

# Gout: The Food Habits to Minimize the Effects

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## Abstract

Gout is a common and complicated type of arthritis that can affect any person. The common cause of the disease is uric acid in the blood. It causes sudden pain, redness, and swelling in joints, predominantly in the toe. The symptoms of the disease fluctuate but can be managed. In this paper, let us discuss in detail the condition and the food habits to be followed to prevent the consequences of this disease. Also, a section elaborates on managing the disease is presented. In this comprehensive study, our focus lies in delving deeper into the intricate factors contributing to gout, shedding light on the various stages of the disease progression. We meticulously examine the pivotal role of specific food habits in triggering gout, elucidating the connection between dietary choices and uric acid accumulation. Furthermore, our research is dedicated to providing actionable insights into effectively managing gout attacks. By thoroughly investigating these aspects, we aim to enhance the understanding of gout's complexities, paving the way for informed strategies for its prevention and treatment.

**Keywords:** *gout, swelling, redness, purine, etc.*

## I. Introduction

The leading cause of Gout is increased uric acid in one's blood. Another reason is that gout occurs if the kidneys do not filter out the uric acid. These excess uric acids are converted to tiny crystals in regions of joints. This, in turn, causes the joints to swell and become painful [1].

Gout attack predominantly occurs at night with massive pain on the big toe. The affected joint swells and becomes so tender that even a tiny weight cannot be tolerated.

Some factors that can be the source of gout are the following.

- Obesity, increase in blood pressure and blood glucose levels
- If there is a problem in the kidney
- Overeating seafood
- Alcohol consumption.

Gout can sometimes lead to other issues if not treated properly. Some of them include the following.

- Occurrence of stones in kidneys
- Small lumps of uric acid crystals in the skin and this is named tophi
- Permanent damage of joints.

There is another form of gout called pseudogout. It is similar to gout, but here, the knee joint is the one that is affected first. Also, sometimes, the wrist is affected by pseudogout.

## **II. Literature survey**

In this section, some of the earlier works by different authors on gout are presented.

The authors in [2] say that the best method of diagnosis is to identify MSU crystals in the synovial fluid. This identification can be done using polarized light microscopy. Imaging can be done via radiography, CT scan, and other techniques. The authors claim that combining ultrasonography and dual Energy CT enables correct diagnosis. The authors also state that diet and lifestyle modifications are essential to manage gout.

The authors in [3] describe in detail the evaluation and management of gout, a type of arthritis. A description of the pathophysiology of the disease is presented. The authors conclude that the occurrence of the disease is mainly due to activities like eating foods rich in protein and more sedentary life habits. The authors also say that the increase in gout patients is due to other diseases like diabetes, increased blood pressure, etc.

The authors in [4] say that gout has been prevalent in more people in recent years. The authors study the plethora of risk factors that contribute to the disease. The authors declare that gout attacks can even lead to cardiovascular mortality. They have presented a survey of the prevalence of the disease in New Zealand, the USA, China, and the UK.

### III. Symptoms of Gout

It is found that gout symptoms occur almost at night and suddenly. The following are some of the symptoms.

➤ **Heavy pain in the joints**

Usually, the big toe is affected. Not just the big toe, but any joint can be affected. Ankles, knees, elbows, wrists, and fingers are some of the other joints most affected. There will be severe pain in the first four to twelve hours of its beginning.

➤ **Persistent discomfort**

Even after the intense pain subsides, a sort of uneasiness will exist. This uneasiness will exist for a small number of days to some weeks.

➤ **Swelling and redness.**

The joint that is affected is inflamed, tender, and red.

➤ **Partial motion**

With the onset of gout, one may be unable to move the joints as usual.



**Fig.1: Gout [5]**

### IV. Different stages of Gout [6]

Gout is a disorder in which monosodium urate crystals, the crystalline form of uric acid, get deposited in the joints and tender tissues. There are four phases of Gout, which are given below.

**1. Asymptomatic hyperuricemia**

2. Acute gouty arthritis
3. Intercritical gout
4. chronic tophaceous gout

Gout is more common in males than females

Those who suffer from asymptomatic hyperuricemia need not take any treatment, but they must make vigorous efforts to reduce their uric acid level by adopting lifestyle changes. This is a stage in which there are no symptoms.

Acute gout predominantly affects the metatarsal joint of the foot. Diagnosis includes joint aspiration. Treatment includes non-steroidal anti-inflammatory drugs. Intercritical gout is the interval between attacks of gout. There is no pain, but the gout is present. Swelling is low, and this damages the joints. This is when one has to manage gout through medications or lifestyle changes. By doing in this manner, chronic gout attacks can be prevented [7]. Chronic gout is developed when the uric acid level of a person is high for many years. One gets to this stage if not treated for many years. Very few people who take proper medication develop chronic gout [7].

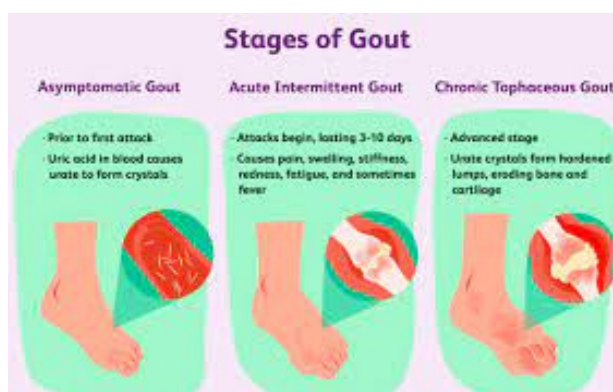


Fig.2: Different stages of Gout [7]

## V. Foods that cause gout

The following foods are said to cause gout.[8]

- Drinks with high sugar content and sweets
- Corn syrup with high fructose
- Consumption of alcohol
- Consumption of organ meats
- Including game meats in the diet
- Some seafood, namely herring, scallops, etc.

- Including red meat, beef, and lamb pork in the diet.



**Fig.3: Best foods and worst foods for Gout [8]**

A low purine diet helps maintain the uric acid levels in the blood, reducing the risk of gout occurrence. Purines are nothing but a sort of chemical substances that are inherent in certain food products. When these food items are broken down, uric acid is released. A low purine diet helps reduce uric acid release in the blood.

## VI. Managing gout attacks

The other names of gout attacks are flares or flare-ups. Gout attacks can happen suddenly and can be very painful. Gout attacks can be there for a few days to several weeks. In the case of acute gout, attacks occur rarely. But in the case of chronic gout, regular attacks take place.

The chief goal of treatment is to reduce the pain at the joints. If one is already taking medicine to lower uric acid, then they can continue with the treatment. If one is not under treatment during a gout attack, one must consult a doctor and take medicine accordingly.

The following are some of the actions to manage gout [9]

- Taking medicines, including NSAIDS, cocaine, and steroids
- Keeping the body hydrated. This can be done by drinking more water.

- Avoiding Alcohol and high purine foods.
- Keeping pressure away from the affected joint.
- Elevating the affected joint.
- Keep the joint cool by using an icepack.
- Breathe deeply and do meditation to manage stress that is due to the pain
- Create a support network

In the following section let us look in detail about the ways to manage gout [10]

❖ **Reducing the intake of meat:** This is a tough task for meat eaters but anyone who has gout attack should first stop eating red meat. Red meat is likely to increase the uric acid in blood as it is rich in purines. Purines are a natural element present in certain food items and in the body of humans. If purines are taken in excess in the human body, it leads to higher levels of uric acid secretion that can lead to gout.

❖ **Reducing the consumption of alcohol**

Alcohol is another substance that limits the ability of the body to reduce uric acid, which is the primary source of gout.

❖ **Avoiding foods that are rich in fructose corn syrup**

Fructose is found to increase the levels of uric acid in the blood. Corn syrup, rich in fructose, is located in many food types and is predominantly present in beverages we drink. One should check the labels on the food items about what we consume and decide whether to purchase or not.

❖ **Application of ice to the gout-attacked joint**

Applying ice to the gout-affected joint will help relieve pain and inflammation. One is advised to keep the ice pack for twenty to thirty minutes at a time and do this several times per day.

❖ **Drinking plenty of fluids**

One who suffers from a gout attack should remain very well-hydrated. The presence of fluid helps in flushing the body away from uric acid. Drinking eight to sixteen cups of fluids per day with water as the primary fluid is advised.

❖ **Elevating the foot**

If one suffers from a gout attack, one must keep the foot elevated with pillows so the foot is higher than your chest. This is to be done to help reduce swelling and relieve pain.



**Fig.4: Ways to manage gout [10]**

❖ **Reducing Stress**

If one experiences stress because of gout attack it can worsen the pain. Any of the following ways can help eliminate stress [11]

- I. Doing exercise
- II. Staying away from work
- III. Reading any of the affected person's favourite book
- IV. Doing meditation
- V. Taking enough rest

❖ **Eating Balanced diet**

A balanced diet that is rich in different varieties of nutrients results in lowering the uric acid levels and hence reduces the occurrence of gout. A diet containing low fat, low carbohydrates and plant-based is good for people with gout flares. Some of the fruits and vegetables that are rich in antioxidants are also good for gout [8]

## **VII. Conclusion**

In this extensive study, we delved into the intricate nuances of gout, unraveling the relationship between uric acid, dietary choices, and joint health. By dissecting the symptoms and stages of gout, we provided a comprehensive understanding of its progression. Notably, our research emphasized the pivotal role of specific foods, such as purine-rich meats and alcohol, in triggering gout attacks. We underscored the importance of a low-purine diet, encouraging individuals to avoid these triggers and opt for a balanced, plant-based diet. Furthermore, our study highlighted the significance of lifestyle modifications, including

regular exercise, stress management, and adequate rest, in preventing gout flares and enhancing overall well-being. Through these insights, our findings advocate for proactive measures. Early diagnosis, informed dietary choices, and adopting a healthy lifestyle are crucial components of effective gout management. By adhering to these recommendations, individuals can mitigate the severity of gout attacks, reduce joint damage, and improve their quality of life. This study serves as a valuable resource for both individuals and healthcare professionals, providing actionable strategies to minimize the impact of gout and empower those affected to lead healthier, pain-free lives.

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