

Back pain is ranked second to headaches as the most frequent location of pain. Four out of five adults will experience at least one bout of back pain at some time in their lives. It is almost next to common colds in the list of common diseases.

The most common site for pain is the lower back because it bears the brunt of our weight and hence is more prone to get affected. Structurally backache is a condition that usually is caused when one or more structures of the back gets affected and these includes muscles, cartilage, bones or spinal cord.

**Anatomy of our Back** - The back region of our body is made of interconnecting structures like bones, joints, muscles, ligaments and tendons. The spine of the back itself is made up of 24 small bones (seven cervical, twelve thoracic and five lumbar) and is the major support structure of back. These small bones are called vertebrae and they are further attached to sacrum and coccyx as we go from top to down. The sacrum attaches itself in front to the bones of the pelvis.

Our Erect Posture and flexibility of our body-The erect human posture has made our back adapt to withstand the forces of gravity over our lifetime. It also has made this region more easily vulnerable to wear and tear, strains and fractures. To keep us mobile, the flexibility of our back is important. This is determined by various factors such as joint structure, muscle elasticity and connective tissue fiber material made up of collagen, elastin and titin. Disc that are interposed between the vertebra, acts as a shock absorber and gives joints their strength, stability and flexibility but limits movement. Vertebrae and discs provide a protective tunnel that allows the spinal cord and its spinal nerves to pass through. These nerves running down the center of the vertebrae, branch off to various parts of the body. The collagen fibers help the disc withstand the tension of the erect posture and our weight. Disc protects the spine and keeps it stable during strenuous activities that puts strong force on the spine, such as jumping, running, and lifting.

Back ache is more prevalent between the age of 35 and 55. The most frequently cause of our back pain are:

Heavy physical work,

Frequent bending, twisting, lifting,

pulling and pushing,

Repetitive work,

Static postures,

Vibrations.

Psychosocial risk factors for backache includes stress, distress, anxiety, depression, cognitive dysfunction, pain threshold, job dissatisfaction, and mental stress at work.

Back pain may be sudden and sharp or it may be dull and if persistent for more than a week it might result in tension, soreness or stiffness of back muscles. Pain may aggravate with slightest of movement or even with coughing and sneezing. It may also be accompanied with numbness and tingling in the arms or legs.

The pain if limited to the back can be treated by simple remedies at home but if radiating to the lower abdomen, groin, leg or foot, needs medical attention.

Back pain is a common reason for seeking disability benefit from governments and insurance companies. However as pain is subjective and difficult to quantify, the process for such claims is tedious and not everyone who makes a claim gets the necessary benefit.

### **What is the reason for Back Pain?**

**Posture** -Back pain most commonly results from poor posture. Sometimes it is due to poor body mechanics like standing for extended periods of time or sitting in an incorrect posture. Back injury, heavy physical work, lifting, bending, twisting, or awkward positions might act a precursor to triggering back pain.

**Injury** -A sudden fall, car crash, or sports injury can cause a sprain or strain. When a back injury occurs, muscles, ligaments, and tendons become over-stretched and swollen up, causing pain, tenderness, and stiffness.

***The three common causes of back pain include:***

**Muscle strains:** Strained muscles, tendons or ligaments or inflamed joints may cause pain along your spine.

**Osteoarthritis:** This degenerative joint condition affects nearly everyone past the age of 60, Old age and injury can slowly lead to deterioration of the cartilage. Cartilage is the protective tissue that covers the surface of the joints of the vertebrae.

**Osteoporosis:** One in three women who are older than 50 can be affected by osteoporosis and this can lead to painful vertebral compression fractures.

What are the Triggering factors for Back Pain?

**Triggering Factors** -The episode of back ache might result either from a strenuous event or previous history. Even psycho-social risk factors like stress, distress, anxiety, depression, cognitive functioning, job dissatisfaction and mental stress can play a role in triggering back ache. There may be some deep underlying causes of low back pain, few of which include:

1. Fracture of vertebral bones
2. Slipped disc; disc bulges out of vertebral joint and puts pressure on spinal nerves

3. Spinal stenosis; owing to narrowing of spinal space, pressure is induced upon the spinal nerves
4. Spondylolisthesis; when one of the back bones slips forward and out of position
5. Degenerative disc disease; when the discs in spinal cord gradually gets worn out
6. Osteoarthritis; a wear-and-tear disease of bones
7. Rheumatoid arthritis; an inflammatory condition of joints
8. Carcinoma or benign tumors
9. Kidney stones
10. Endometriosis
11. Pelvic inflammatory disease in females

Sometimes a routine activities such as gardening, picking up a child, reaching for an object or even coughing, can trigger back ache.

### **Symptoms of Back Pain**

Pain that interferes with sleep, weakness or numbness in one or both legs or groin area- can mean nerve compression and requires thorough evaluation.

Problems with bladder or bowel control can also occur due to compression. Typically there is a continuous ache in the back that is not relieved by change of posture and is worse in the morning. Generally the person affected is unable to perform normal daily chores or housework. Bending to pick up something from the floor can be a painful task.

Back pain arises in many forms, it may be sudden and sharp or it may be dull and if persistent for more than a week, it might result in tension, soreness or stiffness of back muscles. Pain may aggravate with slightest of movement or even with coughing and sneezing. It may also be accompanied with numbness and tingling in the arms or legs. The pain distribution and pattern indicates its severity. The pain if limited to the back can be treated by simple remedies at home but if radiating to the lower abdomen, groin, leg or foot, needs medical attention.

Symptoms such as pins and needles sensation, numbness or a burning sensation across the leg or foot region are an indication of severity of pain and should not be left untreated. These symptoms might indicate damage to the root of the sciatic nerve, the nerve travels from the lower back down towards the back of the leg to the foot and enervates the long muscles of the leg and is responsible for the sensation of the leg and foot.

### **Category of Pain:**

1. Acute - if lasting up to six weeks
2. Sub-acute - If lasting up to three months
3. Chronic - If longer than three months

### **Warning Signs when medical help is required:**

1. Pain getting significantly worse

2. Pain affecting every day activities
3. Groin weakness or numbness
4. Weakness or numbness in one or both the legs
5. Arm or hand weakness
6. Tingling, or numbness in arms radiating to fingers
7. Loss of bowel or bladder control
8. A fever (high temperature) accompanied with redness or swelling on back
9. Constant pain, even at night

**Factors that increase the risk of developing back pain include:**

1. Smoking
2. Obesity
3. Older age
4. Being a female
5. Physically strenuous work
6. Sedentary work
7. Physically or mentally stressful job
8. Anxiety
9. Depression

**Although the back pain often gets triggered suddenly but the causes may have been piling up for quite some time owing to:**

1. Maintaining slouched posture in chairs
2. Driving in a hunched position
3. Standing in an arched manner
4. Lifting without bending knees
5. Sleeping on sagging mattress
6. Being unfit
7. Sleeping prone
8. Getting out of the bed straight from supine lying position

**Chronic back pain and Disability** – Back pain is a common reason for seeking disability benefit from governments and insurance companies. However as pain is subjective and difficult to quantify, the process for such claims is tedious and not everyone who makes a claim gets the necessary benefit. Even the most genuine of cases are liable for rejection, The fear accompanying back pain can sometimes leads to prolonged inactivity and can make the backache worse and make it a chronic condition. This can lead to work-loss and may push a person to seek disability allowance.

The physiotherapist should ensure that the 'fear factor' of back pain should not let a person from stop performing their daily chores. The general advise therefore is that people suffering from low back ache should NOT avoid their daily activities or exercises and should keep performing these with some necessary precautions.