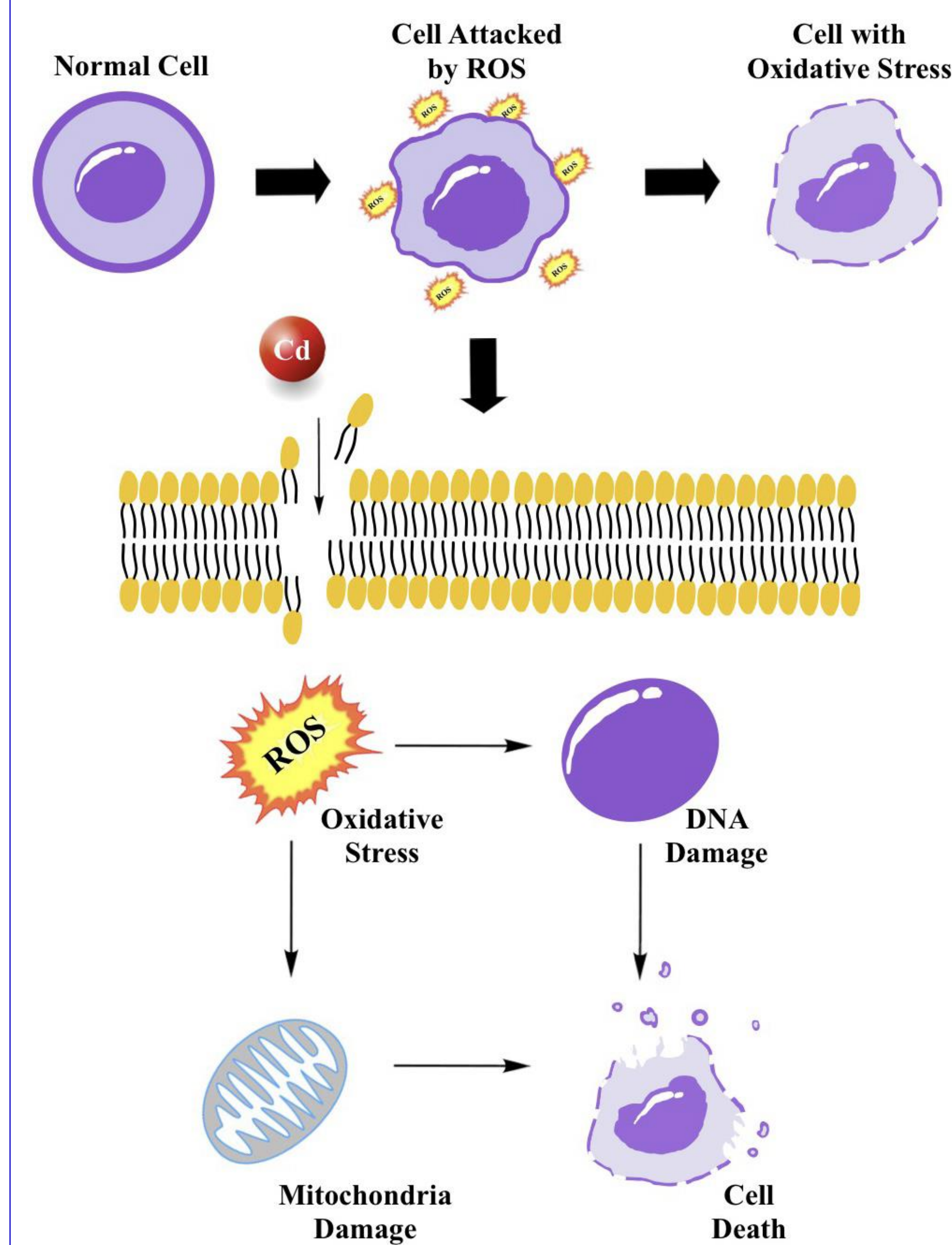


Introduction

- Cadmium (Cd) is a toxic chemical commonly found in our environment and can stay around for long periods of time.
 - Traces have been discovered in batteries, cigarettes, plastics, potatoes and meat.
- Reactive Oxygen Species (ROS) are chemical reactions essential for signaling and guiding cellular activities like tissue regrowth (Wu et al., 2011).
- When exposed to Cd, ROS can buildup and pose issues by causing oxidative stress—an imbalance between its production and the body's capacity to neutralize it (Wu et al., 2012).
- Studying cadmium is important for public health because we need to understand its effects to protect people from its potential health risks, which include cancer and other forms of organ damage.
- Flatworms like *G. dorotocephala* are often used as study models because they can regrow body parts within two weeks and show sensitivity to different chemicals.



(Gonzalez., 2023)

Methods

The flatworms were carefully cut between their front and middle parts using a scalpel. Their tails were then placed in different cadmium chloride concentrations for 24 hours. Afterward, we watched how their heads grew back for two weeks. We used a scoring sheet with different standards to check how well each part regrew, and we took photos to document the process.

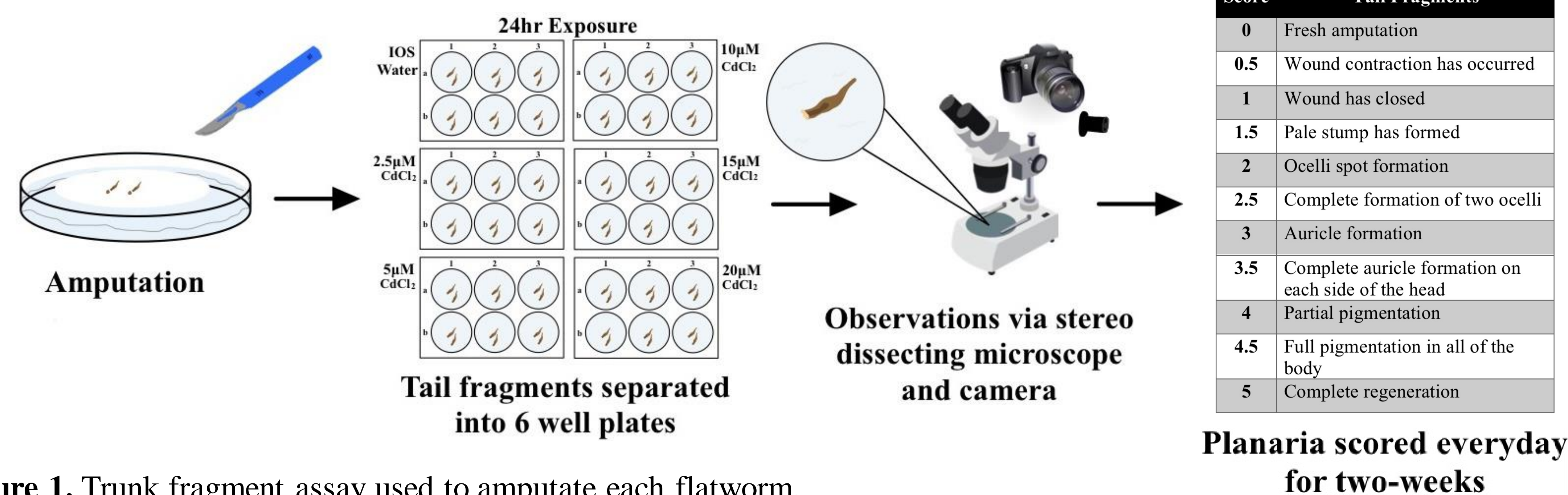


Figure 1. Trunk fragment assay used to amputate each flatworm.

Results



Figure 2. (a) The progress of head regrowth on the same flatworm over 7 days, under no exposure, only their typical instant ocean salt (IOS) water. (b) The progress of head regrowth on the same flatworm over 7 days, following a 24-hour exposure to 5 µM CdCl₂. White arrows show eye formation and black arrows show auricle formation. Both flatworms were scored based on the scoring sheet standards.

Discussion

- Results indicate that increasing concentrations of CdCl₂ slowed down tissue repair and caused some death.
- We plan to introduce antioxidant treatments anticipating less oxidative stress and promote standard regrowth capabilities.
- Assessing antioxidants' impact on delayed tissue repair will provide valuable insights into potential therapeutic interventions, improving the advancements of public health by adding to the understanding of the mechanisms that may aid or hinder the body's natural healing processes.

About Me

- Growing up surrounded by a community involved in healthcare has shaped my passion for science and the need to improve public health.
- In 2022, I proudly obtained a Bachelor's in Biology from Lynn University. With a growing love for being in the lab setting, I decided to continue my education by pursuing a Master's degree.
- Driven by curiosity, I'm eager to explore the link between environmental toxicology and reproductive biology by enrolling in a PhD program.
- As a woman of color in science, I want to improve the pathways for underrepresented individuals, amplifying diverse voices and nurturing a future where everyone, regardless of gender or ethnicity, feels empowered to pursue their scientific aspirations. I hope to encourage the next generation to become bold and fearless in this field.

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