

**REVIEWED***By Chris at 12:27 pm, Aug 08, 2019*

# Symptoms & Conditions

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Pseudarthrosis of the spine is also referred to as a non-union and means 'false joint'. It is the result of a failed spinal fusion. Pseudarthrosis can occur at any place where spinal fusion was attempted and presents as either axial (neck or back) or radicular (arms or leg) pain that occurs months to years after a previous lumbar fusion.

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## Causes

One of the goals of fusion surgery is for the bones to heal together or "weld" into one solid piece of bone. For fusion surgeries,

### **bone graft**

is used to achieve fusion and the fusion heals much in the same way a broken bone heals in a cast. If the bones do not "weld together" properly, then motion may continue across the area. For some patients, motion in that area can cause pain similar to that of a broken bone that never heals. Many patients with pseudarthrosis do not have any particular symptoms, and for these patients further treatment and evaluation is not always needed. When needed,

### **x-rays**

and

### **CT scans**

of the spine may be used to determine if a spinal fusion has occurred.

## Risk Factors

Improved methods of selecting patients for surgery, as well as better surgical techniques have made pseudarthrosis a much less common outcome of spinal fusion surgery. There are a number of different risk factors for development of pseudarthrosis. Many of these are related to other medical conditions a

patient may have. Patient with metabolic disorders, especially those with diabetes mellitus, are at increased risk for the development of pseudarthrosis. The most common and modifiable risk factor is smoking. Patients who smoke or use other tobacco products are at an increased risk, studies show smokers have a 33% decrease in the rate of fusion. Many surgeons may in fact refuse to electively operate on smokers as it poses such an unnecessary great risk for failed fusion.

Other factors include obesity,

**osteoporosis**

, chronic steroid use, malnutrition and chronic illnesses. Patients who have had a previous non-union are at a higher risk for future pseudarthrosis. The use and choice of instrumentation, fusion material, number of fusion levels, and surgical technique have all been shown to influence the rate of successful fusion.

### ***Treatment***

Treatment of the patient with symptomatic pseudarthrosis involves a second attempt at fusion. Recent surgical advances including the use of

**spinal instrumentation,**

**bone graft**

substitutes, and

**genetic engineering**

(bone morphogenetic protein) have helped surgeons decrease the risk of pseudarthrosis after spine fusion surgery.

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