PROCEDURE

Urine collection - infants

Urine collection obtains a urine sample from an infant for infection testing or other laboratory analysis.

PURPOSE
Obtain urine for infection testing and other laboratory analysis

PROCEDURE TYPE
Diagnostic bedside collection, noninvasive or minimally invasive

WHERE IT IS DONE
Clinic, emergency department, hospital bedside, or home

ANAESTHESIA
None; local numbing may accompany suprapubic aspiration

HOW LONG IT TAKES
Minutes for placement; waiting for urine may take longer

PREPARATION
Clean genital skin; follow the treating facility's instructions

RECOVERY
Same day; no driving restriction for the caregiver

MAIN RISKS
Contamination, discomfort, slight bleeding, infection

RESULTS
Urinalysis same day; culture usually within one to three days

Overview

Urine collection in an infant means obtaining a sample of urine for laboratory testing. Because babies cannot urinate into a cup on request, several collection methods are available.

A clean-catch sample is collected while your baby urinates, without touching the skin or diaper. A collection bag or special pad may be placed over or near the genitals. These methods do not enter the body, but bacteria from the skin can contaminate the sample.

For a cleaner sample, a clinician may pass a thin, flexible tube called a catheter through the urethra-the opening where urine leaves the body-and into the bladder. Less commonly, urine is removed through the lower abdomen with a needle. This is called suprapubic aspiration.

The best method is based on why testing is needed, how quickly a sample is required, and

whether a urine culture is planned.

Why the procedure is performed

Urine may be collected when a healthcare professional needs to check for a urinary tract infection, or UTI. Testing may be considered when an infant has a fever without a clear source, poor feeding, vomiting, unusual sleepiness, or other findings that need assessment. These signs have many possible explanations and do not confirm a UTI by themselves.

A sample may also be needed to check hydration, kidney function, blood or protein in the urine, or certain metabolic conditions.

When a UTI is possible, urine is often tested in two ways. Urinalysis looks for findings such as white blood cells or substances produced by bacteria. A urine culture allows bacteria to grow in a laboratory so they can be identified. Culture results are more reliable when the sample has not been contaminated by skin bacteria.

When practical, urine for culture is collected before antibiotics like amoxicillin or doxycycline begin. Treatment should not be delayed solely to obtain urine if the clinical team believes the baby needs prompt care.

Who should and should not have it

Urine collection may be appropriate when the result could help explain an illness, guide treatment, or monitor a known condition. Not every infant with a fever or feeding change needs urine testing. The decision is based on age, examination findings, medical history, and the likelihood that the result will change care.

The collection method is not the same for every baby.

A bag or pad may be reasonable for some screening tests. However, a positive culture from a bag sample usually cannot reliably confirm a UTI because contamination is common. A catheter or suprapubic sample may then be needed.

Catheterization may be avoided or performed by a specialist if there is known blockage of the urethra, recent urethral surgery, or concern about an injury in that area.

Suprapubic aspiration may be delayed or avoided if the bladder is not full enough, there is an infection of the skin over the insertion site, or the baby has a significant bleeding problem. Another collection method can usually be considered.

How to prepare

The treating facility's own instructions take priority over general information in this article.

Most infants can feed normally before urine collection. Fasting is not usually needed, and routine medicines are generally continued unless the healthcare team gives different instructions. Do not give excessive fluid in an attempt to make your baby urinate.

Bring spare diapers, wipes, clothes, and feeding supplies. Tell the healthcare team about recent antibiotics, urinary tract surgery, genital or urinary abnormalities, bleeding conditions, and allergies to adhesives, antiseptics, or local anaesthetics.

For home collection, wash your hands and clean your baby's genital area exactly as instructed. Keep the inside of the container, lid, bag, or pad from touching your fingers or other surfaces. Return the sample promptly. Refrigerate it only if the facility tells you to do so.

What happens during the procedure

For clean catch, your baby's diaper is removed and the genital area is cleaned. You or a staff member waits for urination, then catches urine directly in a sterile container. Some facilities use gentle methods to encourage urination, such as rubbing the lower abdomen with cold, wet gauze.

For bag collection, an adhesive plastic bag is placed over the cleaned genital area. The bag is checked often and removed as soon as urine is passed. Stool contamination means a new sample is needed.

A special urine pad may instead be placed in the diaper and checked frequently. Cotton balls, ordinary gauze, and sanitary products are not suitable substitutes because they may contaminate the urine or affect test results.

For catheter collection, your baby is held still while the area is cleaned. A lubricated sterile catheter is passed through the urethra into the bladder. Urine drains into a sterile container, and the catheter is removed immediately.

For suprapubic aspiration, the lower abdomen is cleaned. Ultrasound may be used to confirm that the bladder contains urine. A thin needle is passed through the skin into the bladder, and urine is withdrawn into a syringe. Comfort measures and local numbing may be used.

Recovery and what to expect afterward

Noninvasive collection should not cause pain, although removing an adhesive bag may briefly pull on the skin. After catheterization or suprapubic aspiration, your baby may be unsettled for a short time. Mild tenderness or a tiny spot of blood can occur.

Your baby can usually feed normally straight away.

Normal movement, play, bathing, and diaper care can generally resume the same day. Follow any site-care instructions after suprapubic aspiration.

Urine collection does not involve sedation in most cases, so there is no procedure-related driving restriction. You can usually drive your baby home unless you have been told otherwise for another reason.

Most caregivers can return to work or usual activities once the visit is over, although waiting for the sample and laboratory assessment may extend the appointment.

Risks and possible complications

The most common problem is contamination. Bacteria from the skin, diaper, or stool can enter the sample. This may produce an unclear or falsely positive result and lead to repeat collection.

Adhesive bags can cause temporary redness or irritation. Clean-catch collection has little physical risk but may take time and may not produce enough urine.

Catheterization can cause brief discomfort, minor bleeding, or irritation when the baby urinates afterward. Infection or injury to the urethra is possible but uncommon.

Suprapubic aspiration can cause pain, bruising, bleeding, or infection. Injury to a nearby structure is uncommon, especially when the bladder is confirmed to be full and ultrasound guidance is used.

Results and follow up

Urinalysis results may be available within minutes or later the same day. These findings can suggest infection but must be interpreted with the collection method, your baby's examination, and other information.

A culture commonly needs one to three days. It may identify the bacteria and show which antibiotics are likely to work. Growth of several different bacteria often suggests contamination rather than a true bladder infection, so another sample may be requested.

If treatment began before the culture was complete, the healthcare team may contact you to continue, change, or stop treatment based on the final result. Ask how and when results will be

communicated. Routine follow-up may include discussing the result, checking recovery, or arranging further assessment if clinically needed.

Alternatives

The main alternatives are different ways of obtaining the same urine sample. Each has trade-offs.

Testing can sometimes be deferred while an infant is observed, but this trades away earlier information. It may not be appropriate when a clinician is concerned about a UTI or another condition requiring prompt assessment.

- Clean catch: No tube or needle and less contamination than a bag, but timing is unpredictable and collection can be difficult
- Collection bag: Easy and painless, but contamination is common and a positive culture usually needs confirmation
- Urine collection pad: Convenient and noninvasive, but may collect too little urine or introduce contamination
- Catheter: Provides a more reliable culture sample quickly, but causes brief discomfort and carries small risks of bleeding or infection
- Suprapubic aspiration: Provides the least contaminated sample, but uses a needle and requires a sufficiently full bladder

When to call your healthcare team

For routine follow-up, contact the healthcare team if you have not received results within the timeframe they gave you, the collection site remains mildly irritated, or you are unsure whether another sample is needed.

Seek prompt medical advice if your baby:

Call emergency services if your baby is difficult to wake, has trouble breathing, develops blue or grey colouring, has a seizure, or appears severely unwell. These symptoms require emergency assessment rather than routine follow-up.

- Has ongoing bleeding, increasing swelling, discharge, or worsening redness
- Appears to have significant pain when urinating
- Produces much less urine than usual

- Develops a new fever or becomes more unwell after the procedure

Common questions

Will my baby be asleep?

Usually not. Clean catch, bag, pad, and catheter collection generally do not require sedation. Local numbing and comfort measures may be used for suprapubic aspiration.

Can I drive my baby home?

Yes, in most cases. Urine collection itself does not usually affect your ability to drive. Follow separate advice if your baby received sedation for another procedure.

How painful is it?

A bag, pad, or clean catch should not be painful. A catheter can cause brief discomfort. Suprapubic aspiration involves a needle and may cause short-lived pain despite comfort or numbing measures.

What if my baby does not pee?

Waiting may take longer than the collection itself. Staff may try a safe stimulation method, allow more time, or discuss catheter collection if a prompt sample is important.

When will I know the results?

Urinalysis may be available the same day. A culture usually takes one to three days, although timing differs between laboratories.

Why does the sample need to be repeated?

A repeat is often needed because the first sample was contaminated, contained too little urine, leaked, or did not provide a clear result.

Sources

- National Institute for Health and Care Excellence. Urinary tract infection in under 16s: diagnosis and management . NICE guideline NG224, 2022
- Royal Children's Hospital Melbourne. Clinical Practice Guidelines: Urinary tract infection
- Robinson JL, Finlay JC, Lang ME, Bortolussi R. "Urinary tract infections in infants and children: Diagnosis and management." Paediatrics & Child Health . 2014;19(6):315-319



- Kaufman J, Fitzpatrick P, Tosif S, et al. "Faster clean catch urine collection in infants: randomised controlled trial." BMJ . 2017;357:j1341
- Kaufman J, Temple-Smith M, Sanci L. "Urinary tract infections in children: an overview of diagnosis and management." BMJ Paediatrics Open . 2019;3:e000487