



Bone Graft in Spinal Fusion

What is bone graft and how is it used?

Often, spinal surgery is done to stabilize two or more bones that are moving unnecessarily. This excessive motion can result in pinching and irritation of the spinal cord or nerves, which may be the cause of some of your symptoms. In order to stabilize two separate bones together permanently, they must be made to grow into each other and create a single larger bone. This is called a fusion. In order for a successful fusion to occur, the body needs a structural framework, bone cells and proteins. This is where a “bone graft” enters the equation.

What types of bone grafts are available?

The most commonly used bone graft is bone obtained from somewhere else in the patient’s body, usually from the hip or pelvis. The next most commonly used graft is bone from a cadaver. Other alternatives include demineralized bone matrix, bone forming proteins, derivatives of coral, and titanium. Most of these alternatives have not been used or studied for extensive periods. Some of them that were initially promising were later found to have side effects and undesired outcomes. In most cases, we advocate using only materials which have undergone rigorous testing and have well understood long-term results.

Which form of bone graft is the best?

Bone from your own body undoubtedly has the best biological properties and the highest rates of successful long-term fusions. There is no chance for rejection or transmission of disease, and there is no question about where the graft was obtained. The downside is that some patients report having pain at the harvest site for extended periods. Also, the graft is usually removed from a separate incision, which introduces the possibility of an infection or other complication at that site. These factors are what have led some surgeons to look for other bone graft options.

Where do you take the graft from when you use my own bone?

Bone graft for back surgery is usually taken through a small incision directly above the buttock on one side. If you have already had bone graft taken during a previous surgery, then the opposite side will be used. For neck surgery the graft is either taken from just above the buttock as described above, or from a small incision over the front of the hip.

What happens to the area where the bone is removed?

Usually the harvest site fills in with a tough fibrous tissue and occasionally new bone will fill in part or all of the defect. Bone is only removed from areas of the pelvis or hip that do not support your body weight. Thus there is very little chance of the bone “breaking”.

How much pain is there afterwards at the bone graft harvest site?

All patients should expect some pain at the bone graft site for the first few weeks after the operation. For the following 1–2 months, patients typically report decreasing levels of pain, many reporting no pain at all. In our experience, very few (5-10%) patients report persistent pain from the bone graft site. Even fewer patients report that the pain interferes with their ability to return to work or perform recreational activities.

Which type of bone graft is best for me?

Many factors such as tobacco use, nutrition, and extent of the planned surgery must be taken into consideration when determining the best option. Ultimately, all patients having a spinal fusion should discuss bone graft options with their surgeon, and come to an agreement on an individual basis.



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The use of any tobacco product has been found to have a negative influence on the outcomes of spine surgery no matter which type of bone graft is chosen.

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