

## Eating to Ease Arthritis and Inflammation

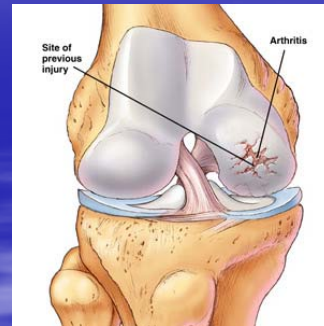
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## Arthritis

- Is the **most common cause of disability in the U.S.**
- Encompasses more than 100 diseases and conditions affecting joints, the surrounding tissues, and other connective tissues
- Arthritis is an umbrella term and includes osteoarthritis, rheumatoid arthritis, psoriatic arthritis and gout.
- Has three most common forms:
  - osteoarthritis
  - rheumatoid arthritis
  - juvenile rheumatoid arthritis
- Affects women almost twice as often as men

## What is Arthritis

- 1) The loss of joint surface that covers the bone. This special surface allows the bones to glide effortlessly, smoothly and pain-free. (This is the white, pearly substance on the end of the chicken bone.)
- 2) It is not to be confused with osteoporosis which is the loss of bone mass.



## What is Arthritis

- 3) The loss of this surface, whether partial or complete, results in variable pain, stiffness, swelling, weakness and loss of motion.
- 4) With progression over time it results in the destruction of the underlying bone and adjacent ligaments

## How Does it Present?

- 1) It can either present in a slow gradual fashion or have a sudden appearance after a minor injury.
- 2) You can have “good and bad” days. Pain will be low level aching to intense pain that won’t allow walking on the leg.
- 3) You can be stiff and achy in the morning, comfortable during the day, then painful at the day’s end.
- 4) Sometimes the pain will lessen with mild to moderate activities.
- 5) You may experience popping, locking or catching.

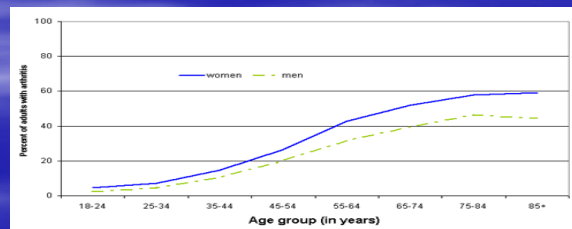
## How Does it Present?

- 6) Prolonged positions will cause increased symptoms, ie. Standing in line, long car rides or sitting for a movie.
- 7) You avoid, or have difficulty doing, activities like kneeling, squatting, stair climbing, getting out of cars/chairs or even tying your shoes.
- 8) You have trouble finding a comfortable position while resting at home with a book or watching T.V.
- 9) You have trouble with waking up at night due to joint pain.

## Arthritis

- Today, 50 million people in America (that's one out of every five adults) have arthritis.
  - Of these, more than two-thirds are younger than 65 years of age.
  - Onset 4<sup>th</sup> – 5<sup>th</sup> decade of life: 80% of all patients develop the disease between ages 35-50
  - Female to Male ratio – 3:1
- Eight out of ten Americans either have arthritis or know someone who does

### Disease incidence increases with age

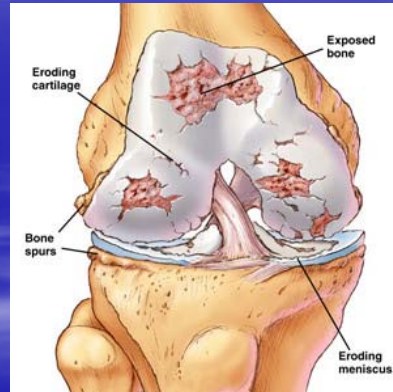


## Arthritis

- Arthritis comprises more than *100 different rheumatic diseases and conditions, the most common of which is osteoarthritis.*
- Other frequently occurring forms of arthritis include rheumatoid arthritis, lupus, fibromyalgia, and gout
- Suffix “itis” means inflammation
- Inflammation of the joints – where bones come together

## Arthritis

- Osteoarthritis (OA) occurs when the cartilage covering the end of the bone deteriorates, causing pain and swelling when bones rub against each other
- Damage can be so extensive that the joint may have to be replaced



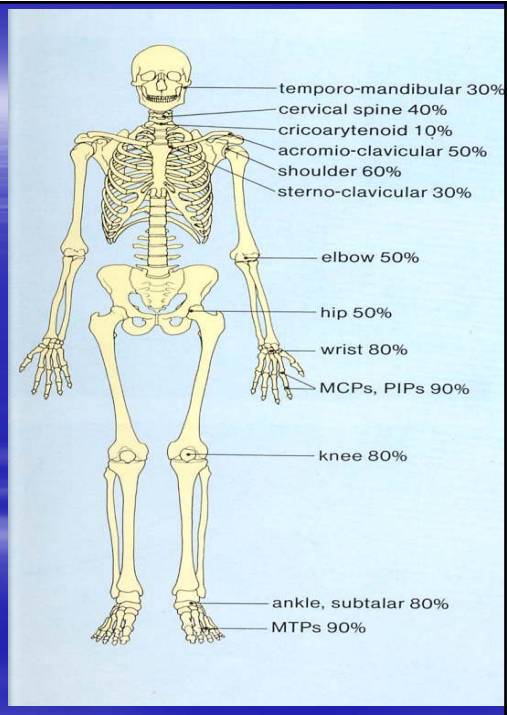
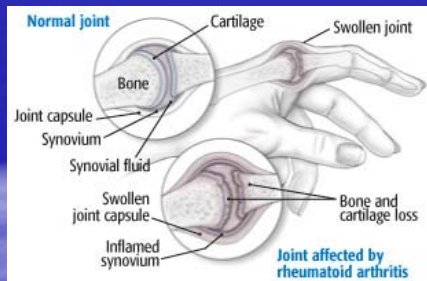
## Osteoarthritis

- Osteoarthritis, sometimes called degenerative joint disease is the most common form of arthritis.
- Causes include aging joints, previous injuries, and obesity, among others.
- Disorder most commonly affects joints in your:
  - Hands
  - Hips
  - Knees
  - Neck
  - Lower back

# Arthritis

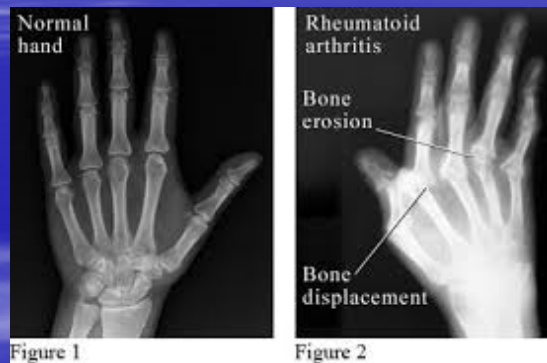
- Rheumatoid arthritis (RA) is a disease that causes inflammation of the lining of the joint capsule – the synovial membrane
- Joints can feel swollen, painful, hot and tender to touch
- Synovial membranes can release enzymes that can dissolve bone and cartilage inside the joint
- Joint can become deformed if enzymes eat away enough tissue

## ■ RA: Joint Distribution



## What is Rheumatoid Arthritis

- Chronic, systemic inflammatory disease



## Factors that can increase risk of Osteoarthritis

- **Older age.** The risk of osteoarthritis increases with age.
- **Sex.** Women are more likely to develop osteoarthritis, though it isn't clear why.
- **Obesity.** Carrying extra body weight contributes to osteoarthritis in several ways. It puts added stress on weight-bearing joints, such as your hips and knees. In addition, fat tissue produces proteins that may cause harmful inflammation in and around your joints.
- **Joint injuries.** Injuries, such as those that occur when playing sports or from an accident, may increase the risk of osteoarthritis.

## Factors that can increase risk of Osteoarthritis

- **Certain occupations.** If your job includes tasks that place repetitive stress on a particular joint, that joint may eventually develop osteoarthritis.
- **Genetics.** Some people inherit a tendency to develop osteoarthritis.
- **Bone deformities.** Some people are born with malformed joints or defective cartilage, which can increase the risk of osteoarthritis.
- **Other diseases.** Having diabetes or other rheumatic diseases such as gout and rheumatoid arthritis can increase your risk of osteoarthritis.

## Obesity

- **Obesity increases the risk for developing osteoarthritis.**
- **Overweight persons might reduce their chances for developing or aggravating their osteoarthritis by losing weight.**
- **If a person already has substantial osteoarthritis in a weight-bearing joint, such as a knee or hip, weight reduction can significantly improve their ability to rehabilitate after joint surgery as well as decrease their risk of surgical complications.**



## Obesity

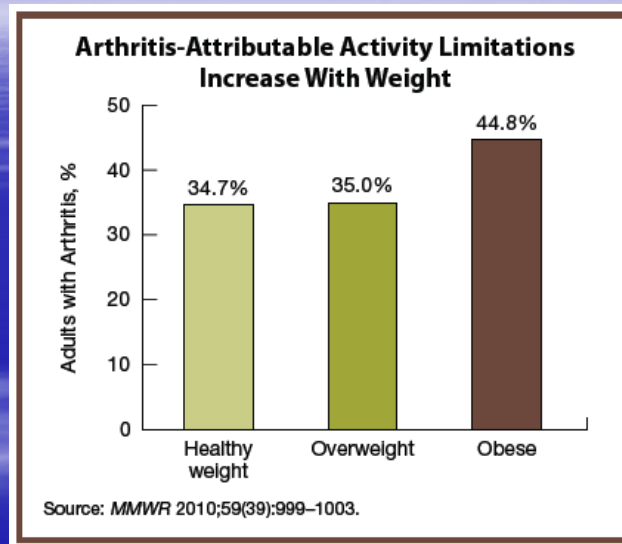
- Body fat is not an inert substance
- It is metabolically active – capable of producing hormones and chemicals that actually increase levels of inflammation
- Weight loss = reduction of inflammation

## Obesity

- Research in *Journal of the American Academy of Orthopedic Surgeons* March 2013
- “Clear link between obesity and osteoarthritis and the link is both from biomechanical factors as well as systemic factors”
- Approximately ½ of osteoarthritis cases of the knee could be avoided in the US if obesity was removed as a risk factor
- Obesity was found to be a strong independent risk factor for pain, especially in soft-tissue such as tendons
- “Weight loss can diminish pain and restore function and quality of life in osteoarthritis patients, and possibly avert approximately 111,206 total knee replacements each year”

## Weight Loss

- Average American is 20–40 lbs. overweight
- Average person takes 5000-7000 steps/day
- Weight loss reduces stress on weight-bearing joints
- Every pound lost equals 4 pounds less stress and pressure on knees



## Exercise and Motion

- Regular, moderate exercise offers a whole host of benefits to people with arthritis.
- Exercise reduces joint pain and stiffness, builds strong muscle around the joints, and increases flexibility and endurance.
- It reduces inflammation from arthritis and related conditions and reduces the risk of other chronic conditions.
- It also helps promote overall health and fitness by giving you more energy, helping you sleep better, controlling your weight, decreasing depression, and giving you more self-esteem.

## Range of Motion Exercises Stretching

- Maintains normal joint movement
- Increases flexibility
- Relieves stiffness
- Increases the ease of surgery, thus allowing better outcomes.

## Tai chi and yoga

- These movement therapies involve gentle exercises and stretches combined with deep breathing.
- Many people use these therapies to reduce stress in their lives, though small studies have found that tai chi and yoga may reduce osteoarthritis pain.
- When led by a knowledgeable instructor, these therapies are safe.

## Meditation

- Practicing meditation, mindfulness, and even simple breathing exercises can improve both the physical pain of arthritis and the emotional ways of coping with it.
- Quiet the body and the mind, stay in the present moment, and notice what thoughts and emotions come up.
- Though you don't choose to have arthritis, you can certainly choose how to relate to it.

## Meditation

- A study published in the *Journal of Psychosomatic Research* found significant improvements among chronic pain sufferers (including those with arthritis) using a form of meditation called mindfulness-based stress reduction
- Participants had improvements not only in the physical aspects of pain but also in measures of quality of life and psychological distress.
- As an added benefit, meditation and mindfulness have mounting scientific evidence for improvement of anxiety and depression, two conditions that often accompany the chronic pain of arthritis.

## Strengthening Exercises

- Increasing muscle strength helps support and protect joints affected by arthritis.
- Exercise is an important part of arthritis treatment that is most effective when done properly and routinely.
- Allows easier recovery and shorter rehabilitation after surgery.

## Aerobic Exercise

- Improve cardiovascular fitness
- Helps control weight
- May help reduce inflammation in joints
- For those worried about advancement of arthritis, a Swedish study showed no progression of arthritis with moderate exercise.
- Try water aerobics or swimming!

## Heat and Cold Therapies

- Reduce pain and inflammation
  - Heat Therapy
    - Increases blood flow, tolerance for pain, flexibility
  - Cold Therapy
    - Cold packs, ice massage, OTC sprays and ointments
    - Reduces pain by numbing the nerves around the joint

## Hot and Cold Packs

- Both hot and cold compresses alter the sensation of pain, but while heat dilates blood vessels to stimulate circulation, cold constricts blood vessels to reduce swelling.
- If using heat, find a warm (not truly hot) temperature that you can tolerate.
- You can try heating pads, hot packs, disposable heat patches, a warm bath or shower, wrapping an affected joint in a scarf or blanket, or even a pair of gloves on suffering hands and fingers.

## Hot and Cold Packs

- If using cold, you can try cool packs, ice packs, or a towel soaked in cool water.
- Effectively using hot and cold compresses for arthritis relief might require some trial and error.
- Work with your physician and/or physical therapist to find a system that works for you.

## Physical Therapy

- The goal is to get back to the point where you can perform normal, everyday activities without difficulty.
- Preserving good range of motion is key to maintaining the ability to perform daily activities.
- Physical therapists provide exercises designed to preserve the strength and use of your joints.
  - Show you the best way to move from one position to another
  - Teach you how to use walking aids

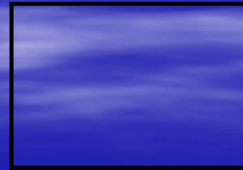
## Medications: Analgesics

- Analgesics, pain relievers, may provide temporary relief of arthritis pain.



## Medications: NSAIDs

- Traditional
  - Aspirin
  - Ibuprofen
  - Naproxen
- *Celebrex* linked to an increased risk of heart attack
- American Heart Association (AHA) warned against the drug for people at risk of heart problems



## Pros and Cons of NSAIDS

### Pros

- Effective control of inflammation and pain
- Effective reduction in swelling
- Improves mobility, flexibility, range of motion
- Improve quality of life
- Relatively low-cost

### Cons

- Does not affect disease progression
- GI toxicity common
- Renal (kidney) complications (eg, irreversible renal insufficiency, papillary necrosis)
- Hepatic (liver) dysfunction
- CNS toxicity

## Medications: Topical Pain Relievers

- Over-the-counter patches, rubs and ointments can provide quick pain relief for people with arthritis that is in just a few joints – such as a hand – or whose pain isn't severe.
- **Capsaicin** is the ingredient found in different types of hot peppers, such as cayenne peppers, that makes the peppers spicy hot.
- When a capsaicin cream or ointment is used on the skin (topical use), capsaicin helps relieve pain. Capsaicin works by first stimulating and then decreasing the intensity of pain signals in the body.

## Nutritional Supplements

- Glucosamine and Chondroitin may help relieve joint pain.
  - Occur in the body naturally; vital to normal cartilage function
- Some people find it very helpful. Some people don't notice a difference
- Dosage: The typical initial dose is 1500 mg of glucosamine and 1200 mg of chondroitin daily for 1-2 months. If a response is obtained, the dose can be reduced to 1000 mg of glucosamine and 800 of chondroitin or less.

## Nutritional Supplements

- May help osteoarthritis pain and improve function.
- Some studies indicate that glucosamine may help as much as ibuprofen in relieving symptoms of osteoarthritis, particularly in the knee, with fewer side effects

## Side Effects of Glucosamine and Chondroitin

These arthritis supplements are generally well tolerated.

However, side effects can occur. The most commonly reported side effects are:

- Nausea
- Diarrhea or constipation
- Heartburn
- Increased intestinal gas

## Glucosamine and Chondroitin

- People with osteoarthritis who have diabetes should talk with a doctor before they take glucosamine because it may influence blood sugar (glucose).
- Do not take glucosamine if you are allergic to shellfish.
  - Glucosamine is made from shellfish covering
  - Glucosamine and chondroitin may interact with blood thinners such as warfarin and cause bleeding problems.

## Avocado-soybean unsaponifiables

- This nutritional supplement — a mixture of avocado and soybean oils — is widely used in Europe to treat knee and hip osteoarthritis.
- It acts as an anti-inflammatory, and some studies have shown it may slow down or even prevent joint damage.
- There have been 4 studies that assessed the effect of avocado soybean unsaponifiables on knee osteoarthritis and hip osteoarthritis.
- Two of the studies were conducted over 3 months -- one assessed hip and knee osteoarthritis, while the other looked only at knee osteoarthritis.

## Avocado-soybean unsaponifiables

- Results from both studies revealed that patients who took 300 mg of avocado soybean unsaponifiables a day didn't need as much pain medication as before -- they decreased their use of NSAID (nonsteroidal anti-inflammatory drugs).
- There was no significant difference observed between the 300 and 600 mg once a day dose of avocado soybean unsaponifiables.

## Avocado-soybean unsaponifiables

- A 2-year clinical trial on hip osteoarthritis revealed that 300 mg once a day of avocado soybean unsaponifiables did not slow down joint space narrowing and no other significant differences were observed when compared to placebo after one year.
- A later analysis of the study, however, determined that avocado soybean unsaponifiables might decrease joint space narrowing in patients with very severe hip osteoarthritis.
- Avocado soybean unsaponifiables took at least two months before any improvement was noticed, according to the study results. Interestingly, there also was residual symptom relief for 2 months after stopping treatment.

**The #1 Brand Recommended by Orthopedic Specialists\***

**Maximum Strength Cosamin<sup>ASU</sup>**  
JOINT HEALTH SUPPLEMENT

**ADVANCED FORMULA**

The most complete and comprehensive joint support supplement available

ASU= glucosamine + chondroitin sulfate works better than glucosamine + chondroitin sulfate.

**Percentage of Marker Activity**

Supplementation	Inflammatory Markers
No Supplementation	HIGH
ASU + Glucosamine + Chondroitin Sulfate	LOWER

**GREATER REDUCTION LEADING TO HEALTHIER JOINTS**

In laboratory cell culture studies of inflammatory markers associated with joint dysfunction and cartilage break-down, it was found that the combination of ASU (avocado/soybean unsaponifiables) + glucosamine + chondroitin sulfate was **BETTER** than the combination of glucosamine + chondroitin sulfate in reducing these markers.

**120 Capsules**

**AVOCADO300 SOY UNSAPONIFIABLES**  
with SierraSil - 600 mg  
60 TABLETS  
Dietary Supplement

**MAXIMIZE**

## Nutrition and Arthritis

- No magic food guaranteed to ward off arthritis
- Healthy diet with plenty of fruits, vegetables, whole grains, lean proteins is good for overall health and joint health

## Nutrition and Arthritis

- Since arthritis is an inflammatory disease – an anti-inflammatory diet is important

## Foods that Increase Inflammation

- Saturated Fats – fats from animal products: fatty beef, pork, poultry skin, full-fat dairy foods.
- Found in cookies, crackers, nondairy creamers, packaged baked goods
- Try to greatly reduce intake
- Choose lean cuts of beef, pork
- Skinless chicken, turkey
- Non-fat dairy foods

## Foods that Increase Inflammation

- Trans fats – created by scientists to give baked goods a longer shelf life
- Even more damaging than saturated fats in terms of inflammation and other health problems
- Found in baked goods, fried fast-foods, stick margarines

## Foods that Increase Inflammation

- Simple and Refined Carbs – sugary foods, white-flour baked goods, white rice, bread, crackers, and other refined carbohydrates
- Set up a state of inflammation
- Increases pro-inflammatory compounds



## Foods that Ease Arthritis Pain

- Omega 3 fatty Acids: The healthiest fats for people with arthritis or other inflammatory disorders
- Decrease inflammation by suppressing the production of enzymes that erode cartilage
- Lots of studies show omega-3 fish oils can reduce symptoms of rheumatoid arthritis
- Study participants reported greater strength, less fatigue, reduced joint swelling and tenderness, less joint stiffness, and less overall pain.

## Foods that Ease Arthritis Pain

- Best: wild salmon, herring, mackerel, sardines, anchovies, rainbow trout, ground flaxseeds, chia seeds and walnuts
- OTC: Nordic Naturals and Carlson (at least 2,000 mg EPA & DHA).

## Vitamin D

- Vitamin D deficiency has been shown to increase the risk of joint space narrowing and progression of disease in osteoarthritis.
- Adequate amounts can reduce risk of both RA and OA
- Can reduce pain

## Vitamin D

- Many doctors are recommending Vitamin D supplementation of 400IU daily.
- Get your levels checked!
- This can also help to prevent osteoporosis.

## Cherries

- Could reducing the pain of arthritis – specifically gouty arthritis – be as simple as eating a bowl of cherries?
- A study in the *Journal of Nutrition* suggests yes
- Several markers of inflammation were decreased in study participants who ate a bowl of cherries each morning for about a month.
- More research is needed to confirm these results but given the known benefits of cherries – including lowering blood pressure, easing muscle soreness, and perhaps even fighting cancer – why not start enjoying cherries today?

## Elimination Diet

- Eating certain “trigger” foods can make pain worse for some people with arthritis
- Food sensitivities can increase inflammation in the body
- Try eliminating certain foods you suspect for 1-2 weeks and notice symptoms

## Nightshades

- **Nightshades** – This food group can aggravate the pain and inflammation of arthritis
- Nightshade family causes some people to notice increased symptoms: tomatoes, white potatoes, peppers (includes bell peppers, cayenne, chili, paprika, pimiento) and eggplant.
- The nightshade family also includes tobacco and belladonna

## Gluten

- Just following a gluten-free diet helps some patients experience less joint pain and inflammation.
- Try reducing or eliminating all grains, and especially wheat, from your diet to see if it helps you.

## Dairy

- Some rheumatoid arthritis patients have antibodies against milk proteins.
- For these individuals, it's important to eliminate or greatly reduce intake of cow's milk products.
- Cow's milk proteins are found mainly in dairy products such as milk, cheese, yogurt, and sour cream.
- Milk proteins may exist in some processed foods in the form of whey, powdered milk, and caseine or sodium caseinate, which appears in many "non-dairy" foods, like coffee creamers and whipped toppings.

## Elimination Diet

- Some people feel better when they give up all dairy products.
- Some people feel better when gluten is eliminated from their diet.
- Gluten is found in wheat, rye, barley, and oats.
- The problem may be molds
- Foods like potatoes, sweet potatoes, nuts, berries, cantaloupe and honeydew melon get moldy easily. If you react to these foods sometimes, but not others, you may be allergic to certain molds rather than the foods.

## Elimination Diet

- Try eating the so-called "stone age diet," which includes only fruit, vegetables, fats like nuts and avocados, meat and fish, for one month
- Studies have shown that if a person is food-sensitive, this type of diet can help reduce morning stiffness and pain, improve range of motion and lower inflammatory mediators in the blood.
- Dr. Brostoff, an allergist, did an experiment and found that more than one-third of people with RA felt better and had less morning stiffness on this diet.
- "We had one or two patients who, after one or two months, were so much better they could go walking and do all the things they could do before," he says.

## Elimination Diet

- The next step is to reintroduce foods, one at a time.
- "The only way of knowing if you are sensitive to a food is to eliminate it and then add it back," Dr. Brostoff says.

## Easing Arthritis Pain

- Green Tea
  - Contains antioxidant epigallocatechin-3-gallate (EGCG)
    - Stops production of certain inflammatory chemicals in body, including those involved in arthritis
  - Contains other catechins that may prevent cartilage from breaking down to help preserve joints longer

## Easing Arthritis Pain

- Olive Oil
  - Contains natural compound *oleocanthal*
    - Compound that blocks the same inflammatory pathways as ibuprofen & aspirin
    - Use for lower heat cooking and in salad dressings, dips
    - May help prevent arthritis-related inflammation
  - Also contains healthy monounsaturated fats
  - Highest antioxidant content in extra virgin olive oil

## Easing Arthritis Pain

- Carotenes
  - Best known is beta carotene; found in many fruits & vegetables
  - Also beta-cryptoxanthin
  - Powerful antioxidant
    - Reduces risk of developing inflammatory disorders
    - Individuals who's diet is high in beta-cryptoxanthin were half as likely to develop a form of inflammatory arthritis: winter squash, pumpkin, papaya, tangerines, red peppers, oranges, apricots

## Easing Arthritis Pain

- Vitamin C
  - Responsible for health of collagen
  - Collagen plays a vital role in health of cartilage
    - People who have a low Vitamin C diet run the risk of developing some form of arthritis
    - Guava, bell peppers, oranges, grapefruits, strawberries, pineapple, broccoli, kidney beans, kiwi, cauliflower



## Easing Arthritis Pain

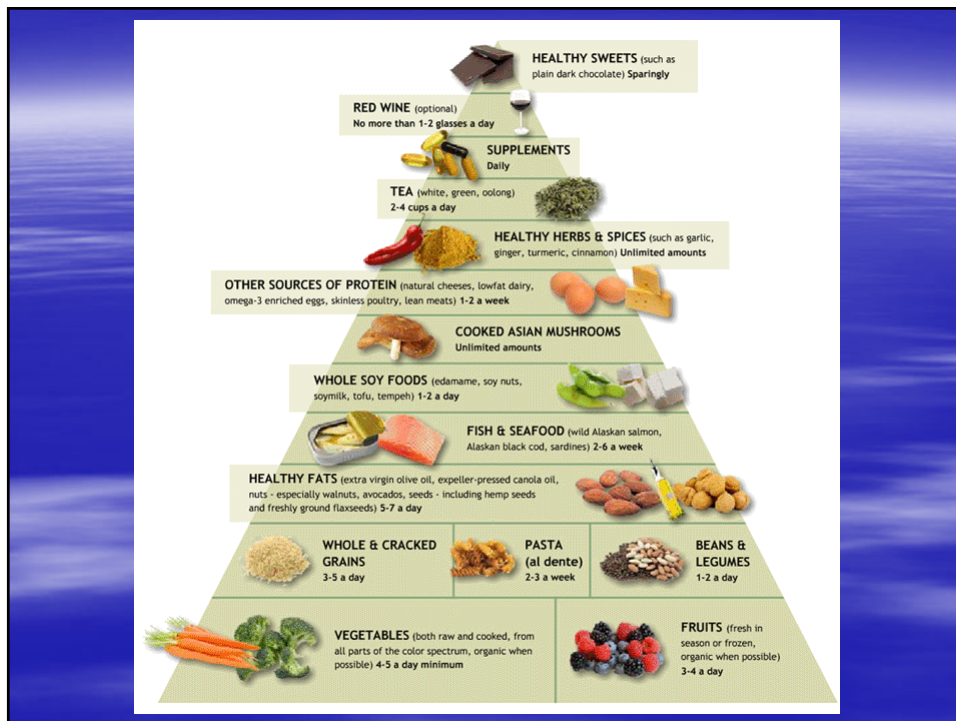
- Anthocyanins
  - Antioxidants that help reduce inflammation by inhibiting production of inflammatory chemicals
    - Contribute to health of connective tissue & are very powerful for defusing dangerous free radicals that cause inflammation
      - Cherries, blackberries, blueberries, elderberries, raspberries, strawberries, plums

## Easing Arthritis Pain

- Spices: Ginger & Turmeric
- Spices contain beneficial phytonutrients
- Have anti-inflammatory effects
- Ginger contains chemicals that work similarly to some anti-inflammatory medications: reduces inflammation by inhibiting prostaglandin and leukotriene synthesis that cause inflammation
- Turmeric – the Asian mustard-yellow spice found in curry
- Inhibits prostaglandin production as well

# Mediterranean Diet

- In a 2003 Swedish study, people with RA who ate a Mediterranean diet rich in fruits, vegetable, cereals, legumes, and olive oil for three months experienced improved physical functioning and vitality when compared to RA patients who did not.



## Zyflamend

- Zyflamend is a patented formulation from New Chapter. It includes proprietary extracts of rosemary, turmeric, ginger, holy basil, green tea, hu zhang, Chinese goldthread, barberry, oregano, and skullcap.
- Zyflamend has been studied at Columbia University's Department of Urology. The preliminary in vitro findings reported that Zyflamend significantly reduced COX-2 activity and modulated cell growth.
- One capsule two or three times daily, but avoid it near bedtime — each pill contains 10 mg of caffeine

## Acupuncture

- Some studies indicate that acupuncture can relieve pain and improve function in people who have knee osteoarthritis.
- During acupuncture, hair-thin needles are inserted into your skin at precise spots on your body.
- Risks include infection, bruising and some pain where needles are inserted into your skin.

## Conclusion

- Getting older does not mean you have to suffer joint pain
- You can arrest the development of arthritis now, no matter what stage you are in
- Clean, healthy diet
- Exercise
- Supplements
- Weight loss, if appropriate