

Bone Morphogenic Protein (BMP)

Written by David A. Bomback, MD

Traditionally, spinal fusion surgery required the harvesting of bone graft or bone chips from a patient's pelvis and transplanting this to the level of the spinal vertebrae to allow the bone to fuse together. Although this procedure is quite effective, the bone graft-harvesting procedure can prolong surgical time, increase surgical blood loss, increase hospital stay, increase recovery time, and increase pain. Some patients report chronic bone graft harvest site pain years after a spinal fusion. Recently, scientists and spinal surgeons have demonstrated that a genetically produced recombinant human protein (bone morphogenic protein) has the ability to stimulate a patient's own cells to make more bone. This process of stimulating bone growth within the body is known as osteoinduction. BMPs have been shown to be osteoinductive agents and have enabled surgeons over the last decade to modify their techniques and often avoid having to harvest a patient's own bone. The results of these recombinant human BMPs are equivalent to and often exceed the results seen with a patient's own bone graft. Two BMP products are currently available for spinal surgeons to use. One such product is known as Infuse (BMP-2) and the other product is known as OP-1 (BMP-7). Although indications for their uses may vary, both have been shown to be clinically effective in both animal and human studies. Our surgeons have been involved in their research and development, and have published papers and chapters regarding the use of BMP.