

pH Control™ (AlkaPlex tablets)
And It's Effect on Urine Acid

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Abstract:

Change in urine acidity is used as a surrogate to measure change in body fluid acidity associated with ingestion of a strong alkaline complex. Urine acidity was tested in 23 participants before and after taking four 1000 mg. tablets of pH Control™, a proprietary alkalizing product, each day for 5 days. The group’s urinary acidity went down an average of 53%; this represents a 112% increase in alkalinity in their urine. Four people out of 23 increased in acidity by 24% while 19 people decreased an average of 61% in acidity. Thus, 83% of the participants had a significant decrease in urine acidity over this five day study while using the pH Control™ product. It is deduced that overall body fluid acidity is also reduced while using pH Control™. The assumption is that when waste is extracted from the blood by the kidneys and is stored in the bladder as urine, the change in urine acidity directly reflects the change in body fluid acidity. ¹ It is a reasonable deduction that body fluids in general will be less acidic if the urine is less acidic as a consequence of taking pH Control™.

Hypothesis:

By taking pH Control™ tablets, containing 1000mg of active Alka-Plex ingredients, four times a day, acid levels in body fluids (as measured by increased urine pH) will decrease after 5 days of

treatment. Decreased acid in the urine reflects increased acid buffering in the blood, since the blood is the link to the kidneys which generate urine.

Methodology:

Testing was done according to the following methodology on 23 people, 12 men and 11 women. The volunteers consisted of employees, their family, and friends. Details include:

- Participant Requirements: To be included in this study, a participant must not be using alkalizing products (Tamer products, Tums, Roloids, acid blockers such as Nexium, etc.) or if using them, discontinue their use for two days prior to:
 - Taking the first urine sample
 - Beginning to take pH Control™
 - They must refrain from using any other alkalizing products during the testing period.

This establishes a baseline or reference pH for each participant.

- Sample Size: Target Size is up to 30 participants.
- Study and Specimen Collection Time Frame:

Day 1	May 12	Monday	Receive Kit
Day 2	May 13	Tuesday	No Alkalizing products
Day 3	May 14	Wednesday	No Alkalizing products
Day 4	May 15	Thursday	Take first urine sample, start taking pH Control™
Day 5	May 16	Friday	2 nd day of pH Control™
Day 6	May 17	Saturday	3 rd day of pH Control™
Day 7	May 18	Sunday	4 th day of pH Control™
Day 8	May 19	Monday	5 th day of pH Control™, last day of pH Control™
Day 9	May 20	Tuesday	Take 2 nd urine sample at same time of day as 1 st one

- The Schedule and Required Information:
 1. On Day 1, stop taking any acid reducing agents as mentioned in the above Participant Requirement Section.
 2. On the morning of day 4, participants fill in the gender, age, weight, date, and time information on Sample Tube A. Participants then collect a sample of their

first urine of the day in a cup provided and transfer it to Sample Tube A. This is the baseline urine acid sample.

3. Place the tube into the provided Ziploc bag and put this into the smaller box provided. Give this to a company representative for testing. If it cannot be given the same morning, the sample should be refrigerated until it can be transferred. Note, all tests to be made in the laboratory with a standardized IQ Scientific Instruments pH Meter, Model IQ150.
4. Participants begin taking the pH Control™ tablets provided on the following schedule:
 - 1 tablet with each meal and at bedtime for a total of 4 tablets a day
 - Use the same dosage for Day 1 through 5
5. On the morning of Day 6, participants collect a urine sample at their first urination in the cup provided and transfer it to the pre-labeled Sample Tube B.
6. Place the tube into the provided Ziploc bag and put this into the smaller box provided. Give this to a company representative for testing. If it can not be given the same morning, the sample should be refrigerated until it can be transferred.
7. The pH level of this second sample, when compared to that of the base line sample, will measure the change, if any, as a result of taking pH Control™ tablets.
8. Specimen will be tracked by number only, assuring privacy and anonymity. Once study kits are distributed, no names will be associated with the test materials.
9. Upon completion of the collection and analysis, results will be anonymously summarized and a copy given to each of the study participants. Write down your kit number (it appears on each box and specimen tube) and keep it to see your own test results on the study.

Results and Data:

A total of 12 men and 11 women completed the study following the above protocol. There were additional people who did not take the proper dosage or were on other acid reducers during the study, and their data was eliminated from the study. 19 out of 23 participants showed decreases

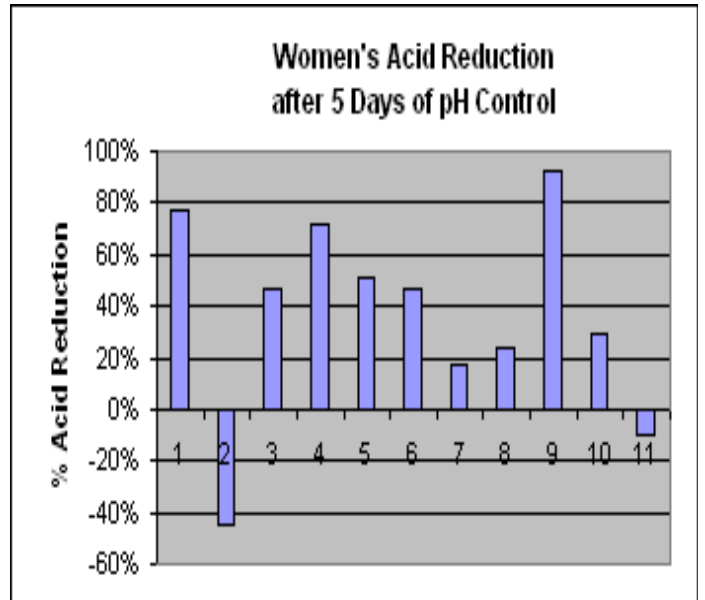
in acidity at the end of the study; four showed an increase in acidity. The average reduction in acid for Women, Men and Overall was 50%, 55% and 53% respectively. Data ranged from 5.02 to 6.51 for baseline pH and from 5.21 to 6.66 for post treatment pH as shown in Table 1 below.

**Table 1
Data and Charts**

In House Urine Acid Reduction Study Using pH Control™

6/16/03

Gender	Age	Weight	p H start	p H after	Reduction in Acid	Increase in Base
F	18	135	5.60	6.25	77.6%	346.7%
F	19	140	5.55	5.39	-44.5%	-30.8%
F	25	150	5.50	5.77	46.3%	86.2%
F	30	115	5.97	6.52	71.8%	254.8%
F	33	143	5.24	5.55	51.0%	104.2%
F	38	210	5.71	5.98	46.3%	86.2%
F	46	260	5.51	5.59	16.8%	20.2%
F	49	130	5.66	5.78	24.1%	31.8%
F	50	140	5.06	6.21	92.9%	1312%
F	51	133	6.51	6.66	29.2%	41.3%
F	59	170	6.18	6.14	-9.6%	-8.8%
M	16	150	5.59	5.56	-7.2%	-6.7%
M	35	321	5.13	5.21	16.8%	20.2%
M	38	170	5.31	6.24	88.3%	751%
M	46	160	5.55	5.79	42.5%	73.8%
M	51	168	5.14	5.33	35.4%	54.9%
M	53	180	5.16	5.45	48.7%	95.0%
M	54	155	5.65	6.07	62.0%	163.0%
M	55	180	6.40	6.26	-38.0%	-27.6%
M	55	185	6.08	6.54	65.3%	188.4%
M	56	220	5.06	5.52	65.3%	188.4%



M	57	195	5.02	5.70	79.1%	378.6%
M	60	165	5.27	5.83	72.5%	263.1%

Women: Average and Changes

5.68 5.99 50.4% 101.6%

Men: Averages and Changes

5.45 5.79 54.8% 121.3%

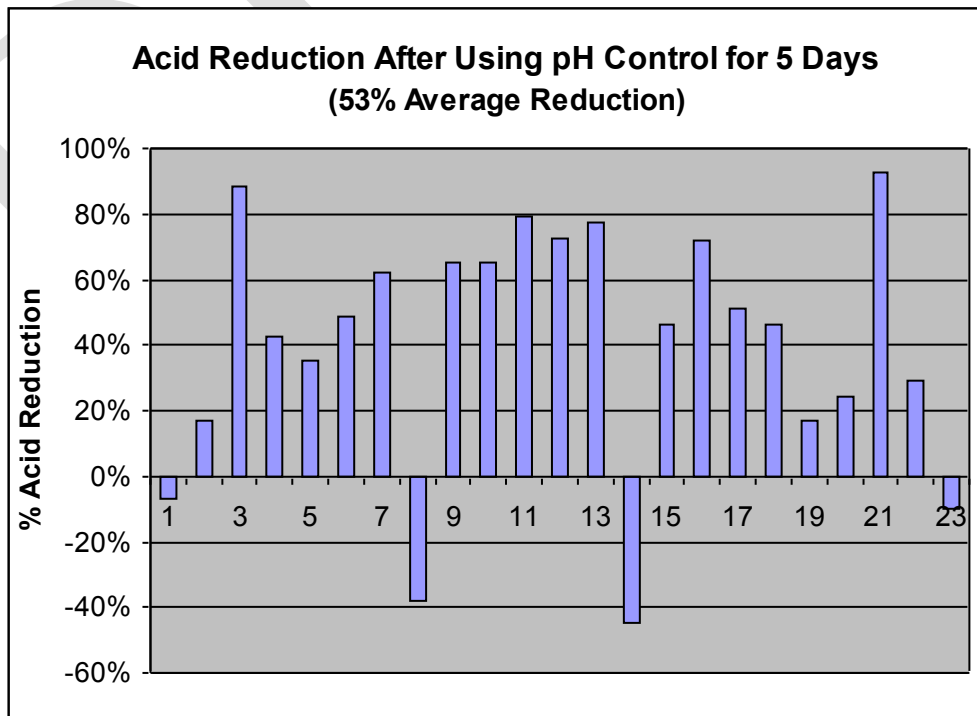
Summary for All Participants

5.56 5.88 52.8% 111.7%

Summary Plot of pH Control™ Data

23 Participants

First 12 are Men, last 11 are Women



Discussion:

The pH range for urine is about 4.8 to 8.4 ¹⁾ but either extreme is considered unhealthy. Urine pH varies during the day as much as a full pH unit. It is at its minimum (most acidic) when you first get up in the morning and at its peak (most basic) in the late afternoon or early evening. This study used the first sample of the day as the reference. Taking the samples in early morning is the minimum intrusion in our participants' lives and is reproducible for multiple samples.

The average urine pH (all 23 participant's data) increased by 0.32 pH units which corresponds to a 53 % average reduction in acid. This decrease in acid means there was a 112% increase in base. These numbers represent a significant change in the acid-base balance in the body. With 19 out of 23 generating more basic urine, this means that the trial was effective on 83% of the people tested. The 19 participants had a 61% average reduction in acid content of their urine. The other four participants increased in acid by 24% but they started at 0.45 pH units higher than the 19. A previous study showed 10 out of 10 people improved with an average decrease of 61% in acidity using an earlier version of our product ²⁾.

There were four people out of 23 that had increased acid levels during this study. One person had performed a heavy aerobic workout the evening before he gave his final sample. His 38%

increase in acid could be the result of lactic acid buildup that his body was still processing

- 1) Handbook of Chemistry and Physics, Chemical Rubber Publishing, 1984, page D151
- 2) Gurol, Macit, *The Effect of Tummy Tamer On Urine pH*, September 2001

11 hours after completing the workout. The test samples the first urine in the morning so he was holding at least 6 hours of urine that had accumulated during sleep. Two others were from the same household and ate the same organic diets that contained many foods that naturally alkalize the body and vary day-to-day. The last person eats very late at 9 - 10 PM and goes to bed at about 11 PM, giving little time to excrete the waste products from food metabolism. Also she was one of the four people who had a pH greater than 6 at the start and it was still above 6 at the end. This is a healthy range to be in for the first urine of the day.

For those interested, further background on chemistry and pH follows: Acid and base in the form of hydroxyl ion (OH^-) and hydrogen ion (H^+) react to form water. An equilibrium equation can be written for this reaction that says the concentration of hydroxyl ion $[\text{OH}^-]$ times the concentration of hydrogen ion $[\text{H}^+]$ is equal to 10^{-14} . These are illustrated below in Equation 1 to 3.



$$[\text{OH}^-] [\text{H}^+] = 10^{-14} \quad \text{Equation 2}$$

$$\text{Therefore: } [\text{H}^+] = 10^{-14} / [\text{OH}^-] \quad \text{Equation 3}$$

The quantity of hydrogen ions is inversely related to the quantity of hydroxyl ions. Therefore a 50% decrease in acid $[\text{H}^+]$ means a 100% increase in the amount of base $[\text{OH}^-]$.

We measure pH to determine the acid-base balance. The term pH is defined as being equal to minus the logarithm (to the base 10) of the hydrogen ion concentration $[\text{H}^+]$. This relationship is given in Equation 4:

$$\text{pH} = -\log [\text{H}^+] \quad \text{Equation 4}$$

For most measurements, pH ranges from 0 to 14. A neutral solution (where $[\text{H}^+] = [\text{OH}^-]$) is at $\text{pH} = 7$. Since pH is a log function, each time you double the hydroxyl ion concentration you increase the pH by 0.3 units. If you increase by a full pH unit, the concentration of base increases by a factor of 10.

Side Effects:

Three participants mentioned that they had increased gas, bloating, and sometimes slight cramping during these tests. This effect was exacerbated if the tablets were not taken with meals. One person did not complete the study because of gas and bloating.

Conclusions:

pH Control tablets taken four times a day over five days does increase the pH of urine by doubling the amount of base and cutting the acid in half, on average. People who have over acidic urine would be well served by using pH Control™ in the recommended dose of 4 tablets per day. Decreased acid in the urine reflects increased acid buffering in the blood, since the blood is the link to the kidneys which generate urine.

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