

# **OSTEOARTHRITIS & GOUT**

**Presented by: Prof. Sultan  
Almogairen**

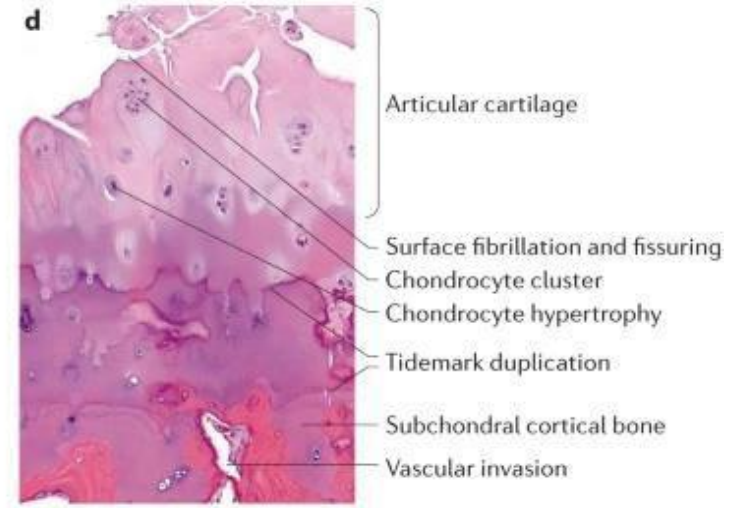
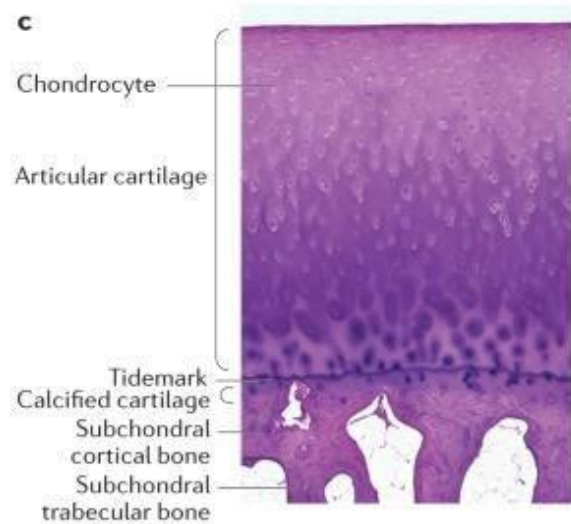
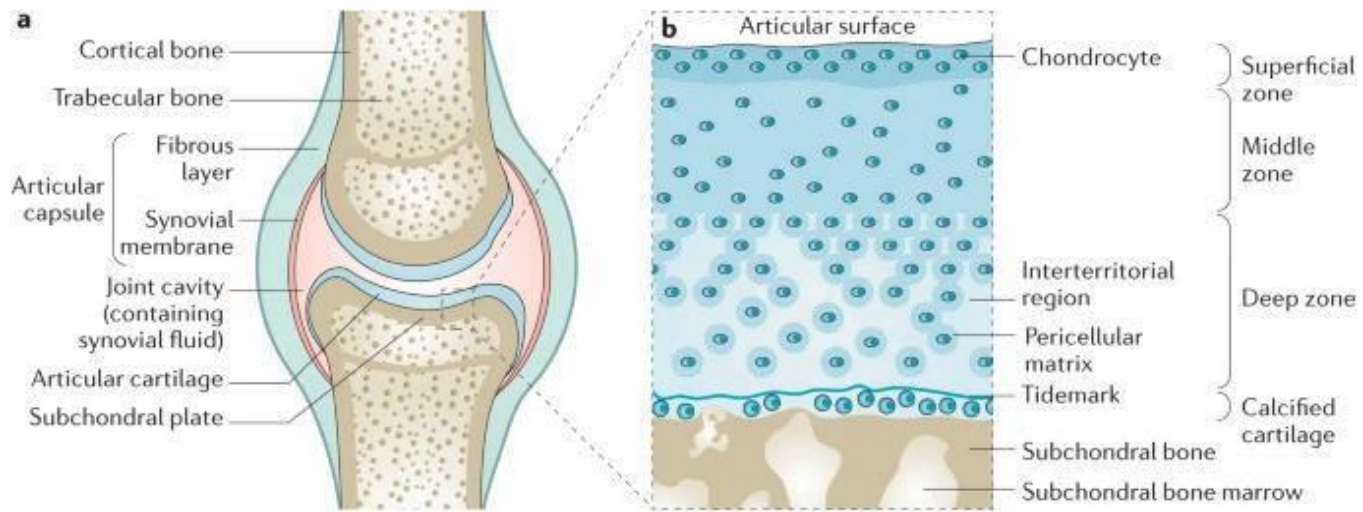
# **OSTEOARTHRITIS**

Content:

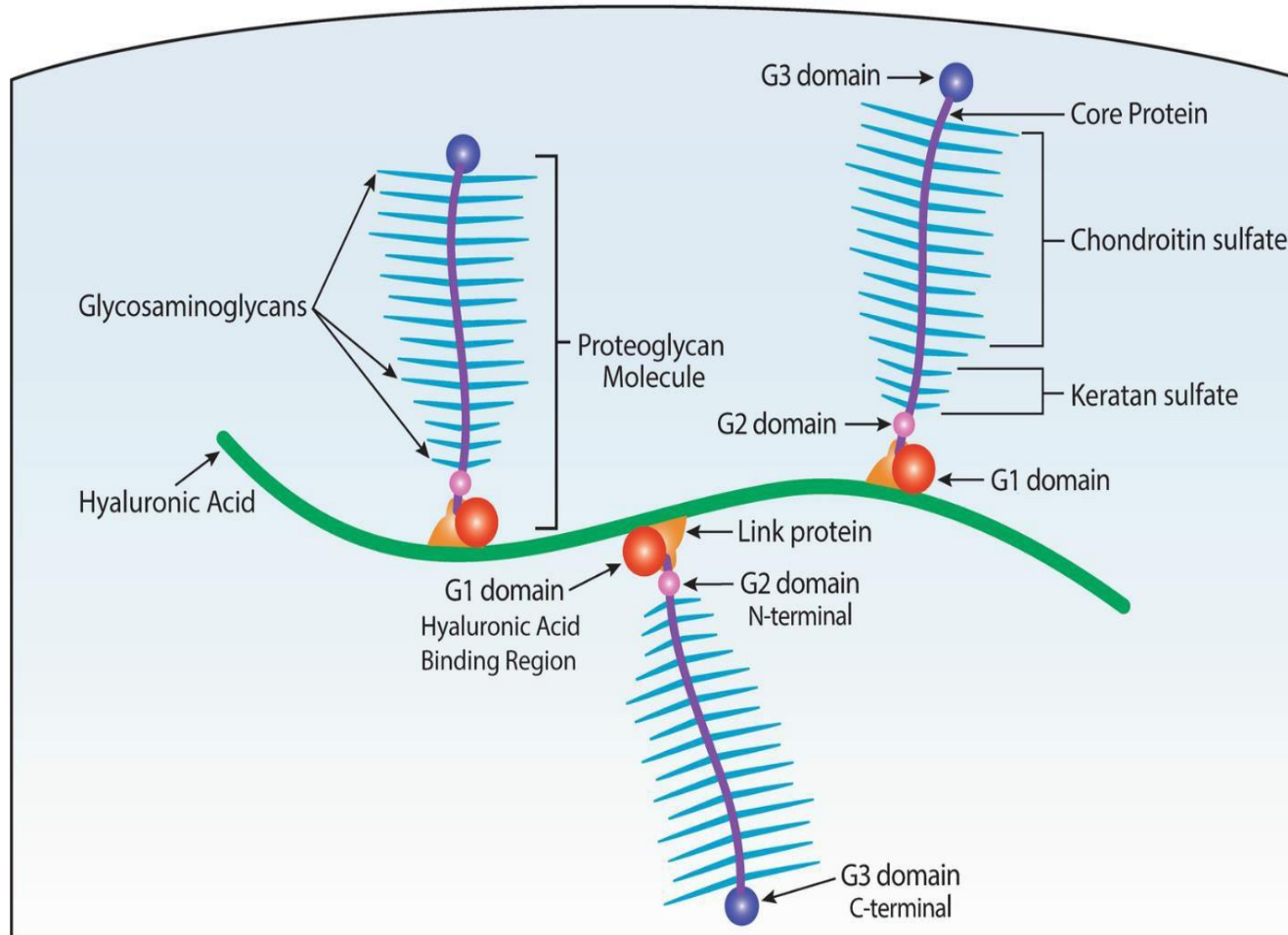
Pathophysiology

Clinical

Management



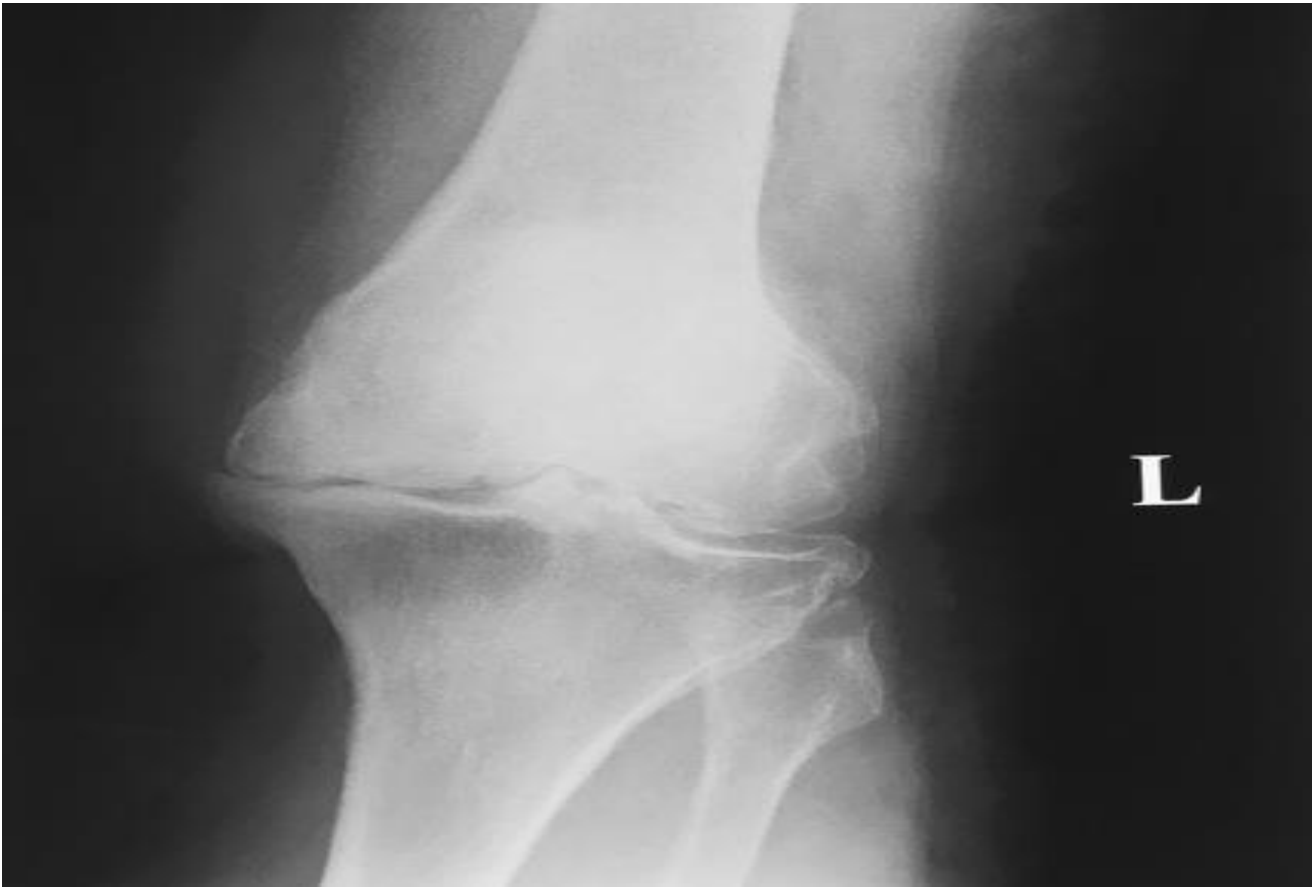
## Articular Cartilage Aggrecan Molecule













Intervention	Joint		
	Hand	Knee	Hip
Topical nonsteroidal antiinflammatory drugs			
Topical capsaicin			
Oral nonsteroidal antiinflammatory drugs			
Intraarticular glucocorticoid injection			
Ultrasound-guided intraarticular glucocorticoid injection			
Intraarticular glucocorticoid injection compared to other injections			
Acetaminophen			
Duloxetine			
Tramadol			
Non-tramadol opioids			
Colchicine			
Fish oil			
Vitamin D			
Bisphosphonates			
Glucosamine			
Chondroitin sulfate			
Hydroxychloroquine			
Methotrexate			
Intraarticular hyaluronic acid injection	(First carpometacarpal)		
Intraarticular botulinum toxin			
Prolotherapy			
Platelet-rich plasma			
Stem cell injection			
Biologics (tumor necrosis factor inhibitors, interleukin-1 receptor antagonists)			

Strongly recommended
Conditionally recommended
Strongly recommended against
Conditionally recommended against
No recommendation

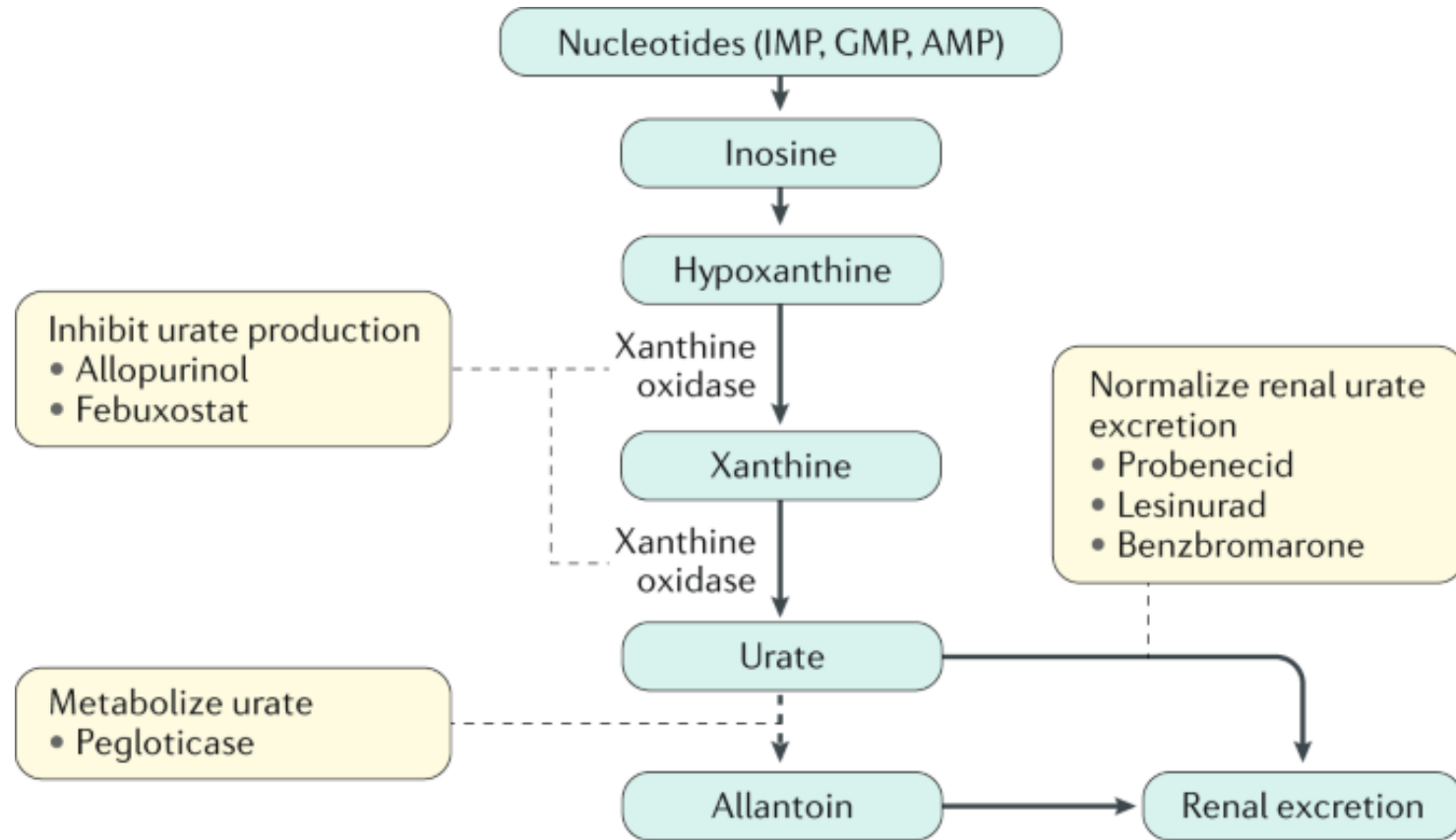
Intervention	Joint		
	Hand	Knee	Hip
Exercise			
Balance training			
Weight loss			
Self-efficacy and self-management programs			
Tai chi			
Yoga			
Cognitive behavioral therapy			
Cane			
Tibiofemoral knee braces		(Tibiofemoral)	
Patellofemoral braces		(Patellofemoral)	
Kinesiotaping	(First carpometacarpal)		
Hand orthosis	(First carpometacarpal)		
Hand orthosis	(Other joints)		
Modified shoes			
Lateral and medial wedged insoles			
Acupuncture			
Thermal interventions			
Paraffin			
Radiofrequency ablation			
Massage therapy			
Manual therapy with/without exercise			
Iontophoresis	(First carpometacarpal)		
Pulsed vibration therapy			
Transcutaneous electrical nerve stimulation			

Strongly recommended
Conditionally recommended
Strongly recommended against
Conditionally recommended against
No recommendation

# **GOUT**

## **Contents:**

- 1. Pathophysiology**
- 2. Clinical & Lab features**
- 3. Management**



## Overproduction (10%)

### Dietary purine

- Meat (beef, pork, lamb)
- Seafood (shrimps, tuna)
- Beer

### Endogenous purine synthesis

- Malignancy
- Tumor lysis syndrome

### Purine salvage

- HGPRT deficiency
- PRPS deficiency

### Purine breakdown

- Glycogen storage disease

## Risk factors

- Male
- Age
- Obesity



URIC ACID CRYSTALS

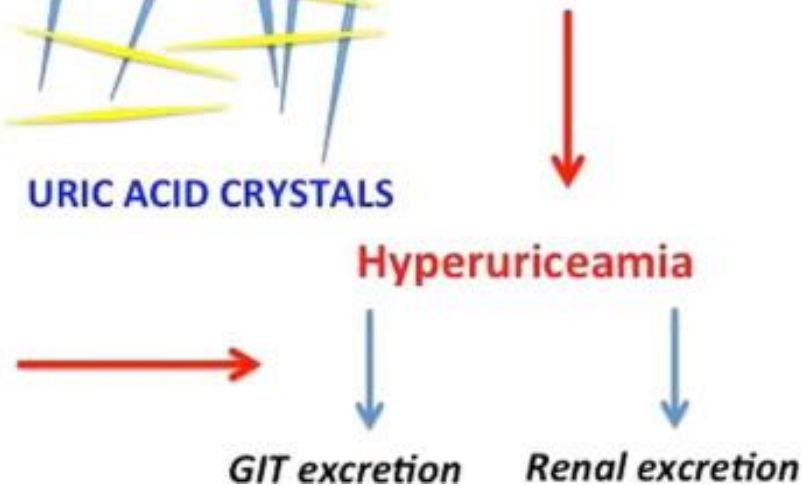
## Underexcretion (90%)

### Urinary excretion

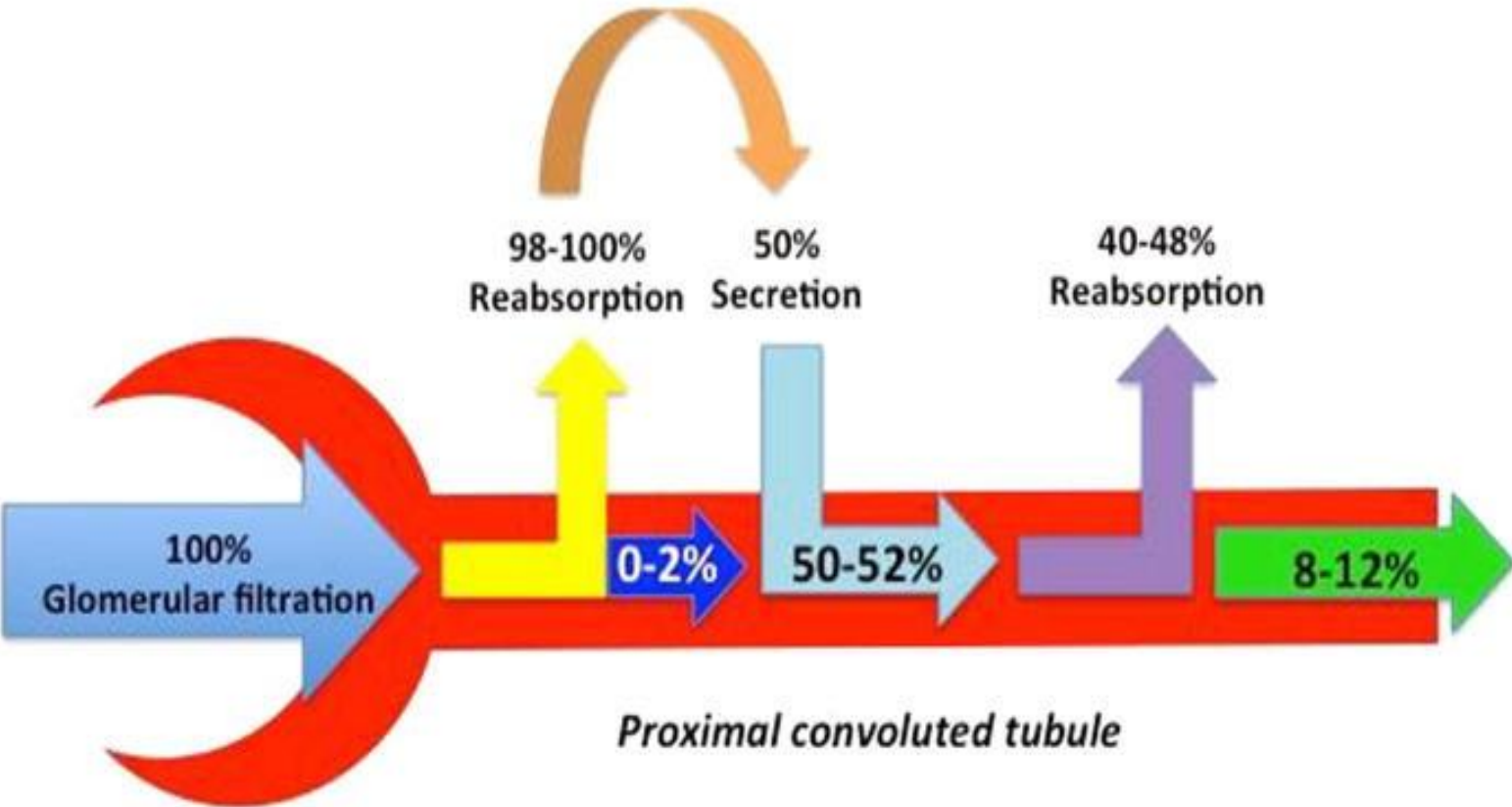
- Diuretics
- Renal failure

### Urinary reabsorption

- Alcohol
- Genetic defects



# Renal excretion of uric acid



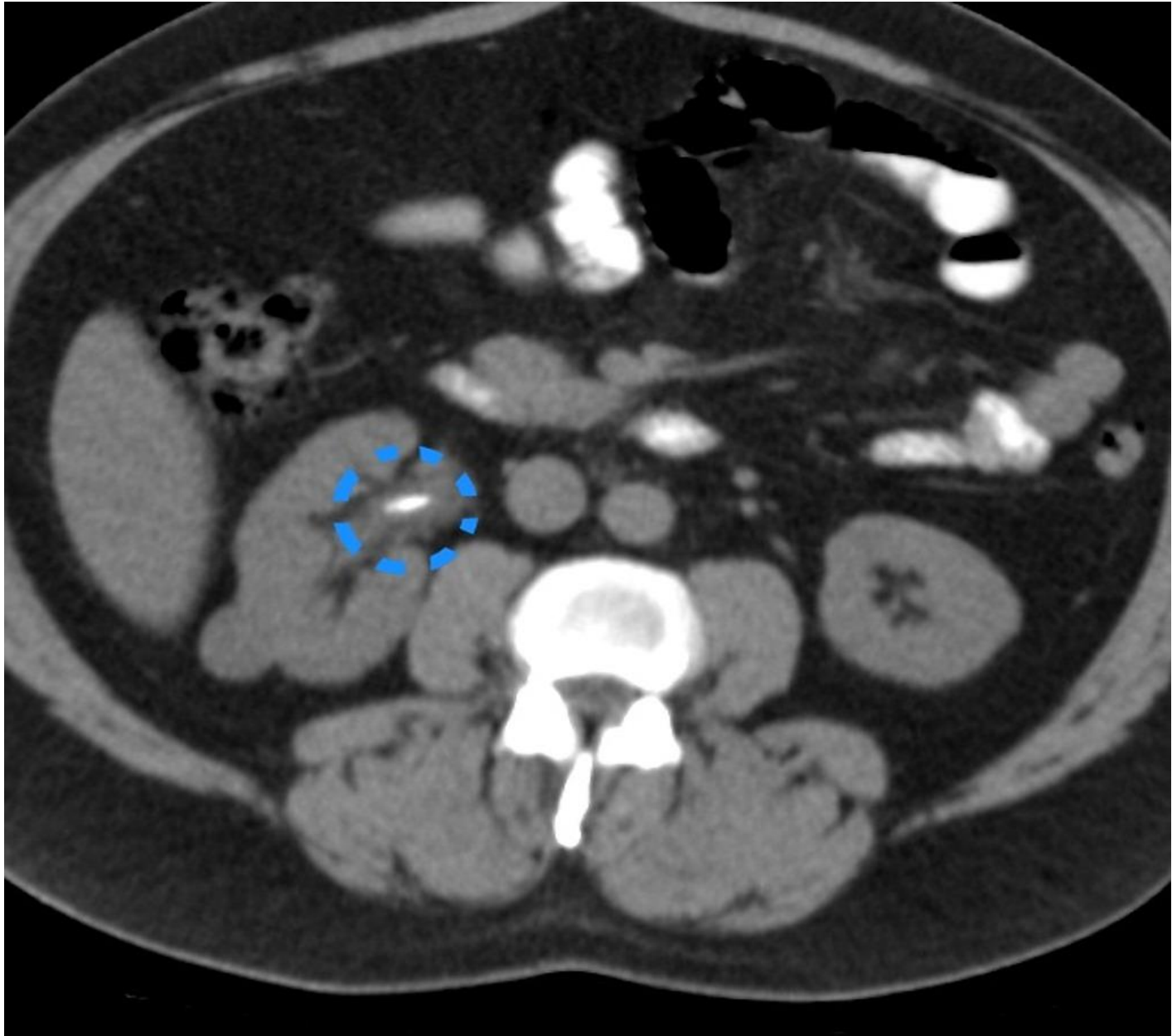


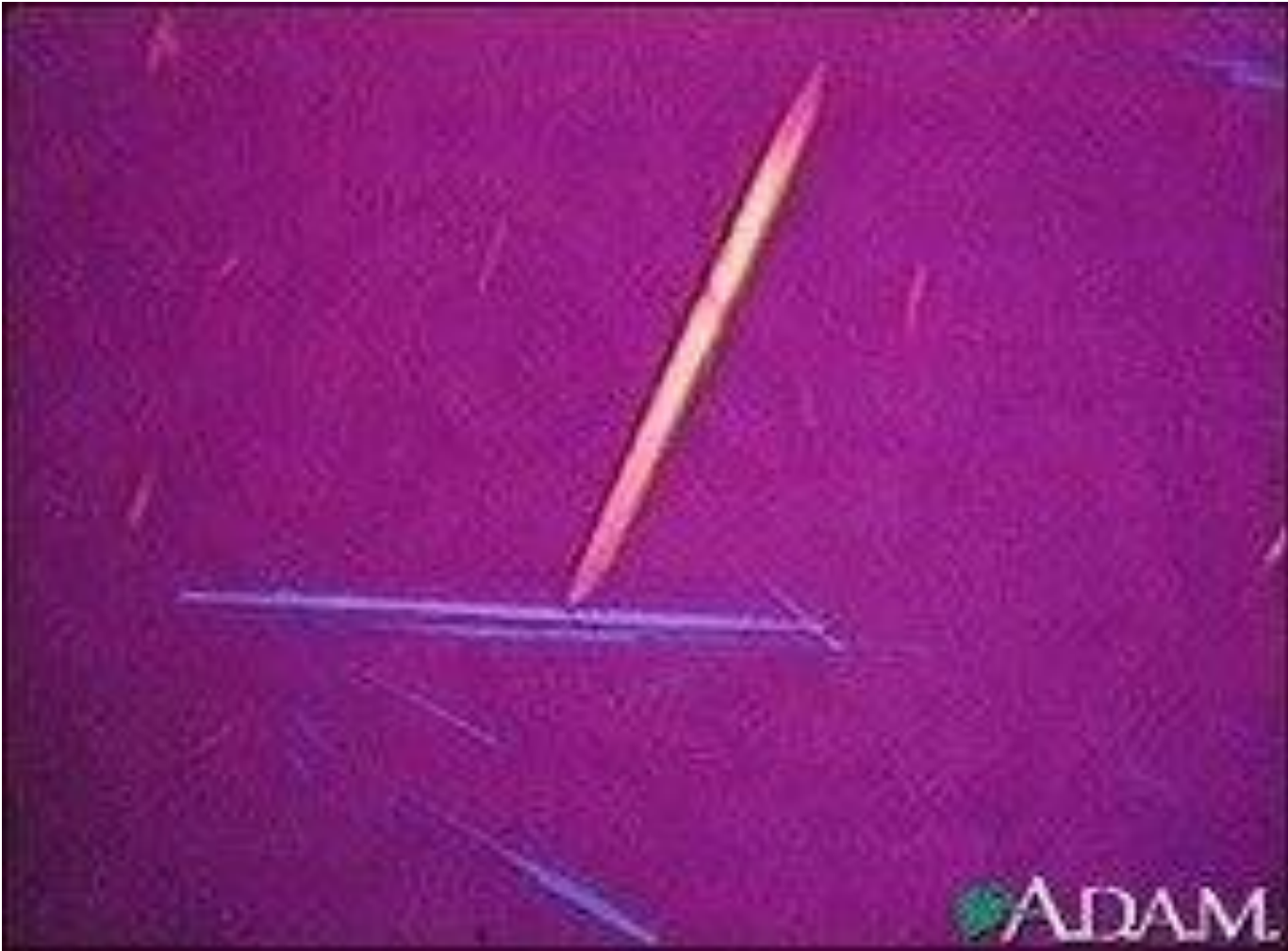














mg/dL	$\mu\text{mol/L}$	mmol/L	Diagnosis
5 or less	300 or less	.30 or less	Safe
5 – 6	300 – 350	.30 – .35	Good
6 – 7	350 – 400	.35 – .40	Warning
Over 7	Over 400	Over .40	Danger

## Vital Uric Acid Levels Conversion Chart

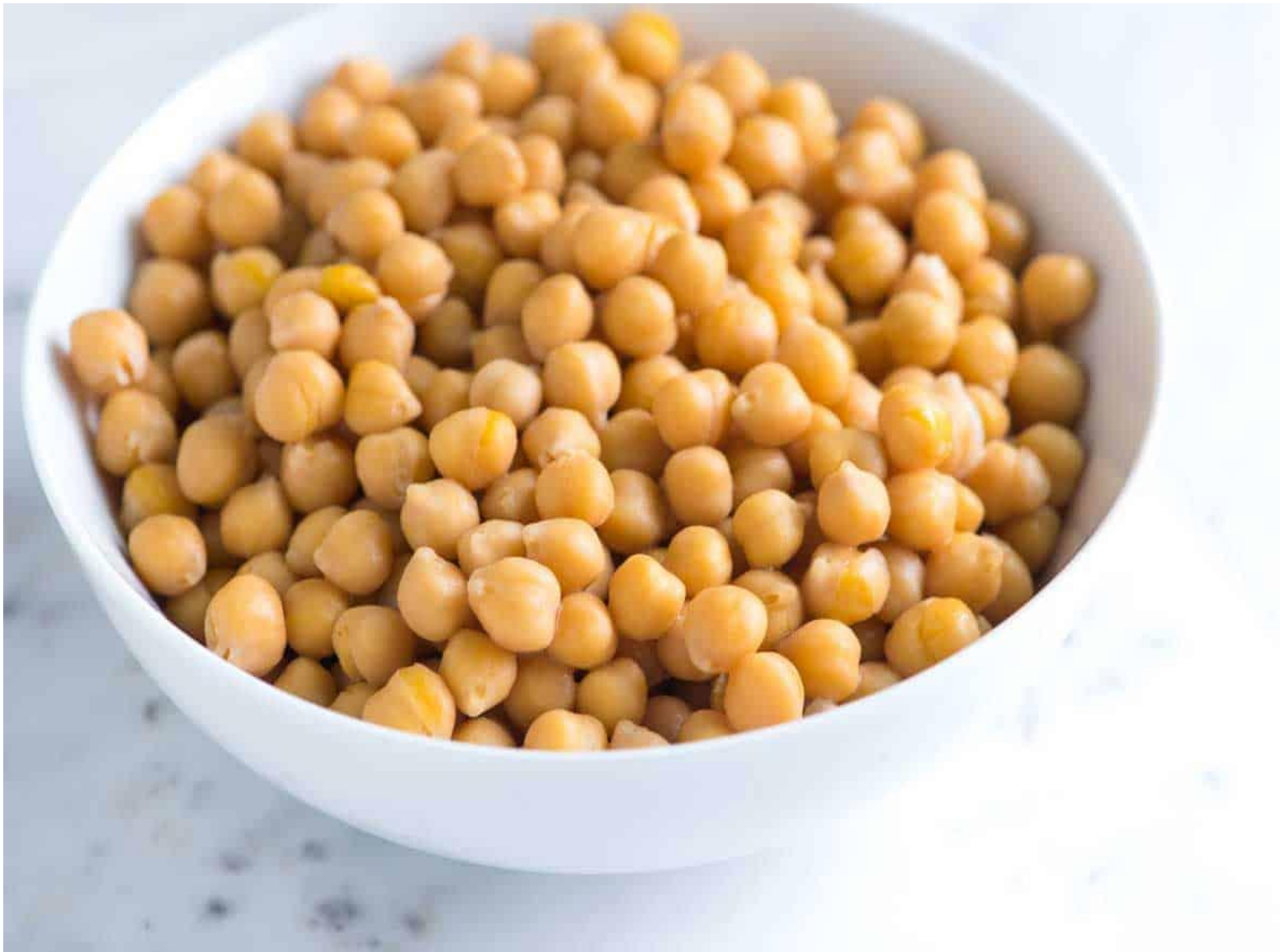
Source: [www.heart.org](http://www.heart.org)

**Avoid** if Possible:-Organ Meats – liver, kidney, heart, sweetbreads, tripe, brain and tongue

**Limit**:-Beef, Chicken, camel. Seafood sardines  
Tuna Lamb.. mushrooms

vegetable:- high purine content include cauliflower, spinach,..Chickpeas, Soybeans , Peanut, high fructose **corn** syrup, sweetened soda













palak soup



**.Evidence grades for recommendations: level**

**A** supported by multiple (i.e., 1) randomized clinical trials or meta-analyses; **level B** derived from a single randomized trial or nonrandomized studies; **level**

**C** consensus opinion of experts, case studies, or standard of care...the recommendations assumed a lack of contraindications, intolerance, serious adverse events, or drug–drug interactions for given agents.

### Causes of increased urate production

Dietary Purine-rich and fructose-rich **foods**, weight **loss** (fasting)

Myeloproliferative and lymphoproliferative diseases. Hemolytic disorders. **Tumor lysis syndrome**

Other **Psoriasis**

### Causes of reduced renal urate excretion

**Drugs** Cyclosporine, thiazides, loop diuretics, aspirin (500–1000 mg/d) Low-dose salicylates

Beta blockers. Ethambutol

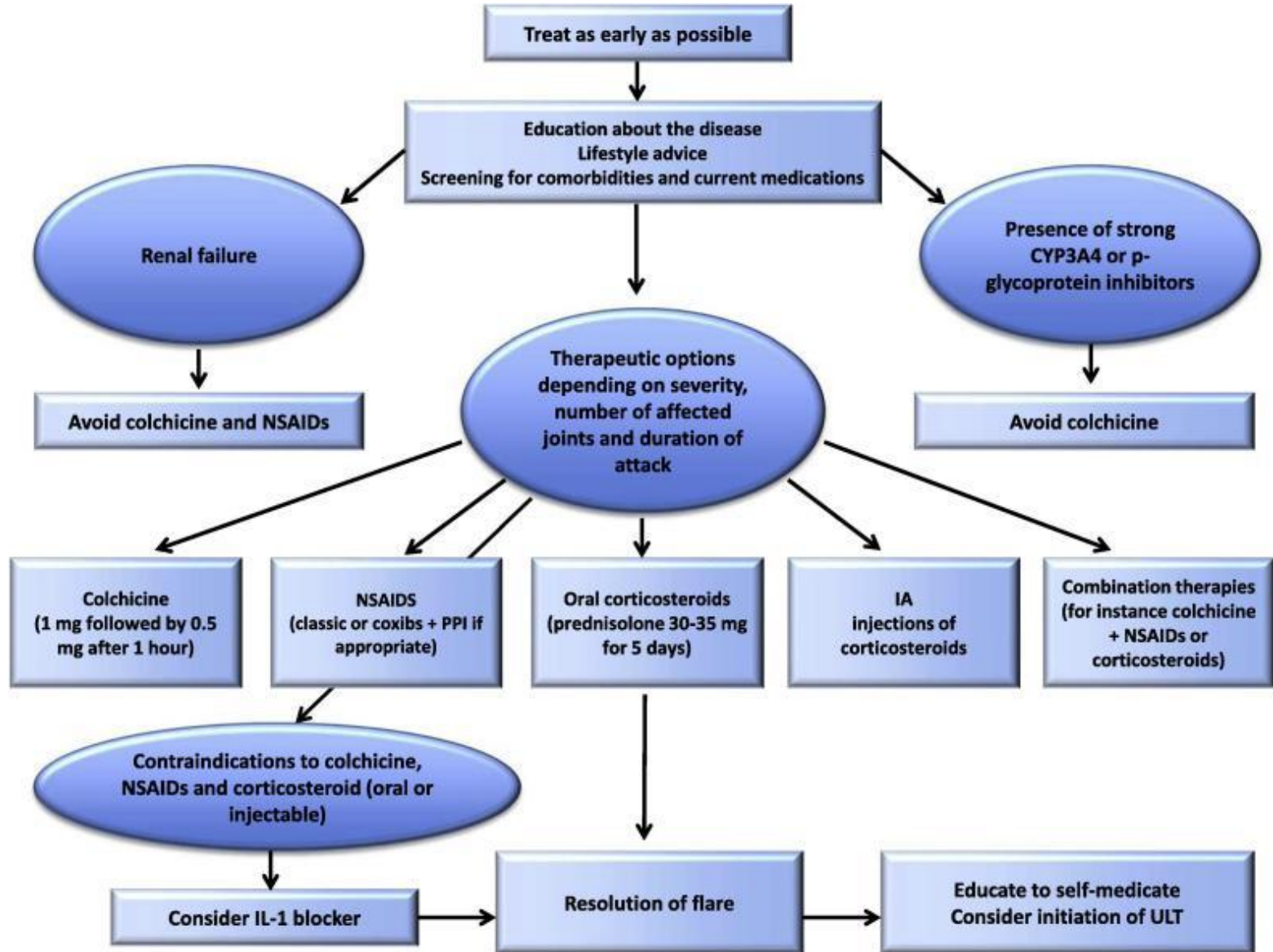
**Renal** Hypertension, polycystic kidney disease, chronic renal failure of various etiologies

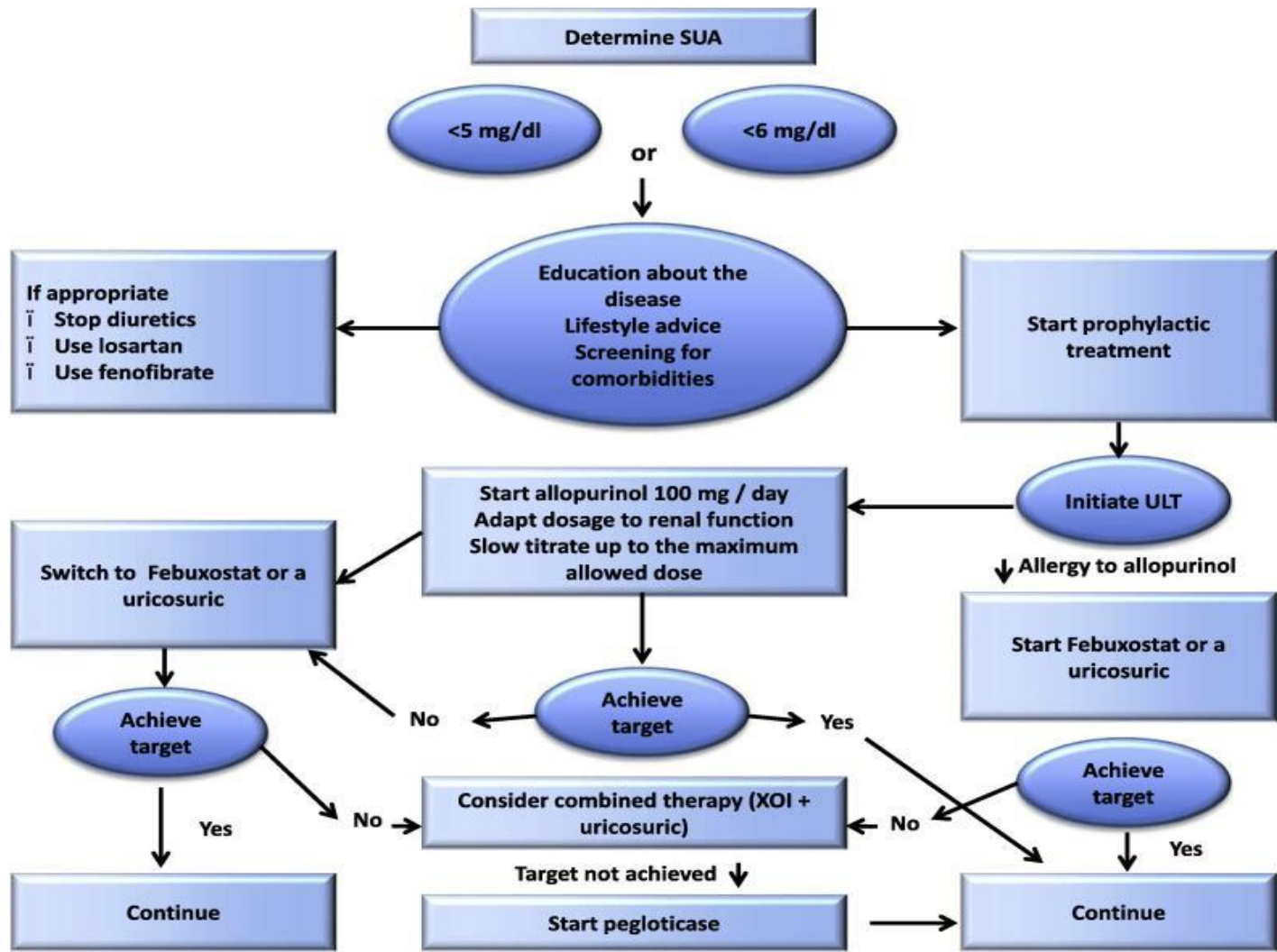
Metabolic/endocrinological Dehydration (often associated with surgery), lactic acidosis, ketosis, hypothyroidism.. Preeclampsia

### Combined mechanisms

Alcohol, metabolic syndrome (obesity, hypertriglyceridemia)

**inherited and genetic causes**







Take home messages: