portion is called the body, cylindrical in shape, and is strong and stable.

The back portion of the vertebra is referred to as the vertebral or neural arch and is made up of many parts. The two strong pedicles join the vertebral arch to the front body.

The laminae form the arch itself while the transverse process spread out from the side of the pedicles like wings to help anchor the vertebral arch to surrounding muscle.

The spinous process forms a steeple at the apex of the laminae, and is the part of our spine that is felt directly under the skin.

Laminae

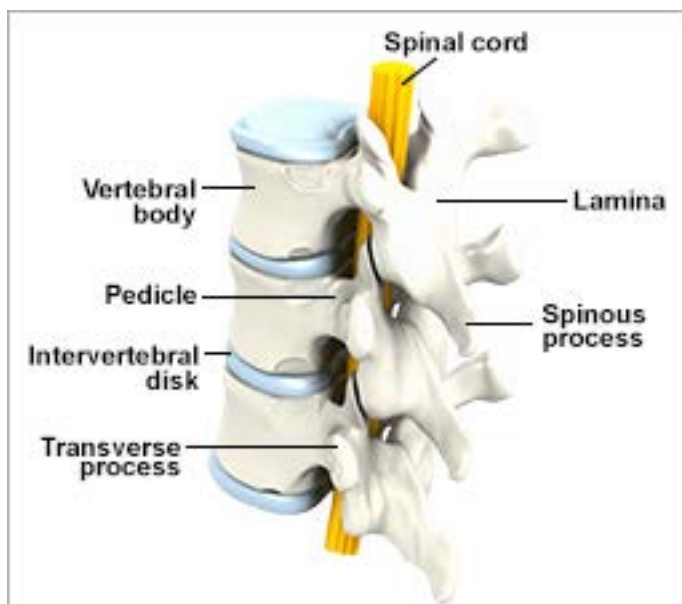
The laminae of the vertebra can be described as a pair of flat arched bones that form a component of the vertebral arch.

Spinal Canal

This canal is formed by the placement of single vertebral foramina one on top of the other to form a canal. The purpose of the canal is to create a bony casing from the head to the lower back through which the spinal cord passes.

Pars Inter Articularis

Known as the Pars, it is the part of the vertebral arch where the pedicle, transverse process and articular process transect (*Refer figure. 2*)



(Figure. 2)

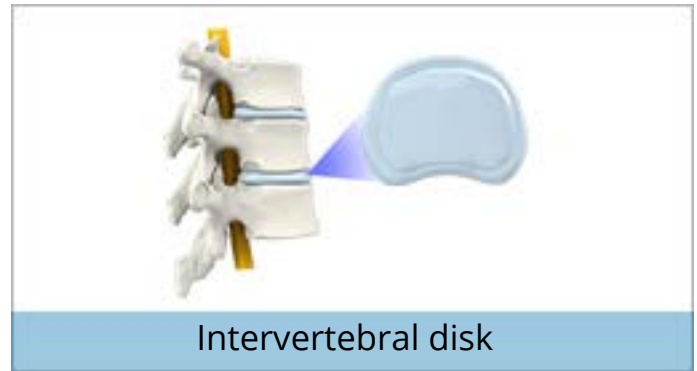
Fibrous Tissue

Intervertebral Disc

The intervertebral disc sits between the weight bearing vertebral bodies, servicing the spine as a shock absorbers.

The disc has fibrous outer rings called the anulus fibrosus with a watery jelly filled nucleus called the Nucleus Pulposus.

(*Refer figure. 3*)



(Figure. 3)

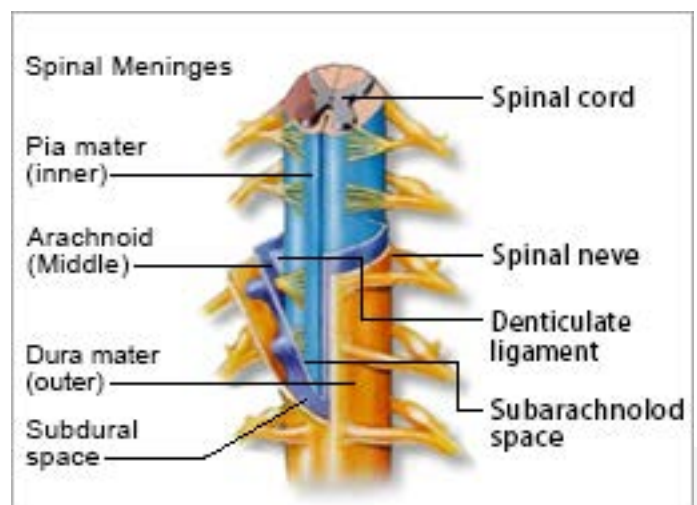
Spinal Cord

The spinal cord is the means by which the nervous system communicates the electrical signals between the brain and the body. It begins at the brain stem and is held within the spinal canal until it reaches the beginning of the lumbar vertebra.

At L1 the spinal cord resolves down to a grouping of nerves that supply the lower body.

Facets joints are the paired articular processes of the vertebral arch.

These synovial joints give the spine its flexibility by sliding on the articular processes of the vertebra below. (*Refer figure. 4*)



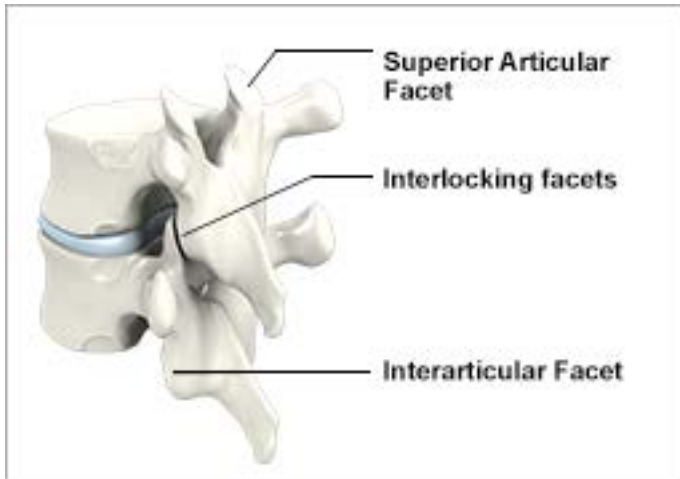
(Figure. 4)

Facet Joint

Facets joints are the paired articular processes of the vertebral arch.

These synovial joints give the spine its flexibility by sliding on the articular processes of the vertebra below.

(Refer figure. 5)



(Figure. 5)

Risk Factors

Anyone can develop back pain at any point in their lives; however there are certain risk factors that may predispose you to developing back pain.

Age

Increasing age raises your risk of developing back pain due to decreased bone strength and muscle tone. Discs can lose their flexibility and deteriorate with age causing less cushioning between the vertebrae.

Physical Fitness

Inactive lifestyle and lack of exercise can lead to weight problems and obesity causing stress on the spine. When back and abdominal muscles are not strong enough to support the spine, back pain can occur.

Smoking

Although smoking is not a direct cause of back pain, smoking affects circulation which can affect the delivery of nutrients to the discs. Chronic coughing from smoking can cause back pain. Also, smokers don't heal as well as non-smokers which can prolong pain after back injury or surgery.

Occupational Risks

If you are working in a job that involves heavy lifting, pushing, pulling, or frequent twisting of the body, you are at higher risk for developing back pain. If you work at a desk job and have poor posture or sit in an uncomfortable chair all day, back pain can develop.

Genetics

Some painful back conditions may be hereditary such as disc disease and congenital scoliosis.

Diet

An unhealthy diet high in fat and calories can lead to overweight or obesity increasing your risk of developing back pain.

Spinal Stenosis

Narrowing of the spinal canal as we age, most commonly due to degenerative arthritis.

Skeletal Conditions

Spine curvatures such as in scoliosis and kyphosis.

Cauda Equine Syndrome

A very serious compression disorder of the spine. The cauda equine is an area at the base of the spinal cord where the nerve roots of all spinal nerves are located. Compression in this area can cause pain and loss of all nerve function below the site of compression and loss

of bowel and bladder control. This condition is a surgical emergency requiring immediate decompression of the spinal nerves.

Fibromyalgia

A common condition characterized by chronic body wide pain with localized tender points in muscles, joints, and soft tissues.

Referred Pain

Pain that occurs somewhere else in the body but is experienced in another location, such as in the back. Examples include kidney and bladder infections, ovarian cancer, ovarian cysts, endometriosis, etc.

Psychological Factors

Stress and depression have been associated with increased complaints of back pain.

Tumors

Although spinal tumors are rare, cancer can spread from other parts of the body to the spine causing pain.

Causes of Back Pain

It is important to know back pain is a symptom not a medical diagnosis. Click the following for more information on medical conditions that can cause back pain.

Sprain, Strain, or Spasm to the Back Muscles

Sprain, strain, or spasm to the back muscles or ligaments caused by heavy or improper lifting. This is the most common cause of low back pain and will usually resolve completely in a few weeks.

Injury or Trauma to the Back

Injury or trauma to the back such as in car accidents, sports injuries or falls.

Degenerative Disc Disease

A condition caused by wear and tear on the discs between the vertebrae causing them to lose their cushioning ability.

Osteoporosis

Weak, porous bones caused by osteoporosis can lead to fractures of the spine.

Arthritis

Degenerative changes from osteoarthritis and ankylosing spondylitis are associated with back pain.

Herniated Discs

A condition caused by a tear in a disc causing the disc contents to bulge outside of the disc. Symptoms related to herniated discs in the lumbar region include sharp, continuous back pain, weakness in the legs, and some loss of sensation to the leg and foot.

Sciatica

Irritation of the sciatic nerve, one of the large nerves to the legs and thighs, is usually caused by a ruptured or herniated disc compressing the nerve.

Sciatica causes pain to the leg and buttock often accompanied by tingling and numbness.

Spondylitis

Infection or inflammation of the spinal joints causing chronic back pain.

Spinal Stenosis

Narrowing of the spinal canal as we age, most commonly due to degenerative arthritis.

Skeletal Conditions

Spine curvatures such as in scoliosis and kyphosis.

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Diagnosing Back Pain

Evaluating the source of back pain is critical in determining your treatment options for relief of the pain.

Your physician will perform the following:

- Medical history
- Physical examination

Depending on what the history and exam show, your doctor may order medical tests to determine the cause of your back pain.

MRI

Magnetic and radio waves are used to create a computer image of soft tissue such as nerves and ligaments.

CT Scan

This test creates 3D images from multiple x-rays and shows your physician spinal structures not seen on regular x-ray.

CT Scan with Myelogram

A type of medical imaging which is done by injecting contrast medium into the affected area of the spine followed by CT scan of the area that creates 3D images from multiple x-rays.

X-rays

A form of electromagnetic radiation that is used to take pictures of bones.

Electromyogram

A test involving the placement of small needles into the muscles to monitor electrical activity. This test is used to detect the level of nerve root damage related to chronic pain.

Treatment Options: Acute Back Pain

Treatment for back pain will depend on the cause of the pain and whether the pain is acute or chronic.

Acute back pain, the most common type of back pain, usually gets better on its own. Treatment guidelines for acute back pain include:

- Continue your normal daily activities as much as possible: bed rest is not recommended and in fact can make your pain worse.

- NSAIDS (non-steroidal anti-inflammatory drugs) such as aspirin, ibuprofen, acetaminophen, can help ease the pain until it resolves.
- Ice or heat packs, or both, applied to the back can help relieve stiffness and pain.
- Sleeping with a pillow between the knees while lying on your side or placing a pillow under your knees while sleeping on your back may help alleviate back pain.
- Exercise or surgery is not recommended for acute back pain.

Treatment Options: Chronic Back Pain

If your back pain persists more than three months your doctor may suggest more intensive treatments.

Hot or cold packs, or both

Exercise

Your doctor may refer you to a physical therapist to instruct you on exercises to strengthen your trunk and back muscles.

Medications

Your doctor may prescribe over the counter anti-inflammatory medications such as ibuprofen, Tylenol, etc. For severe pain, you may be prescribed narcotic pain medications, muscle relaxants, anti-depressants, or injections into the back to decrease pain and inflammation. Prescription sleep aids are sometimes prescribed as most chronic pain patients also suffer with sleep disorders.

Therapeutic Massage

Massage by a trained therapist can decrease muscle spasms.

Electrical Stimulation

Safe and painless, Transcutaneous electrical nerve stimulation, or TENS, sends a weak electrical current from the skin to the nerve pathways to interrupt pain signals being sent to the brain.

Spine Care Education

Your doctor may suggest attending a “back school” to learn about posture, exercises, proper body mechanics, and back pain prevention.

Behavioral Modification

Your doctor may discuss ways for you to change current behaviors which may be affecting your back health. These include quitting smoking, eating healthier, losing weight, and getting regular sleep.

Surgical Treatment

Surgical treatment is rarely the first choice for back pain unless cauda equine syndrome, a medical emergency, has been diagnosed. Your physician will likely order conservative treatment methods as previously described.

If your back pain persists, interferes with your sleep and daily activities, and does not respond to conservative treatment, your doctor may suggest surgery. Some of the medical diagnoses that may need surgical intervention include:

- Herniated discs
- Spinal stenosis
- Spondylolisthesis
- Degenerative disc disease
- Vertebral fractures

SUMMARY

Although every effort is made to educate you on Back Pain and take control, there will be specific information that will not be discussed. Talk to your doctor or health care provider about any concerns you have about managing back pain.



YOUR SURGERY DATE

READ YOUR BOOK AND MATERIAL

VIEW YOUR VIDEO /CD / DVD / WEBSITE

PRE - HABILITATION

ARRANGE FOR BLOOD

MEDICAL CHECK UP

ADVANCE MEDICAL DIRECTIVE

PRE - ADMISSION TESTING

FAMILY SUPPORT REVIEW

Physician's Name : _____

Patient's Name : _____

Physician's Signature: _____

Patient's Signature: _____

Date: _____

Date: _____

