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Infuse Bone Graft

Infuse is a synthetic bone graft system indicated for spinal fusion available from Medtronic Sofamor Danek. It has 3 components: recombinant human bone morphogenetic protein-2 (rhBMP-2), a metal spinal cage and a collagen sponge. The graft is prepared fresh during spine surgery by soaking collagen sponges in an rhBMP-2 solution, inserting the rhBMP-2 soaked sponges into the spinal cage (see Figure) and then placing the constructs into the spine to repair degenerated discs.

The Infuse bone graft system was cleared by FDA for marketing in 2002 in a landmark case for tissue engineering since Infuse was the first product to be cleared that utilized a genetically engineered protein. In clinical trials it was found that Infuse had several advantages over traditional "autograft" spinal fusion surgery where bone is harvested from iliac crest (hip): no donor site morbidity, patients reported less back pain, patients returned to work faster and surgical times were shortened. Financially, Infuse has been very successful accounting for nearly half the revenues of the 2.6 billion dollar "orthobiologics" industry.