



## **Understanding Adult Scoliosis: Causes and Effective Non-Surgical Treatments**

Adult scoliosis is more prevalent than commonly assumed, affecting up to 68% of individuals over the age of 60 (McAviney, Roberts et al., 2020). This condition significantly impacts physical, emotional, and functional aspects of life, often reducing the quality of daily activities and mobility. For chiropractors and other healthcare providers specializing in musculoskeletal health, understanding the nuances of adult scoliosis and its management is essential. This article delves into the types of adult scoliosis, associated challenges, and the most effective non-surgical treatment options.

### **Types of Adult Scoliosis**

Adult scoliosis is not a singular condition but rather manifests in three distinct forms. Each type has unique causes, symptoms, and progression patterns, underscoring the need for a tailored approach to management.

#### **1. Adolescent Idiopathic Scoliosis in an Adult (ASA or ISA)**

Idiopathic scoliosis originates in childhood or adolescence, with approximately 3-5% of adolescents receiving a diagnosis. Curves in adolescent progress during growth spurts and as a result of the vertebrae growing deformed or asymmetrical. This causes the spine to rotate and laterally bend. While many people believe it is not a concern when someone has reached skeletal maturity many curves can still progress in adulthood. Danielson and Nachemson found that 36% of adolescents with scoliosis had progressing by more than 10° after 22 years (Spine 2023). Curves exceeding 30° have an increased risk of progression and curves over 50° have a 100% risk of continued progression in adulthood. Location of the curve can also impact risk of progression. Thoracic curve may be more stable because the ribcage help provide stability, but lumbar and thoracolumbar (T/L) curves—often progress during adulthood due to spinal degeneration. This progression can lead to significant deformity and chronic pain. Additionally, single curves are generally more progressive than double curves.

A study by Chopin et al found the following rate of curve progression in adults:

- lumbar curves 1.8°/y
- thoracolumbar curves 1.4°/y
- thoracic curves 1.2°/y
- double curves thoracic 0.8°/y, lumbar 0.9°/y

*Symptoms of ASA include:*

- Persistent back pain.
- Visible postural changes, such as uneven shoulders or hips.
- Difficulty standing for extended periods.
- Fatigue following short walks.

## 2. Adult De Novo Scoliosis (DDS)

DDS develops later in life, typically affecting postmenopausal women and men over 70 years old. This type results from spinal degeneration, with asymmetric wear of spinal discs and facet joints leading to imbalances. Over time, progressive curves and nerve compression exacerbate symptoms.

*Common symptoms of DDS include:*

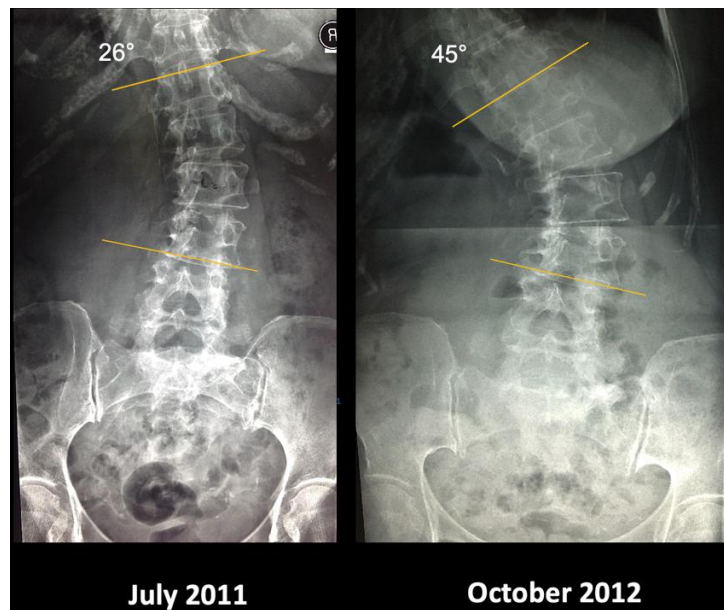
- Localized back pain.
- Radiating leg pain.
- Difficulty maintaining mobility and posture.
- Gradual loss of height.

## 3. Secondary Adult Scoliosis (SAS)

SAS arises as a consequence of other underlying conditions. This type is often associated with neurodegenerative diseases, metabolic bone disorders, or biomechanical factors.

*Key causes of SAS include:*

- Neurodegenerative diseases such as Parkinson's or Alzheimer's.
- Osteoporosis, often leading to vertebral fractures.
- Post-surgical complications, including segmental fusion or hip replacements.



**Example of Degenerative Scoliosis**

- Biomechanical issues, such as leg length discrepancies or hip pathology.

### The Vicious Cycle of Curve Progression

Adult scoliosis progresses differently than adolescent scoliosis. The theory of adult scoliosis is as follows:

1. Either due to pre-existing biomechanical issues such as pre-existing scoliosis or due to injuries the functional unit of the spine begins to degenerate.
2. As a result of this degeneration soft tissue integrity is lost.
3. This loss of soft tissue integrity leads to functional unit instability.
4. This instability allows further scoliotic progression.
5. Over a period of time the bone tries to adapt and further degeneration occurs.

### Challenges Associated with Adult Scoliosis

Regardless of its type, adult scoliosis poses significant challenges that can hinder a patient’s quality of life. Chiropractors must address the following issues:

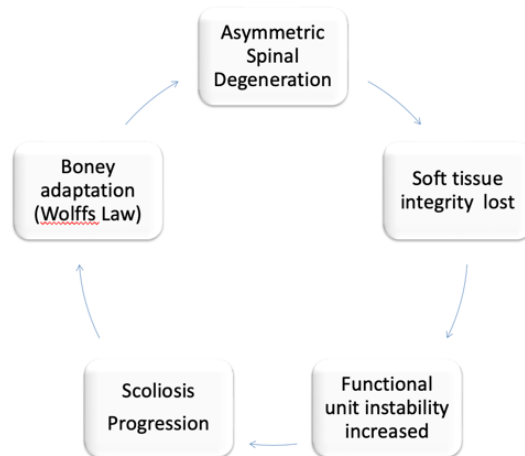
1. **Pain** – Chronic back pain and nerve-related symptoms are common. Pain in scoliotic patient presents different than pain in non-scoliotic patients.
2. **Disability** – Reduced mobility and difficulty performing daily tasks can lead to a diminished sense of independence.
3. **Progression** – Without intervention, scoliosis may worsen over time, increasing deformity and symptoms.
4. **Aesthetics** – Visible postural changes can affect self-esteem and emotional well-being.

### Non-Surgical Treatment Options

For many adults, non-surgical treatments offer effective ways to manage symptoms and slow the progression of scoliosis. These approaches prioritize improving function, reducing pain, and enhancing quality of life without the risks associated with surgery.

#### 1. ScoliBalance Exercises

Customized [scoliosis exercise programs](#) tailored to individual needs focus on improving posture, core strength, and mobility. Research indicates that targeted exercises can reduce pain, enhance spinal alignment, and improve functionality (Negrini et al., 2015). These exercises are



particularly effective when integrated into a patient's daily routine under professional guidance. Negrini et al found that 68% of adults doing scoliosis specific exercises and an improvement in their scoliosis.

## 2. Bracing with ScoliBrace

Advanced bracing technology, such as ScoliBrace, provides 3D-customized support to slow curve progression. Developed using advanced imaging techniques, these braces ensure a precise fit, promoting better alignment and results. Studies have shown that such braces can significantly reduce curve progression and improve posture (Palazzo et al., 2017). Palazzo et al did a retrospective study looking at the effectiveness of brace treatment in adults. They looked at the adults over a 15 year period. During the first 10 years the adults did not have any treatment and the average curve progressed 15° over 10 years or 1.5° per year. The adults wore custom scoliosis braces 4-6 hours a day for the last 5 years and only had 1° of curve progression over 5 years when wearing a custom brace part time or an average of 0.2° worsening per year. The evidence is clear that custom [scoliosis brace](#) worn part-time can dramatically reduce scoliosis curve progression in adults.

## 3. Bracing and Scoliosis-Specific Exercise Combined

Wearing a brace and performing scoliosis-specific have both been found effective in treating adult scoliosis but when we combining these two likely produces the best results. Papadopoulos looked at 144 patients over the age of 40 with degenerative scoliosis. The patients were prescribed scoliosis-specific exercises to be done daily and a custom scoliosis brace to be worn 8+ hours daily. Following treatment 68% of the patients had no pain and 67% had improvement in posture and appearance. 53% of the patients had a reduction in the size of their curve.

### Why Choose Non-Surgical Care?

While surgery remains an option for severe scoliosis cases, it carries considerable risks, including complications, prolonged recovery, and significant costs. Scoliosis surgery has 2.5% mortality rate ([Pater DB, et al. Spine 2008](#)). Non-surgical treatments, on the other hand, provide safer and effective alternatives to manage symptoms and maintain an active lifestyle.

Benefits of non-surgical care include:

- Effective pain management.
- Slowing the progression of spinal curves.
- Enhanced mobility and overall function.

### The Role of Chiropractor

Chiropractic adjustments serve an important role in managing patients with degenerative scoliosis. Spinal adjustments help maintain spinal mobility, decrease pain and some techniques can help with postural



improvements. There is no evidence to support chiropractic adjustments can improve scoliosis or reduce scoliosis curve progression, meaning adjustments can change spinal deformity.

ScoliCare works closely with chiropractors to help [co-manage scoliosis](#) cases. We also provide x-ray reviews for scoliosis and hyper-kyphosis. ScoliCare is the world's leading authority for non-surgical scoliosis treatment. We are here to work with and support local chiropractors in managing their scoliosis and hyper-kyphosis patients. For [scoliosis treatment in Denver](#) visit ScoliCare Denver Colorado or call 303-955-1919.

**About the Author:**

Dr. Gubbels is head scoliosis clinician at ScoliCare Denver Colorado. He has published research in peer reviewed scientific journals and presented case studies at the International Society on Scoliosis Orthopedic and Rehabilitation Treatment annual international research conferences. He regularly presents and teaches on the conservative treatment of scoliosis and spine deformities and has presented for the Colorado Chiropractic Association.