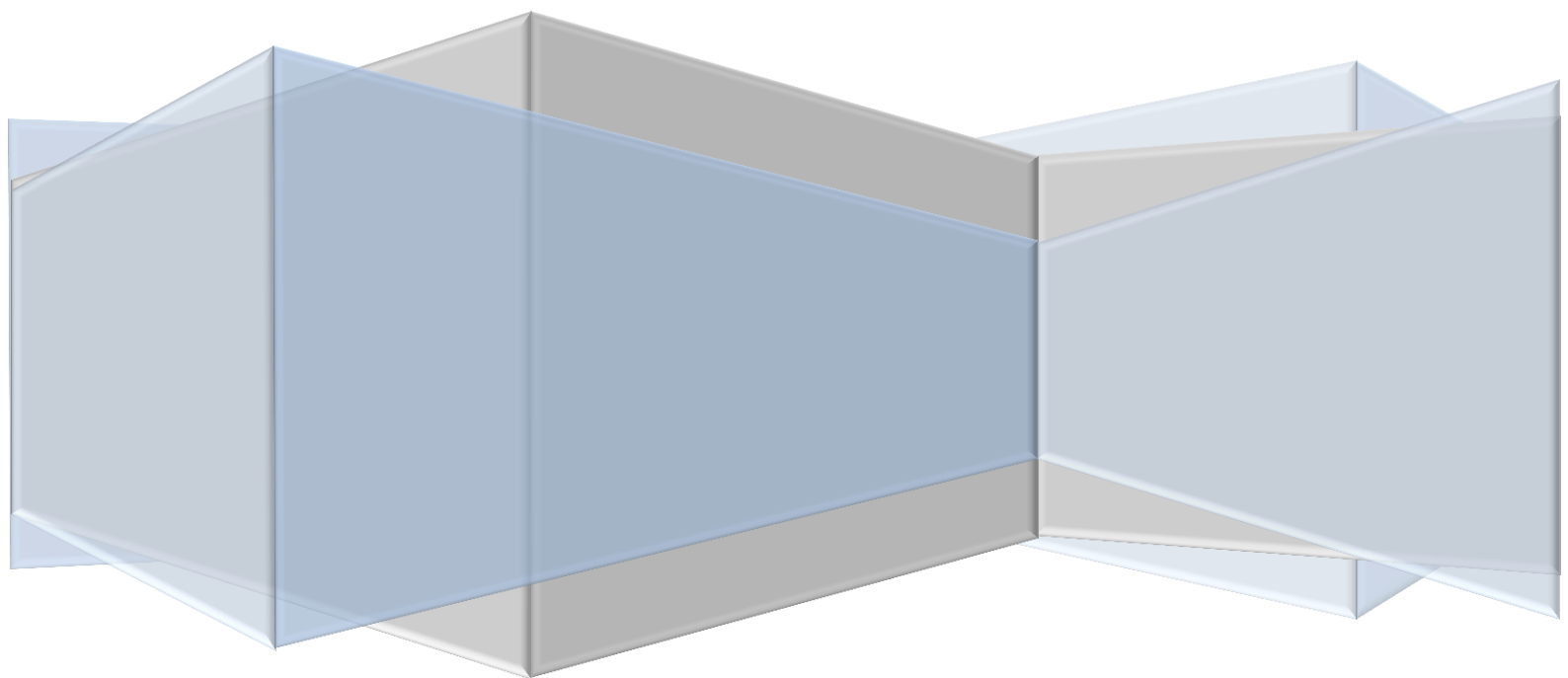




Faculty of pharmacy

# Phytotherapy for Musculoskeletal System

Dr. Yousef Abusamra



## The Musculoskeletal System

- Short-lived (lasting for short time) inflammatory disorders are not normally treated with phytomedicines.
- On the other hand, the use of botanical preparations for chronic inflammatory conditions is widely spread.
- The classical NSAID, aspirin, was originally developed as a result of study on salicin, a glycoside obtained from willow bark.
- The botanical anti-inflammatory remedies have fewer side effects.

1

## Herbals for arthritis, rheumatism and muscle pain

### Ananas (Pineapple):

- **Bromelain** (Ananas): is a mixture of proteolytic enzymes extracted from the fruit and stem of the pineapple.
- It is used to treat **joint stiffness, arthritis, bruising and joint pain.**
- Bromelain, given once daily in **acute tendon injury** at a dose of 7 mg/kg for 14 days, promoted healing by **stimulating tenocyte proliferation.**
- Tenocyte = tendon cell.

2

# Herbals for arthritis, rheumatism and muscle pain

## Turmeric (*Curcuma domestica*): الكركم

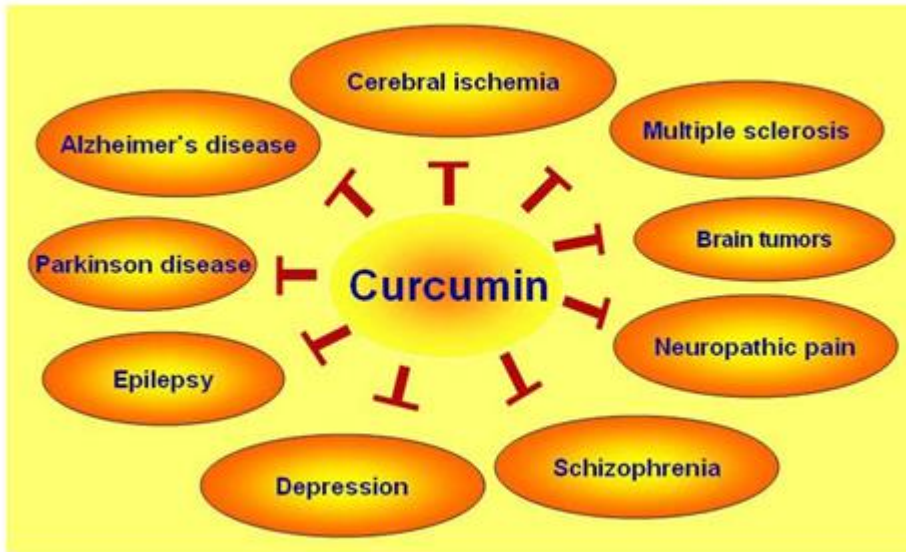
- The **rhizomes** of this plant used as an **anti-inflammatory, anti-hepatotoxic, digestive**.
- Most of the action is attributed to **curcuminoids**.
- It has been shown to possess the followings:
  1. **Inhibition of the activation of transcription factors.**
  2. **Cyclooxygenase inhibition.**
  3. **Free radical scavenger activity.**

3



4

Prevention and treatment of neurodegenerative diseases by curcumin



3



6

## Herbals for arthritis, rheumatism and muscle pain

### Willow bark الصفصاف:

• **Salix** species are a European phytomedicine with a long traditional use for:

1. Chronic forms of pain.
2. Rheumatoid fever.
3. Headache.

❖ The effect is due to the **phenolic glycoside salicin**.

7



8





9

## Drugs used for gout

- Gout is a very painful, localized inflammation of the joints caused by **hyperuricemia and the formation of needle crystals of uric acid.**
- The **xanthine oxidase inhibitor allopurinol** is the drug of choice.
- The alternative is **sulfinpyrazone**, which **increases excretion of uric acid.**
- Prophylactic treatment should never be initiated during an acute attack as it may prolong it.

10

## Gout treatment

- Acute gout is normally treated by **indomethacin** or other NSAID, **but not aspirin**.
- If inappropriate, **colchicine** **التحلاج** can be used.
- It is obtained from the corm ***Colchicum autumnale***.
- Corm: **bulbo-tuber, or bulbotuber** is a short, vertical, swollen underground plant stem.
- The plant extract should not be used because the alkaloid is toxic.
- The dose is 1 mg initially, followed by increments of 500 µg every 2-3 hrs until relief is obtained to max. of 6 mg .
- The course should not be repeated within 3 days.

11



12

# Topical anti-inflammatory agents

- **Capsaicin**: it is the pungent substance (protoalkaloid, tropolone alkaloid) from the **fruit** of red or green **chilli pepper**.
- **Effect**: It **desensitizes sensory nerve endings to pain stimulation**.
- For topical use it is formulated as a cream containing 0.025% or 0.75%.

13



14



## Topical anti-inflammatory

### Wintergreen oil حشيشة الشتاء:

- Obtained from *Betula lenta*.
- The oil contains **methyl salicylate 98%** which is produced by enzymatic hydrolysis of the phenolic glycoside during maceration and steam distillation.
- Methyl salicylate has **anti-inflammatory** effect, it is used in the form of **ointment** or **liniment** for muscle pain.

13



16

## Nocturnal leg cramps

- Night cramps are common in elderly people, particularly in patients with **liver disease**.
- **Quinine** is used and it may also be effective in reducing their incidence.
- It presumably acts by decreasing the excitability at the endplate.
- Care should be taken for **cardiac toxicity** in routine uses.

17



18