



Legacy Needles are designed to pull a Small Aspirate From a Single Location

Optimal technique for minimizing peripheral blood with a traditional aspiration needle is to perform a single small volume pull (2 mL) from the distance most proximal from the entry of the needle. Larger volumes of bone marrow aspirate contain higher amounts of peripheral blood because the cannula is open ended and because traditional needles do not have a mechanical means for precise relocation. Aspirating after retracting the needle exacerbates the problem of peripheral blood contamination by exposing the open ended cannula to the resulting channel that is created by the needle itself and that is filled with peripheral blood.

These results confirmed that strict adherence to a specific collection procedure, involving small volume marrow aspirations and multiple puncture sites, results in a product with a high number of early hematopoietic progenitor cells and minimal contamination by peripheral blood.

Spitzer et al "The impact of harvest center on quality of marrows collected from unrelated donors." J Hematother, 1994 Spring;3(1):65-70. Massachusetts General Hospital, Boston 02114.

The data shows that as the aspiration volume increases from any one given site, the concentration of bone marrow derived cells decreases quickly and the fraction of the sample composed of peripheral blood increases. MUSCHLER G, et al "Aspiration to Obtain Osteoblast Progenitor Cells from Human Bone Marrow: The Influence of Aspiration Volume" The Journal of Bone and Joint Surgery; VOL. 79-A, NO. 11. Cleveland Clinic

This study shows that marrow harvesting by means of multiple small volume aspirations minimizes the dilution with peripheral blood and results in greater numbers of cells and hemopoietic progenitors. Bone marrow harvest for marrow transplantation: effect of multiple small (2 ml) or large (20 ml) aspirates. Bacigalupo A et al; Bone Marrow Transplantation. [1992, 9(6):467-470]

Aspirates of bone marrow demonstrated greater concentrations of mesenchymal stem cells with a 10-ml syringe compared with matched controls using a 50-ml syringe.

Int Orthop 2013 Nov;37 (11): 2279-87 *Benefits of small volume and small syringe for bone marrow aspirations of mesenchymal stem cells* Hermigou. P et al

A larger-volume of aspirate from a given site is contraindicated with the additional volume contributing little to the overall number of bone-marrow cells and results principally in unnecessary blood loss.

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