

## SCOLIOSIS

### SPINAL CURVATURE AND SCOLIOSIS



#### Normal spinal curvature

Running from the base of the skull down to the pelvis, the spine has three natural curves. When viewing an individual from the side, these curves give the spine a slight “S” shape.<sup>1</sup>

As the spine bears much of the body’s weight and receives a great amount of stress from the body’s day to day movements and activities, these curves help ensure that this weight is evenly distributed.<sup>1,2,3</sup>

#### Spinal curvature in scoliosis

Scoliosis is a condition in which the spine is abnormally curved. Severe cases of scoliosis may cause the spine to rotate or twist.

Scoliosis is not a disease, and can affect individuals that are otherwise completely healthy.<sup>4</sup>

#### Causes of scoliosis

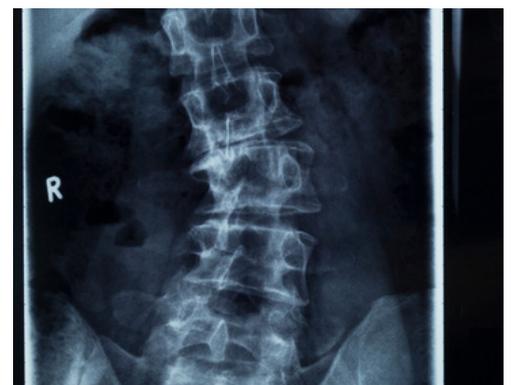
In the majority of cases, the cause of scoliosis is not known and tends to occur in children just before puberty. Scoliosis may also have hereditary causes or be caused by an infection, injury, birth defect, or underlying medical condition such as cerebral palsy or muscular dystrophy.<sup>5</sup>

#### Symptoms of scoliosis

Scoliosis tends to develop gradually over time. The condition itself is not painful, such that children who suffer from scoliosis — and their parents — might not be immediately aware of its existence.

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The following are some of the warning signs of scoliosis:

- Visible curvature of the spine
- Ill-fitting clothing
- Uneven shoulders, waist, or hips
- Protruding shoulder blades (one or both) or hip
- Slight leaning to one side
- A hump on one side of the back
- Uneven or protruding ribs (in severe cases)
- Back pain (generally more common in adults)



## How does scoliosis affect quality of life?

For many, scoliosis has a minimal effect on quality of life and daily activities. For others, scoliosis may have more serious implications, such as the following<sup>5</sup>:

- **Appearance.** Uneven shoulders, hips, or posture can be detrimental to an individual's self-esteem, particularly for children and teenagers.
- **Chronic back pain.** This is particularly true for adults suffering from scoliosis in childhood.
- **Lung and heart damage.** In extreme cases, scoliosis curvature may cause the rib cage to squeeze the lungs and heart, impairing breathing and heart function.

## Diagnosing scoliosis

Scoliosis is usually diagnosed at the doctor's office with a physical examination and review of medical and family history. A neurological examination might also be performed to check for muscle weakness, numbness, or abnormal reflexes. X-ray testing is then ordered to ascertain the location and severity of spinal curvature. If there is any suspicion of an underlying medical condition or tumor, additional testing may be ordered.<sup>5, 6</sup>

## Treatment of scoliosis

For most individuals, scoliosis is a manageable condition which requires nothing more than periodic check-ups (generally x-rays) in order to ensure that the spinal curvature is not developing further.<sup>5, 7</sup>



In others, scoliosis can become progressively worse, even to the point of severe disability. In such cases, various treatment options may be available.

When determining the right treatment for scoliosis, the following factors are considered <sup>5,6</sup>:

- **Age.** Bone growth is a strong determining factor in scoliosis treatment. For example, braces are generally used only if bones are still growing.
- **Sex.** Young girls suffering from scoliosis are four times more likely to require surgery than boys as the condition tends to progress at a higher rate.
- **Severity of curvature.** The larger the curve, the greater the likelihood that it will worsen.
- **Location of curvature.** When curvature occurs in the center region of the spine, it tends to have greater implications than curvature occurring in the upper or lower regions.
- **Pattern of curvature.** A “double” or “S-shaped” scoliosis curvature tends to be more severe than a “C-shaped curve”.



### Treatment for babies and toddlers

Infantile scoliosis might simply be monitored to see if the condition improves on its own. However, when more than a “wait and see” approach is required, babies and toddlers might be fitted with a plaster cast or plastic brace.

### Back braces for children

A brace is a temporary measure to prevent scoliosis from worsening while a child is still growing. Most are lightweight, form-fitting, and may need to be worn day and night, or only at night.<sup>5,6</sup>

There is no set time period that a brace must be worn, and each child is different. However, a brace is generally worn until a child has stopped growing. For teenagers diagnosed with scoliosis, this is an average of 26 months, while for younger children this can be several years. Some patients opt to continue wearing a brace beyond this point in order to improve posture and balance.<sup>8</sup>

Most children are able to carry on with their daily lives while wearing a brace and may even be able to remove it for certain sports or activities. However, the longer the brace is worn the more effective in halting scoliosis progression it will be. It is important to understand that, while it can potentially prevent further progression, a brace cannot straighten or reverse an existing scoliosis curvature.<sup>5</sup>

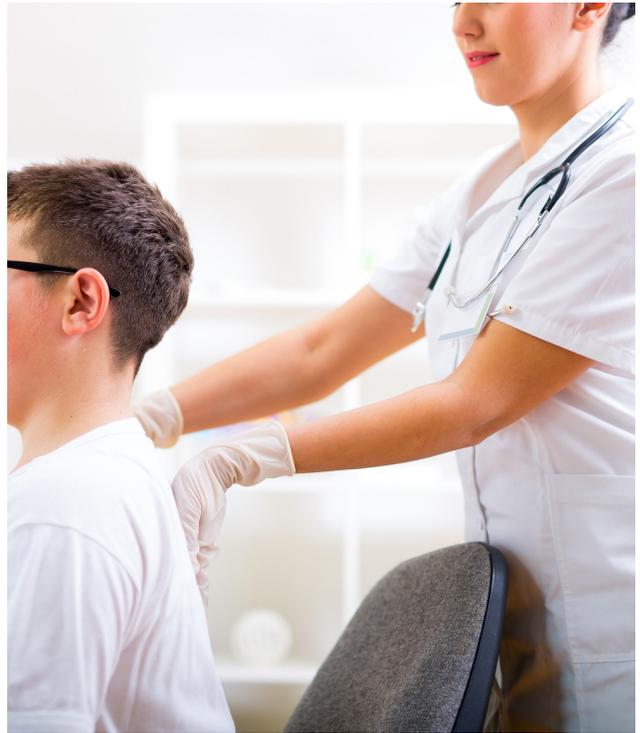
## Treatment for adults

Adults suffering from scoliosis might consider medication or spinal injections to relieve pain. Exercise can also be beneficial for strengthening the back and providing pain relief. However, always consult with a doctor before beginning any new activities or exercise program.<sup>7, 9</sup>

Surgery may be used either as a preventive measure or a corrective measure to straighten the spine, and may be necessary for children or adults when scoliosis is extremely disabling or painful, or when it is seen to be increasing in severity.<sup>5, 7</sup>

For scoliosis curvatures of over 45 degrees, surgery is generally considered to be the only treatment method that can provide a lasting solution.<sup>6</sup>

When considering surgery for scoliosis or for any medical condition, it is important to weigh the short and long-term benefits against possible complications and loss of quality of life.



## 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.



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