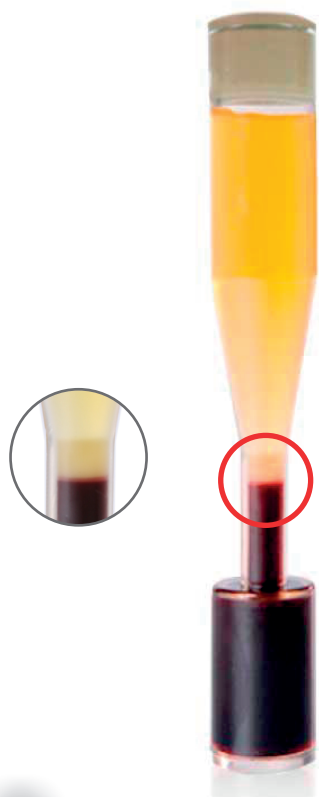




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GUIDELINES FOR PRP USAGE

1. PRECAUTIONS TO PRP USERS

- ☐ Stop taking anticoagulant or antithrombotic medicine such as Aspirin 2 weeks before from the PRP treatment
- ☐ Consult your doctor in advance if you have any blood disease, thrombotic disease, or arrhythmia.
- ☐ Notify your doctor in advance if you are suffering from serious anemia.
- ☐ Don't drink alcohol too much and refrain from smoking before the PRP treatment.
- ☐ Eat lots of fruit especially containing vitamin-C
- ☐ Take a deep sleep.
- ☐ Try to get away from much stresses

2. PRECAUTIONS TO PATIENTS

- ☐ Stop taking anticoagulant or antithrombotic medicine such as Aspirin 2 week before from the PRP treatment.
- ☐ Consult your doctor in advance if you have any blood disease, thrombotic disease, or arrhythmia.
- ☐ Notify your doctor in advance if you are suffering from serious anemia.
- ☐ Don't drink alcohol too much and refrain from smoking before the PRP treatment.
- ☐ Eat lots of fruit especially containing vitamin-C.
- ☐ Take a deep sleep.
- ☐ Try to get away from much stresses.

The better conditions the patient has, the better result will be shown when harvesting buffy coat. If the patient is in a bad condition, buffy coat might not be concentrated well.

BLOOD DONOR'S CHARACTERISTICS

1) *Male*

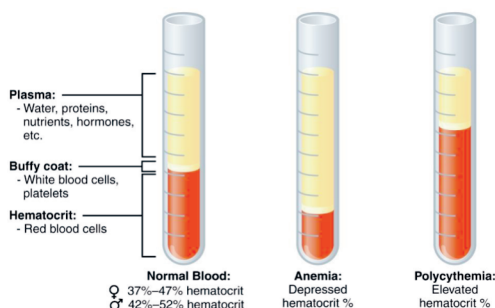
- ☐ A young and healthy man is the best blood donor for PRP treatment.
- ☐ Normally, the size of male's Red Blood Cells (RBC) tends to be larger than that of female's or anemia patient's, therefore; the height of RBC can relatively be high after the spin.

2) *Female*

- ☐ Normally, the platelet counts of female's are lesser than that of male's.
- ☐ The size of female's RBC tends to be smaller than that of males.

3) *Anemia Patient*

- ☐ A young and Healthy man is the best blood donor for PRP treatment.
- ☐ Normally, the size of male's Red Blood Cells are larger than female's or anemia patient's.



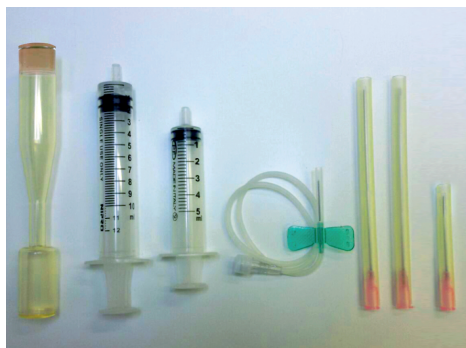
4) *Old-Aged Patient*

- ☐ A young and healthy man is the best blood donor for PRP treatment.
- ☐ Normally, the size of male's Red Blood Cells are larger than female's or anemia patient's.

The operator of PRP treatment should check if the blood donor has any particular conditions that must be considered before drawing blood.

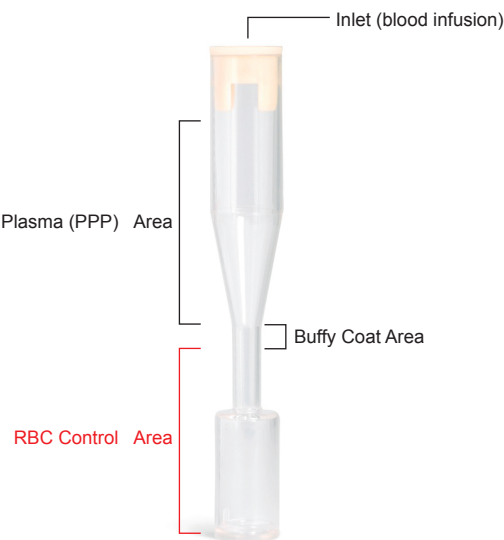
PREPARATION

1. NEEDED SUPPLIES (FOR 1 EA)



- ☐ Easy PRP (1 pcs)
- ☐ Blood (10-11 ml)
- ☐ Anticoagulant (1 ml)
- ☐ 18G 13mm (1pc)
- ☐ 20cc Syringe (1 pc)
- ☐ 5ml Syringe (1 pc)
- ☐ 21G Butterfly Needle (1 pc)
- ☐ 18G 9 cm Needle (2 pcs)
- ☐ Alcohol-soaked cotton/Forceps

2. FEATURES OF Easy PRP



3. ANTICOAGULANTS TO USE

There are several choices of anticoagulant that support the metabolic needs of platelets and the viable separation of platelet in an undamaged manner.



ACD-A



Sodium Citrate
4g / 100ml

1) ***Preferred Anticoagulant***

- ☐ ACD-A (Anticoagulant citrate dextrose Solution-A)
- ☐ Sodium Citrate

2) ***Inhibited Anticoagulant***

- ☐ Heparin: Heparin may obstruct PRP activation
- ☐ EDTA: EDTA is poisonous and it may damage platelet membrane.

4. HOW MUCH OF ANTICOAGULANT IS REQUIRED?

- 1) 1 ml of anticoagulant is needed for 10-11 ml blood sample



Draw Anticoagulant



Syringe coating

- 2) Before drawing blood, coat the inside wall of syringe with anticoagulant.

BLOOD COLLECTION

1) DRAW 10-11 ML BLOOD



Butterfly Needle

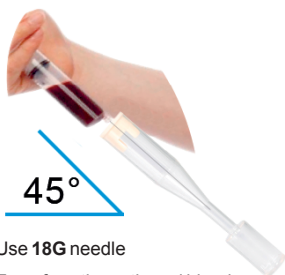


Mix blood swinging the syringe slowly

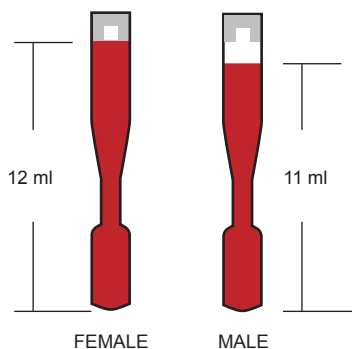
※ CAUTIONS

- ☐ Before taking blood, take out air pressure in the syringe by pumping 2-3 times.
- ☐ Don't draw blood too strongly and fast. When you draw blood, take it softly and slowly. If you force blood to be taken with too much strength or speed, cells in blood could be broken.

2. BLOOD TRANSFUSION INTO TUBE



- 1) Use **18G** needle
 - 2) Transfuse the gathered blood into Easy PRP
- (maintaining a slope of 45°)



Blood	11 ml	10 ml
Anticoagulant	1 ml	1
Total	12 ml	11 ml

CAUTIONS



Blood Clogged in the Middle of the Slim Neck

If the blood is clogged in the middle of the slim neck while transfusion, press the syringe a little harder

CENTRIFUGATION

CENTRIFUGE PROTOCOL

Type	Digital		Non-digital
	Swing	Angle	Angle
			
RPM	3500	3500	3500
RCF	1888*g ~ 2008*g		
Time	5 min		

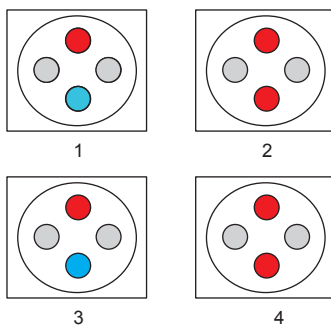
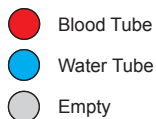
Digital type set automatically RPM following RCF. Therefore, set RCF first as the above instructed RPM can be different from model to model.

CENTRIFUGE BALANCE

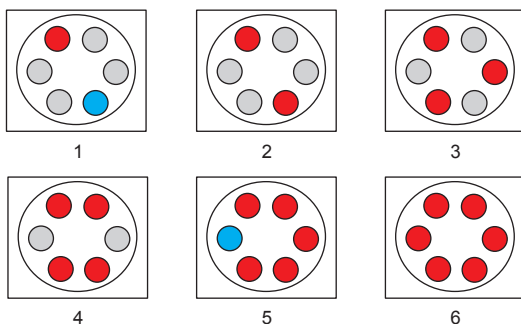
Centrifuge balance is one of the most significant factors in the blood separation process.

Centrifuge imbalance can cause breakage of tubes in the centrifuge or a blood leak in the course of a spin.

4 Hole Centrifuge

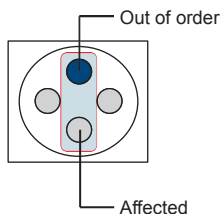


6 Hole Centrifuge



In one bucket of a centrifuge has a defect, the opposite bucket can be affected while spinning.

As a result, tubes in both buckets may be broken and blood leaks.

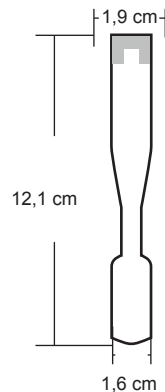


CENTRIFUGE ADVICE



A

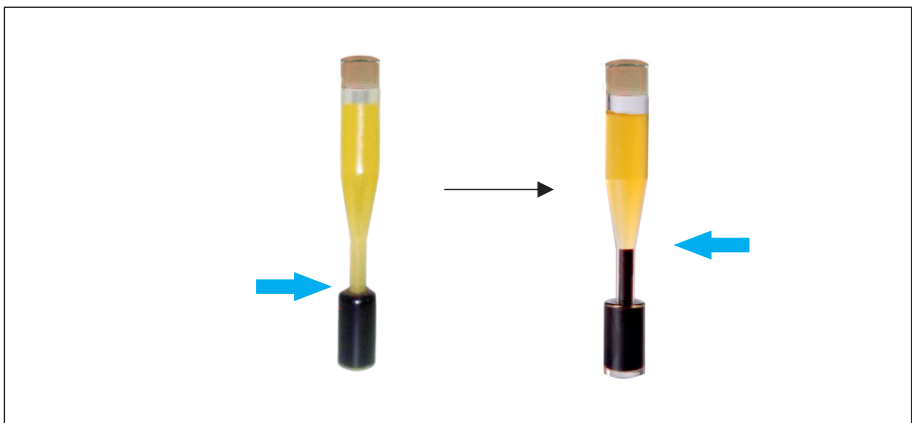
If you have this kind of centrifuge seen in the photo A, check if the head of the tube reaches the central rotor. If so, tubes might be broken while spinning.



CENTRIFUGATION CASES

1) *Standard Case - 1 time Spin*

Case A - Clearly separated after the 1st spin



Reason

Time and RPM in exceeded. In addition to low red blood cell levels are.

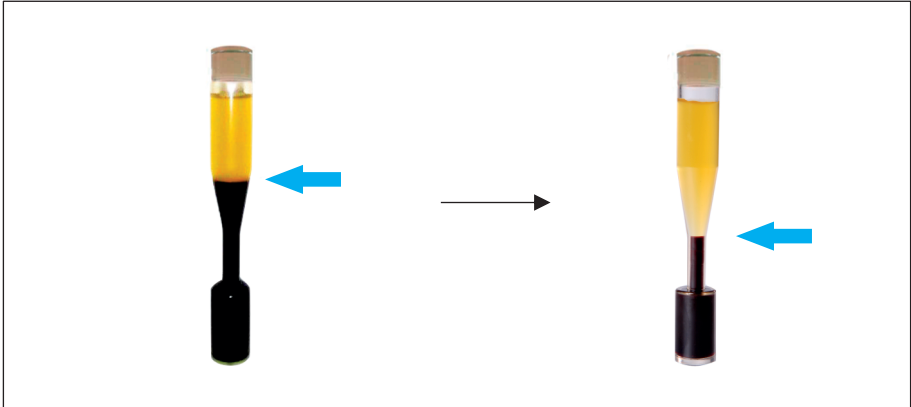
Solution

Syringe up to the blood that was left on the arrow, and then once more centrifuge of 2 minutes at 3500RPM.

CENTRIFUGATION CASES

2) *Standard Case - 1 time Spin*

Case B - Clearly separated after the 1st spin



Reason

This lack of time and RPM High red blood cell levels are.

Solution

Long needle inserted deep into the up arrow once again dropped off the RBC once more centrifuge cycle 2 minutes at 3500RPM.

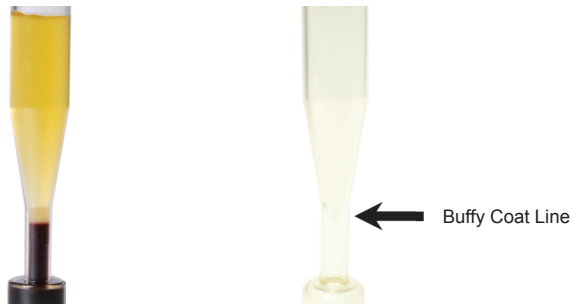
SUGGESTED TO USE



PRP EXTRACTION

HOW TO EXTRACT PRP

- 1) The buffy coat will be automatically isolated without any maneuver by the operator



- 2) Prepare 5cc syringe/18 9 cm needle for PRP extraction
- 3) Draw 1.5-2ml PRP from the slim neck where Buffy Coat is concentrated, making Tornado inside the tube so that sunk platelets can be floated and drawn easily.

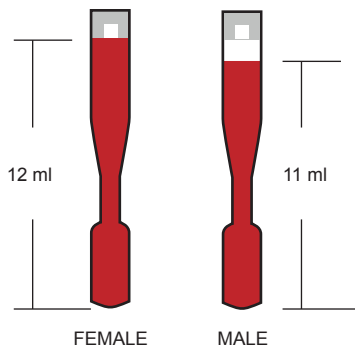


- 4) Draw the remaining PPP (platelet poor plasma) in 5 cc syringe. PPP is used to spray on the entire face to relieve the stimulated skin.



PRP VOLUME FOR ENRICHMENT TEST

- ❑ **1/10** of the total blood sample volume is required for enrichment test.



Blood Vol.	11 ml	10 ml
Anticoagulant Vol.	1 ml	1 ml
PRP Vol. PRP / Blood 1 / 10	1.1 ml	1.0 ml

※ If You Use a Needle for Extraction,

Normally, about 0.05 ml of buffy coat might remain clinging to the inside hole of the needle.

Therefore, about 0.05ml loss of buffy coat should be considered when you count platelets in PRP, and deduct loss volume of 0.05 ml from 1/10 of the total blood sample volume.

PRP	1.1 ml	1.0 ml
Loss Vol.	- 0.05	- 0.05
PRP Test Vol.	1.05 ml	0.95 ml

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