

# NOT ALL PLATELET-RICH PLASMA ARE CREATED EQUAL

CLINICAL EFFICACY IN PRP IS PRIMARILY DEFINED  
BY THREE KEY PARAMETERS:



1.

## OPTIMAL PLATELET CONCENTRATIONS

Both excessively high and excessively low platelet concentrations may prove detrimental to cellular proliferation. The current landscape lacks sufficient publications to ascertain the optimal platelet concentration in the endometrium and ovaries.

2.

## LEUCOCYTE CONTENT

Reducing the immunogenicity of the PRP product, by using **leucocyte free PRP**, can lower the risk of incompatibility or graft-versus-host disease (GVHD) between the embryo and implantation site. Moreover, decreasing the immunogenicity of the utilized PRP may reduce the likelihood of premature implantation failures.

3.

## EX VIVO PLATELET ACTIVATION

Evidence supports ex-vivo activation over the use of nonactivated platelets, avoiding the inflammatory effect of the platelet-leucocyte aggregates. The use of an **activated and fibrin-depleted PRP** may benefit endometrial treatments, considering that the presence of fibrin over the endometrial epithelium might act as a barrier to embryo implantation for several days until there is assurance of complete fibrin elimination.

**IT IS STRONGLY RECOMMENDED TO DRAW LESSONS FROM ERRORS IN OTHER MEDICAL DOMAINS AND ADVOCATE FOR A COMPREHENSIVE CHARACTERIZATION OF THE PRP USED IN ALL PUBLISHED STUDIES GOING FORWARD.**

### OPEN VERSUS CLOSED SYSTEMS

**Closed systems ensure more homogeneity** in the results compared to open systems. Opting for FDA-approved or CE-marked kits and devices is imperative.

### USE OF PLATELET-RICH PLASMAS IN REPRODUCTIVE MEDICINE

- . Recurrent implantation failures
- . Poor ovarian reserve

# ABSTRACT

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## Not all platelet-rich plasma are created equal

**Manuel Muñoz Cantero**

### **PURPOSE**

**This review aims to elucidate potential variations in clinical outcomes resulting from the use of different types of platelet-rich plasma (PRPs) in reproductive medicine. It seeks to explore the reasons behind the diverse results reported in various studies and assess the general features distinguishing different PRP formulations.**

### **RECENT FINDINGS**

PRPs have found applications across diverse medical fields, generating controversy due to the variability in outcomes. The field of reproductive medicine, despite its limited published studies, is encountering a similar challenge as it integrates these treatments.

### **SUMMARY**

The multitude of PRP product brands in the market, coupled with 'home-made' PRPs, poses a significant barrier to establishing a common protocol for the preparation of standardized PRP products. This impediment hinders widespread adoption by clinicians, particularly in endometrial or ovarian treatments. Drawing from evidence in other medical disciplines, this review endeavors to compile essential characteristics that PRPs must possess, aiming to mitigate the impact of variables affecting results in forthcoming studies.