GOUT [HYPERURICEMIA]

Inflammatory disease in which mono sodium urate crystal deposit into a joint making it red, hot, tender, swollen within hours called **GOUTY ATTACK**

[DEPTH OF BIOLOGY]

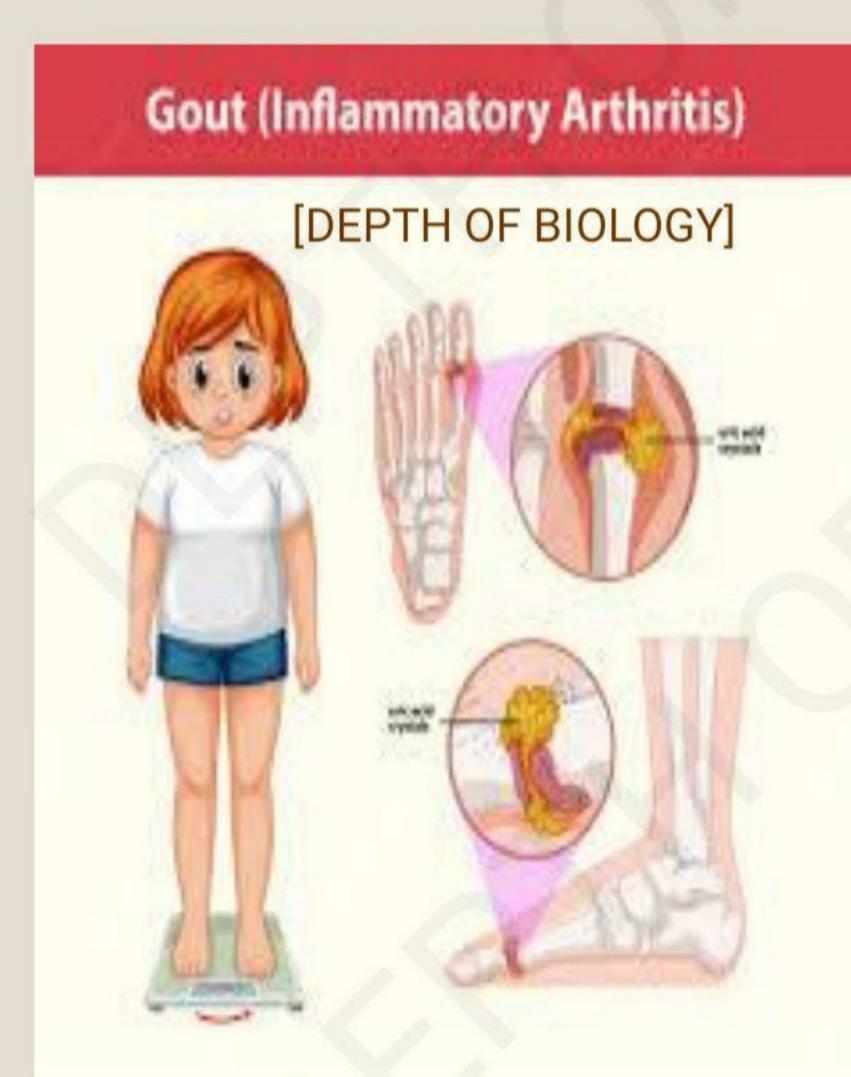


CAUSE- hyperuricemia {too much uric ACID in blood}

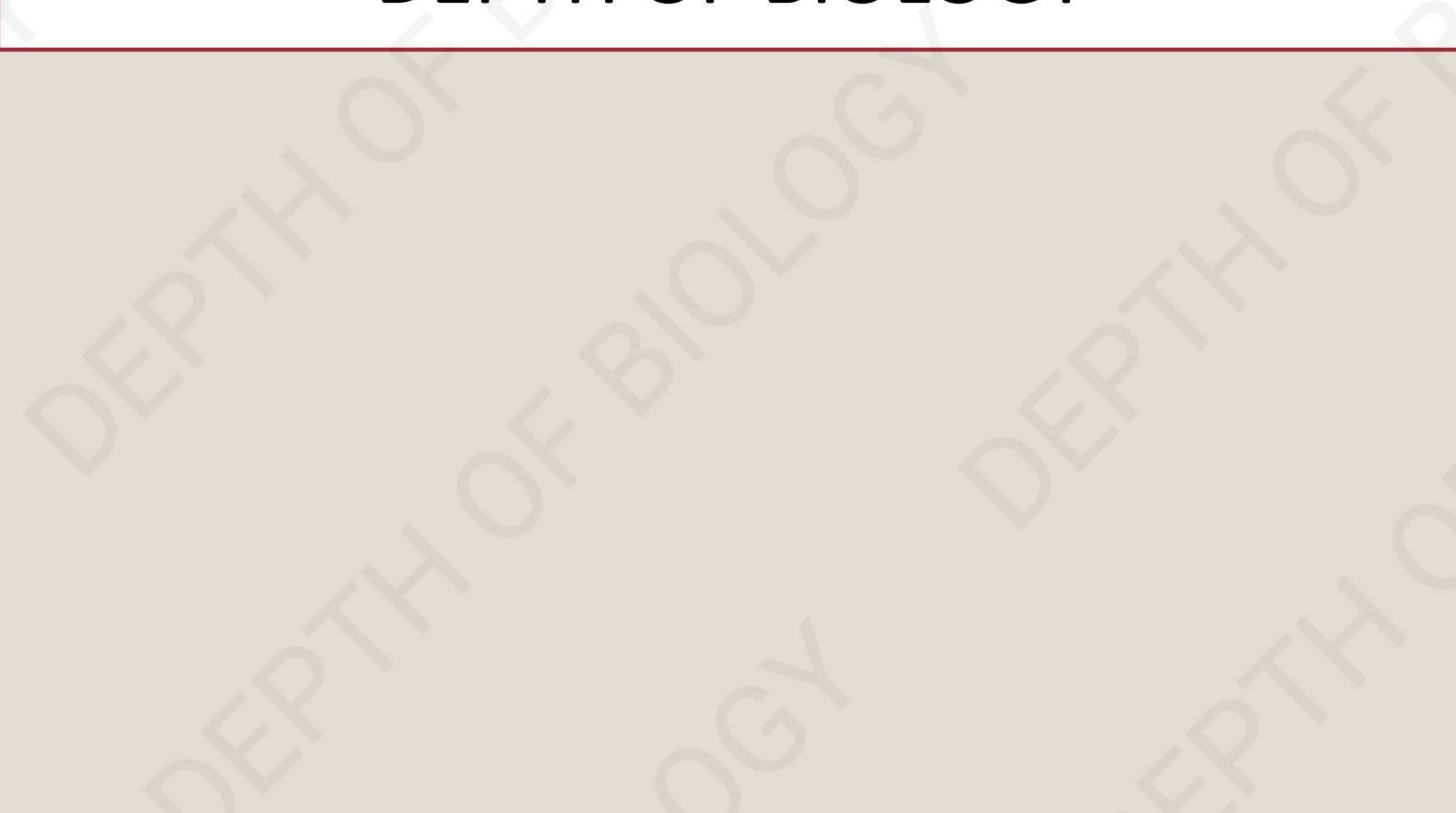
Results in the formation of sharp needle like crystal in areas with slow blood flow like the joints & kidney

tubules [DEPTH OF BIOLOGY]

Repeated gouty attack can cause destruction of the joint tissue Lead to ARTHRITIS [DEPTH OF BIOLOGY]



DEPTH OF BIOLOGY



 Purines + pyrimidines are the key component of nucleic acid like DNA, RNA

 Cell containing purine- when breakdown; purine is converted in uric acid that can be filtered out of blood & excreted in urine.

[DEPTH OF BIOLOGY]

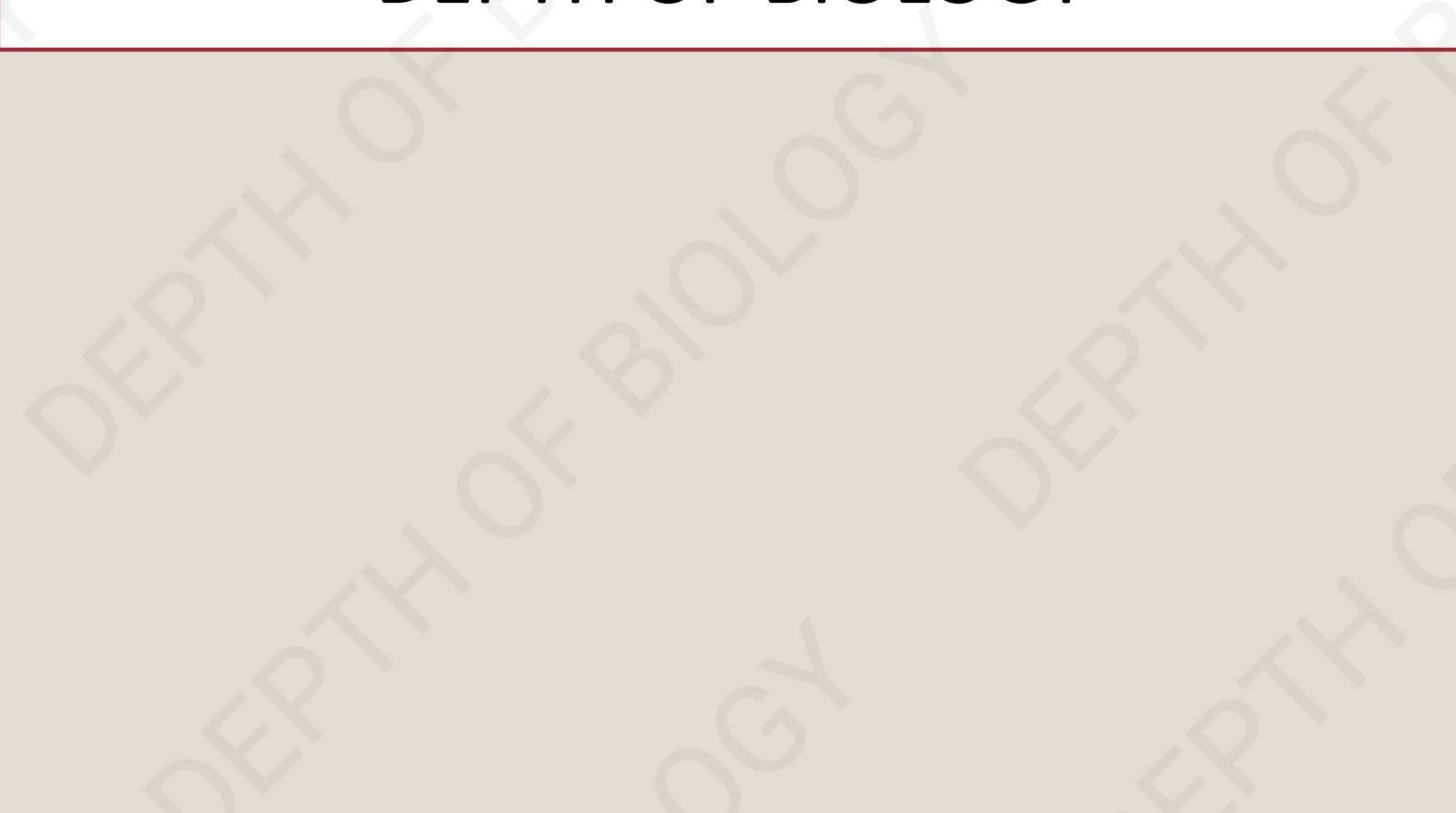
Uric acid has limited solubility in body fluids

[DEPTH OF BIOLOGY]

- At a pH of 7.4 uric acid loses a proton & becomes urate ion
- Then bind with Na & form mono sodium urate crystals

[DEPTH OF BIOLOGY]

DEPTH OF BIOLOGY



- i. This crystal can form as a result of increase in consumption of amines [DEPTH OF BIOLOGY]
- ii. Increase in production of purine
- iii. Decrease in clearance of uric acid

[DEPTH OF BIOLOGY]

Results from dehydration
[not drinking enough water]
or alcohol consumption

- iv. By chemotherapy or radiation treatment since cell dies faster than normal rate
- v. Genetic pre-deposition
- vi. Chronic kidney disease

[DEPTH OF BIOLOGY]

NOW,

- GOUT mostly affects the the 1st metatarsal joint of the foot of big toe

 Person will
- This condition is called PODAGRA
- Also affects other joints as well
- Elbow, ankle, knee, wrist
- This inflammation is caused by WBC

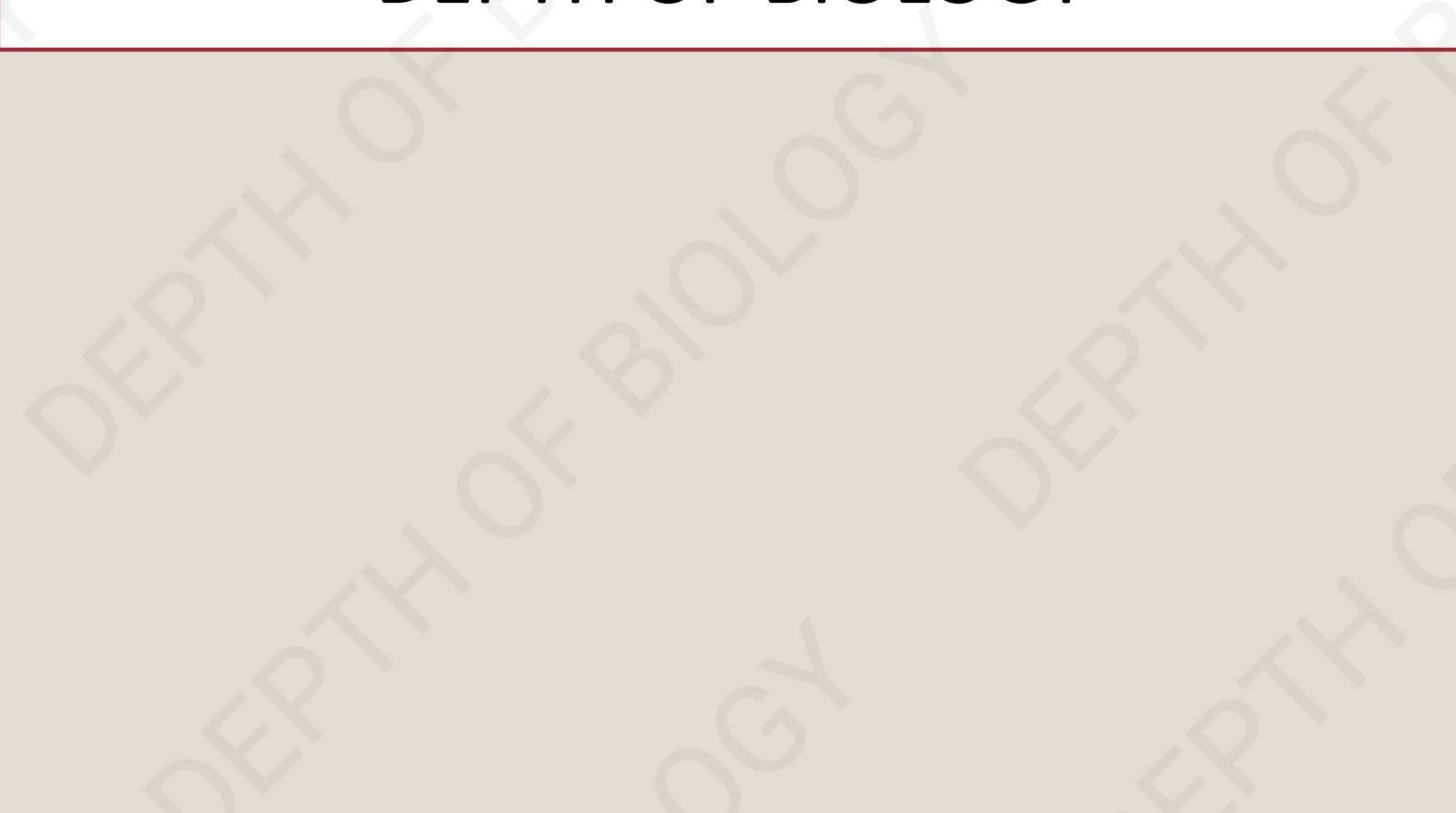
[DEPTH OF BIOLOGY]

WBC migrate here & help to eliminate uric acid by release of some cytokine

Person will wake-up and feel like their big toe is on fire

Pain is most severe in hours after attack

DEPTH OF BIOLOGY



TREATMENT

- Here we focus on decreasing pain & swelling
- NSAIDS (like ibuprofen)
- Corticosoid [DEPTH OF BIOLOGY]
- Colchicine- anti inflammatory effects: inhibiting WBC migration

UNDERLYING CAUSE TREATMENT-

- A. Diet modification [DEPTH OF BIOLOGY]
- B. Eliminate alcohol, soda, seafood & red meat

Decrease uric acid level

a. Xanthine oxidase inhibitor –
 enzyme purine
 uris acid

[DEPTH OF BIOLOGY]

b. Uricosuric medication- increase excretion of uric acid