



RUAC STANDARD OPERATING PROCEDURE

TITLE: Daily Health Check of Zebrafish

SOP Category: Aquatic

RUAC SOP #: 5.01

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Effective Date: 9/27/2024

Approval:

DCM

Revisions: 5/13/2022, 12/19/2023

SCOPE:

This document describes the procedures to be followed for daily observation of fish health. This SOP applies to all Animal Care Staff (ACS), ACS Supervisors (ACSS), Veterinary Staff (VS), and Research Staff members (RS) at the Rutgers University facilities.

OBJECTIVE:

The objective is to observe all fish tanks daily, assess fish health, and identify and remove sick and dead fish. Here are the steps to take if a sickly or poor body condition fish is discovered. Fish observed to have behavioral or physical abnormalities should be removed.

PROCEDURES:

1. Observe fish for the following signs of disease (See pictures below):

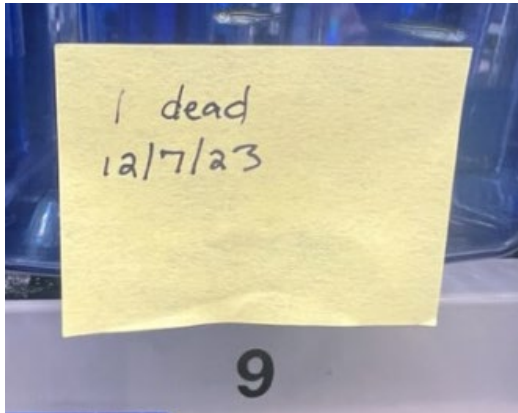
Behavioral Abnormalities	Physical Abnormalities
Rapid opercular movement (Gasping)	Color change (pale)
Sluggish movements/lethargy	Weight loss (skinny)
Circling, twirling, spinning	Pop-eyes
Loss of equilibrium	Distended abdomen
Laying on bottom of tank	Skeletal deformity (bent spine)
	Mass/swelling
	Hemorrhage/redness
	Gas bubbles
	Protruding scales
	Fin erosion or lesion
	Skin ulceration or lesion

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2. If you find an abnormal or deceased fish use the small yellow post-it note to flag the tank, label it “sick” or “dead”, and the date. Record the tank information on the sick/dead log sheet.



3. Inform the Aquatic Supervisor, Vet Tech, or Veterinarian on duty, who will assess the severity of the fish’s condition and then inform the responsible lab member of the required action. (See PI contact list/tank color code in SharePoint).

4. If no staff or lab members are available, isolate the fish from the system in a separate tank.

5. If necessary, follow SOP for Rapid Cooling Euthanasia.

Source: ZIRC Daily Monitoring of Fish Morbidity and Mortality

https://zebrafish.org/wiki/_media/protocols/health/daily_monitoring_fish_morbidity_07_2015.pdf

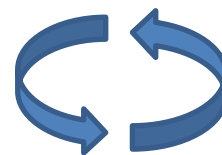
Common Zebrafish Health Concerns

Buoyancy Problems



Swimming and resting at an abnormal angle, such as tilting to one side or swimming vertically.

Whirling


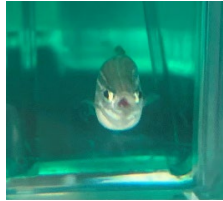


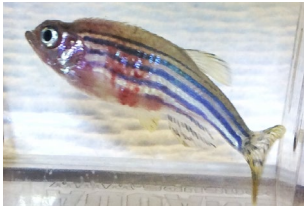
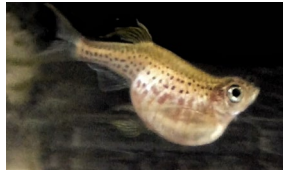




Movement is swift and erratic, occasionally in a spiraling pattern.

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Body Condition Score 1/Emaciated  Extremely under-conditioned/thin.	Gasping  Labored/unusual respiration. Often accompanied with lethargy.
Lethargic a.k.a. “bottom swimming”  Severely reduced movement and frequently resting on the bottom of the tank. Often accompanied with gasping.	Curved Spine /scoliotic  Body is bent, sometimes resembling an S-curve.
Lesions or Hemorrhaging  Redness or loss of scales along the body due to an open wound or internal bleeding.	Distended  Body is over-conditioned/obese or has a celomic mass, often is a result of infection or being egg-bound.
Exophthalmos a.k.a. “popeye”  Eye(s) protrude from the fish far more than is typically seen.	Masses / Swelling  An abnormal growth, occasionally of a different color.