



**ROYAL
BIOLOGICS**



REGEN

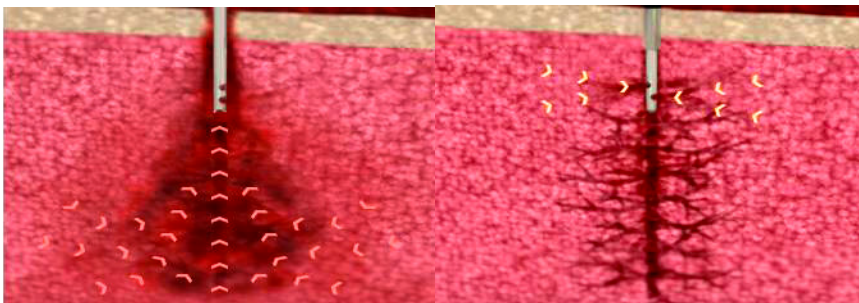
REGENERATIVE MEDICINE RE-DEFINED

MAXX - REGEN Fact Sheet

The **MAXX - REGEN** system maximizes the yield of stem and progenitor cells by giving the clinician the ability to efficiently harvest bone marrow from multiple levels within the medullary space, while restricting dilution caused by peripheral blood.

WHAT ARE THE LIMITATIONS OF A TRADITIONAL NEEDLE?

Traditional bone marrow aspiration needles aspirate primarily through an open ended cannula, which leads to excess peripheral blood dilution and inadequate of key stem and progenitor cells. For this reason, high volume of bone marrow aspirate must be collected and then manipulated. (i.e. centrifuged) before being applied for regenerative therapies.



(Traditional Needle)

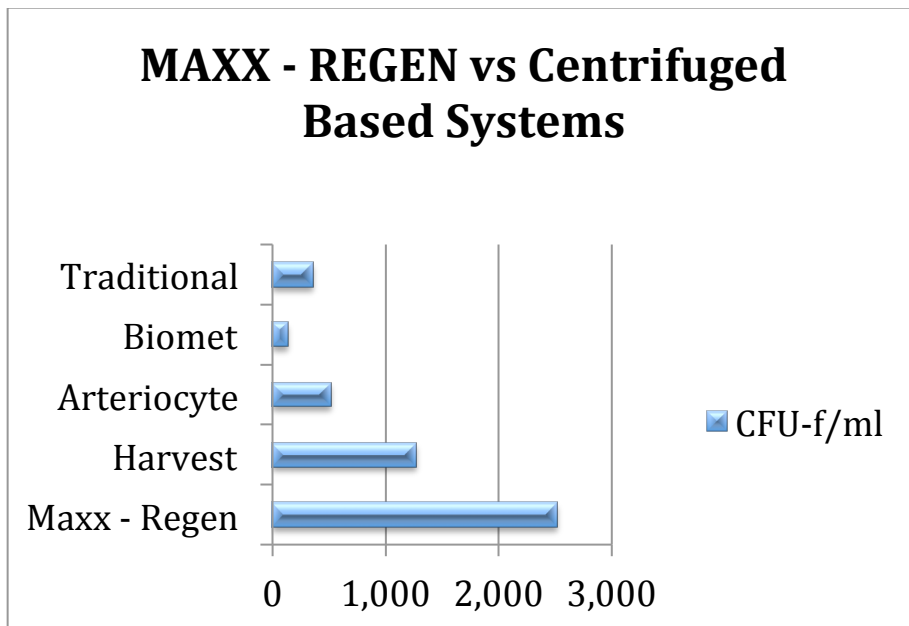
(MAXX - REGEN)

HOW DOES THE **MAXX – REGEN** SYSTEM OVERCOME THESE LIMITATIONS?

MAXX – REGEN offers 2 key features not available with traditional needles.

- Closed Tip Aspiration Cannula that restricts aspiration through the side holes of the cannula and away from the channel caused by the tip of the needle, avoiding excess peripheral blood infiltration.
- A Mechanical means for measured controlled retraction of the aspiration cannula to collect bone marrow aspirate from multiple geographies inside the medullary space with a single puncture.

COMPETITIVE PERFORMANCE



	Maxx - Regen	Harvest	Arteriocyte	Biomet
CFU-f/ml	2,514	1,270	514	134

KEY BENEFITS

Reduce the cost of Utilizing Biologics. **MAXX – REGEN** delivers better regenerative solutions at a reduced cost compared to industry leading solutions.

Minimize O/R Time

Centrifugation systems typically require 20 minutes or more of spin time during the surgical procedure, not to mention the additional support time needed for preparation and cleanup of equipment.

Minimize Sterility Challenges

Centrifugation systems require passing the BMA off the sterile field for processing and back on for implantation. **MAXX – REGEN** eliminates the additional steps where infection concerns must be managed.

Minimize Sample Waste

Centrifugation systems typically discard 80% of the aspirate due to the high levels of peripheral blood. Worse, significant numbers of the desired cells (approx. 40%) are discarded because as these cells increase in density prior to division, they are processed into the undesired red cell centrifuge component and thus discarded, substantially limiting regenerative potential of the resulting sample.

Minimize Use of Anti-Coagulants

Centrifugation systems require at least 10% dilution by volume for the addition of anti-coagulant to allow the sample to separate, and also require another 10% dilution in the form of a neutralizing agent such as thrombin and calcium chloride in order for the marrow to clot in the graft. **MAXX – REGEN** eliminates these requirements.

Eliminate the Need to Filter

Protocols require the marrow to be filtered prior to centrifugation. Cells bound within a clot cannot be counted but they can be delivered to the patient when mixed with graft material or injected. This is not the case when clots are filtered out prior to centrifugation. Filtering increases time and reduces regenerative potential.

For More Information, visit www.RoyalBiologics.com



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