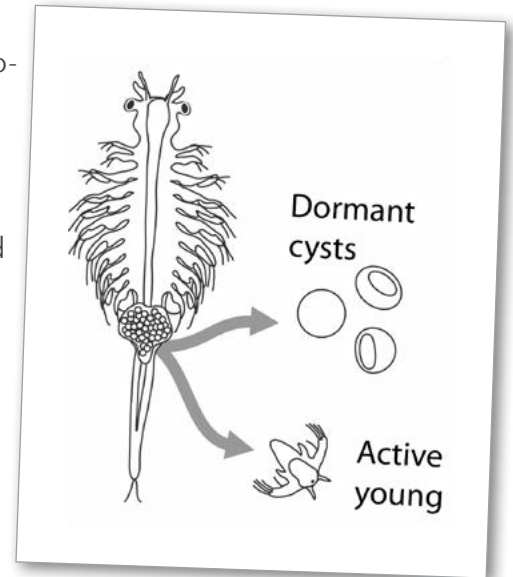


Abuse-A-Cyst

Background

Brine shrimp (*Artemia franciscana*) living in Great Salt Lake are subjected to environmental extremes. Yet because of an adaptation involving the birth of their young, this resilient species continues to survive. When conditions in the lake are just right, female brine shrimp release active young (called nauplii). When the environment is less than ideal however, females release embryos encased in a protective shell. The encased embryos, known as cysts, lie dormant until conditions are favorable for hatching.

Cysts can weather the worst of circumstances and still produce healthy nauplii, but just how much can they take? Subject brine shrimp cysts to an environmental extreme and see if they still hatch.



Experiment

Think about the kinds of environmental extremes cysts are likely to encounter. Choose one extreme to test.

Environmental Extreme I'm Testing: _____

How will you mimic this environmental extreme in the laboratory? Explain how you will conduct your experiment. (If using chemicals, be sure to rinse the cysts before hatching so you don't contaminate the hatching environment.)

After exposing cysts to your chosen environmental extreme, place them in 100 mL of 3% salt water solution (room temperature) to see if they will hatch. Explain your results here:

TIP: As cysts hatch they swell with water and crack as the embryos inside begin to grow. When the nauplii first emerge they are still wrapped in hatching membranes. Fully hatched nauplii are pale yellow and swim with jerky movements. In ideal conditions, cysts hatch in 1 - 2 days.



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