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Administration of Anti-D Immunoglobulin for Prevention of Haemolytic Disease of the Fetus and Newborn (HDFN)

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Target Audience:

People who need to know about this document in detail	(For example: Authors and owners of policies, procedures and written control documents)
People who need to have a broad understanding of this document	(For example: Board Members, Management Board. Senior Leaders. Board Committees.)
People who need to know that this document exists	(For example: All staff involved in the development of Health Board Policies.)

Integrated Impact Assessment:

Equality Impact Assessment Date & Outcome	Date: April 2026 Outcome: no negative impact
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Aligns to the following Wellbeing of Future Generation Act Objective	Choose an item.



Disclaimer:

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Administration of Anti-D Immunoglobulin for Prevention of Haemolytic Disease of the Fetus and Newborn (HDFN)

1. Purpose

To provide standardized clinical guidance for the use of anti-D immunoglobulin (Ig) in Rh D-negative pregnant women to prevent Rh alloimmunisation and associated complications such as Haemolytic Disease of the Fetus and Newborn (HDFN).

2. Scope

This guideline applies to all healthcare professionals managing Rh D-negative pregnant women in antenatal, intrapartum, and postnatal care across maternity units and emergency settings.

3. Background

- Prior to the use of anti-D Ig, alloimmunisation occurred in approximately 16% of D-negative women following two D-positive pregnancies.
 - Postnatal administration of anti-D Ig reduced this rate to around 2%.
 - The introduction of antenatal prophylaxis (RAADP) further reduced sensitisation rates to 0.17%–0.28%.
 - Mortality associated with HDFN decreased significantly—from 46 to 1.6 per 100,000 births.
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4. Clinical Guidelines

Screening to determine blood group, RhD status, and the presence of red cell antibodies should be offered to all pregnant women early in pregnancy, regardless of previous screening history.

For RhD negative women, additional screening using cell-free DNA (cffDNA) can predict fetal RhD status. This supports personal informed choice regarding prophylaxis and care, reducing unnecessary administration of anti D. Please see hyperlinks below for information and pathway.

If Baby is RhD negative Anti D is not required.

Pathway for cffDNA testing - [V1 Final pathway](#)

A guide below for professionals on cell free fetal DNA (cffDNA)

[Screening Information for Professionals - cffDNA A Guide for Health Professionals V2.pdf - All Documents](#)

Please see Antenatal screening Wales Policy, Standards and Protocols below on cffDNA - section 5

publichealthwales.nhs.wales/services-and-teams/screening/antenatal-screening-wales/programme-reports/antenatal-screening-wales-policy-standards-and-protocols-v7/

4.1 General Principles

- Anti-D Ig should be administered as soon as possible following a potentially sensitising event—ideally within **72 hours**.
- If delayed, administration **up to 10 days** post-event may still offer partial protection.

4.2 Management Based on Gestation

A. < 12 Weeks' Gestation

Clinical Scenario	Anti-D Ig Required	Dose	FMH Testing
Mild PV bleeding, no pain, complete miscarriage (non-instrumented)	No	N/A	No
Heavy/repeated bleeding or with abdominal pain	Yes	250 IU	No
Ectopic pregnancy	Yes	250 IU	No
Molar pregnancy	Yes	250 IU	No
Therapeutic termination (medical or surgical)	Yes	250 IU	No

B. 12 to < 20 Weeks' Gestation

Clinical Scenario	Anti-D Ig Required	Dose	FMH Testing
Any sensitising event (bleeding, trauma)	Yes	250 IU	No
Ongoing uterine bleeding	Yes (every 6 weeks)	250 IU	No

C. ≥ 20 Weeks' Gestation

Clinical Scenario	Anti-D Ig Required	Dose	FMH Testing
Any sensitising event	Yes	500 IU	Yes
Continuous uterine bleeding (single event)	Yes (every 6 weeks)	500 IU	Yes
Intermittent bleeding	Yes	Based on FMH	Yes (every 2 weeks)

Additional Doses:

- **IM:** 125 IU per mL of fetal red cells
- **IV:** 100 IU per mL of fetal red cells
- 500 IU IM is sufficient for FMH up to 4 mL

4.3 Routine Antenatal Anti-D Prophylaxis (RAADP)

Regimen	Dose	Timing
Single-dose	1500 IU	Between 28–30 weeks
Two-dose	500 IU each	At 28 and 34 weeks

- A blood sample should be taken at 28 weeks for group and antibody screening before RAADP is administered.
- RAADP must be administered regardless of previous anti-D Ig given for sensitising events.

4.4 Postnatal Management

- Determine the newborn's blood group from cord blood.
- If the infant is Rh D-positive:
 - Administer at least 500 IU of anti-D Ig to the mother within **72 hours**.
 - Perform FMH test on maternal blood.
 - Administer additional doses if FMH > 4 mL.

4.5 Special Clinical Situations

Scenario	Recommendation
Intrauterine death (IUD) with no fetal sample	Give ≥ 500 IU within 72 hours of diagnosis

Scenario	Recommendation
Intraoperative cell salvage (ICS) in C-section, baby Rh D+ or unknown	Give 1500 IU post-reinfusion; perform FMH test at 30–45 min
Detection of anti-D in maternal blood	Investigate immune vs. passive origin; if unclear, follow prophylaxis protocol
Cord blood sample unobtainable	Administer ≥ 500 IU anti-D Ig

5. Contraindications & Hypersensitivity

- Although rare, allergic reactions including **anaphylaxis** can occur.
 - Caution in **IgA-deficient** patients—risk of severe hypersensitivity.
 - **Emergency medication** (e.g., adrenaline) must be available when administering.
 - Discontinue administration immediately if signs of hypersensitivity arise (e.g., urticaria, chest tightness, hypotension).
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6. Administration Guidance

Route	Preferred Site	Notes
Intramuscular (IM)	Deltoid muscle	Gluteal injection may delay absorption
Intravenous (IV) or Subcutaneous (SC)	As appropriate	For patients with severe bleeding disorders or thrombocytopenia ($\leq 30 \times 10^9/L$)

- Women with bleeding disorders (e.g., severe von Willebrand disease) should be managed in consultation with a **haemophilia centre**.
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7. Documentation and Follow-Up

- All anti-D Ig administrations must be clearly documented in patient records.
 - Track FMH test results and follow-up on required additional doses.
 - Communicate with relevant departments to ensure continuity of care.
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8. References

- Antenatal Screening Wales Policy, Standards and Protocol, Public Health Wales 2023

- BCSH guideline for the use of anti-D immunoglobulin for the prevention of haemolytic disease of the fetus and newborn. H. Qureshi, E. Massey, D. Kirwan, T. Davies, S. Robson, J. White, J. Jones, S. Allard. <https://doi.org/10.1111/tmc.12091>
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SHOT flowchart to guide the appropriate administration of anti-D Ig (www.shotuk.org)

Anti-D Administration Checklist

Anti-D Administration Checklist

Always confirm - the woman's identity - that the woman is RhD Negative using the latest laboratory report - that the woman does not have immune anti-D using the latest laboratory report - that informed consent for administration of anti-D Ig is recorded in notes	
Potentially Sensitising Events (PSEs) during pregnancy	
Gestation LESS than 12 weeks	
Vaginal bleeding associated with severe pain	Administer at least 250 IU anti-D Ig within 72 hours of event. Confirm product / dose / expiry and patient ID pre administration
ERPC / Instrumentation of uterus	
Medical or surgical termination of pregnancy	
Ectopic / Molar Pregnancy	
Gestation 12 to 20 weeks	
For any Potentially Sensitising Event (PSE)	Administer at least 250 IU anti-D Ig within 72 hours of event. Confirm product / dose / expiry and patient ID pre administration
Gestation 20 weeks to term	
For any Potentially Sensitising Event (PSE) (Irrespective of whether RAADP has been given)	Request a Kleihauer Test (FMH Test) and immediately administer at least 500 IU anti-D Ig within 72 hours of event. Confirm product / dose / expiry and patient ID pre administration
Does the Kleihauer / FMH test indicate that further anti-D Ig is required ?	Administer more anti-D Ig following discussion with laboratory
For continuous vaginal bleeding at least 500iu anti-D Ig should be administered at a minimum of 6-weekly intervals, irrespective of the presence of detectable anti-D, and a Kleihauer / FMH Test requested every two weeks in case more anti-D is needed	
Routine Antenatal Anti-D Prophylaxis (RAADP)	
For Routine Antenatal Anti-D Prophylaxis (Irrespective of whether anti-D Ig already given for PSE)	Take a blood sample to confirm group & check antibody screen – do not wait for results before administering anti-D Ig
	Administer 1500 IU anti-D Ig at 28 – 30 weeks
	OR
	Administer at least 500 IU anti-D Ig at 28 weeks and then administer at least 500 IU anti-D at 34 weeks
Confirm product / dose / expiry and patient ID pre administration	
At Delivery (or on diagnosis of Intra Uterine Death >20 weeks)	
Is the baby's group confirmed as RhD positive ? OR Are cord samples not available ?	Request a Kleihauer Test (FMH Test) Administer at least 500 IU anti-D Ig within 72 hours of delivery Confirm product / dose / expiry and patient ID pre administration
Does the Kleihauer / FMH test indicate that further anti-D Ig is required ?	Administer more anti-D following discussion with laboratory