

# Joint Pain



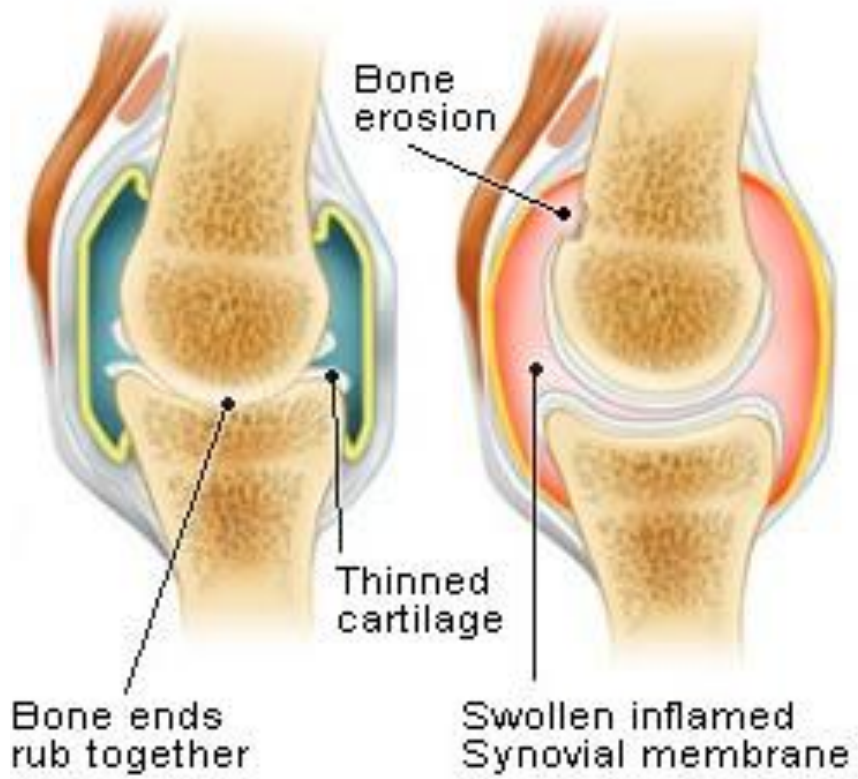
## The Scale of The Problem

- Joint problems affect many millions of people throughout the world, leading to agonising pain and disability.
- The two most common joint diseases are:-
  - 1) Osteoarthritis (cartilage degradation).
  - 2) Rheumatoid arthritis (chronic inflammatory disease).
- They are the single biggest cause of physical disability in the U.K. and is the second most common cause for people taking sick leave, after mental health disorders.
- There are approximately 8.5 million people suffering with osteoarthritis in the U.K. with half of people over 50 affected.
- Rheumatoid arthritis, is the most common inflammatory arthritic disease, affecting approximately 1% of the population.

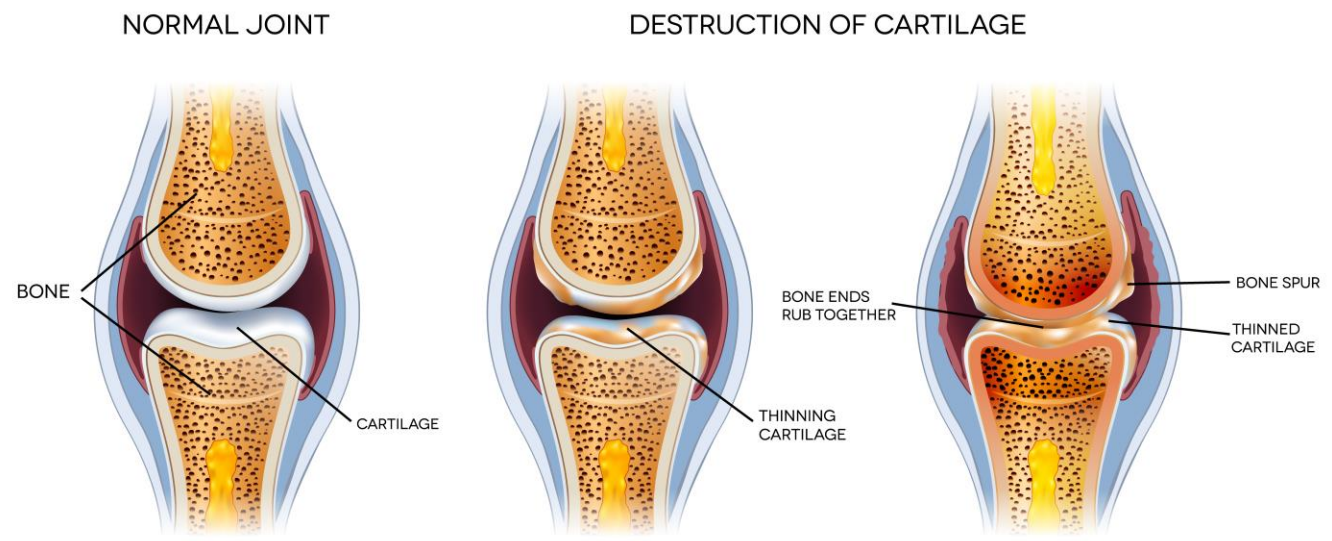


# Joint Pain

## Osteoarthritis    Rheumatoid Arthritis

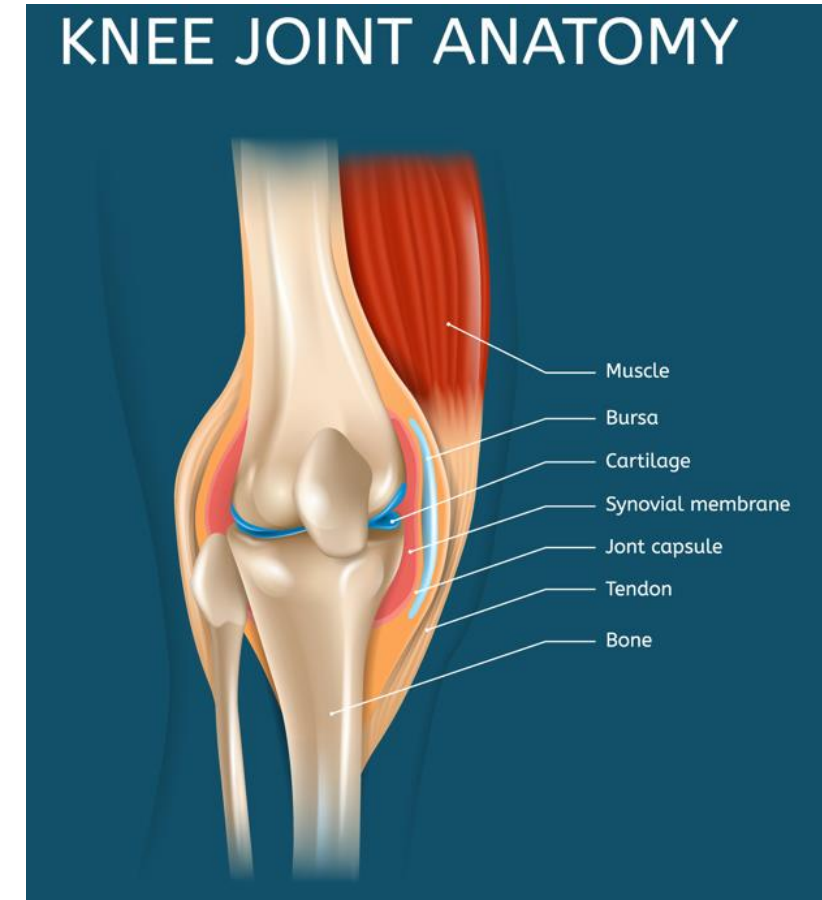


## OSTEOARTHRITIS



## Cartilage – The Key To Healthy Joints

- Cartilage is a very tough substance, which gives many tissues of the body the strength they need.
- A lot of cartilage is to be found in the joint lining.
- To be effective, cartilage needs a good framework to lie on, much like the foundations to your home.
- Glycosaminoglycans (GAGs) provide that framework.
- Spaces between cartilage fibres are occupied by water molecules.
- Water molecules provide a medium through which nutrients, such as Vitamin C and sulphur, gain access to the joint.
- This is important, as joint tissue has no blood supply.
- Healthy cartilage needs to have a ‘springy’ quality to resist use and abuse, and be well lubricated with good, thick synovial fluid.



## How Menopause Affects Joint Health

- Menopause brings with it a plethora of health issues. One of the lesser known ones is increased joint pain – why is this?
- Oestrogen affects your cartilage, which is the connective tissue in joints, as well as bone turnover (the natural replacement of bone in your body), so it can play a part in inflammation and pain.
- During menopause, women can be more likely to get osteoarthritis (particularly in the hands) and possibly rheumatoid arthritis making the joints swollen, stiff and painful.
- It's not just new aches and stiffness that may be experienced during menopause, old injuries from years ago that used to cause pain, can flare up again in the menopause.

The right side of the slide features two overlapping circles in shades of blue. The top circle is a darker blue and contains the text 'Osteoarthritis'. The bottom circle is a lighter blue and overlaps the bottom of the top circle. The background of the slide is white.

# Osteoarthritis

# The Stages of Osteoarthritis

When a diagnosis of osteoarthritis is made, doctors often use a scale to describe the level of degeneration of the joint lining.

Osteoarthritis affects weight bearing areas (spine, hip, knee), tends to be worse on one side than the other (when affecting hip or knee) and progresses with age.

This scale runs from 'Stage 1' to 'Stage 5', with Stage 1 symptoms involving mild morning joint stiffness and Stage 5 involving severe pain and immobility.

Realistically, nutritional supplements can offer some degree of help for the first 4 stages; beyond this, very few will avoid surgery.

# The Stages of Osteoarthritis



## Stages 1 – 2 (Mild)

### Symptoms

- Mild, early morning joint stiffness.
- Eases after person gets 'up and about'.

### Key events

- Loss of water molecules from the joint tissue - needed to lubricate, nourish and hydrate cartilage.
- Nutrients, such as Vitamin C and sulphur use these fluids to access cartilage. Without these, joint cells suffers poor nutrition and synthesize less building blocks (GAG).
- Reduced viscosity of synovial (lubricating) fluid.



## Stages 1 – 2 (Mild)

### **Perfect Partner – Glucosamine and Chondroitin**

These two ‘proteoglycans’ form GAGs, molecules that are of primary importance as the building blocks in the growth of healthy new cartilage.

The Chondroitin also helps draw the lost moisture back to the lining and restores the viscosity of synovial fluid, so is perhaps most suited to early stage osteoarthritis.



# The Stages of Osteoarthritis

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## Stages 2 – 3 (Mild-Moderate)

### Symptoms

- Moderate level of prolonged discomfort.
- Discomfort soon occurs with activity e.g., gardening.
- Numbness and tingling symptoms start to appear in limbs if spine is affected.

### Key events

- Ongoing loss of water and viscosity of the synovial fluid.
- Integrity of joint structures start to suffer due to poor nutrition. All arthritic joints are low in sulphur, a deficiency that slows cell detoxification.

## Stages 2 – 3 (Mild-Moderate)

### Perfect Partner – Glucosamine, MSM & Chondroitin

- Combining Glucosamine, MSM and Chondroitin together may best suit those who have suffered joint wear for some time and who suffer prolonged discomfort.
- Both MSM and Chondroitin have beneficial effects on joint structures.
- Chondroitin contributes to the ‘springiness’ of cartilage-rich tissues.
- MSM helps to support multi-directional resistance to loads and acts as an anti-inflammatory.

# The Stages of Osteoarthritis

## Stages 3-4 (Moderate)

### Symptoms

- Severe discomfort and restriction of joint mobility.
- Pain is constant and can cause depression.

### Key events

- Sulphur-rich bridging links (rungs in the collagen structure like those of a ladder) fail.
- Poor nutrition and detoxification mean poor cell vitality and more inflammation.



## Stages 3-4 (Moderate)

### **Perfect Partners** – Glucosamine, MSM & Chondroitin plus Turmeric

- When reversing the loss of sulphur, and relief from pain are the most urgent needs.
- MSM should serve as both a valuable nutrient and an anti-inflammatory.
- MSM plays important roles in detoxifying cells by increasing the permeability of cell membranes, reducing pain and inflammation.
- Turmeric also provides much needed anti-inflammatory effects.

## Stage 5

### Symptoms

- Inflammation worsens.
- Bone grinding against bone.
- Patients are in constant pain.

### **Perfect Partner – The Surgeons Knife!**

In all likelihood there is nothing to be done for these unfortunate people, the only thing we can do is try to help those before they get to this stage.

## Glucosamine

- This is an 'amino monosaccharide', part amino acid and part sugar.
- Glucosamine occurs in shrimp, lobster and crab shells. None is found in food.
- Glucosamine produced from fermenting corn with the fungus *aspergillus niger* is the only source of Glucosamine suitable for vegetarians, vegans and those allergic to shellfish.
- Glucosamine is an important part of the joint building blocks (GAGs) chondroitin and hyaluronic acid and should be the foundation nutrient in any combination as all GAGs contain glucosamine derivatives.
- The body's synthesis of new glucosamine continues to decline with age, so the need for supplementation is ongoing.

## Chondroitin

- Chondroitin is a ready-made GAG, made of many glucosamine molecules.
- The only significant source of dietary chondroitin sulphate is animal cartilage.
- Chondroitin helps attract moisture to the spaces of the cartilage, improving its nutrition, and restores the viscosity of synovial fluid, so is perhaps the most suited to early stage osteoarthritis.
- In addition, chondroitin contributes to the 'springiness' of cartilage.
- Like glucosamine, to which it is structurally related, it also contributes to GAG formation.



## MSM

- MSM (Methylsulphonylmethane) is a *biologically* organic form of sulphur, so it is easily used by the body.
- Amazingly, it is ocean plankton that release a precursor to MSM into the atmosphere.
- After reaction with ozone and sunlight, it is then taken up by plants from rainfall.
- No studies as to the best food sources of MSM have been conducted.



## **Sulphur (MSM) performs 3 key roles**

- Increases the permeability of cell membranes, for better cell nutrition.
- Reduces inflammation because of its detoxifying effects.
- Reverses the sulphur deficiency of arthritic joints and nourishes the 'di-sulphide bridges' that cross-link the structures in cartilage.

## Rosehip

- Rosehip is another increasingly popular product for the support of joint issues.
- Much of the beneficial action of rosehips is down to a little known component called glycoside of mono and diglycerol.
- Rosehips exert an anti-inflammatory effect by reducing white blood cell production that is in turn responsible for the inflammatory response at the site of irritation.
- Therefore, rosehips are not actually directly responsible for any joint repair.

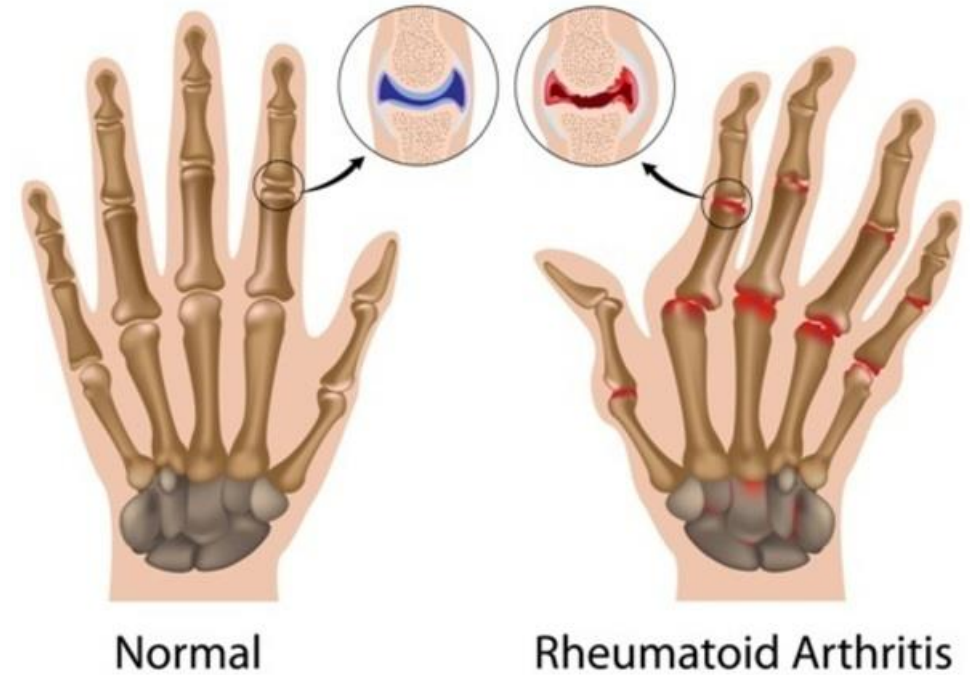




# **Rheumatoid Arthritis**

# Rheumatoid Arthritis

- Mainly affects the joints.
- Small joints in hands and feet are usually first affected and is symmetrical.
- The associated pain is usually a throbbing and aching pain.
- Joints often feel stiff especially in the morning or after a period of inactivity.
- The lining of the joints affected become inflamed, causing the joints to swell and become hot and tender to touch.



## Causes

- Rheumatoid arthritis is an auto-immune condition.
- Antibodies are sent to the lining of the joint causing it to attack the surrounding tissues.
- This leads to the thin layer of cells, called the synovium (covers the joints) to become sore and inflamed.
- Chemicals are consequently released that damage bones, tendons, ligaments and cartilage.
- Left unchecked this can completely destroy the joint.

## Orthodox Medical Approach

- The orthodox medical approach to dealing with inflammatory joint disease has tended to focus on the use of non-steroidal anti-inflammatory drugs (NSAID's).
- We have seen over recent times the withdrawal of several of these products due to safety concerns leading to people turning to a more natural approach.
- In one study, 1,826 osteoarthritis and rheumatoid arthritis sufferers who had taken NSAID's for 6 months or more and had to stop due to gastric upset were assessed.
- Clinically significant gastroduodenal lesions were found in 37.1 percent of patients and of those 24 percent had ulcers.

# Rheumatoid Arthritis Support

## Essential Fatty Acids

- Both Omega-3 and Omega-6 fatty acids can help with omega-3 supplements having similar anti-inflammatory effects to NSAID's without the harsh effects on the stomach.

## Devil's Claw

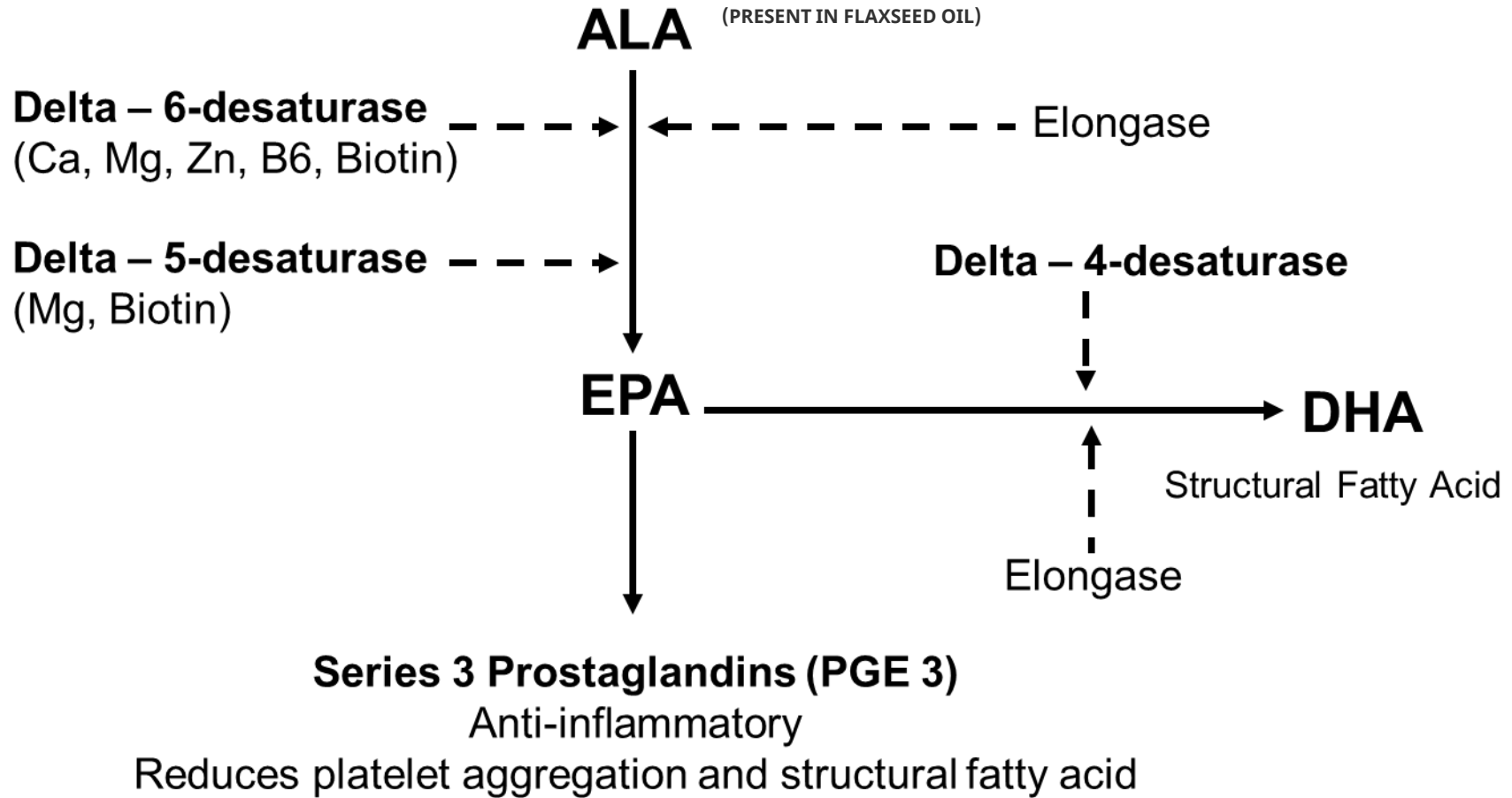
- In addition to anti-inflammatory and pain killing effects, Devil's Claw has been shown to have normalizing effects on the immune system.

## Turmeric

- Well documented anti-inflammatory effects. N.B. be aware that piperine, often added to turmeric does interact with many medications.

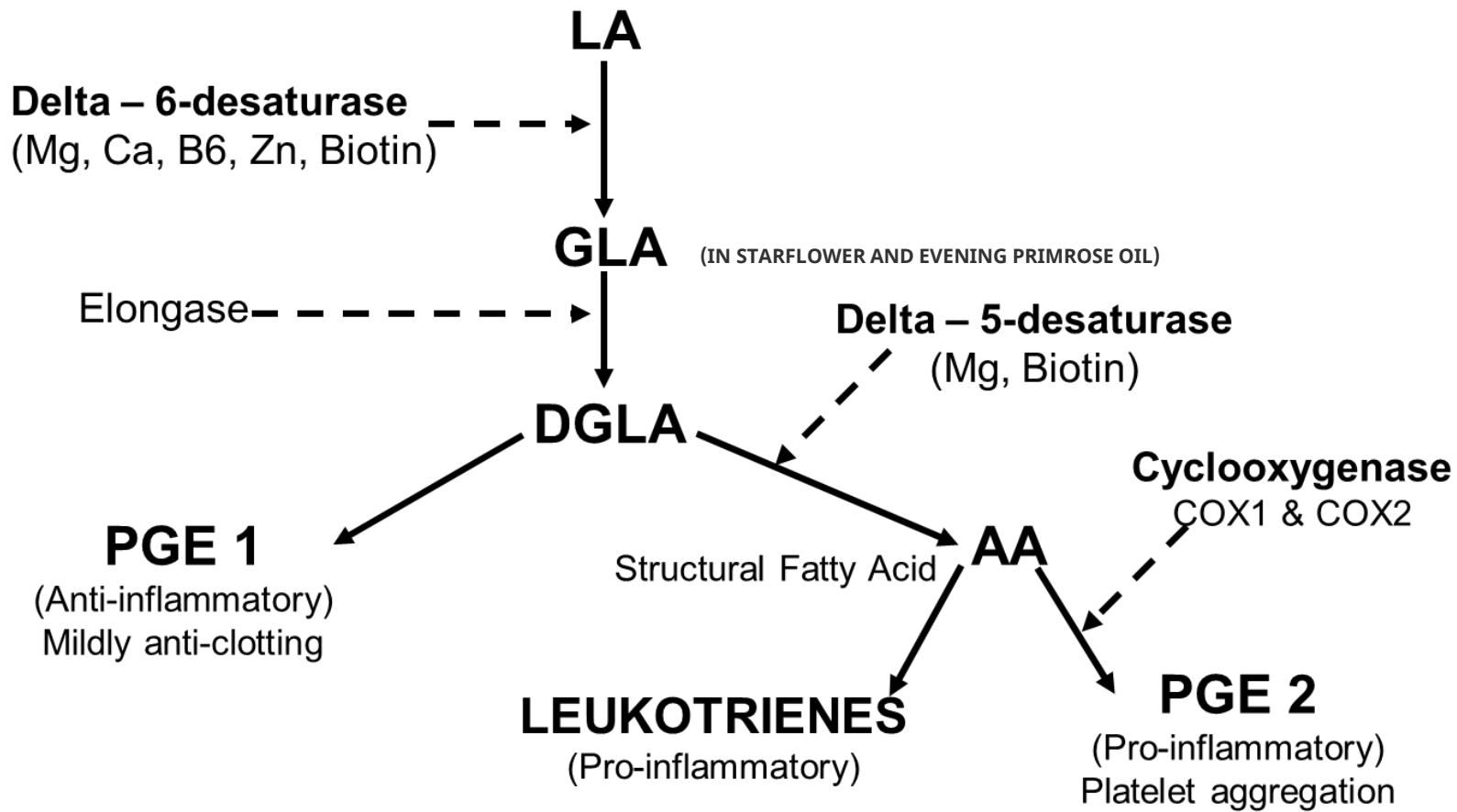


# OMEGA-3 PATHWAY





# OMEGA-6 PATHWAY



# QUESTIONS?

