

Tobacco Utilization & its Impact on Spinal Fusion

The bone is a living tissue dependent on the functions and support provided by the other body systems. When these systems are not able to perform normally, bone is unable to rebuild itself. Tobacco utilization clearly affects a multitude of these systems.

The success of a spinal fusion relies on the ability of the body to heal and grow new bone across the fusion segments of the spine. The screws, rods and plates only act as an internal brace until this fusion occurs. If a fusion does not occur then all of these internal bracing technologies will eventually fail due to repetitive stress and metal fatigue – often ending in fracture of these components.

There is continued and growing evidence that tobacco utilization adversely affects spinal surgery:

- Studies have shown that patients who utilize tobacco and undergoing an anterior cervical fusion have an increased rate of failed fusion (up to **47%**) in comparison to patients who do not use tobacco products.
- A similar study involving lumbar fusions suggested risk of failed fusion in up to **40%** (compared to **8%** in patients who do not use tobacco products).
- Studies have shown that tobacco utilization is associated with ***an increased risk of infection*** following any spinal procedure.
- A failure of solid fusion following any spinal fusion procedure is associated with a very poor overall outcome. Repeat operations to address a failed fusion have a ***success rate of only 50% !!!***

There are many other risk factors associated with poor spinal surgical outcomes and fusion rates and these include, but are not limited to, ***diabetes, age, gender, chronic steroid medications and osteoporosis***. Therefore the addition of tobacco utilization in patients with other risk factors will further increase the overall risk of a poor outcome in these cases.



In addition, the risk of a failed fusion is proportional to the number of fused spinal segments in a given operation and therefore all of the above issues are extremely important in regard to more extensive (multi-level) spinal fusions. Clearly, tobacco utilization is extremely detrimental to the overall success of a spinal fusion and patients should make every effort to stop smoking prior to any spinal procedure.

Patients are therefore strongly encouraged to discuss cessation medications and other options with their primary care physicians and to consider delay elective fusion procedures if necessary.

I have read and fully understand the risks listed on this page and I should not sign this educational form if I have any specific unanswered questions regarding these risks.

Patient Name

Date Signed