

Telediagnosis of New World Screwworm

Guidelines for Submitting Images for Healthcare Providers and Laboratorians

Assistance from CDC's Diagnostic Parasitology Laboratory (DPDx)

- **Contact DPDx@cdc.gov to request telediagnosis submission instructions for a suspected NWS case.**
 - Provide your name and institutional affiliation in the request email. **Do not include patient identifiers in the request email.**
 - DPDx will respond with instructions and a unique secure upload link.
- Download and complete the [CDC 50.34 Specimen Submission Form](#). The test order for telediagnosis is CDC-10563 (Parasites: Telediagnosis).
 - Your [jurisdictional public health laboratory](#) can also assist you with this properly completing this form.

Collect and Preserve Specimens

Standard biosafety precautions for working with clinical specimens, such as gloves, are adequate.

- Collect a representative sample of larvae from a single infestation, especially if multiple stages or species appear to be present.
- Place all specimens in a single vial. If there are fewer than 10, collect them all. Otherwise, collect at least 10.
- Place the larvae in a leakproof vial with just enough alcohol to cover them.
- **Do not dispose of any larvae or eggs in the trash or outside on the ground.**
- Store and transport larvae in 70% alcohol (ethanol or isopropyl). Keep them in a dish of alcohol while capturing images for telediagnosis.
- Collect the remaining larvae and eggs in a separate leakproof container, submerge them in alcohol, place the container into a zip-top plastic bag, and seal it. Dispose of the sealed bag as biohazardous waste.

Shipping

In some instances, the initial review by telediagnosis may not achieve a confirmatory diagnosis. If so, ship the specimen to CDC for direct examination following the steps below.

- Contact your state, tribal, local, or territorial public health laboratory to notify them of a suspected NWS case and coordinate submission. If they allow it, ship the specimen directly to CDC. Otherwise, submit it to their laboratory as directed.
- Using an alcohol-proof label, mark the vial with two or more unique identifiers, matching the submission form identifiers (patient's name, sex and date of birth, hospital specimen ID).
- Complete a 50.34 submission form and enclose it in the outer portion of the package. The test code for diagnosis of physical specimens is CDC-10234 (Parasites: Morphologic Identification).
- Wrap the lid of the specimen vial with parafilm or tape.
- Enclose the vial in a sealed plastic bag.
- Put the bag in the package with enough cushioning to protect the vial from impact during transit.
- Ship the specimens at room temperature to:

CDC STAT LAB
(Attn Unit 52)
1600 Clifton Rd NE
Atlanta GA 30329



Diagnostic Images of New World Screwworm Fly Larvae

The photos you'll need

1. A top-down (dorsal) view of the posterior half of the larva showing the tracheal tubes (**Figure 4**). Use **Figure 1a** to identify the dorsal side based on the orientation of the mouthparts, which curve downward.
2. An end-on view of the anal segment, with spiracular plates in focus (**Figure 1b, 3b**). You will need a microscope to capture sufficient detail of this feature.
3. A whole-larva view next to a ruler or standard-size object such as a coin (**Figure 2**).

To keep the larva in place with its head pointed down during photography, make a simple support out of a manila file folder, business card, or other stiff piece of paper (**Figure 3a**).

- Cut the paper into a rectangle, fold it lengthwise, then cut a small opening into the crease.
- Use paper sturdy or thick enough to provide support even while immersed in alcohol.

Photo Do's	Photo Don'ts
<ul style="list-style-type: none"> • Use a dissecting microscope (stereomicroscope). Even without a dedicated camera, adequate photos can be obtained by holding a phone camera up to the eyepiece. Figure 3b was captured using this method. • Be persistent until you get clear, in-focus, high-resolution photos. • Take multiple photos if necessary. There is no limit on the number and size of images you can upload for review. 	<ul style="list-style-type: none"> • Photograph larvae through the side of a specimen container. • Include patient identifiers in image file names, or in the text of any email to CDC.

Figures

<p>Figure 1a Diagram of larva with terms: dorsal/ventral, anterior/posterior.</p>	<p>Figure 1b Diagram of anal spiracular plate.</p>	<p>Figure 2 Obtaining a whole-organism image with a size reference.</p>
<p>Figure 3a The simple support allows you to orient the fly larva with the head down and posterior segment facing up toward the microscope lens.</p>	<p>Figure 3b The resulting photo, with both spiracular plates in clear focus in the same plane.</p>	<p>Figure 4 Top-down (dorsal) photo showing the presence or absence of dark tracheal tubes.</p>