










SHOT reports reveal that 40% of platelet reactions and 40% of allergic reactions are investigated inappropriately with serological tests. This SHOT bite aims to clarify which investigations are needed following a febrile, allergic or hypotensive reaction.

The first step is to correctly classify the reaction as febrile, allergic or hypotensive (see shot bite no. 05: FAHR – getting the diagnosis right)

Febrile	Allergic	Hypotensive
Temperature rise and/or inflammatory symptoms such as rigors, nausea, myalgia, shortness of breath without wheeze	Flushing, urticaria/rash, angio-oedema, wheeze, stridor, hypotension (anaphylaxis)	Isolated fall in systolic blood pressure of 30mmHg or more AND systolic blood pressure of 80 mmHg or less within 1 hour of completing transfusion and no anaphylactic symptoms

When should serological investigations (repeat group & screen/ DAT/ crossmatch) be sent?

Serological tests are only required for febrile or hypotensive type reactions involving red cells, where the reaction is severe enough to warrant stopping transfusion.

	Red cells	Platelets	Plasma products
Febrile			
Allergic			
Hypotensive			

Where reactions warrant serological investigations, basic screening tests (full blood count, renal function, liver enzymes), coagulation screen and haemolysis screen (LDH, haptoglobin, urine for haemoglobin) should also be sent.

Other tests sent in certain circumstances**Tryptase**

When to send: Suspected anaphylactic reactions where diagnosis is uncertain

What to send:

Serum sample x 3

- At onset of symptoms
- 1-2 hours (peak result)
- 24 hours (or longer) post reaction (to assess baseline)

Interpretation: Rise during reaction to peak $> 14 \mu\text{g/L}$ with fall at baseline supports anaphylaxis

Immunoglobulin A (IgA) levels

When to send: Severe allergic reactions or recurrent severe febrile reactions within the first 15 minutes. Looking for severe congenital IgA deficiency.

What to send: Serum sample (if immunoglobulins have not previously been tested)

Interpretation: If isolated severe deficiency (IgA $< 0.07 \text{ g/l}$ and **not** hypogammaglobulinaemia), send a sample to blood service for confirmation and anti-IgA antibody testing

Patient blood cultures

When to send: Severe febrile reactions which warrant stopping transfusion.

Might be considered in moderate febrile reactions, particularly if patient is immunocompromised.

