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Joint Preservation

EVIDENCE MATTERS
RESEARCH BULLETIN

Researchers found Stryker's RegenKit THT to be More Efficient at Producing PRP as Compared to Arthrex ACP

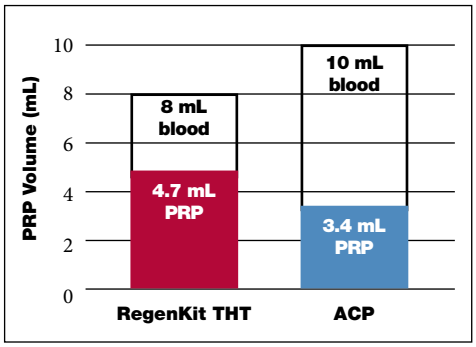
METHODS

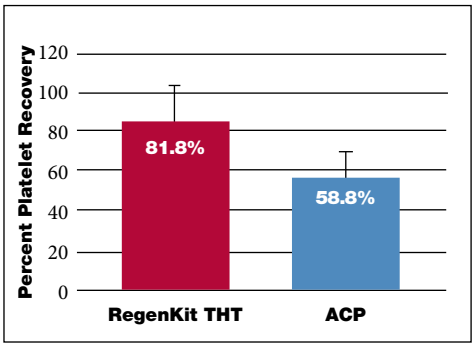
Approximately 24 mL of blood per donor was drawn from 20 healthy donors. Platelet Rich Plasma (PRP) was prepared using two systems, the Arthrex ACP and the RegenKit THT. Per the IFUs of the two systems, approximately 10 mL was used for the ACP and approximately 8 mL was used for the RegenKit THT. Four mL was reserved to determine baseline values of whole blood.[1]

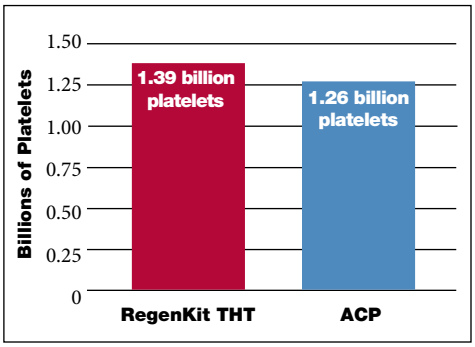
EFFICIENCY

A significantly greater volume of PRP was prepared from less blood with the RegenKit THT.[1] ($p < 0.001$)

A significantly greater percentage of platelets recovered resulted in more platelets in the PRP prepared with the RegenKit THT. Platelets are the architects of tissue healing as their presence to an injury site initiates and guides the healing process.[2] In this study, RegenKit THT recovered 38% more platelets than the Arthrex ACP, resulting in a PRP containing 10% more platelets. ($p < 0.001$)

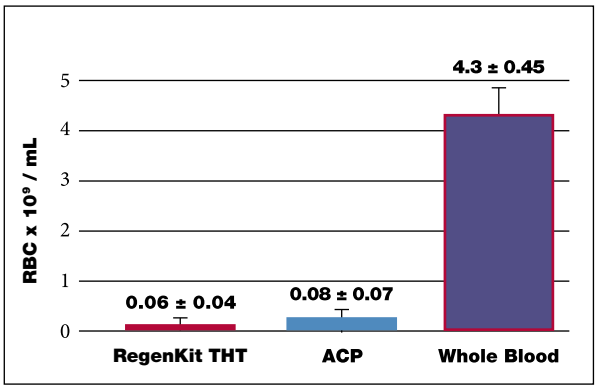






RED BLOOD CELLS

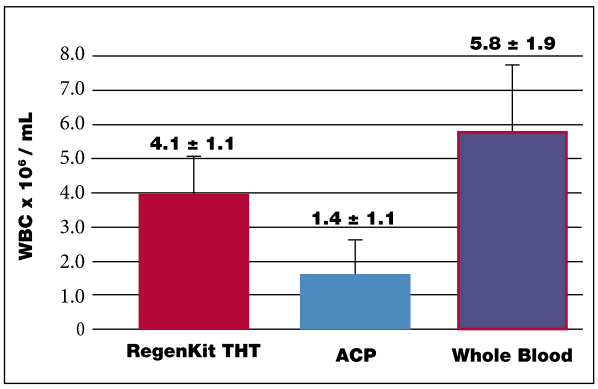
Both the RegenKit THT and the Arthrex systems were effective at removing RBC, with the RegenKit THT removing over 98% of RBC.[1]



WHAT ABOUT WHITE BLOOD CELLS?

In a study evaluating human bone marrow stem cell proliferation and migration, cell migration was enhanced by PRPs containing WBC while PRPs without WBCs showed little effect on cell migration.[3] A critical component of healing is the attraction of WBCs to the healing site. WBCs positively influence the inflammatory phase during tissue healing and may modulate infection at the tissue site.[4]

WBCs are present in the PRP produced with both systems.[1]



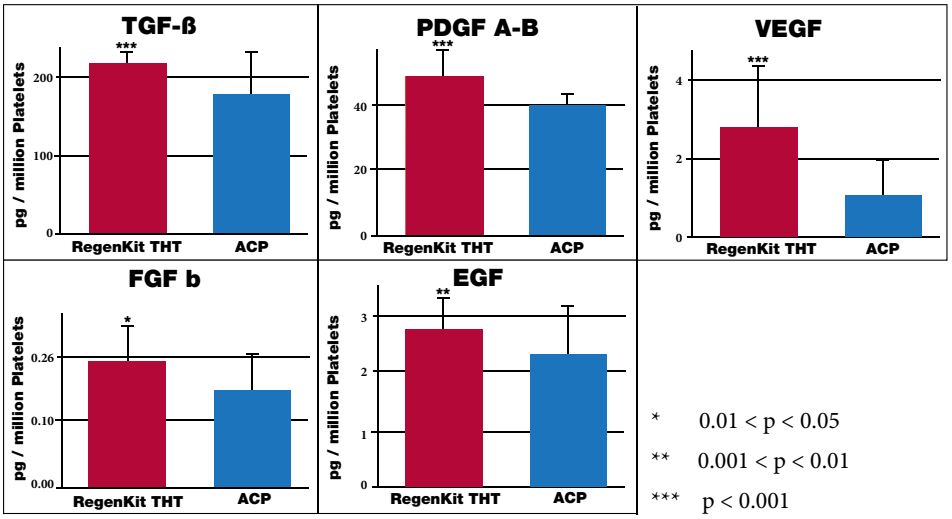
PRP from the RegenKit THT contains WBCs at close to normal physiological levels.[1]

Other systems result in the concentration of WBCs above physiological levels which may have a negative inflammatory effect.[5,6]

GROWTH FACTORS

Platelets play a key role in the normal healing process by producing growth factors. Healthy platelets recovered in PRP continue to produce these growth factors.

Healthy platelets produce more growth factors. PRP from the RegenKit THT resulted in a significantly greater production of grow factors per million platelets than ACP from the Arthrex system.[1]



CLINICAL RELEVANCE

- **Researchers found the RegenKit THT more efficiently delivered a higher total number of platelets from a smaller volume of blood than the Arthrex system.**
- Researchers also found that platelets from PRP produced with the RegenKit THT continue to produce critical growth factors – significantly more per platelet than platelets from the Arthrex system in this study.
- White blood cells are present in the PRP of both systems; but the study demonstrated that only the RegenKit THT maintains WBC near physiologic levels. PRPs containing white blood cells have been shown to demonstrate enhanced cell attraction.
- The RegenKit THT was shown to be stable up to 4 hours after preparation.[1]

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