



# SERUM TIMES

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## SERUM MEDICAL BULLETIN

### From the desk of the Editor-in-Chief

Dear Readers/Doctors,

We hope you are well both mentally and physically. We are entering the festival season, starting with the Vishwakarma Puja on 17th September 2024 and ending with the Saraswati Puja, observed on Shukla Panchami Tithi, on 2nd February 2025. Festival season means enjoyment and festivity. But we are to be very careful about our health and dutifulness.



On the 16th of August, the World Health Organization (WHO) declared with emergency that monkeypox as a global threat. Monkeypox had become a public health emergency in the African continent. WHO said that there had been more than 14,000 cases of it and 524 deaths in Africa this year. The corresponding figures for last year's had already crossed. It is also known that monkeypox has been detected in at least 13 countries in Africa. About 96% of all cases are found in Congo alone. WHO also pointed out that monkeypox originated in Africa and later caused a global outbreak in 2022.

How does it spread? It can spread from one infected person to another through direct contact i.e., touching, kissing, breathing, or having sex, etc. It can also spread through animal bites or scratches. It is also a concern for India as recently some cases have been found in Pakistan as well. It is reported that India's Central Government has called for a meeting with health experts and officials of hospitals under its control immediately after the declaration by WHO about this. Some state governments are also taking steps to decide how not to spread the disease. So, everybody should be careful about it but please do not be panicked.

The dengue cases are also rising in the state. We touched on this in our last issue also. So, try to obey the government guidelines about dengue for our own safety.

In this issue, we will discuss Albuminuria, a kidney-related problem, which develops when a patient has higher than normal levels of protein in her/his urine. When the filtration system of the kidneys does not function well, too much protein can move into one's urine. The Story 1 will discuss it more elaborately.

Story 2 touches upon the importance of magnesium-rich food in our diet. Magnesium is one of the four most abundant minerals in the human body. It has a vital role in the repair and growth of DNA. So, what the latest research has found about the importance of eating magnesium-rich food, has been discussed in the story 2.

We again extend best wishes for the upcoming festive season and expect your good health.

With best wishes & thanking you,

Sanjib Acharya

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## Albuminuria, caused by kidney disease, may need repeated tests for diagnosis

Story 1

Albuminuria, also called proteinuria, is caused by damage in the kidney. The damage generally occurs in the glomerulus, i.e., the kidney's filter. Albuminuria occurs when albumin enters in urine of a person. What is albumin and its role? It is an important protein found in the blood. It serves many roles in the body like building muscle, repairing tissue, and fighting infection. It is not found in the urine. An important function of the kidney has been stopping most of the albumin entering the urine from getting through its filters. So, either no or very little amount of albumin can enter into the urine. But if kidneys are damaged albumin can leak through the filters and enter into urine. So, albuminuria starts when an excess amount of albumin is present in the urine of a human body.

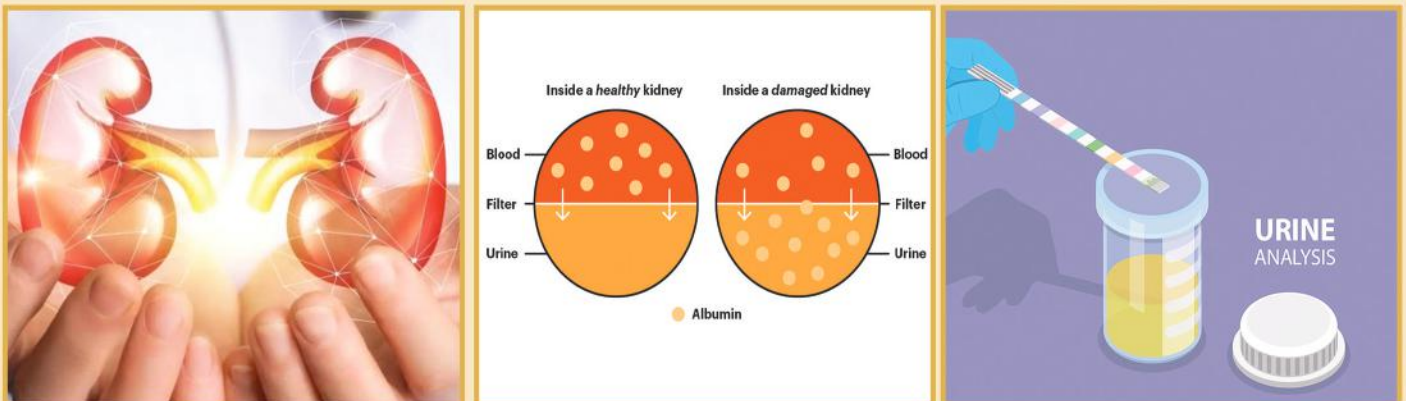
Doctors say it is not a separate disease and it is a symptom of different types of kidney diseases. If the problem starts it may easily turn to chronic kidney disease CKD like both type 1 and type 2 diabetes.

### Symptoms of albuminuria

It does not cause noticeable symptoms. So, people with kidney problems are advised to test regularly for protein in their urine. Some of the symptoms of CKD are intolerance to colds, fatigue, dizziness, the scent of ammonia on the breath, a metallic test in the mouth, and dyspnea (shortness of breath). Others are easy bruising, swelling of the face, troubling concentration, itching, loss of appetite, foamy urine, frequent urination even at night, and pain in kidneys, legs, or upper back.

### Causes of albuminuria

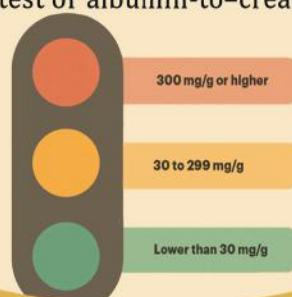
There are some short-term causes like dehydration, fever or infection, and intense exercise. At the same time,



there are some long-term causes. These are the presence of early-stage kidney disease. Long-term diabetes where higher than normal levels of glucose are present. This can damage kidneys by damaging their capillaries. So, the structure that filters waste from the blood into the urine does not work properly and elements such as albumin and blood cells may leak out to urine. High blood pressure is a cause of this. It is reported that about 40% of untreated high blood pressure persons and 25% of those who take medicines for this have albuminuria.

### Diagnosis

A simple urine test is to be done using a small plastic dipstick that would change the colours in response to the presence of protein. But for further analysis, if required, the urine sample to be tested for an ACR test or albumin-to-creatinine ratio test.



## Why should we eat more magnesium-based food? A recent study observed remarkable result

Story 2

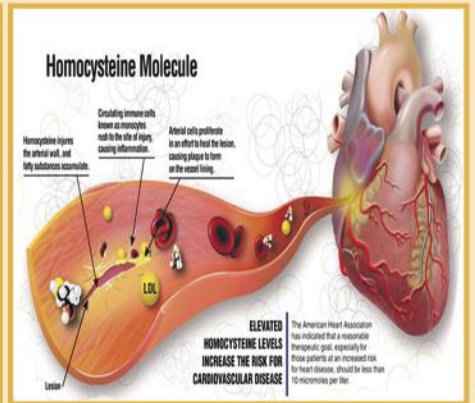
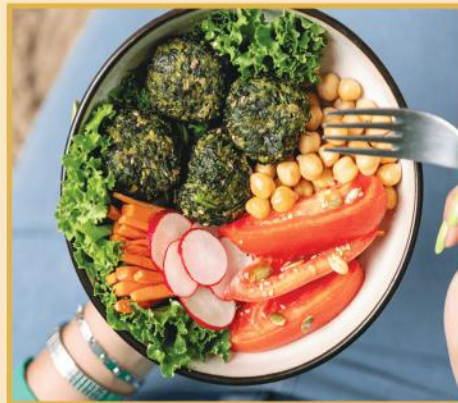
Magnesium is one of the four most abundant minerals in the human body. It is vital for our healthy muscles, nerves, bones, blood sugar levels, mood, exercise performance, etc. But in most cases, people do not get enough of it in their diet. Magnesium is required to activate about 200 enzymes and is involved in about 600 chemical reactions in our body. It converts food into energy, creates new proteins from amino acids, helps create and repair DNA and RNA, helps muscle movements, regulates the nervous system, and does many other jobs. However, studies observe that more than 50% of adults in developed countries only get less than the recommended daily amount of magnesium. The thing is worse for people in developing and poor countries.

### How to eat magnesium rich food?

Some food items rich in magnesium are pumpkin seeds, chia seeds, spinach boiled, almonds, cashews, cooked black beans, peanut butter, cooked brown rice, salmon, halibut, avocado, etc. One can also eat magnesium supplements in the case of a medical condition if the doctor recommends it. Magnesium-rich food can be taken every day but must be at par with the recommended limit.

### Recent study found special importance of magnesium for our body

A recent study done in Australia and published the observation of it in the European Journal of Nutrition has observed that people with low levels of magnesium, independently or in conjunction with an increase in homocysteine levels play a role in inducing DNA damage. What is homocysteine? It is an amino acid that the human body produces naturally and in small amounts in someone's blood. By using amino acids protein is produced in the body.



### The study methodology

Researchers recruited participants (healthy, non-smokers, without Alzheimer's, etc.) aged between 35 and 65. Their blood samples were also analyzed for micronutrients, like folate, vitamin B12, and homocysteine. Magnesium levels from the blood samples were also assessed. Several statistical analyses were made to understand the distribution of biomarkers and determine correlations between magnesium and homocysteine levels and the concentration of DNA damage biomarkers in blood.

### Result and conclusion

The study found that the levels of magnesium and homocysteine had significant inverse correlations with each other. Furthermore, magnesium levels showed inverse correlations with the DNA damage biomarker. The study result indicates that magnesium is essential for protecting nucleic acids from endogenous genotoxicity.

So, in conclusion the researchers observed that low magnesium levels independently and along with high homocysteine levels cause increased DNA damage.

## CSR Activities & Events of SERUM throughout August, 2024



Aug 4-9: Entire SERUM Group welcomed Our Brand Leader, Sri Sanjib Acharya after receiving the Bhartiya Mahantam Vikas Puraskar, 2024 & World Sustainability Commitment Award by Asia One Magazine at London



Aug 12: Press conference at Press Club, Kolkata before the Mega Car Rally on Independence Day

Aug 15: Mega Car Rally from Shyambazar to Barasat to eradicate Thalassemia from society on Independence Day



Aug 4: Sri Sanjib Acharya at the Thalassemia Awareness & Health Checkup Camp organized by Utterer East Bengal

Aug 10: Sri Sanjib Acharya at the Blood Donation, Health & Eye Checkup Camp and Sit & Draw Competition organized by Amherst Street Royal Club, at Anglo Arabic Secondary School

Aug 26: Life-saving medicines givent o Thalassemics in association with Scud Society For Social Communication



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