GOUT (PODAGRA): THE ROLE OF LIFESTYLE AND DIET IN DISEASE DEVELOPMENT

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Introduction

Gout, often referred to as podagra when it affects the big toe, is the most common form of inflammatory arthritis, characterized by sudden and excruciating joint pain, swelling, and erythema. Prevalence in developed countries ranges from 1–2% of adults, with incidence notably rising due to aging populations, dietary shifts, and increasing metabolic syndrome burdens. Globally, around 55.8 million people were estimated to have gout in 2020—an increase of 22.5% since 1990—with numbers projected to reach nearly 96 million by 2050.

Epidemiology and Risk Factors

• Males are more susceptible, and risk escalates with age.

• Elevated BMI contributed to 34.3% of disability (YLDs) associated with gout in 2020, underscoring the pivotal role of obesity.

• Gout often coexists with metabolic comorbidities—hypertension, chronic kidney disease, obesity, diabetes—prevalent among up to 74%, 71%, 53%, and 26% of patients, respectively.

Dietary Influences

1. Purine-Rich Foods. In a large cohort of 47,120 men over 12 years, high intake of meat and seafood was associated with a 1.41–1.51-fold increase in gout risk, while purine-rich vegetables did not raise the risk.

2. Dairy Products. Participants in the highest dairy intake quintile showed a ~50% lower risk of developing gout compared to those with lowest consumption, even after adjusting for BMI, age, hypertension, and other factors.

3. Alcohol and Fructose. Beer and liquor intake elevates serum uric acid levels dose-dependently; wine was less consistently associated. High consumption of sugar-sweetened beverages and fructose strongly correlates with increased gout risk.

4. Dietary Patterns. Diets rich in vitamins, fiber, unsaturated fats (e.g., Mediterranean or DASH) are linked to lower gout risk and improved cardiometabolic health.

5. Protective Elements. Increased intake of vegetables, fruits, fiber, folate, vitamin C, coffee, dairy, and nuts is inversely associated with gout risk according to meta-analyses (e.g., coffee OR 0.56; dairy OR 0.69). These findings align with systematic reviews emphasizing benefits of such foods.

Lifestyle Factors

• Obesity and Weight Control

•Obesity and central adiposity (e.g., waist-to-height ratio) significantly elevate gout risk; in Taiwan, individuals with higher ratios had OR 3.9–4.4 for developing gout.

• Weight loss—and associated reduction in insulin resistance—reduces serum uric acid and gout incidence.

• Physical Activity

• Regular exercise helps mitigate hyperuricemia, reduce gout flares, and addresses comorbid metabolic risks.

• Other Modifiable Factors

• Coffee consumption appears protective through mechanisms such as xanthine oxidase inhibition and improved insulin sensitivity.

• Low-fat dairy has uricosuric effects—promoting excretion of precursor substrates—further supporting its preventive role.

• Holistic Management

• Lifestyle interventions—diet modification, weight control, exercise—are cost-effective and synergize with pharmacotherapy to control serum urate and prevent gout progression.

Conclusion

The growing global burden of gout is intricately tied to lifestyle and dietary factors. Consumption of purine-rich meats, alcohol (especially beer), and fructose-rich drinks heightens gout risk, while dairy, coffee, plant-based foods, fiber, and healthy dietary patterns (like Mediterranean/DASH) offer protective effects. Obesity and insulin resistance significantly amplify risk, whereas weight loss and physical activity can counteract this. Effective gout prevention and management must extend beyond pharmacological interventions to embrace sustainable lifestyle and dietary modifications—thus improving not only gout outcomes but also broader cardiometabolic health.

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