

# Profile of Uric Acid Levels Among Elderly Men In RT 02 RW 16 Cihideung Village, West Jawa

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**Abstract** – Uric acid is a metabolic end product often linked to health issues in older men. It is the ultimate result of purine metabolism, and its levels can be influenced by dietary intake of purine- and fructose-rich foods. An excessive buildup of uric acid may lead to conditions such as hyperuricemia and gout. Compared to women, men face a higher likelihood of experiencing disturbances in uric acid metabolism, as they typically have elevated serum uric acid levels. This study aimed to outline the uric acid profile in elderly male individuals. A descriptive method with a cross-sectional design was employed, involving a total of 46 respondents. All respondents were elderly male residents of RT 02 RW 16, Cihideung Village, West Jawa. Of these, 14 individuals presented with elevated uric acid levels, averaging 8.57 mg/dL, with the highest measurement reaching 10.9 mg/dL. The remaining 32 participants exhibited normal uric acid levels, averaging 5.23 mg/dL. Elevated levels were observed predominantly in participants aged 45–59 years, a stage classified as pre-elderly yet still considered within the productive age group. Further investigations are recommended to explore the underlying factors affecting uric acid levels in elderly men.

**Keywords:** uric acid, gout, hyperuricemia, elderly men.

## I. INTRODUCTION

The rising standard of living, particularly in developed countries and large urban areas, has brought significant changes to individuals' lifestyles. Fitriani (2021) explain that these changes not only include greater access to convenience and comfort but also cause a substantial shift in the pattern of diseases affecting the population. Alongside the development of modern lifestyles, lifestyle-related diseases—such as obesity, diabetes, hypertension, and hypercholesterolemia—are becoming increasingly prevalent. This condition has shifted the pattern of disease occurrence from previously being dominated by infectious diseases to degenerative and metabolic diseases. Degenerative diseases, such as heart disease, stroke, and osteoporosis, generally affect the nervous system, blood vessels, muscles, and bones, and can significantly reduce the quality of life of those affected. These changes reflect a new challenge for health systems in addressing diseases associated with lifestyle and population aging.

Uric acid, or gout, is one of the diseases commonly suffered by the population, particularly among adults and the elderly. Today, gout is among the most well-known

diseases, alongside diabetes and hypertension. This condition is caused by elevated uric acid levels in the blood, which subsequently form crystals in the joints and cause pain. Due to the widespread use of the term "uric acid" and the abundance of information available, misconceptions in the community regarding its causes, symptoms, and treatment are common. Consequently, joint or muscle pain is often mistaken for symptoms of gout, even though it may be caused by other factors

Gout is more common in men than in women because men do not have high levels of estrogen in their blood. This makes uric acid more difficult to excrete through urination, increasing the risk of elevated blood uric acid levels. In addition to lower estrogen levels, men are more susceptible to gout due to having higher androgen levels compared to women (Suriya, M., & Zuriati, S., 2019).

Based on the study by Firdayanti (2019), conducted on 100 respondents, the examination of uric acid levels by sex showed that 52% of men experienced gout arthritis compared to 48% of women. This occurs because men generally have higher serum uric acid levels than women. In general, gout arthritis is more frequently found in men than in women, and its incidence increases with advancing age.

Based on the 2018 Basic Health Research (Riskesdas) report, the prevalence of gout in Indonesia has shown a continuing upward trend. In 2018, gout cases accounted for 7.30% within the category of joint diseases, as identified through signs and symptoms. In West Java Province, the prevalence was recorded at approximately 8.86%, ranking sixth nationally.

## II. LITERATURE REVIEW

Uric acid serves as the final product of purine metabolism, a process facilitated by the enzyme xanthine oxidoreductase. Its concentration in plasma may rise due to external factors, including high consumption of foods containing purines and fructose. In addition, uric acid levels are largely affected by endogenous metabolic processes, especially catabolism occurring in the liver and small intestine (Hu, 2021).

Hyperuricemia and gout are common diseases that have become significant global health concerns (Engel, 2021). These conditions are characterized by excessive production and reduced excretion of uric acid. They are closely associated with unhealthy lifestyles, hypertension, diabetes mellitus, metabolic syndrome, cardiovascular disease, and chronic kidney disease. Therefore, monitoring and controlling uric acid levels is essential (Yadav et al., 2022).

Gout is a chronic, painful, and disabling form of arthritis. It is caused by an increase in serum uric acid concentration that leads to hyperuricemia, defined as serum uric acid levels exceeding 6.8 mg/dL. Persistent elevation of serum uric acid results in the deposition of monosodium urate crystals in joints and soft tissues, triggering both acute and chronic inflammation. Hyperuricemia is a condition in which an individual's serum uric acid concentration is equal to or greater than 6.8 mg/dL at a temperature of 37°C and a neutral

pH. This condition is widespread and is often the result of an unhealthy lifestyle, including poor dietary patterns with excessive intake of purines, protein, alcohol, and carbohydrates. Hyperuricemia is a biochemical state that serves as the primary cause of gout development (Engel et al., 2021; Yadav et al., 2022).

Gout is a disease with a hereditary tendency, where genetic factors play a role in increasing an individual's risk of developing the condition. It occurs more frequently in adult men than in women, particularly in post-pubertal men and postmenopausal women. The incidence of gout is estimated to be approximately 3–4 per 1,000 individuals and is more prevalent among those with high socioeconomic status, as well as individuals who consume alcohol regularly. These groups are considered more susceptible due to lifestyle patterns or dietary habits that may elevate blood uric acid levels, leading to the formation of uric acid crystals in the joints. This makes gout one of the joint inflammatory diseases that warrants serious attention, particularly among high-risk groups (Pasaribu, 2022).

### III. MATERIALS AND METHODS

This study is a descriptive research employing a cross-sectional method, aimed at determining the uric acid level profile in elderly men residing in RT 02 RW 16, Cihideung Village, West Java. The cross-sectional approach allows researchers to collect data from a number of respondents or samples within a relatively short period of time and provides a direct snapshot of the relationship between dependent and independent variables at the same point in time. Data were collected in April 2025 through blood sampling to directly measure the respondents' uric acid levels.

The population in this study consisted of all elderly men living in RT 02 RW 16, Cihideung Village. The sampling technique used was total sampling, in which the entire population of elderly men in RT 02 RW 16, Cihideung Village, was included. The sample comprised 46 elderly men aged between 45 and 79 years, registered as residents of RT 02 RW 16, and willing to participate in the uric acid health examination.

### IV. RESULTS AND DISCUSSION

A total of 46 respondents participated in this study. The participants were asked to provide personal data and underwent blood sampling to measure their blood uric acid levels.

Table 1. Frequency Distribution of Uric Acid Profile

Uric Acid Level	N	%	Mean
Normal	32	69.6	5,23

Abnormal	14	30.4	8,57
Total	46	100	

Based on Table 1, it can be observed that among 46 elderly male respondents in RT 02/RW 16, Cihideung Village, the majority had normal uric acid levels, totaling 32 individuals (69.6%), while 14 respondents (30.4%) had abnormal uric acid levels. The average uric acid level among those with normal levels was 5.23 mg/dL, whereas those with abnormal levels had an average of 8.57 mg/dL.

Table 2. Distribution by Age Group

Respondent Characteristics	N	Percentage (%)	Highest Uric Acid Level	Mean Uric Acid Level
Age Groups:				
Pre-Elderly (45–59 years)	12	26.1	10.9	5.79
Young Elderly (60–69 years)	28	60.8	9.3	6.29
Middle Elderly (70-79 years)	6	13.1	9.5	6.09
Total	46	100		

As shown in Table 2, the largest proportion of respondents in this study were in the young elderly group (60–69 years), totaling 28 individuals (60.8%), followed by the pre-elderly group (45–59 years) with 12 individuals (26.1%), and the middle elderly group (70–79 years) with 6 individuals (13.1%).

The highest uric acid level, 10.9 mg/dL, was found in the 45–59 years age group. This group is categorized as pre-elderly and still within the productive age range, an age at which individuals are considered mature both physically and biologically, and often at the peak of their activity. At this stage, physical activities tend to be more strenuous than in other age ranges, potentially leading to stress. Stress can affect normal body functions and trigger disease symptoms. Men in this age group often experience joint pain in areas such as the feet,

heels, wrists, elbows, and fingers, which can be associated with high uric acid levels (Astari, 2018).

These findings indicate that although the respondents were in the elderly age group, the majority still had uric acid levels within the normal range. This result is consistent with a study by Fitria et al. (2022) conducted in the working area of Pringapus Public Health Center, which found that most elderly respondents had normal uric acid levels. That study suggested that an active lifestyle, adequate water consumption, and a diet low in purines may contribute to maintaining stable uric acid levels among the elderly (Fitria, E., Andriani, S., & Widyasih, R., 2022).

Furthermore, these results align with research by Rizky & Suryani (2023) in Padang City, which reported that among 50 elderly respondents, 64% had uric acid levels within the normal range. They concluded that although age is a risk factor, factors such as physical activity level, consumption of fibrous vegetables, and adherence to a low-purine diet play important roles in maintaining stable uric acid levels (Rizky, 2023).

Nevertheless, it is important to note that 30.4% of respondents in this study had abnormal uric acid levels. This condition may be influenced by several contributing factors, such as a dietary history rich in purine-containing foods (including red meat, organ meats, and seafood), inadequate hydration, and the presence of coexisting health issues like hypertension or mild renal impairment, which can hinder the elimination of uric acid.

Therefore, although most elderly participants in this study had normal uric acid levels, continuous education on healthy lifestyles and low-purine diets remains essential to prevent future increases in uric acid levels.

Management of hyperuricemia and gout can be carried out through medical treatment and self-management. For individuals who frequently experience gout attacks, medications such as allopurinol, febuxostat, or pegloticase may be prescribed. In addition to medical treatment, uric acid levels can also be managed through self-management strategies, which involve daily activities aimed at maintaining overall health (Madyaningrum, 2020).

Preventive measures for individuals with a history of high uric acid levels include adopting a healthy lifestyle by monitoring daily food intake, engaging in physical activities such as exercise, and managing stress, as stress levels can influence a person's overall health status (Astari et al., 2018; Madyaningrum et al., 2020; Indonesian Rheumatology Association, 2018).

## V. CONCLUSION

The findings of this study revealed that 32 participants (69.6%) had normal uric acid levels (<7 mg/dL), while 14 participants (30.4%) exhibited abnormal uric acid levels, with the highest recorded value being 10.9 mg/dL. Elevated uric acid levels were observed across

all age ranges. In addition to age, several other factors may influence uric acid levels, including stress, obesity, dietary intake, and physical activity. Further research is warranted to investigate the factors affecting uric acid levels among elderly men, so as to provide recommendations and insights to relevant institutions regarding this condition.

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