# Gonorrhoea

## MANAGEMENT SUMMARY

**TEST IF:**
- Person has signs or symptoms of gonorrhoea, e.g. urethritis in males
- Person is a sexual contact of gonorrhoea
- Routine sexual health check in women
- Pre-termination of pregnancy (TOP)
- Pre-intrauterine device (IUD) insertion
- Suspected pelvic inflammatory disease (PID)
- Routine sexual health check in man who has sex with other men (MSM)
- Suspected epididymo-orchitis

**Note: Most laboratories are automatically performing dual NAAT testing for chlamydia and gonorrhoea.**
**False positive gonorrhoea results are possible in low prevalence populations – see NZSHS Management of Gonorrhoea 2014, and Response to the Threat of Antimicrobial Resistance.**

**RECOMMENDED TESTS by NAAT (e.g. PCR or SDA)**
- It is recommended to test for co-existing STIs (see Sexual Health Check guideline www.nzshs.org/guidelines)
- **Asymptomatic Female** (or examination declined):
  - A vulvo-vaginal NAAT swab either clinician-taken or self-taken
  - Additional anorectal NAAT swab as indicated based on sexual history
- **Symptomatic Female** (vaginal discharge, abnormal bleeding or pelvic pain):
  - A speculum examination should be carried out. A vulvo-vaginal swab for NAAT testing (prior to speculum insertion) plus an endocervical swab for gonorrhoea culture plus a vaginal culture swab for testing for trichomoniasis, bacterial vaginosis and candida
  - Additional anorectal NAAT swab as indicated based on sexual history
- **Symptomatic Male** (dysuria or discharge):
  - Take a urethral swab for gonorrhoea culture followed by first-void urine for NAAT testing
- **Asymptomatic Male**:
  - Men do not require screening for urethral gonorrhoea if asymptomatic but gonorrhoea testing may be done if a urine specimen is sent for chlamydia testing
- **Men who have Sex with Men:**
  - **Additional anorectal and pharyngeal NAAT swabs** regardless of sexual practices as asymptomatic rectal and pharyngeal infection is common

**MANAGEMENT**
- **Treat immediately if high index of suspicion** e.g. symptoms and/or signs, or contact of gonorrhoea
- **If antimicrobial susceptibilities are not available** or isolate is ciprofloxacin resistant or pregnant or breastfeeding or pharyngeal infection:
  - Ceftriaxone 500mg im stat (make up with 2ml lignocaine 1% or as per data sheet) PLUS azithromycin 1g po stat (pregnancy category B1)
- **If isolate is Ciprofloxacin susceptible:**
  - Ciprofloxacin 500mg po stat PLUS azithromycin 1g po stat. (not in pregnancy, lactation, or pharyngeal infection)
- If clinical PID or epididymo-orchitis, treat as per PID guideline www.nzshs.org/guidelines or Epididymo-orchitis guideline www.nzshs.org/guidelines
- Refer to full guideline if case has drug allergies or anti-microbial resistance is suspected or if anorectal symptoms

**PARTNER NOTIFICATION**
- Be clear about language: 'partner' implies relationship – all sexual contacts in the last 2 months should be advised so they can be tested and treated
- Contact(s) should have a sexual health check and if asymptomatic treat empirically for gonorrhoea with ceftriaxone 500mg im stat (make up with 2ml lignocaine 1% or as per data sheet) plus azithromycin 1 gram po stat
- Contacts should be treated without waiting for their test results and advised to use condoms or abstain from sex for 7 days; if positive for other STIs, refer to specific guideline
- Most choose to tell contacts themselves; giving written information is helpful
- Notifying all contacts may not be possible, e.g. if there is insufficient information or a threat of violence

**FOLLOW-UP**
- By phone or in person, 1 week later
- No unprotected sex for 1 week post treatment?
- Completed/tolerated medication?
- All notifiable contacts informed?
- Any risk of re-infection? Re-treatment necessary if re-exposed to untreated contact
- Test of cure is only needed if symptoms don't resolve or if pharyngeal infection. Re-test by culture in 3 days or by NAAT in 2 weeks (pharyngeal infection)
- Patient should be asked to re-attend for a sexual health check-up in 3 months (test of re-infection)

Further guideline information – www.nzshs.org or phone local sexual health service.

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# Introduction

- Gonorrhoea is caused by infection with the bacterium *Neisseria gonorrhoeae*.
- It is highly infectious and can infect the endocervix, urethra, rectum, pharynx, and conjunctivae.
- Transmission is through direct inoculation onto mucosal surfaces via:
  - sexual contact (oral, vaginal or anal)
  - sexual practices such as fingering, or sharing of sex toys
  - or vertical transmission from mother to baby at delivery (e.g. neonatal conjunctivitis)

### Gonorrhoea is most commonly diagnosed in:

- People under 25.
- Sexual contacts of gonorrhoea.
- People with recent gonorrhoea.
- People who have multiple sexual contacts.
- People who have not used condoms consistently.

# Test

- People with possible symptoms and signs of gonorrhoea infection.
- Sexual contacts of gonorrhoea.
- Women requesting a sexual health check (beware of false positives in low prevalence populations).
- Women having antenatal screening for STI's (beware of false positives in low prevalence populations).
- Pre-TOP.
- Pre-IUD insertion if risk factors for sexually transmitted infections.
- Men with epididymo-orchitis.
- Women with presumptive PID.
- Men who have sex with men.
- If history of sexual assault or intimate partner violence.

**Note: If patient is asymptomatic and is concerned about a specific recent sexual event- the recommended testing interval is 2 weeks from time of last unprotected sexual intercourse.**

If the patient is unlikely to return and has not been previously tested then test opportunistically at the time of presentation and offer a re-test in 2 weeks time.

# Symptoms and signs

**Note: Symptoms and signs are non-specific.**

### Females

- Often asymptomatic, but may complain of vaginal discharge, dysuria, abnormal bleeding or lower abdominal pain.
- There may be signs of purulent cervical discharge, easily induced cervical bleeding, purulent urethral discharge, abdominal tenderness or anal pain or discharge.

### Males

- Men with urethral infection are usually symptomatic with dysuria and/or urethral discharge (see Urethritis guideline www.nzshs.org/guidelines).
- Incubation period 1 to 14 days (average 2-5). If untreated most will become asymptomatic within a few weeks to 6 months but can still be infectious
- There may be purulent urethral discharge or signs of epididymo-orchitis on examination (see Epididymo-orchitis guideline www.nzshs.org/guidelines).

**Note:** Pharyngeal and rectal infections in both sexes are usually asymptomatic but occasionally there may be pharyngeal symptoms, anal discharge, anal bleeding or anal discomfort.

# Complications

- PID, infertility, chronic pelvic pain, ectopic pregnancy.
- Epididymo-orchitis.
- Disseminated infection manifested by arthritis, skin lesions, meningitis.
- Fitz-Hugh Curtis syndrome (peri-hepatitis).
- Adverse pregnancy outcomes e.g. chorio-amnionitis, premature rupture of membranes, neonatal conjunctivitis.
- Adult gonococcal conjunctivitis.

# Diagnostic tests

**All people at risk for gonorrhoea infection should be tested for other sexually transmitted infections. Refer to NZSHS guideline on how to do a Sexual Health Check** www.nzshs.org/guidelines.

### NAATS (nucleic acid amplification tests eg PCR, SDA)

- Most NZ laboratories are performing dual NAAT testing for gonorrhoea and chlamydia.

**NAATs are recommended as tests of choice for non-genital sites in all international guidelines despite not yet being fully validated.**

### Advantages

- More sensitive than culture, particularly for non-genital specimens.
- Allow for testing on a wider range of specimens.
- Dual testing for chlamydia can be done on the same specimen.
- Allow for testing without examination e.g. urines or vaginal swabs.

### Disadvantages

- Cannot test for anti-microbial susceptibilities – it is therefore recommended that an additional specimen is sent for culture if gonorrhoea is clinically suspected.
- **False positives can occur on rare occasions** particularly in non-genital sites so supplementary testing may be required e.g. if culture has not been done or if the culture is negative. Discussion with your laboratory or local sexual health clinic is recommended for unexpected positive results.

## Culture

### Advantages

- Highly specific and cheap.
- Allows for antimicrobial susceptibility testing.

### Disadvantages

- Important to get specimen to laboratory within 6 hours as there is loss of viable organisms so transport delays can result in false negatives.
- Less sensitive particularly for non-genital sites.

### Situations when it is recommended to take a specimen for culture

- If the patient is being treated for gonorrhoea at the time of testing because gonorrhoea is clinically suspected.
- If the patient is a contact of someone with gonorrhoea.
- If there are persisting symptoms or signs after treatment so that anti-microbial susceptibility testing can be done.
- Allergy to empirical treatment in case of treatment failure.
- Medico-legal reasons e.g. sexual assault.
- If NAAT testing is not available.

**Note:**

- A vaginal swab is not a suitable specimen for culture.
- Do not refrigerate culture swabs as Neisseria gonorrhoeae is sensitive to temperature.
- Ensure prompt transport to laboratory within 6 hours.
- Culture cannot be performed on NAAT specimens.

# Recommended specimens

## Females

### **NAAT** (e.g. PCR, SDA)

**A vulvo-vaginal swab is the recommended specimen as it has the highest sensitivity for gonorrhoea and chlamydia testing in women. This can be either clinician-collected or self-collected** as follows: Remove the swab from the container, wipe the swab around the vaginal entrance, then insert the swab 4cm (thumb's length) into the vagina, count slowly to 5 and replace in the swab container.

- Symptomatic women should always be examined if possible:
  - external ano-genital examination is required for women with ano-genital skin symptoms (e.g. warts, herpes, candidiasis, dermatological conditions)
  - speculum examination is required for proper clinical assessment of women complaining of vaginal discharge, abnormal bleeding and pelvic pain.
- If doing a speculum examination – do the vulvovaginal swab prior to speculum insertion.
- If gonorrhoea is clinically suspected a speculum examination should be performed to take an endocervical swab for culture and anti-microbial susceptibility testing.
- If the woman is asymptomatic and an examination is not necessary or declined – a self-collected vulvo-vaginal swab should be taken – instruct the woman to take the swab as detailed above.

**Note: Urine specimens are not recommended in females, due to low sensitivity compared with vaginal swabs so should only be done if it is not possible to get a vaginal specimen.**

## Males

### **NAAT** (e.g. PCR, SDA)

- Asymptomatic **heterosexual** men, i.e. **with** no urethral discharge or dysuria who are not contacts of gonorrhoea and who have normal examination findings do not require routine testing for gonorrhoea. However most laboratories are now routinely doing dual testing for gonorrhoea and chlamydia on any specimens sent for chlamydia testing.
- **Take a urethral swab for culture if complaining of dysuria, urethral irritation, urethral discharge, or if urethral discharge is noted on examination (use smallest possible swab to minimise discomfort, e.g. pernasal).**
  (See Urethritis guideline www.nzshs.org/guidelines).
- **After collection of the urethral swab ask the patient to collect a first void urine for gonorrhoea and chlamydia testing by NAAT. (Note the first 30ml of voided urine , at least 1 hour after last voiding if possible).**

### Indications for Rectal and Pharyngeal Testing

- All men who have sex with men (MSM) being screened for sexually transmitted infections should be offered anorectal and pharyngeal swabs for gonorrhoea testing regardless of stated sexual practices because:
  - Gonorrhoea is usually asymptomatic in these sites
  - Rectal and pharyngeal infection may result from oro-genital contact, fingering or anal-oral contact (see Sexual Health Check guideline www.nzshs.org/guidelines).
- Ano-rectal swabs in heterosexuals should be considered on basis of ano-rectal symptoms or history of anal intercourse with an index case.
- NAATs are test of choice for these sites but positive specimens require supplementary testing by the laboratory as specificity is lower than for genital sites.
- Anorectal swabs can be collected by gently inserting a swab 4cm into the anal canal using lateral pressure to avoid any faecal mass, rotating and then replacing into the swab container.
- Pharyngeal swabs should be wiped across the posterior pharynx, tonsils and tonsillar crypts.
- Pharyngeal and rectal swabs for culture should be taken in addition to NAAT specimens in MSM who are gonorrhoea contacts or who have anorectal symptoms.
- **MSM with ano-rectal symptoms such as bleeding, discharge and tensmus require anoscopy and further testing and should be referred or discussed with a specialist sexual health clinic.**

For further information on STI testing for MSM refer STIGMA Testing Guidelines stipu.nsw.gov.au/stigma/sti-testing-guidelines-for-msm/.

### Conjunctivitis

- Culture is the recommended test.
- Collect specimen by wiping a culture swab over the lower eyelid.
- Collect an additional conjunctival chlamydia NAAT swab (gonorrhoea result may be given with dual chlamydia/gonorrhoea NAATs).

# Management

- **Dual therapy is routinely recommended as co-infection with chlamydia is common.**
- Dual therapy is still recommended even if a chlamydia test is negative, due to increasing anti-microbial resistance to gonorrhoea.
- It is essential to check the susceptibility profile of the isolate to ensure successful treatment.
- **Resistance to penicillin, tetracycline and ciprofloxacin, is widespread in New Zealand.** These antibiotic agents are therefore not suitable for treatment of gonorrhoea when anti-microbial susceptibilities are not available.
- Patients must be advised to use condoms or abstain from intercourse for 7 days after treatment and/or until all sex contacts have been treated.

# Treatment regimens

### Antibiotic Susceptibilities not available e.g. Empirical Treatment or NAAT Testing

- Ceftriaxone 500mg im stat (make up with 2ml lignocaine 1% as per data sheet) AND azithromycin 1g po stat.

### Ciprofloxacin Susceptible

- Ciprofloxacin 500mg po stat AND azithromycin 1g po stat.
- Not in pregnancy or pharyngeal infection.

### Pregnancy and Breastfeeding

- Ceftriaxone 500mg im stat AND azithromycin 1g po stat.
- Both drugs pregnancy category B1.
- Infants born to mothers with untreated gonorrhoea infection require prophylaxis and should be discussed with a paediatrician.

### Allergy to Ciprofloxacin

- Ceftriaxone 500mg im stat AND azithromycin 1g po stat.

### Pharyngeal Infection

- Ceftriaxone 500mg im stat AND azithromycin 1g po stat.

### Severe Allergy to Penicillin

- **Note:** Cross-allergy to third generation cephalosporins such as ceftriaxone is rare.
- Ceftriaxone is contraindicated as a treatment option only in patients who have genuine hypersensitivity with immediate and/or severe hypersensitivity to penicillin or other beta-lactam drugs.
- Discuss management with specialist sexual health clinic.

## Complicated infections

**Gonococcal PID** (see PID guideline www.nzshs.org/guidelines)
- Ceftriaxone im stat PLUS oral doxycycline 100mg po twice daily for 14 days PLUS metronidazole 400mg po twice daily for 14 days.
- Severe PID should be referred to gynaecology in-patient services.
- If pregnant discuss with specialist sexual health clinic.

**Gonococcal Epididymo-orchitis** (see Epididymo-orchitis guideline www.nzshs.org/guidelines)
- Ceftriaxone 500mg im stat plus oral doxycycline 100mg po twice daily for 14 days.

**Gonococcal Conjunctivitis**
- Refer urgently to ophthalmologist.

**Disseminated Gonococcal Infection**
- Refer to hospital.

# Partner notification and management of sexual partners

## Partner notification

- Be clear about language: 'partner' implies relationship – all sexual contacts in the last 2 months should be advised so they can have a sexual health check and treatment.
- Contacts should be treated without waiting for their test results; if positive, then their recent contacts need to be informed.
- Most choose to tell contacts themselves.
- Giving written information is helpful.
- Notifying all contacts may not be possible, e.g. if there insufficient information or a threat of violence.

## Management of sexual partners/contacts

- Perform a full sexual health check.
- Do not wait for test results – treat empirically for gonorrhoea.
- If susceptibility profile of isolate from index case is known – treat accordingly.
- If susceptibility profile of isolate from index case is not known, treat with ceftriaxone 500mg im stat (make up with 2ml lignocaine 1% or as per data sheet) AND azithromycin 1g po stat.
- Advise to use condoms or abstain from sex for 7 days after initiation of treatment and/or until 7 days after all sexual contacts have been treated.
- If they test positive for gonorrhoea – partner notification as above.

# Follow-up

- The index case should be followed-up by phone or in person 7 days after treatment to ensure symptom resolution, give results and check that all partners/contacts have been notified.
- **Culture results and susceptibilities should be checked to ensure that appropriate treatment has been given.**
- Re-treatment is required if there has been any unprotected sex with untreated sexual partners/contacts during the follow-up interval.
- Patient should be asked to re-attend for a sexual health check-up in 3 months (test of re-infection).

# Recommendations for test of cure

- Test of cure is not routinely required for patients who are asymptomatic after completing treatment, as all regimens are >95% effective.
- Patients with persisting symptoms after treatment should be re-tested by culture 3 to 7 days post-treatment. If at risk of re-infection they should be re-treated at time of repeat test.
- Patients with pharyngeal infection should be re-tested by NAAT 2 weeks post-treatment unless they have co-infection with chlamydia (when they should be re-tested at 5 weeks post-treatment as chlamydial DNA can persist for much longer).

# Referral guidelines

**Referral to or discussion with a specialist sexual health service is recommended for:**
- Management of sexual partners if clinician wishes.
- Recurrent gonorrhoea.
- Cases where antibiotic resistance is suspected e.g. persisting symptoms after correct management
- Patients with ano-rectal symptoms that may be STI related.
- Complicated clinical situations where management advice is needed, e.g. unexpected positive NAAT test.

For more comprehensive guidelines please refer to NZ Guideline for the Management of Gonorrhoea 2013 and Response to the Threat of Antimicrobial Resistance www.nzshs.org.

Further guideline information – www.nzshs.org or phone local sexual health service.

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