



Centers for Disease
Control and Prevention
National Center for
Health Statistics

2021 Urine Specimen Collection Manual

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National Health and Nutrition Examination Survey

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1. Urine Specimen Collection and Processing

1.1 Introduction

The purpose of urine collection and processing is to collect sufficient urine from participants of various ages over age 3 to be able to (1) perform a pregnancy test on selected females aged 8 to 11 years and all females aged 12 to 59 years to exclude pregnant participants from other components that could put the participant at risk; (2) aliquot urine into vessels for storage and transport to multiple government and contract laboratories for analysis; and (3) aliquot urine into a vessel for future studies. After the specimen is aliquoted into vials specified in the urine protocol, excess urine will be discarded. There are no exclusions for urine collection. All SPs are eligible to participate in urine collection.

1.2 Urine Collection for SPs 6+ Years Old

The mobile examination center (MEC) staff instructs each SP aged 6 years and older to provide a urine sample as soon as possible when they enter the MEC. Ideally, this sample would be collected at the same time that the SP changes into the exam outfit. If the SP cannot provide a urine sample at the time of the initial request, the staff offers the SP a glass of water and asks the SP to provide a sample as soon as possible. The SP is instructed to collect a complete void by emptying the bladder into the urine collection cup. The coordinator, assistant coordinator, or any MEC staff member is responsible for transporting the urine specimen to the laboratory.

MEC staff explain the following instructions to the SP before urine collection:

- Wash your hands with soap and water.
- Take the cap off the cup.
- Urinate directly into the cup until it is full or until you have finished urinating.
- DO NOT OVERFILL THE CUP.
- The inside of the cup and cap should not touch or come into contact with any part of your body, clothing, or external surfaces.
- Recap the collection cup and seal tightly.

- Place the filled urine cup on the top of the toilet tank lid.
- Please remember to wash your hands.

If an elderly SP, disabled person, or obese female wishes to use the same collection container that is used for the 3- to 5-year-olds in place of the urine cup, this request will be accommodated along with the appropriate instruction for its use. An adjustment for the container tare weight will need to be made at the time the urine volume is recorded in the laboratory.

When the SP has completed the collection, the urine sample should be taken to the laboratory for processing. Place the urine sample on the shelf immediately inside the entrance to the laboratory and let the laboratory staff know that a sample has been delivered. The equipment noise in the laboratory is loud, so make sure one of the medical technologists acknowledges that a sample has been delivered.

1.3 Urine Collection for SPs 3- to 5-Years-Old

While at the MEC, a urine specimen will be collected from the child by their parent/guardian in the MEC restroom. The collection will be introduced during Proxy administration with the parent/guardian (See Chapter 3). Up to two attempts, during the participant's scheduled MEC exam, will be made to obtain the urine. The target volume will be 62.5 mL. The MEC staff will introduce the urine collection procedure for 3- to 5-year-olds to the parent or guardian, who will help the child collect the urine. Detailed instruction will be provided by the MEC staff, who will also transport the specimen to the laboratory.

- The MEC staff will prep the toilet for the 3- to 5-year-olds.
- The MEC staff will place the urine collection container on the toilet's porcelain rim and lower the toilet seat for the SP.
- The MEC staff will explain not to touch the inside of the container, not to put toilet paper inside the collection container, and to have the parent/guardian hold the child over the collection container.
- The MEC staff will also instruct the parent/guardian to gently place the lid on the container and leave it on the toilet when they are finished.
- The MEC staff will transport the specimen to the laboratory.

1.3.1 Equipment and Supplies

The equipment and supplies needed to conduct the urine collection for 3- to 5-year-olds is described in the following sections. The urine collection container has been pre-washed to eliminate possible contaminants. The container should not be opened until it is being prepared for use by the SP.

Equipment

- **Urine Collection Kit.** The urine collection kit is comprised of a specimen collection bowl, graduated up to 700m, a stabilizing frame, and disposable wipes (Exhibit 1).
- **Step Stool.** A plastic step stool (Exhibit 2) will be used to assist SPs in the urine collection (if needed).

Exhibit 1. Urine collection kit



Exhibit 2. Step stool



Supplies

- **Germicidal Wipes.** Wipes are used to clean the surface of the toilet.
- **Examination Gloves.** To be used to transport the specimen and to clean the surface of the toilet seat and the rim of the bowl.

1.3.2 Collection Procedures

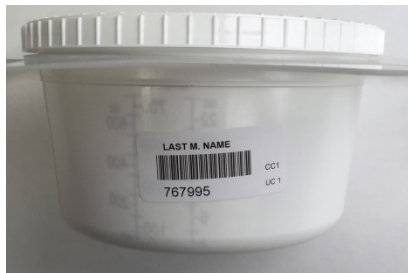
When the child needs to urinate, NHANES staff will take the collection kit from the coordinator area and escort the child and their parent/guardian to the bathroom and instruct them on how to assist their child to obtain the specimen. If the child has not provided a specimen within the first ½ hour of the MEC visit, the coordinator will remind the parent/guardian that one is needed and ask if the child would like some water to drink.

- Thoroughly wipe down the following (in the order listed below) using a germicidal disposable wipe:
 1. Top of the toilet tank,
 2. Full surface of the toilet lid,
 3. Full surface of the toilet seat, and
 4. Rim of the bowl.



Note: Throw the wipes in the trash, not in the toilet.

- Remove the pre-labeled urine collection unit from its bag.
- Verify the container is secure in the frame, loosen the lid on the container but leave it on the container.



- Place the urine collection unit on the bowl in the center and toward the front of the bowl.
- Lower the toilet seat on the frame to hold the unit in place; and loosen but do not remove the container lid.



- Instruct the parent/guardian to wash their hands and their child's hands with soap and water before assisting their child to reduce contamination (see talking points in Appendix A).
- Instruct the parent/guardian that the inside of the container and the cap should not be touched or come into contact with any parts of their body, clothing, or external surfaces. Exposure of the sample to air should be minimized (see instruction in

Appendix B). The lid should be placed on the back of the toilet before the child provides the specimen.

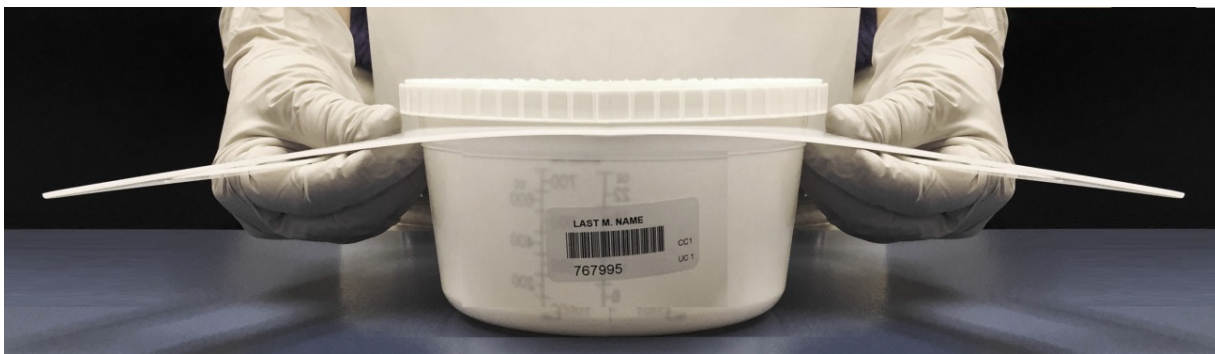


- Review the instructions with the parent/guardian and ask if they have any questions. Shut the bathroom door and remain outside the bathroom should there be any questions from the parent/guardian. Instructions for obtaining the urine specimen are posted in English and Spanish in all MEC bathrooms to assist the participant's parent/guardian.

When the child is able to urinate into the collection container, the parent/guardian should encourage them to continue until the child's bladder is empty (they cannot pee any longer). They should **not** put any toilet paper or wipes in the urine collection container.

Immediately after the child has finished urinating, the parent/guardian will gently place the lid on top of the container, but should not push down on it. After the child has finished and exited the bathroom, a staff member will remove the container from the toilet, fasten the lid securely, remove the stabilizing frame, and deliver the container immediately to the lab (Exhibit 3).

Exhibit 3. Removing the frame



Some examinees may be asked to attempt a second urine collection if the first specimen is inadequate for analysis. The MEC manager or coordinator will ask the parent/guardian if another urine collection attempt will be possible before the participant leaves the MEC. The parent/guardian will be told that even a few drops of urine can be helpful in completing the urine protocol if additional urine is required to reach the minimum volume of 62.5 mL. If the SP needs to provide a second sample, automatically provide them with a cup of water. After 2 attempts by the parent/guardian to collect urine from the child, the MEC staff will not make any further requests to obtain this urine specimen during their MEC visit.

Appendix A

Talking Points: Urine Collection From 3- to 5-Year-Olds

Appendix A

Talking Points: Urine Collection From 3- to 5-Year-Olds

Right now I'm going to review the step-by-step instructions so you will know what you have to do.

- Any staff person who is available when your child is ready to collect their urine sample, will escort you both to the bathroom, provide a urine collection container with your child's ID symbol on it, set-up the urine collection container and wait outside the door while you assist your child to collect the specimen.

[SHOW THE COLLECTION KIT WITH THE SP ID LABEL]

- Any amount will be helpful, so try to collect all the urine that your child can provide once they start urinating.

[SHOW HOW MUCH 60 ml LOOKS LIKE IN THE COLLECTION CONTAINER]

[INCLUDE IF CHILD IS A BOY]

- We prefer that your child sit to collect the specimen, do you think that will be a problem? (If they say “yes,” continue by stating the following): Remind the staff person taking you to the room if you need a step stool so that your child is high enough to get all the urine in the plastic collection container.
- When collecting your child's urine:
 - Do not touch the inside of the plastic collection container or its lid.
 - Place the lid on back of the toilet.
 - Help hold your child while they sit over the urine collection container.
 - Do not throw toilet paper into the urine collection container.
- When your child is done:
 - Leave the urine collection container in place.
 - Gently place the lid on top of it without touching the inside or the lid or the container. DO NOT push down on the lid or try to screw it on.
 - The staff person waiting outside the bathroom will remove the urine specimen after you both have left the bathroom.

- If your child accidentally poops while collecting the specimen, let the staff person know and we will decide if we can use the urine or not.
- When your child has to go to the bathroom, a staff person will review the instructions as they take you to the bathroom.

Urine Collection Talking Points for 3- to 5-Year-Olds (Spanish)

Ahora voy a revisar las instrucciones punto por punto para que sepa lo que tiene que hacer.

- Algún miembro del personal que esté disponible cuando su niño esté listo para recoger la muestra de orina los acompañará hasta el baño, le dará un envase para la muestra con el símbolo de identificación de su niño, preparará el envase de la muestra y esperará afuera del baño mientras usted ayuda a su niño a recoger la muestra.

[SHOW THE COLLECTION KIT WITH THE SP ID LABEL]

- Cualquier cantidad será útil, así que trate de recoger toda la orina que pueda una vez que el niño comience a orinar.

[SHOW HOW MUCH 60 ml LOOKS LIKE IN THE COLLECTION CONTAINER]

[INCLUDE IF CHILD IS A BOY]

- Preferimos que el niño se siente para recoger la muestra, ¿cree que eso será un problema? (If they say yes say) Recuérdale al miembro del personal que lo está acompañando si necesita una banca para que el niño quede a la altura suficiente para recoger toda la orina en el envase de plástico.

- Mientras recoge la orina de su niño:

- No toque la parte de adentro del envase, ni de la tapa, para la muestra.
- Ponga la tapa del envase encima de la cisterna o tanque del inodoro.
- Ayude a sostener al niño mientras (él/ella) se sienta encima del envase para la muestra.
- No tire el papel higiénico en el envase para la muestra.

- Cuando el niño termine:

- No mueva el envase con la muestra de orina
- Con cuidado, ponga la tapa encima del envase sin tocar la parte de adentro de la tapa ni del envase. NO empuje la tapa ni trate de enroscarla.
- La persona que está esperando afuera del baño, se llevará la muestra de orina después de que ustedes salgan del baño.

- Si el niño defeca de manera accidental mientras recogen la muestra, avísele al miembro del personal para que podamos decidir si se puede usar la muestra o no.
- Cuando su niño tenga que ir al baño, un miembro del personal revisará las instrucciones con usted mientras se dirigen al baño.

Appendix B

Urine Collection Instructions – 3- to 5-Year-Old SPs

Appendix B

Urine Collection Instructions – 3- to 5-Year-Old SPs

Urine Collection Instructions for 3-5 year olds

1  ➤ Wipe the lid of the water tank and the toilet seat with a germicidal disposable wipe.

2  ➤ Pull up the toilet seat and wipe the bowl.

3  ➤ Place the collection kit in the center of the bowl facing the front of the toilet.

➤ Lower the toilet seat on top of the frame to hold the collection container in place.

When Collecting Your Child's Urine:

- Do not touch the inside of the plastic collection container or its lid
- Help to hold your child while (he/she) sits over the urine collection container
- Do not throw toilet paper into the urine collection container.

When Your Child is Done:

- Leave the urine collection container in place.
- Gently place the lid on top.
- **DO NOT** push down on the lid or try to screw it on.
- The staff person waiting outside will remove the urine specimen after you both have left the bathroom.



Urine Collection Instructions for 3- to 5-Year-Olds (Spanish)

Al recoger la orina de su niño:

- No toque la parte de adentro, ni de la tapa, del envase para la muestra.
- Ayude a sostener al niño mientras (él/ella) se sienta encima del envase para la muestra.
- No tire el papel higiénico en el envase para la muestra.

Cuando el niño termine:

- No mueva el envase con la muestra de orina.
- Con cuidado ponga la tapa encima del envase.
- **NO** empuje la tapa ni trate de enroscarla.
- La persona que está esperando afuera del baño, se llevará la muestra de orina después de que ustedes salgan del baño.

