

Does Urine Specific Gravity and Thumb Shape Correlates?

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ABSTRACT

Specific gravity of urine is always greater than 1 that is greater than specific gravity of water. Urine being mixture of water and various types of solute having different densities is always denser than water. Measurement of density of urine is known as its specific gravity. Specific gravity of urine depends upon the densities of solute particles present in urine. Specific gravity of urine in adults is in between 1.010-1.030. In condition of dehydration, diarrhea, excess of water lose due to sweating, UTI the specific gravity of urine increases. Thumb shape is continually changing variable depending upon the allele present on chromosomes. "S" allele for straight thumb is dominant over the "s". So if persons receives "S" from parents thumb shape will be straight and if "ss" or "SS" the thumb shape will be either straight or bend in backward direction. The relation between thumb shape and urine specific gravity was found because almost same percentage was observed in many values of specific gravity of urine. So we can say that thumb shape doesn't influence the urine specific gravity.

Keywords: Thumb shape, Urine specific gravity, Dipstick.

Introduction

Specific gravity of urine is always greater than 1 that is greater than specific gravity of water. Urine being mixture of water and various types of solute having different densities is always denser than water.

Measurement of density of urine is known as its specific gravity. Specific gravity of urine depends upon the densities of solute particles present in urine. Specific gravity of urine is totally dependent on the ability of kidney to make urine concentrated. By renal disease the abilities of kidney decreases so it absorbs less solutes, as a result the urinalysis will indicate specific gravity less than 1. So if urinalysis shows specific gravity less than one it indicates renal disease. The function of kidney is to clear the waste material from the body and minimize the loss of water and nutrients by reabsorption of water and nutrients by the kidney while the toxins are excreted out of the body. Specific gravity of urine in adults is in between 1.010-1.030.

In condition of dehydration, diarrhea, excess of water lose due to sweating, UTI the specific gravity of urine increases. So this can be avoided by drinking excess of water. Decrease in specific gravity of urine indicates the kidney is not working well. According to work done on thumb shape by glass and kittler in 1953, the thumb may be straight or may be bending in back word direction. The term they used for the bend thumb is hitchhikers thumb, depends either angle of thumb is greater or equal to 50. During these work they observed that many individual have one thumb straight while other bent.

The data of shape of thumb collected by different people was also different. Thumb shape is continually changing variable depending upon the allele present on chromosomes. "S" allele for straight thumb is dominant over the "s". So if person receives "S" from both the parents thumb shape will be straight and if "ss" the thumb shape will be bend in backward direction. Present study objective was to correlate thumb shape with urine specific gravity.

Material and Method

Material used to test urine bilirubin level was a bottle to collect the sample, testing strip and the chart on which standard values were given.

Task designing

Thumb shape data of 100 subjects were gathered then their urine test was performed.

Collected the sample into the container and the dipstick was dipped into the sample for 2 seconds and wait for a minute and when dip strip had changed give it to the technician or the nurse to check all the values that will be represented on the dip strip. Note the values.

Results and discussion

Table 1. Shows values of specific gravity by relating them with thumb shape in male

<i>Male</i>	1.005	1.015	1.025	1.030	1.020	1.010
<i>Bend thumb</i>	0%	13%	3%	10%	3%	0%
<i>Straight</i>	0%	0%	0%	13%	3%	0%

Table 2. Urine specific gravity relation with thumb shapes in female

<i>Female</i>	1.005	1.015	1.025	1.030	1.020	1.010
<i>Bend thumb</i>	1%	5%	6%	3%	8%	7%
<i>Straight</i>	6%	5%	5%	11%	2%	17%

Table shows 1% female with bend thumb had specific gravity of 1.005. 6% females with straight thumb showed urine specific gravity of 1.005. 13% male and 5% females with bend thumb had urine specific gravity 1.015. 5% female had urine specific gravity of 1.015 and had straight thumb.

3% males and 6% female had urine specific gravity of 1.025 and had bend thumb and 5% female had same specific gravity but had straight thumb shape. 10% male and 3% female with bend thumb had shown urine specific gravity of 1.030 and 13% male and 11% female with straight thumb had same urine specific gravity.

3% males and 8% bend thumb female and 3% male and 2% straight thumb male had urine specific gravity of 1.020. 7% female with bend thumb and 17% with straight thumb had urine specific gravity of 1.010. Mostly people had normal urine specific gravity value.

Conclusion

No relation between thumb shape and urine specific gravity was found because almost same percentage was observed in many values of specific gravity of urine. So we can say that thumb shape doesn't influence the urine specific gravity.

Declarations

Source of Funding

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Competing Interests Statement

The authors declare no competing financial, professional and personal interests.

Consent for publication

We declare that we consented for the publication of this research work.

Availability of data and material

Authors are willing to share data and material according to the relevant needs.

References

- [1] Qadir MI, Noor A (2018) Anemias. Rare & Uncommon Diseases. Cambridge Scholars Publishing. Newcastle, England. ISBN: 978-1-5275-1807-0.
- [2] Qadir MI, Javid A (2018) Awareness about Crohn's Disease in biotechnology students. Glo. Adv. Res. J. Medical Sci., 7(3): 062-064.
- [3] Qadir MI, Saleem A (2018) Awareness about ischemic heart disease in university biotechnology students. Glo. Adv. Res. J. Medical Sci., 7(3): 059-061.
- [4] Qadir MI, Ishfaq S (2018) Awareness about hypertension in biology students. Int. J. Mod. Pharma. Res., 7(2): 08-10.
- [5] Qadir MI, Mehwish (2018) Awareness about psoriasis disease. Int. J. Mod. Pharma. Res., 7(2): 17-18.
- [6] Qadir MI, Shahzad R (2018) Awareness about obesity in postgraduate students of biotechnology. Int. J. Mod. Pharma. Res., 7(2): 14-16.
- [7] Qadir MI, Rizvi M (2018) Awareness about thalassemia in post graduate students. MOJ Lymphology & Phlebology, 2(1): 14-16.
- [8] Qadir MI, Ghalia BA (2018) Awareness survey about colorectal cancer in students of M. Phil Biotechnology at Bahauddin Zakariya University, Multan, Pakistan. Nov Appro in Can Study, 1(3): NACS.000514.2018.
- [9] Qadir MI, Saba G (2018) Awareness about intestinal cancer in university student. Nov Appro in Can Study, 1(3): NACS.000515.2018.