

# Impact of Pastas, Noodles, Pizzas and the Topping Ingredients used for Taste, on Creatinine Levels in the Body Indicating the Kidney Functioning

Dr. Manisha Mathur<sup>1</sup>, Gaurang Mathur<sup>2</sup>

Department of Zoology, G. N. Khalsa College, Matunga, Mumbai, India

Geetanjali Medical College, Udaipur, Rajasthan, India

**Abstract:** *Kidney is an important excretory organ and forms urine, discharge wastes, and maintains osmoregulation. Creatinine is one of the nitrogenous waste product produced by our kidney. The normal Creatinine level in urine in a normal adult is 2.2-26.5mmols/L or 0.25-3gm/L. The current study was to find out the food product which degrades the Creatinine and reduces its level in body. About 12 food products were studied in the present research. Mainly the toppings of Pizzas and pastas were studied as the consumption of these eatables is maximum in today's era. Effect of Origano, chilli flakes Cheeze, Olives, Arabiata, Mushroom, Mint, Coriander, Bitter gourd, Pasta and Maggie Noodles was observed on the creatinine level in the body. To what extent they maintain the proper functioning of Kidney or do they cause harm to our Kidneys. The origin of this study is the current issue among most of the parents for their children for consuming pizzas, pasta, noodles, burgers, and other junk food instead of consuming traditional/conventional food including vegetables, pulses, rice etc. and proper balanced diet ;very often or daily instead of taking proper healthy and balanced diet. Not only children but also adults are dependent on such type of food habits now a days. This research will definitely create awareness about the health issues, especially related to kidney functioning and about the levels of creatinine in the body after consumption of such foods. As per our research findings, cheese reduces the creatinine level to least extent while coriander reduces the creatinine level to maximum extent.*

**Keywords:** Pastas, Noodles, Pizzas Topping Ingredients, Creatinine Kidney

## 1. Introduction

Normal levels of creatinine in the blood are approximately 0.6 to 1.2 milligrams (mg) per deciliter (dL) in adult males and 0.5 to 1.1 milligrams per deciliter in adult females. (In the metric system, a milligram is a unit of weight equal to one-thousandth of a gram, and a deciliter is a unit of volume equal to one-tenth of a liter.) [1] Muscular young or middle-aged adults may have more creatinine in their blood than the norm for the general population. Elderly persons, on the other hand, may have less creatinine in their blood than the norm. Infants have normal levels of about 0.2 or more, depending on their muscle development. In people with malnutrition, severe weight loss, and long standing illnesses, the muscle mass tends to diminish over time and, therefore, their creatinine level may be lower than expected for their age. [2, 3]

A person with only one kidney may have a normal level of about 1.8 or 1.9. Creatinine levels that reach 2.0 or more in babies and 5.0 or more in adults may indicate severe kidney impairment.[4, 6, 7] The need for a dialysis machine to remove wastes from the blood is based upon several considerations including the BUN, creatinine level, the potassium level and how much fluid the patient is retaining.[5, 8, 9]

Studies have shown oregano oil's ability to fight candida albicans, aspergillus mold, staph infections, vaginal infections, pseudomonas and listeria. A study from the US Department of Agriculture showed that oregano essential oils presented antimicrobial activities against Salmonella and E.coli[10, 11] Other studies have had similar results,

finding that oregano oil is such a powerful antimicrobial that it can be used to preserve food! Studies from the Department of Food Science at the University of Tennessee found similar results for oregano oil's antibacterial action on pathogenic germs.

A recent study from the Department of Physiology and Biophysics at Georgetown University Medical Center, stated the following in regard to the role of essential oils for infections[12]"New, safe antimicrobial agents are needed to prevent and overcome severe bacterial, viral, and fungal infections. Based on our previous experience and that of others, we postulated that herbal essential oils, such as those of *origanum* (oregano oil)...offer such possibilities."In an article published on Science Daily, oil of oregano was found to be effective in killing *Staphylococcus* bacteria. It was also equally as effective in its germ-killing abilities as common prescription antibiotics [13]

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease. Oregano is an important culinary and medicinal herb that has been used in medicine and cooking for thousands of years - with a number of potential health benefits. It is a species of *Origanum*, belonging to the mint family (*Lamiaceae*) The herb is used to treat respiratory tract disorders, gastrointestinal (GI) disorders, menstrual cramps, and urinary tract disorders. The herb is also applied topically to help treat a number of skin conditions, such as acne and dandruff. Oregano contains: fiber, iron, manganese, vitamin E, iron, calcium, omega fatty acids, manganese, and typtophan. Oregano is also a rich source of: Vitamin K - an

Volume 6 Issue 8, August 2017

[www.ijsr.net](http://www.ijsr.net)

Licensed Under Creative Commons Attribution CC BY

important vitamin which promotes bone growth, the maintenance of bone density, and the production of blood clotting proteins. Dietary antioxidants - a report published in the Journal of Nutrition revealed that oregano contains very high concentrations of antioxidants (1)

A person suffering from kidney disease and often drink beer, wii have deposits of uric acid, resulting in blockage of renal tubules which will lead to kidney failure.

Chilli, is one essential material in many people's kitchen, because it can flavor our dishes largely. In clinical, chilli is always considered as one healthy food for people with cardiovascular disease, because of its rich benefits. Generally, people can get the following benefits from eating proper amount of chilli, so do kidney disease patients. Lower high blood sugar

The experts in Jamaica prove that chilli capsaicine in chilli can help lower high blood glucose obviously. At present, diabetes is the leading cause of kidney disease, so for people with kidney disease and diabetes, chilli may be a good food to try. It Improve blood circulation. Chillies prevent cold.

Many foods need to be avoided when your creatinine level is higher than the normal range (0.5-1.1 for female and 0.6-1.2 for male), and the purpose of which is to protect residual kidney function and prevent kidney failure. It is widely known that people with kidney problem always have elevated creatinine level and once the level of creatinine increases to a certain degree, generally no less than 5.6, Dialysis or kidney transplant will be suggested. Some foods have influence on creatinine level, so to prevent creatinine level increase to the level that need dialysis or kidney transplant, these foods that can elevate creatinine level need to be avoided.

Avoid food with high protein content. Low-protein diet is commonly recommended for kidney disease patients, and this is because too much protein intake will increase extra renal burden, which can worsen kidney damages and therefore cause a higher creatinine level. Beans, bean products, fish, milk, egg white and lean meat are high in

protein, they need to be avoided in theory. However, to meet the physical demand, kidney disease patients can take some fish, milk and lean meat. They contain high quality protein and cause little extra renal burden. Therefore, they are available for kidney disease patients, but the intake of them need to be limited. 2. Too much meat will not be recommended.

Coriander is an annual herb in the family apiaceae that can be used to deal with various discomforts. It is health-beneficial, but it is not good for kidney failure patients because coriander is high in potassium.

Mushroom contains high proteins, low fat, rich essential amino-acid, mineral substances, vitamins and so on[14] Mushroom contains eighteen kinds of amino acids. But kidney disease patients are advised to limit the intake of it, that is because the damaged kidneys fail to remove the metabolic product of protein out of body. Much intake of protein can increase the kidneys' burden, so kidney disease patients are suggested to have low-protein diet. While mushroom contains high level of proteins. Another reason is that mushroom also contains high level of potassium[15] The potassium cannot be discharged by the damaged kidneys, in that case, hyperkalemia may happen, then a series of symptoms may occur, such as chest pain, stiff tongue, numbness of fingers, fatigue, anesthesia, even arrhythmias and sudden heart arrest and so on.

## 2. Objectives

- 1) To test the effect of different pastas on creatinine levels in kidney/body.
- 2) To test the effect of different types of noodles on creatinine levels in the body.
- 3) To test the effect of different types of toppings(arabiata cheese, mozzarella cheese, chilli flakes, oregano, mushroom, mint, coriander, etc.) on pastas and noodles on the creatinine levels in kidney and body.



Origano



Origano



Origano



Chilli Flakes



Chilli Flakes



Mozeralla Cheeze



Mozerella Cheez Arabiata Olives



Mozerella Cheez



Arabiata



Olives



Mint

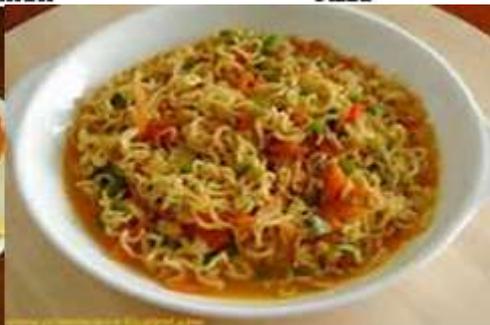
Coriander



Pizza



Pasta



Maggie Noodles

### 3. Material and Methods

- 1) Different types of noodles were collected
- 2) Different types of spices and toppings (arabiata cheese, mozzarella cheese, chilli flakes, oregano, mushroom, etc) were purchased.
- 3) Creatinine powder was purchased.
- 4) Creatinine testing strips were purchased.
- 5) Creatinine will be dissolved in aquagaurd filtered water and 1% solution will be made.
- 6) Five test tubes with 1% creatinine solution were kept as control and quantity of creatinine will be measured by dipping the strips and observing colorimetrically on the colour chart.
- 7) In test /experimental tubes, 1% creatinine solution were taken in about atleast 30 test tubes, creatinine quantity will be tested in each one of them by dipping the strip and comparing on the colorchart and was added with different ingredients used in making toppings of pizza (after grinding them coarsely, and dissolving in either water or organic solvent or just melting them or making paste(as in case of cheese, or pasta itself or noodles itself(after soaking them in water.) and after 15 mins, 30 mins, 45 mins and 1hr., the creatinine levels were again be measured using testing strips colorimetrically and will be compared with the colour chart.
- 8) After performing the above test, the decreases in creatinine levels were observed and data were recorded.
- 9) Data were analysed.
- 10) Results and discussions were framed.
- 11) Report was prepared.
- 12) People were made aware of the findings.

### 4. Results and Discussions

Research in this area (Both at national and International Level) shows maximum results on other parameters related to health issues by the consumption of different types of pizza, pasta, noodles, and other pizza toppings. But not much data was found on the effect of pizzas, pastas and noodles and their topping ingredients on creatinine levels in the body which is directly related to the kidney functioning in the body. Results show that all the eatables used (As shown in the above Pictures and Table -1) in the toppings (used in the current study), reduce creatinine level to some or the other extent. But coriander reduces the creatinine level to maximum extent. None of the eatables under current study were found to be harmful to the kidney functioning. Mint and coriander were found to be most useful which can prevent the damage of kidney or can prevent improper functioning of kidney. Initially when creatinine testing strips were dipped in the stock or standard solution of creatinine, the level of creatinine was 26.5 mmols/l or 3g/L. After adding the extracts of 12 different types of eatables which are mentioned in the following Table Number-1, the creatinine level dropped down between 0.9m mols/L or 0.1g/L by adding following listed edibles. The eatable which could reduce the creatinine level to minimum, i.e; 0.9m mols/L was coriander and the eatable which could reduce creatinine level to least was Cheeze. The results were predicted by observing the change in colour of the pads on the testing strips.

**Table 1**

| Sample No. | Name of the Food Product | Creatinine Level Initially | Creatinine Level After Adding The Food Product (mmol/l) | Creatinine Level After Adding The Food Product (gm/l) |
|------------|--------------------------|----------------------------|---|---|
| 1.         | Origano                  | 26.5mmol/Lor3g/L           | 13.0  | 1.5   |
| 2.         | Chilli Flakes            | 26.5mmol/Lor3g/L           | 8.8   | 1   |
| 3.         | Mozirella Cheeze         | 26.5mmol/Lor3g/L           | 17.7  | 2   |
| 4.         | Amul Cheeze              | 26.5mmol/Lor3g/L           | 17.7  | 2   |
| 5.         | Coriander                | 26.5mmol/Lor3g/L           | 0.9   | 0.1   |
| 6.         | Mushroom                 | 26.5mmol/Lor3g/L           | 8.8   | 1   |
| 7.         | Bitter Gourd             | 26.5mmol/Lor3g/L           | 8.8   | 1   |
| 8.         | Mint                     | 26.5mmol/Lor3g/L           | 2.2   | 0.25  |
| 9.         | Pasta                    | 26.5mmol/Lor3g/L           | 8.8   | 1   |
| 10.        | Maggie                   | 26.5mmol/Lor3g/L           | 2.2   | 0.25  |
| 11.        | Garlic                   | 26.5mmol/Lor3g/L           | 17.7  | 2   |
| 12.        | Olive                    | 26.5mmol/Lor3g/L           | 8.8   | 1   |

### 5. Conclusion

A supportive environment which links to young people's health services may be more appropriate. This research has definitely helped us to know the data for consumption of junk food and the parents and children can be made aware of harmful effects of consuming junk foods like pizzas, pastas, noodles, etc. very frequently and they can be benefited by getting aware of possible health issues of their children and themselves by consuming the above mentioned junk foods. Hence this research will be of great use. Public should be made aware that along with these toppings on Pizza, Pasta, Burgers and Noodles, more of mint and Coriander should be added, which will benefit the Kidney functioning.

### 6. Acknowledgement

I dedicate my work to my Father Mr.K.G.Mathur, Mother Amar Mathur, My Brothers Prasoon Mathur and Arvind Mathur and my Bhabhies who are my backbone. Without their blessings my work is never possible. I acknowledge my heartiest feelings for the sacrifice of my husband Sanjay and my children Kartik, Gaurang, Mohit and Rimjhim during my study.

### References

- [1] Inhibition of enteric parasites by emulsified oil of oregano in vivo
  - a. M Force, WS Sparks, RA Ronzio - Phytotherapy Research, 2000 - Wiley Online Library
  - b. ... Additional Information. How to Cite. Force, M., Sparks, WS and Ronzio, RA (2000),
  - c. ...
- [2] B Dimitrios - Trends in Food Science & Technology, 2006 - Elsevier
  - a. ... The importance of antioxidant plant phenols is also seen in the efforts of researchers:
  - b. (a). to increase the content of phenolics in plants (Wilhelm, Klaus, & Juergen, 2000). (b)...

- [3] Herbal plants and their derivatives as growth and health promoters in animal nutrition
  - a. SR Hashemi, H Davoodi - Veterinary research communications, 2011 - Springer
  - b. ... References.... S Afr J Anim Sci 34:197–210. Borris RP (1996) Natural product research.... P, Giannenas
- [4] I, Christaki E, Govaris A, Botsoglou NA (2006) Performance of chickens and oxidative stability
  - a. of the produced meat as affected by feed supplementation with oregano, vitamin C...
- [5] An evidence-based systematic review of herb and supplement interactions by the Natural Standard Research Collaboration
- [6] C Ulbricht, E Basch, W Weissner... - Expert Opinion on Drug ..., 2006 - Taylor & Francis
- [7] ... Researchers in the field of complementary and alternative medicine were consulted for access
  - a. to additional references or... receptor agonists and/or to exhibit estrogenic properties in basic science
- [8] Antimicrobial activity of whey protein based edible films incorporated with oregano, rosemary and garlic essential oils
- [9] AC Seydim, G Sarikus - Food research international, 2006 - Elsevier
- [10]... These researchers found the inhibitory effect of oregano was due to the relatively high concentration of carvacrol and p-cymene.... This research was supported by The Scientific and
- [11] Technical Research Council of Turkey (TUBITAK-TOGTAG Project # 3343).... References....
  - a. Extract of oregano, coffee, thyme, clove, and walnuts inhibits NF-κB in monocytes and in transgenic reporter mice I Paur, TR Balstad, M Kolberg, MK Pedersen... - ... Prevention Research, 2010 - AACR
  - b. research has found correlations between the ability to induce Nrf2 and anti-inflammatory properties, and a cross-talk between NF-κB and Nrf2 has been... 12 and references herein...
- [12] Efficacy of oregano oil in the inactivation of Salmonella typhimurium on lettuce
  - a. GT Gündüz, ŞA Gönül, M Karapınar - Food Control, 2010 - Elsevier
- [13] Phenolic antioxidants from clonal oregano (*Origanum vulgare*) with antimicrobial activity against *Helicobacter pylori*, SS Chun, DA Vatter, YT Lin, K Shetty - Process Biochemistry, 2005 - Elsevier
- [14] Spice antioxidants isolation and their antiradical activity: a review
  - a. M Suhaj - Journal of food composition and analysis, 2006 - Elsevier
  - b. Total phenolic contents, chelating capacities, and radical-scavenging properties of black peppercorn, nutmeg, rosehip, cinnamon and oregano leaf
- [15] L Su, JJ Yin, D Charles, K Zhou, J Moore, LL Yu - Food chemistry, 2007 - Elsevier
  - a. .. Content. Citation Only; Citation and Abstract;... Acknowledgements. This 2.2study was partially supported by Frontier Natural Products Co-op (Norway, IA), and a grant from USDA National