



# Complementary and Alternative Medicine (CAMs)

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# Why CAMs?

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- **Because our patients are:**

- Involved and engaged in their medicinal consumption
- Pro-active about seeking alternatives
- Driven to find relief of their symptoms

- **Who is taking them?**

- Nearly ½ of adult patients in the U.S
- Rising interest

- **Why are we involved as PT's?**

- Working with those taking them
- Patients ask for our professional opinion
- Patients may be seeking further health professional information about them



# What is classified as a CAM?

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- Drugs that previously were prescribed, but are now OTC
- Vitamins, Minerals, Herbs
- Homeopathic Medicine
- Traditional Chinese Medicine
- Mind-Body Techniques (mindfulness)
- Energy practices (Acupuncture, Biofield Therapy)
- Self-Help Physical Activity and Yoga



# Keep in Mind...

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- No mandatory testing
- No legal standards
- Research of safety and efficacy is still limited
- Consumption may go untold



# Glucosamine/Chondroitin

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- Anti-inflammatory and analgesic
- Natural substances found in and around cartilage cells
- Controversial beliefs on it's relief of OA pain
  - And few studies have looked at its effects on joint structure/cartilage reformation
- In a study by the NIH with 1,583 participants, found that not much difference in pain for those with mild-to-moderate OA, but more relief in a small subgroup that had **moderate-to-severe OA**.
  - First study was short- 6 months long
  - Secondary study performed- 2 years long – showed that prolonged use was safe, but that benefits of OA pain relief were not statistically superior to placebo.
  - Study conclusion: OA patients should work with their health providers to develop a comprehensive plan for managing their arthritic pain.



# Tumeric/Curcumin

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- Claims: **Reduce inflammation** especially with OA, heal wounds, improve skin health, protect cognitive abilities, and alleviate pain
- Antioxidant/Anti-Inflammatory/Anti-Arthritic Effects
  - Reduce number of damaged cells and reduce inflammation
  - Evidence that turmeric extracts result in similar improvements to NSAIDs, especially in OA.
- Metabolic Syndrome
  - Significantly reduces concentrations of pro-inflammatory cells in patient's with insulin resistance, hyperglycemia, hypertension, low HDL, and high LDL, obesity, elevated triglycerides
- Antitumor, Anticancer, and Antiseptic effects
- Healthy Individuals
  - Indications of health benefits with 80mg/day: significant lowering of triglyceride levels, and a decrease in markers of brain aging, stress, and liver disease. May help with exercise-induced muscle soreness.
- According to JECFA and EFSA reports, the Allowable Daily Intake (ADI) is 0-3 mg./kg body weight
- Problem: Poor Bioavailability





# Willow Bark

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- Analgesic and Anti-inflammatory
- Used primarily for low back pain and OA
  - Also used for headaches and inflammatory conditions like tendinitis and bursitis
- Contains Salicin (similar to aspirin) and Flavonoids (natural plant-based anti-inflammatory agents)
  - Appears to take longer to work (than aspirin), but has longer lasting effects
- In a well-designed study, higher doses (240mg) of Willow Bark had significant low-back pain relief in comparison to placebo.
- Side effects tend to be mild: upset stomach, nausea, etc.



# Devil's Claw

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- Anti-Inflammatory
- Reduce pain: resulting in improved physical function in those with OA
  - Higher pain relief than generic leading brand of pain medication in Europe
  - U.S. National Library of Medicine reported that devil's claw seems to work about as well as some NSAIDs.
- Moderate effectiveness for arthritis of the spine, hip, and knee
- Safety: appears to be non-toxic and carries few side effects





# S-adenosylmethionine(SAMe)

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- Naturally occurring compound found in almost every tissue & fluid in the body
- Anti-Inflammatory and Analgesic
  - *Lessen morning stiffness, reducing pain and swelling, improving ROM, and increasing walking pace*
- In multiple well-designed, short term studies of 4-12 weeks, these supplements were just as effective as NSAIDs.
- Recommended between 600-1,200 mg per day for OA (in divided doses)
  - May also be beneficial for mild-to-moderate depression (brain chemical involvement)
  - May reduce fibromyalgia symptoms (injection)



# Avocado Soybean Unsaponifiables (ASU)

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- Natural vegetable extracts made from avocado and soybean oils
  - Active components are currently unknown
- Treat OA symptoms by blocking pro-inflammatory agents and slow progression of disease by preventing deterioration of synovial cells and promote regeneration.
- Reduces pain and stiffness while improving function in joints
- Currently looking at further studies to...
  - Determine how BMI, disease severity, and activity level influence the effect of ASU
  - Determine if benefits are short-term or long-term



# Thunder God Vine

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- Evaluated for patients with RA
  - High quality studies denote that it may improve some RA symptoms.
  - Very few studies have taken place
- **Side effects may be greater than the benefits**
  - Infertility, decreased bone mineral content, hair loss, etc.
- Conclusion: Not enough evidence to date showing true significance with any health conditions other than RA.



# Cannabidiol Hemp Oil (CBD)

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- Made from high CBD and low THC hemp- unlike medical marijuana products.
  - *Low amounts of THC result in non-psychoactive products (No High!!)*
- CBD interacts through the endogenous cannabinoid system which regulates the body's homeostasis
  - "Corrects/Mediates" body's reaction
  - Within the past decade, over 23,000 studies published
- Believed to help with anxiety, epilepsy, inflammation, cancer, and chronic pain.
  - In a systematic review: moderate-quality reports of cannabinoids treatment effectiveness for chronic pain and spasticity.



# Fish Oil

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- Claim: Protects the heart, eases inflammation, improves mental health and lengthens life
- Contains Omega-3 fatty acids which...
  - Promote brain function, normal growth and development, and suppress inflammation
  - **Lowers triglycerides** to lower risk of death, heart attack, diabetes, and stroke
  - Deficiencies linked to various health problems
- In those with RA – improved morning stiffness, joint tenderness, and pain
- General recommendation:
  - Eating dietary sources of fish oil 2x/week is associated with reduced risk of heart disease (seafood or plant based)
  - Uncertain if greater benefits from Omega-3's in natural source or via supplement.



# Vitamin D

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- Few foods in nature contain Vit. D, but many foods are fortified with it
- Promotes calcium absorption
  - Normal bone mineralization, growth, and remodeling
- Modulates cell growth, neuromuscular and immune function, and reduces inflammation
- National Institute of Health reports that Vit. D improves immune response.
  - Correlation between Vit. D levels and seasonal infections
- For recommended dietary allowances, the average person from 1-70 years old needs 600IU (international units).
  - Sun exposure without sunscreen for 5-30 minutes at least 2x/week
    - *Cannot be within a window - UVB cannot penetrate*





# Essential Oils

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- Used for aromatherapy and traditional medicines to improve physical, emotional, and spiritual well-being
- Multiple theories behind why they work
- Common Oils Include:
  - **Anti-Inflammatory:** Eucalyptus, Orange, Yarrow, Peppermint, Patchouli, Rose, Helichrysum, Tea-Tree
  - **Anti-arthritic:** Galbnum, Tarragon, Thyme (rheumatism), Yarrow
  - **Analgesic:** Ginger, Lavender (also noted beneficial in treatment of NS issues- Headaches), Lemongrass, Marjoram, Rosewood, Peppermint
  - **Stimulating:** Eucalyptus, Grapefruit, Peppermint
  - **Sedative/Relaxant (soothe anxiety):** Frankincense, Marjoram, Vanilla, Bergamot, Roman Chamomile, Lavender



# Nutrition: The Role it Plays

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- Diets play a pivotal role in chronic inflammation
  - Many major disease are linked to chronic inflammation
- Our digestive bacteria release chemicals that create or suppress inflammation.
- Picking the “right” foods and avoiding the “wrong” foods
  - Brain-Gut connection
- **What Holds True:** When it comes to vitamin and mineral supplements, no substance can wholly substitute the wealth of nutrients you get from eating fruits, vegetables, and whole grains.
  - Our bodies love movement: we need to remain physically active
  - We need to listen to our bodies



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