

# Homeostasis in Urine

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## Intro:

Excreting waste is one way the body can achieve equilibrium through homeostasis. Homeostasis is the tendency toward a relatively stable balance between interdependent elements in the body. In the waste management process the liver is one of the most important organs. The liver cleanses the blood of dead blood cells and waste. The liver then puts the waste products into the urinary system. The color of your pee is directly related to the amount of water and waste in your urine. The darker the pee the less water and more waste in your pee. Normal, healthy pee actually has a yellow color from a pigment called urochrome. However, drinking so much water that your pee is clear can actually cause an imbalance in your electrolyte levels. When the liver is cleaning out the blood, your brain knows when to pee from the hormone antidiuretic (ADH). The hormone Aldosterone is released to tell your brain the bladder is empty.

## Materials:

Food	Water
Gym/Field to run	Toilet
Wifi	Sports
Laptop	

## Methods:

We will test our hypothesis by eating, drinking, and exercising like normal and record our data for each of the test subjects. We also asked them to observe their urine color. We finally after collecting the data will analyze it.

## Hypothesis

The color of your urine color is directly related to the amount of toxins in your body and the more your body had to work to achieve homeostasis.

## Acknowledgements:

Special thanks to our teacher and participants.

**Conclusion:** Our data tells us that if you are able to keep a balanced diet and exercise every day it is inevitable that you will have a more diluted urine with less toxins in it. Your body will be able to achieve homeostasis more easily and quickly. This allows your body to correct itself in other ways like body temperature and heart rate.

## Test Subjects:

We chose four participants. We chose these people because there is a wide range of physical activity and same age (within a year). These subjects also eat a variety of diets.

## Results:

What we have gathered from the data we took is that the healthier you eat in combination with a sufficient amount of exercise, and a moderate amount of water leads to a more diluted volume of toxins in your urine. Test subjects 1, 2, and 3 all had moderately yellow urine due to sufficient amount of water intake and the recommended exercise time everyday. Test subject 4 on the other hand had darker color pee due to his diet, poor fluid intake, and an insufficient amount of daily exercise.

**Abstract:** As the body tries to complete homeostasis your body excretes waste. One way to excrete waste is through the urination process. Our experiment is to see how the body reacts to nutrients in the blood and how the color of your urine responds. We chose 4 participants with different diets and physical activity levels. Each participant recorded their food intake, water, and exercise for one day. Once we analysed the data we were able to prove our hypothesis that the more toxins in your body is directly related to how dark your urine is.

<http://www.webmd.com/digestive-disorders/bilirubin-15434#1>

<http://mcb.berkeley.edu/courses/mcb135e/kidneyprocess.html>

<https://www.google.com/search?q=Homeostasis&ogq=Homeostasis&aqs=chrome..69i57j0i5.477j0j7&sourceid=chrome&ie=UTF-8>

<http://www.healthline.com/health/bright-yellow-urine>

<http://www.runnersworld.com/nutrition/how-to-test-your-hydration>