



# Acidity Level Homeostasis

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**Intro:** The body has a function in it which regulates all of our systems. This occurs so that we don't die because of something messed up. This is called homeostasis. There are many different types of homeostasis. We are focused on acidity level homeostasis in the body. This is how homeostasis in acidity level works. The body's acid-base balance is normally tightly regulated by buffering agents, the respiratory system, and the renal system, keeping the arterial blood pH between 7.36 and 7.42. Several buffering agents that reversibly bind hydrogen ions and impede any change in pH exist. Extracellular buffers include bicarbonate and ammonia, whereas proteins and phosphate act as intracellular buffers; the relationship between multiple buffers in the same solution is described by the isohydric principle. The bicarbonate buffering system is especially key, as carbon dioxide (CO<sub>2</sub>) can be shifted through carbonic acid to hydrogen ions and bicarbonate. (Official foundation for Human Research

## Materials:

- Red Bull
- pH Strips
- Timer

## Methods:

For our experiment, we are drinking a Redbull, the most acid food or drink we were able to get. Every 5 minutes, we tested the acidity in our saliva using pH strips. We test this until we are back to our normal pH levels.

**Abstract:** For our project, we were testing the homeostasis in our body's acidity levels. We are doing this by drinking something that had a large level of acidity that we could obtain and it wasn't harmful to our bodies. Then, every five minutes, we checked our pH levels.

**Conclusion:** This project was successful and proved that acidity level homeostasis exists. Even though our results did something that we didn't expect, the levels of pH all went back down to our original number after 10 minutes, proving that the homeostasis took effect. I was surprised that all of our pH were exactly back to our normal at 10 minutes.

## Test Subjects:

Our test subjects are Addie Seymour, Beau McAndrew, and Quinton Graybeal. We chose them because they like Red Bull.

**Citations: Official Foundation for Human Research**

[https://en.wikipedia.org/wiki/Acid%E2%80%93base\\_homeostasis](https://en.wikipedia.org/wiki/Acid%E2%80%93base_homeostasis)

<http://www.ck12.org/user:a3F1aWnrQHdIYmlub3Jn/section/Homeostasis-and-Regulation/>

**Link to google sheets:**

[https://docs.google.com/spreadsheets/d/1LC\\_omJNqvMH0SzLT7m\\_3xY\\_mSrEc\\_wH3hBWkLtzpj2w/edit#gid=0](https://docs.google.com/spreadsheets/d/1LC_omJNqvMH0SzLT7m_3xY_mSrEc_wH3hBWkLtzpj2w/edit#gid=0)

**Results:** Everyone's pH went back to normal after 10 minutes. Quinton and Addie's went up and Beau's went down.

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## Results

		0 min	5 min	10 min	15 min
1					
2	Addie		7	7.7	7
3	Beau		7.1	6.8	7.1
4	Quinton		6.8	7.4	6.8