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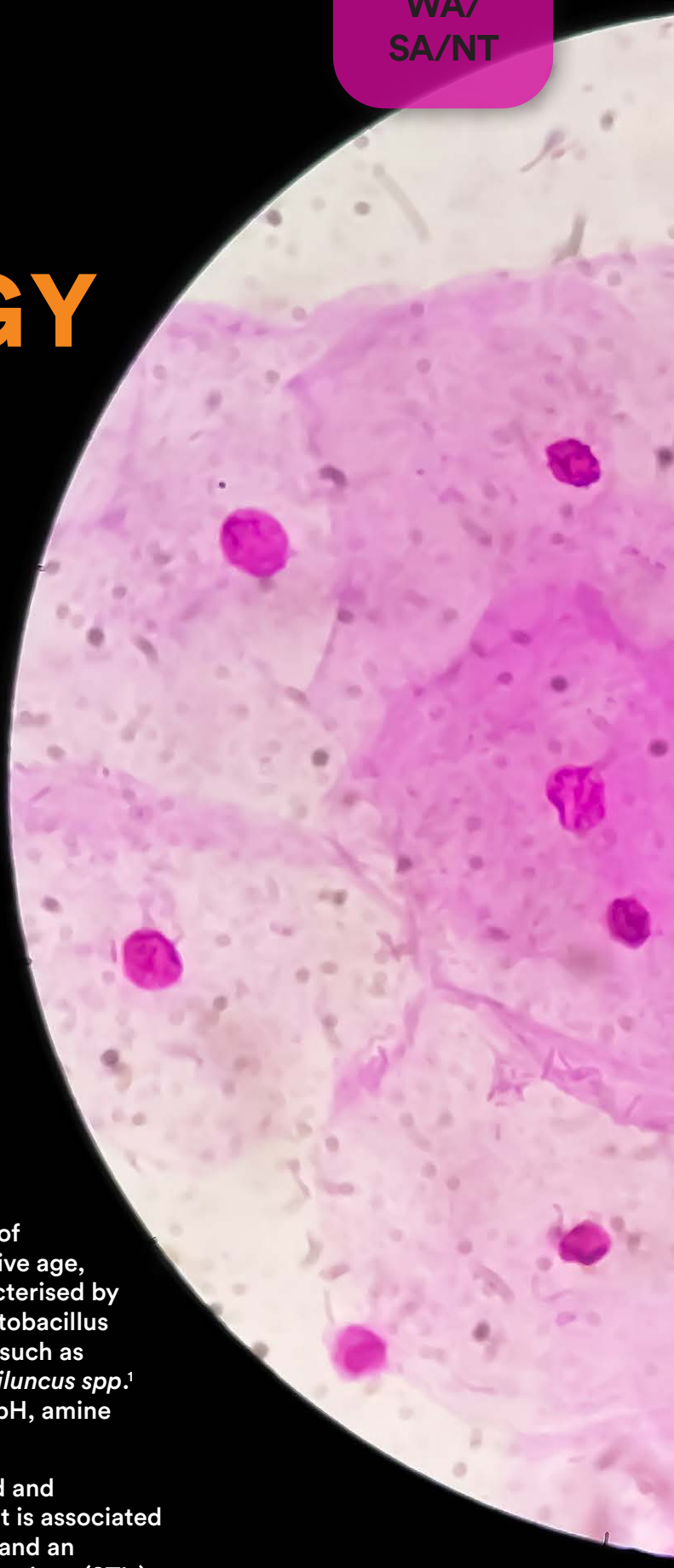

Reframing Bacterial Vaginosis

New research supports STI reclassification and partner treatment

By Dr Linda Dreyer

Bacterial vaginosis (BV) is the most common cause of abnormal vaginal discharge in women of reproductive age, affecting nearly 30% of women globally.[1] It is characterised by a shift in the vaginal microbiota from protective lactobacillus dominance to an overgrowth of anaerobic bacteria such as *Gardnerella vaginalis, Atopobium vaginae* and *Mobiluncus spp*.[1] This dysbiosis is associated with increased vaginal pH, amine production and a characteristic malodour.

Despite its prevalence, BV remains underdiagnosed and undertreated, particularly in asymptomatic cases. It is associated with significant reproductive health complications and an increased risk of acquiring sexually transmitted infections (STIs), including chlamydia, gonorrhoea and HIV.[1] This update provides an overview of BV's pathophysiology, diagnosis, treatment and new insights into partner management.

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Clinical presentation

While many women with BV are asymptomatic, typical symptoms include a thin, white or greyish discharge with a distinct fishy odour. BV is more commonly detected among users of intrauterine devices (IUDs) and is associated with an increased risk of obstetric complications such as spontaneous abortion, preterm birth, chorioamnionitis and postpartum endometritis.[1]

Diagnosis

Diagnosis of BV relies on either Amsel's criteria or Nugent scoring from vaginal swabs. Amsel's criteria require at least three of the following four features: homogeneous discharge, vaginal pH ≥ 4.5, clue cells on microscopy and a positive amine ("whiff") test. Nugent scoring is based on Gram stain, with a score of 7–10 diagnostic for BV.[1] Molecular diagnostic methods such as nucleic acid amplification tests (NAATs) can also detect BV-associated bacteria.

Management

First-line treatment

For non-pregnant women:

- Metronidazole 400 mg PO twice daily for 7 days (PBS listed)
- Clindamycin 2% intravaginal cream, 5 g nightly for 7 nights (not PBS listed)
- Metronidazole 0.75% gel, 5 g intravaginally nightly for 5 nights (not PBS listed)[1]

Patients should be advised to avoid alcohol during and for 48 hours after metronidazole treatment. Sexual contact should preferably be avoided. Condoms may be used if needed but as intravaginal creams may weaken latex condoms, barrier protection should be used cautiously.

For **pregnant women**, the same regimens apply. Metronidazole has not been associated with teratogenicity, and clindamycin is safe in pregnancy.[1]

Recurrent BV

Recurrence is common and occurs in over 50% of women within 3–12 months of treatment.[2]

Recommended management for recurrence includes:

- Metronidazole 0.75% gel, 5 g twice weekly for 4 months
- Consider specialist-guided use of intravaginal boric acid (compounded)[1]

Emerging evidence suggests that recurrence is often driven by reinfection from untreated partners.[2]

Partner Treatment: A paradigm shift

Due to lack of efficacy, treatment of male partners was not recommended historically. However, a 2025 randomised controlled trial (RCT) led by Vodstrcil et al. found that concurrent treatment of male partners significantly reduces recurrence of BV in women.[3]

In the trial, recurrence within 12 weeks occurred in only 35% of women whose partners received treatment, compared to 63% in the control group.

> ***"A 2025 randomised controlled trial led by Vodstrcil et al. found that concurrent treatment of male partners significantly reduces recurrence of BV in women."***

Male partner treatment regimen:

- Metronidazole 400 mg PO twice daily for 7 days,

  AND

- Clindamycin 2% cream, applied to the penis twice daily for 7 days[1]

Synchronised treatment of couples is advised. Both partners should abstain from sexual activity during treatment or use barrier methods if needed. Adverse effects in men were mild and included nausea, headache and a metallic taste.[3]

Women with female partners

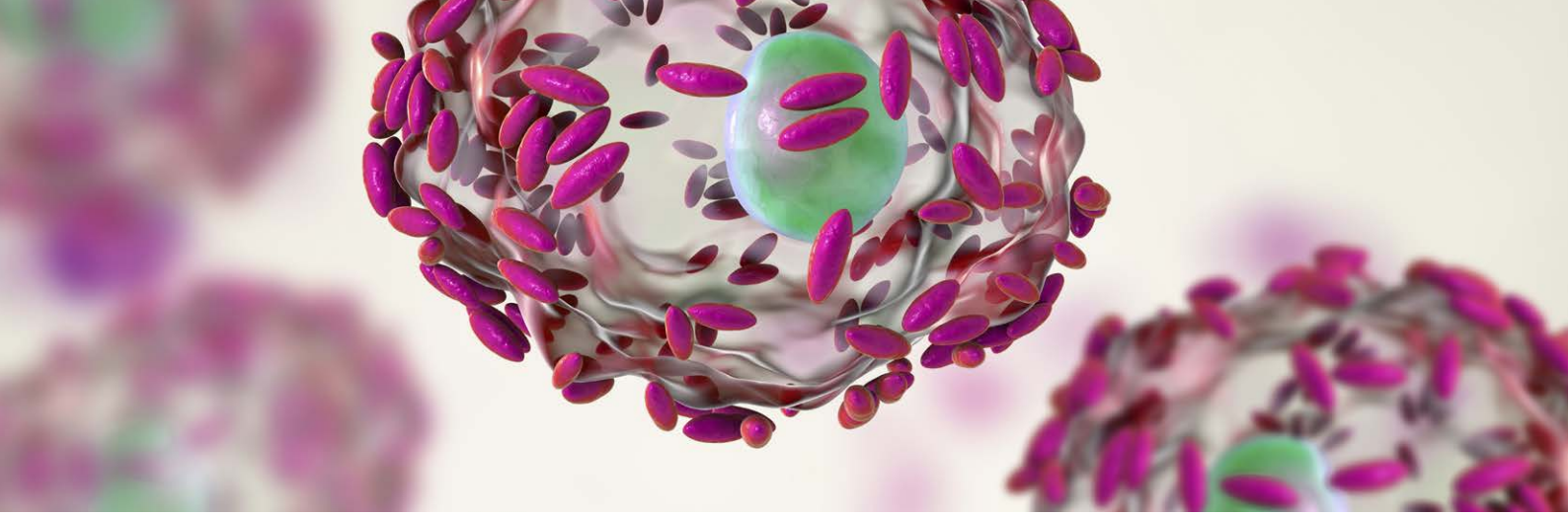
High concordance of BV has been observed in women who have sex with women. Although no trials have yet confirmed the efficacy of partner treatment in this population, testing and synchronised treatment may reduce reinfection risk.[1] A current trial (PACT study) is underway to assess efficacy in this community.

Recommendations for GPs

- **Always treat symptomatic BV** and offer treatment for asymptomatic women requesting care or undergoing invasive procedures.
- **Educate patients** about the role of sexual transmission and the importance of partner management.
- **Consider offering partner treatment**, especially in ongoing male-female relationships, in line with new evidence.
- **Reinforce adherence**, avoidance of intravaginal cleaning products, and consistent condom use.
- **Refer complex or recurrent cases** to sexual health specialists for further management, including adjunct therapies.

Conclusion

Emerging research has redefined BV as a sexually associated condition, challenging traditional treatment approaches. With recurrence rates historically high, incorporating partner treatment represents a promising strategy for reducing recurrence and improving long-term outcomes. GPs play a pivotal role in diagnosis, treatment and patient education to minimise the reproductive morbidity associated with this common condition.



How to Order Testing for Bacterial Vaginosis (BV) with Clinical Labs

What to write on the request form: Complete the Clinical Labs general pathology request form, requesting vaginal/genital swab MCS.

Specimens required: Vaginal swab or genital swab.

Test cost: Bulk-billed, subject to Medicare eligibility criteria.

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1. Melbourne Sexual Health Centre. *Bacterial Vaginosis Treatment Guidelines.* 2024. Available from: https://www.mshc.org.au
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GP

Bacterial Vaginosis: Rethinking management with partner treatment

By Dr Binay Kumar

Dr Binay Kumar is a GP and Director at Lilydale & Mt Evelyn Doctors in Melbourne's outer east. He has a special interest in cosmetic medicine and preventative care, with clinical experience across India, the UK and Australia.

Bacterial vaginosis (BV) is a common presentation in general practice, caused by an imbalance in the vaginal microbiome. It typically presents with a thin, grey discharge and a characteristic fishy odour, though some women remain asymptomatic.

Diagnosis is usually clinical, and first-line therapy remains oral metronidazole or intravaginal clindamycin. However, recurrence is common; over half of women relapse within three to six months. Traditionally, management has focused only on the woman, with little evidence supporting treatment of sexual partners.

A landmark 2025 NEJM trial from Australia demonstrated that treating male partners in heterosexual monogamous couples significantly reduced recurrence. Male partners were prescribed oral metronidazole (400 mg twice daily for seven days) plus topical clindamycin 2% cream applied to the penis twice daily. The trial was stopped early due to clear clinical benefits: recurrence fell from 63% to 35%, and adverse effects in men were mild and manageable.

These findings strongly support BV's classification, at least in part, as a sexually transmitted infection. Reinfection from untreated partners appears to be a key driver of recurrence.

In my own practice, I have begun discussing partner treatment with women experiencing recurrent BV. When appropriate, I offer concurrent partner therapy, explaining the rationale. Most patients welcome this proactive, longer-term strategy.

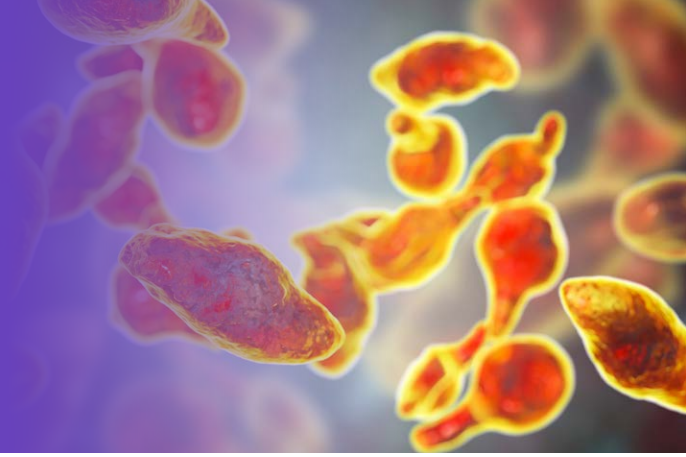
While this approach may not be suitable for every case, it represents a valuable addition to our management toolkit. Importantly, local guidance is evolving: Melbourne Sexual Health Centre has already incorporated partner therapy into practice, endorsed by the RACGP.

As formal guideline revisions are awaited, we can consider a couple-focused approach in selected patients, potentially reducing recurrence, improving outcomes and shifting the way we think about BV.

Mycoplasma genitalium:

Guidelines for specimen collection, testing and treatment

By Dr Stella Pendle



Introduction

Mycoplasma genitalium is a small bacterium with no cell wall, so traditional methods of Gram stain and culture cannot be used to detect and identify it. Nucleic acid amplification testing (NAAT) is recommended for detection of this organism.

Clinical significance

M. genitalium has become a well-recognised cause of sexually transmitted infections worldwide and has been shown to cause urethritis, cervicitis and pelvic inflammatory disease (PID). Although the organism has been discovered at multiple anatomic sites, there is insufficient evidence that it is a primary cause of proctitis, and no evidence that it causes pharyngitis or epididymo-orchitis. Asymptomatic infections can also occur, but the consequences are unclear.

Prevalence in Australia

The prevalence of *M. genitalium* infection in Australia varies depending on the clinical setting and population being tested. Overall, it is estimated to be around 1% in young adults (18-27 years old), but can be significantly higher in specific populations like men who have sex with men (MSM). Prevalence is also higher in individuals presenting with nongonococcal urethritis (NGU) (15-25%) and PID (up to 15%).

Antimicrobial resistance

Treatment of infection caused by this organism is challenging in an era of increasing antimicrobial resistance across multiple drug classes, and emerging resistance worldwide has become a concern. Azithromycin (macrolide) resistance exceeds 60% in Australia in the majority of cases and exceeds 80% in MSM. Fluoroquinolone resistance is also rising and approaching 20% in many urban settings, impacting on the efficacy of moxifloxacin. Moxifloxacin is not recommended for use in pregnancy or breastfeeding.

Specimen collection

Clinical Labs recommends testing for *M. genitalium* on a first-pass urine sample or two dry swabs suitable for NAAT testing. Gel-containing transport media should not be used. Two swabs are required—one for the *M. genitalium* NAAT assay and one for macrolide resistance testing if *M. genitalium* is detected. If only one swab is received, macrolide resistance testing cannot be performed, and a further collection will be needed. If a urine sample is received, the sample can be split to accommodate both tests. However, the test sensitivity on urine is slightly less than on swabs.

Laboratory testing

Approved specimen types

Molecular tests are required to identify this organism and are approved for use on urine, endocervical, vaginal and urethral swabs. Throat swabs are not recommended, as pharyngeal infection is uncommon.

Indications for testing

Testing should be performed on patients with persistent or recurrent urethritis or cervicitis once chlamydia and gonorrhoea have been ruled out and symptoms persist despite therapy. Testing should also be performed on patients with PID or post-coital bleeding. Current sex partners of patients being treated for symptomatic *M. genitalium* infection should also be tested, even if they are asymptomatic.

Screening recommendations

Asymptomatic or routine screening for *M. genitalium* is not currently recommended due to lack of knowledge regarding its natural history, rising antimicrobial resistance and increasing complexities around access to effective treatments.

Testing methodology at Clinical Labs

At Clinical Labs, testing is performed with the Aptima *Mycoplasma genitalium* assay. This assay is a highly sensitive rRNA-based NAAT that can detect very low levels of *M. genitalium*. It is much more sensitive than DNA-based assays, which may miss up to 40% of infections. The Aptima assay does not test for macrolide resistance, so positive specimens are referred to another laboratory to perform resistance testing. However, due to the difference in sensitivity between the rRNA assay and DNA assays, the results from the referral laboratory may come back negative. If this occurs, then a result cannot be obtained for macrolide resistance.

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Laboratory Testing and Diagnosis

- Clinicians should not routinely screen for *M. genitalium* in asymptomatic individuals.
- Clinicians should test for *M. genitalium* in individuals with persistent or recurrent urethritis or cervicitis.
- When testing is indicated, clinicians should use NAAT to diagnose *M. genitalium* infection, with resistance testing if available.

Treatment

Clinical Labs microbiologists recommend using standard resources such as the ASHM Health Treatment Guidelines and/or the Australian Therapeutic Guidelines: Antibiotic for determining whether treatment is required, and if so, which agents to use.

If a macrolide susceptibility result cannot be obtained by NAAT, then the best treatment regimen will depend on individual patient factors such as the presence or absence of symptoms, the possibility of reinfection, treatment(s) received so far and persistence/recurrence of PCR positivity. Complicated infections may require specialist referral. It is reasonable to assume macrolide resistance is present in infections persisting after failure of azithromycin, particularly in men who have sex with men, where macrolide resistance exceeds 80% in most urban settings in Australia.

Contact tracing is recommended for ongoing sex partners.

Test of cure

Perform test of cure 21 days after treatment is completed, and if symptoms persist or there is ongoing risk of reinfection. Testing earlier than 14 days may lead to false-positive results.

How to Order STI Testing with Clinical Labs

What to include on the request form:

Complete the Clinical Labs General Pathology request form, listing the required tests. To order *Mycoplasma genitalium*, please specify M genitalium PCR and macrolide resistance test.

Clinical notes recommendation:

Please provide adequate clinical details, including STI risk factors (if relevant), to assist with the processing of the samples and interpretation of results in our microbiology laboratory.

Specimens required:

- Two dry swabs are required—one for PCR testing and one for macrolide resistance testing. Alternatively, a first-pass urine sample is also acceptable.
  Note: Vaginal swabs are more sensitive than FPU samples in female patients.

Test cost:

Bulk-billed, subject to Medicare eligibility criteria.

References

ASHM Treatment Guidelines: https://sti.guidelines.org.au/sexually-transmissible-infections/mycoplasma-genitalium/

Australian Therapeutic Guidelines: Antibiotic

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Gestational Diabetes:

Rising incidence, updated guidelines and clinical implications

By Dr Phoebe Stanford

Gestational diabetes mellitus (GDM) is a common disorder of pregnancy with potential adverse effects on mother and baby. Defined as hyperglycaemia, less marked than overt diabetes, detected during pregnancy, GDM affects around 15% of pregnancies.[1]

Metabolic and hormonal changes during pregnancy result in a progressive reduction in insulin sensitivity. GDM occurs when insulin secretion cannot be increased sufficiently to overcome this insulin resistance.[2] The physiological insulin resistance of pregnancy resolves after delivery; however, women with GDM may have pre-existing insulin resistance or impaired beta-cell function and are at high risk of developing type 2 diabetes.

Clinical implications of GDM

Women with GDM have an increased risk of obstetric and neonatal complications, including pre-eclampsia, preterm delivery, obstetric intervention, macrosomia, neonatal hypoglycaemia, respiratory distress syndrome and jaundice.[2,3] Exposure to hyperglycaemia in utero also results in an increased metabolic risk in the longer term. Detection of GDM is important, as treatment reduces the risk of obstetric and perinatal complications.

Incidence

Gestational diabetes prevalence is increasing. According to a study including more than 1.8 million women, the incidence of GDM in Australia has increased significantly in recent years, from 8.9% in 2016 to 14.8% in 2021.[1] Higher rates are seen with increasing maternal age, lower socioeconomic status and in certain ethnic groups. Women from South and Central Asia had the highest incidence, followed closely by women born in Southeast Asia.

Possible reasons for the marked increase in GDM observed in Australia include increasing maternal age, increasing prevalence of overweight or obesity in pregnant women and migration resulting in a higher proportion of pregnant women from high-risk ethnic groups.

Risk factors for GDM

Table 1. Risk factors for gestational diabetes from the Australian Diabetes in Pregnancy 2025 Guidelines[3]

Risk Factor	Odds Ratio for GDM
Previous GDM	8.4 – 21.1
Obesity	5.6
Overweight	2.8
Family history of diabetes	2.3 -3.5
Age	
30-34 years	2.7
35-39 years	3.5
≥ 40 years	4.9
Polycystic ovarian syndrome	2.0-2.9
Hypothyroidism	1.9
History of adverse pregnancy outcomes	
Macrosomia	2.5-4.4
Preterm delivery	1.9-3.0
Congenital anomaly	3.2
Stillbirth	2.3-2.4
Pregnancy-induced hypertension	3.2
Multiparity	1.4

Diagnosis

The Australian Diabetes in Pregnancy Society (ADIPS) has recently updated the recommendations for diagnosis of gestational diabetes. Due to a review of recent evidence, the recommended glucose thresholds for diagnosis of gestational diabetes have been increased.

The earlier 2014 ADIPS cut-offs for diagnosis of GDM were based on data from the large international Hyperglycaemia and Adverse Pregnancy Outcomes (HAPO) study. This study showed increased risk for perinatal complications associated with increasing maternal glucose concentration following a 75g oral glucose tolerance test (OGTT). While the risk was continuous, glucose thresholds corresponding to an odds ratio of 1.75 (compared to the mean glucose) were adopted. Due to recent data showing a potential for overtreatment at the lower thresholds, as well as increased awareness of the potential psychosocial impact of a diagnosis of GDM, the recommended thresholds have been increased to correspond with an odds ratio of 2.0 from the HAPO study.

The updated recommendations have been widely endorsed or accepted across concerned organisations within Australia, including: the Australian College of Midwives (ACM), the Australian Diabetes Society (ADS), Diabetes Australia (DA), the Endocrine Society of Australia (ESA), the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG), the Royal College of Pathologists of Australasia (RCPA), the Royal Australian College of General Practitioners (RACGP) and the Society of Obstetric Medicine of Australia and New Zealand (SOMANZ).

"Due to a review of recent evidence, the recommended glucose thresholds for diagnosis of gestational diabetes have been increased."

Diagnostic criteria (ADIPS 2025)[3]

Gestational diabetes diagnosis is based on any one of the following during a 75g 2-hour OGTT (performed at any time during pregnancy):

- Fasting plasma glucose ≥ 5.3–6.9 mmol/L
- 1-hour plasma glucose ≥ 10.6 mmol/L
- 2-hour plasma glucose ≥ 9.0–11.0 mmol/L

Overt diabetes in pregnancy should be diagnosed at any gestation if one or more of the following criteria are met:

- Fasting plasma glucose ≥ 7.0 mmol/L or 2-hour plasma glucose ≥ 11.1 mmol/L following a 75g 2-hour OGTT
- HbA1c ≥ 6.5% (≥ 48 mmol/mol)
- Random plasma glucose ≥ 11.1 mmol/L in the presence of clinical signs or symptoms indicative of hyperglycaemia

Recommended approach to screening

Early testing for women with risk factors

- **HbA1c at the first antenatal visit**

Women with one of more risk factors for hyperglycaemia in pregnancy (Table 1) should have an HbA1c performed at the first antenatal visit, if not already performed within the past 12 months, to identify pre-existing, but undiagnosed overt diabetes (HbA1c ≥ 6.5%).

- **Early OGTT**

Women with a previous history of gestational diabetes mellitus or early pregnancy HbA1c levels 6.0–6.4% (without a history of diabetes) should have a 75g 2-hour OGTT before 20 weeks' gestation (ideally between 10 and 14 weeks). While not universally recommended, an OGTT in early pregnancy may also be offered to women with other risk factors based on the women's informed decision or local policies.

Due to limited tolerance related to nausea and uncertain benefit, OGTT should not be performed before 10 weeks' gestation.

Universal testing at 24-28 weeks' gestation

- All women (without diabetes already detected in the current pregnancy) should have a 75g 2-hour OGTT at 24–28 weeks' gestation.

Suggested approach when an OGTT is not performed

An OGTT may not be performed in some women, either due to it not being tolerated or due to individual choice. An OGTT is not recommended in women with a history of bariatric surgery due to potentially inaccurate results and reactive hypoglycaemia related to altered gastric emptying.

For women where an OGTT is not performed, a fasting plasma glucose is recommended, and a result ≥ 5.3 mmol/L should be managed as gestational diabetes. Women with a fasting glucose < 5.3 mmol/L in early pregnancy can wait until further screening at 24-28 weeks' gestation but should be advised that GDM cannot be excluded without an OGTT.

For women with fasting plasma glucose 4.7-5.3 mmol/L at 24-28 weeks' gestation, a period of capillary self-blood glucose monitoring may be considered, although there is no guidance on glucose thresholds for GDM diagnosis based on self-blood glucose monitoring, and government subsidies for glucose monitoring equipment are not available without diagnosed diabetes.

Due to a physiological fall in HbA1c by the second trimester, HbA1c is not recommended to screen for gestational diabetes in later pregnancy due to poor sensitivity. However, women with an HbA1c 6.0-6.4% who have not had an OGTT should be offered self-blood glucose monitoring and dietary education.

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Postpartum follow-up

Women who are diagnosed with gestational diabetes should have an OGTT at 6-12 weeks postpartum to assess maternal glucose status.

Due to the increased risk of type 2 diabetes and cardiometabolic disease, regular screening for diabetes and assessment of cardiovascular risk factors is recommended.

Transitioning to the 2025 ADIPS criteria

There will be some women who have been diagnosed with gestational diabetes based on the previous ADIPS 2014 criteria. For these women, ADIPS recommends continuing care based on the original diagnosis.[4] Decisions regarding blood glucose monitoring, treatments, or the model or care provided should consider current self-monitored blood glucose levels and the overall clinical context.

Women diagnosed based on the 2014 ADIPS criteria still have an increased risk of developing type 2 diabetes, for which screening and diabetes prevention advice is recommended.

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