Vitamin’s A, B-12, & E’s Effects on Planaria Regeneration

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General Information

• Regeneration

• Why regeneration is important

• How diet affects regeneration

• What can negatively affect regeneration
What is Regeneration?

- Regeneration is renewing, or restoring lost or destroyed parts.

Who or what can do regeneration?

- Many invertebrates and some vertebrates can regenerate tissue, limbs, and/or organs.
Planarian (Platyhelminthes)

- Planarians are bilaterally symmetric metazoans of the phylum Platyhelminthes.
Why is it important?

- Some organisms cannot survive without their limbs.
What happens when regeneration cannot take place?

- The human body cannot always regenerate a specific organ needed to stay alive, so when that happens, it requires an organ transplant.
How does diet affects regeneration?

- The human body needs certain vitamins, minerals and nutrients to maintain health.
Some important nutrients.

- “Helpful nutrients” refers to sunlight, air, water, vitamins, minerals, sugars, starches, fats, oils, amino acids, digestive enzymes and various other nutrients.
Some vitamins needed to maintain health

- Vitamin A
- Vitamin B-12
- Vitamin E
Essential minerals.

- These minerals included: calcium, copper, iron, magnesium, phosphorus, potassium, selenium, sodium, and zinc.
What can negatively affect regeneration?

- Lethality (death) of the cells, in this case the planaria.
- Too extensive of an injury.
Objective

• I wanted to learn more about regeneration, I predict that certain vitamins, that humans need to maintain health, would help with regeneration in planaria.
Methods

- I divided 96 Planaria, into 4 groups, with their heads cut off behind their eyes. The planaria, were then placed into 24 well plates with 1ml artificial pond water to each well, with a dilution of three (3) different vitamins.
There, the planarian regeneration progress was monitored daily under a magnifying glass/or dissecting microscope.
- Group -1, I used a 1:100,000 dilution of vitamin A, with artificial pond water.
- Group -2, I used a 1:100,000 dilution of vitamin B, with the artificial pond water.
- Group -3, I used a 1:100,000 dilution of vitamin E, with artificial pond water.
The dilutions were adjusted according to toxicity. Group -4 & 5 I used as control groups, no vitamins just the artificial pond water.
Conclusion
Does anyone have any questions?
Finally, at this time, I would like to thank you for the time you have given me today and I hope you have a great day.
References

References

