Lab 3 Worksheet: Peripheral Circulation and The Dive Response

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Notes

- Please pay attention to the **intellectual content** contained in each section of this **worksheet**.
- Our goal here is the practice logically laying out our **ideas** focusing on ***physiological mechanisms***.
- Sections (1) and (2) together are designed to guide you to building strong hypotheses, and (3) and (4) are mini-results and mini-discussion sections, respectively.

(1) Statements of Purpose

Use these statements of purpose to frame your thinking about this lab, complete them as needed:

Distance from heart – "We demonstrate the predicted drop in blood pressure with distance from the central pump. We explore whether there is a greater drop in systolic or diastolic pressure with distance" (in a full lab report you would set up your ideas for why it might go either way).

Effect of gravity – "We demonstrate the action of gravity on blood pressure. As vertebrates possess a closed circulatory system, vertical height should contribute to blood pressure in predictable ways."

Dive response – "When diving, peripheral circulation should be reorganized to reduce cardiac output and increase peripheral vasoconstriction, called the dive response. We aim to observe the dive response by measuring _____."

Stimulus for dive response – "We will test potential triggers for the dive response including _____.""

(2) Expectations demonstrate your mastery of the mechanisms

> Notes
>
> *After identifying the mechanisms, communicate (at least hint at) what you expect to see in the data if the hypothesized mechanisms are occurring. That shows deeper understanding.*

If these mechanisms are occurring in your data, what would you expect to see? Be specific and relate back to observable parameters: (explain how you controlled for confounding parameters, if appropriate). *In a full lab report this would be written in paragraph form, in a narrative style.*

- Distance from heart
- Effect of gravity
- Dive response
- Stimulus for dive response

(3) Mini Results

Display your results by including either ***a figure or a table*** *for each important result* (you may work together with your group to produce the figures or tables). ***Write one sentence*** *pointing out what your data actually shows for each display item.*

(4) Mini Discussion:

Wrap-up: In paragraph form, briefly **Discuss** the **main take-aways** that you learned from these experiments on peripheral circulation and the dive response. Use specific results that back up your statements or speculate on the significance of the results. Organize by hypotheses above.

Individual assignment. Text must be your own, but you may work together with your group to produce figures/tables. You may edit this sheet. Submit by hard copy next week.