Lumbar – Posterior Lumbar Interbody Fusion (PLIF)

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**Introduction**

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**Decompression**

An incision is made in the middle of the low back. The muscles are moved aside and the lamina portion of the vertebrae are exposed. Cutting instruments are used to remove the spinous process, portions of the lamina (laminectomy), and portions of facet joints (facetectomy) from the back of the vertebrae. Removing bone here allows the surgeon to see the disc and compressed spinal nerves. A grasping instrument is used to remove most of the intervertebral disc, which relieves pressure on the compressed spinal nerve, allowing it to return to the proper position.

**Instrumentation**

Next, the vertebrae are prepared for instrumentation. A sharp awl is used to make holes in the pedicles for inserting pedicle screws. Screws are placed through a metal plate and then into the pedicle holes, ending with the screw tips in the middle of the vertebral bodies. Screws and plates are placed on both sides of the spine. Two more pedicle screws are then placed through the metal plate and screwed into the lower vertebral body pedicles.
Distraction and Graft Placement
To prepare for bone graft insertion, the disc space is spread apart (distracted) by moving the vertebral bodies or applying pressure on the pedicle screws. The screws are tightened to hold the disc space in this open position. Two bone grafts are then placed between the vertebral bodies. The bone grafts allow for eventual fusion as bone grows between the vertebral bodies. In variations of this procedure, spacers, cages packed with graft material, or ground bone graft material may also be packed into the disc space to aid with the fusion.

Compression
To provide stability to the spine while the fusion occurs, the lower screws are loosened and the vertebral bodies are squeezed together (compressed). The screws are tightened in the compressed position, which allows for a tight fit of the grafts between the vertebral bodies. Small screws called blockers are placed on the pedicle screws to lock the screws to the metal plate.

Summary
The incision is closed and dressed to complete the surgery. Patients will typically be hospitalized for 2-4 days and should avoid strenuous activity for 6-12 weeks.