

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](#).
 - 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 species identification. 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.
- 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

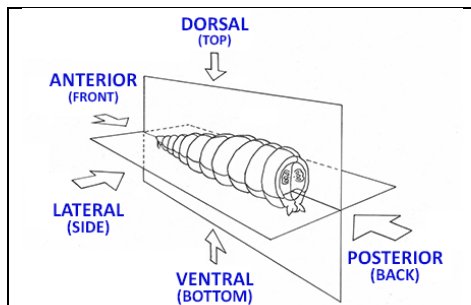


Figure 1a Diagram of larva with terms: dorsal/ventral, anterior/posterior.

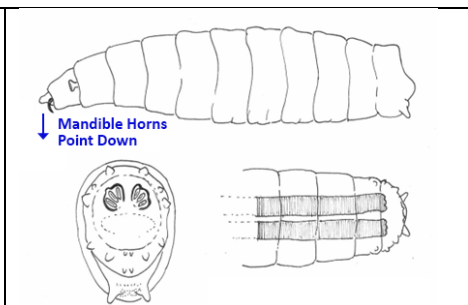


Figure 1b Diagram of anal spiracular plate.



Figure 2 Obtaining a whole-organism image with a size reference.

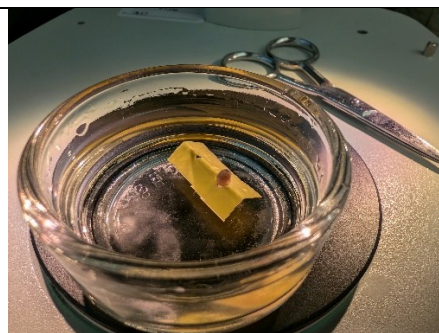


Figure 3a The simple support allows you to orient the fly larva with the head down and posterior segment facing up toward the microscope lens.



Figure 3b The resulting photo, with both spiracular plates in clear focus in the same plane.



Figure 4 Top-down (dorsal) photo showing the presence or absence of dark tracheal tubes.