

# Spondylolisthesis

## TERMINOLOGY (SYNONYMS)

- Slipped vertebrae
- Displacement of a vertebral body
- Anterolisthesis: (forward translation of a vertebral body relative to the one below.)
- Retrolisthesis: (backward translation of a vertebral body relative to the one below)

## INTRODUCTION

Spondylolisthesis refers to the forward slippage of one vertebral body with respect to the vertebrae beneath it. If a person has spondylolysis the top bone either settles forward on the bottom bone or slides back and forth on the vertebrae underneath. This most commonly occurs at the lowest freely movable vertebrae which is L5, upon S1. It is also fairly common at the level of L4 upon L5. Spine x-rays taken with the patient standing, bending forward and bending backward would show if the bones were slipping on one another. If so the person would be considered for a fusion of the bones to join them and make them act as one. A defect in the construct of bone between the superior and inferior facets with varying degrees of displacement so the vertebra with the defect and the spine above that vertebra are displaced forward in relationship to the vertebrae below. It is usually due to a developmental defect or the result of a fracture. There are five primary types of spondylolisthesis which are:

- **Type 1:** The dysplastic (congenital) type which occurs as the result of a developmental defect in the upper arch of L5 or the upper portion of the sacrum
- **Type 2:** Isthmic type which results from a defect in a pair of bones along the back of the vertebrae (pars) which permits forward slippage of the uppermost vertebrae. There are three subcategories of type 2 which are the lytic (stress fracture) form, the elongated bone (pars), and the recent bone fracture (pars).
- **Type 3:** Degenerative type which acquired secondary to disc degenerative and loss of facet joint stability. The spinal segment becomes gradually unstable and shifts forward over time. The bone is still intact.
- **Type 4:** The traumatic type which can occur at any age secondary to fracture of any part of the back portion of the vertebrae.
- **Type 5:** The pathological type with result from generalized bone disease such as severe osteoporosis (thinning of the bone) or Paget disease.

Spondylolisthesis can be graded based upon the amount of slippage forward (or setting forward) with respect to the vertebrae below. The grades are:

- Grade 1: less than 25% of vertebral diameter
- Grade 2: 25-50%
- Grade 3: 50-75%
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- Grade 4: 75-100%

## **PREVALENCE**

- Age at detection: usually 10-20 years old
- More common in females