

# Kyphosis

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Kyphosis is an exaggerated convex curvature of the thoracic spine. Kyphosis is often referred to as humpback, hunchback, or roundback. Spinal curvature can stress nerves, muscles, and joints, and can lead to disc degeneration.

Kyphosis is found in children. Juvenile kyphosis caused by a rigid disfigured spine is known as Scheuermann's disease. Causes of juvenile kyphosis are not completely understood, but include traumatic injury and heredity. Scheuermann's disease can be differentiated from kyphosis caused by poor posture based on the rigidity of the spine. A spine disfigured by poor posture should still be flexible.

## Diagnosis

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Kyphosis usually does not develop in children younger than 10 years. The syndrome is often diagnosed between 10 and 15 years of age. At this point, there is rarely any pain, and usually little or no disability. Pain varies by patient and age. 22% of patients report back pain at adolescence, 60% report back pain at skeletal maturity.

If kyphosis is suspected, a complete X-Ray from shoulders to pelvis is required. The image will allow measurement of the spinal bend (curvature  $> 40$  degrees is considered kyphosis). In cases of Scheuermann's disease, wedging caused by degenerating discs will also be evident.

## Treatment

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A physical therapist can help with posture training, pectoral stretching, back extension strengthening and hamstring stretching. In case of Scheuermann's disease, in addition to the exercises described above, bracing is indicated if the kyphosis is more than 45 degrees in severity. A modified Milwaukee brace, with a chin extension and lateral pads to keep the shoulders back, is effective in most cases. The brace is usually worn for about 16 hours a day for about one to two years. Once skeletal maturity of the vertebral bodies is obtained, bracing is no longer necessary (boys approx. 18 yrs of age, girls approx. 18 months after onset of menses).

About 5% of the patients will undergo surgery because of extreme or progressive kyphosis. Surgery involves fusing the spine and using surgical implants to hold the fuse.

If the curvature is less than 60 degrees, the curvature is usually not progressive after maturity.

## **What the teacher should know**

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Especially in the early stages, kyphosis is usually not painful or debilitating. The spine usually makes compensatory curves to overcome balance problems. The patient may suffer from some pain or tight hamstrings, however, which may require modifications during physical activity.

During treatment, teachers may need to be familiar with the limitations of the brace being used. As with any brace, it will be problematic during periods of growth - possibly causing injury or discomfort.

## **Sources of information**

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Kyphosis

<http://www.med.jhu.edu/ortho/peds/kyphosis/>

Kyphosis questions & answers

[http://orthospine.com/hottopics/qa\\_kyphosis.htm](http://orthospine.com/hottopics/qa_kyphosis.htm)

Scheuermann's Kyphosis

<http://www.orthoseek.com/articles/scheuermann.htm>