Fight Inflammation and Support Nerve Health with Nutrition

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Objectives

- Understand “inflammation” and its effect on health
- Review inflammation’s relationship to neuropathy
- Identify pro-inflammatory food categories
- Define characteristics of an anti-inflammatory diet
- Discuss specific anti-inflammatory dietary patterns
  - Mediterranean Diet
  - Dr. Weil’s Anti-Inflammatory Food Pyramid
- Recognize foods that fight pain and inflammation
- Identify foods and supplements that support nerve health and may benefit some types of neuropathies
Inflammation

- The body’s attempt at self-protection
  - Part of our innate immunity
  - Helps heal wounds
- Conditions with “itis” involve inflammation
  - Arthritis, Tendonitis, Colitis, Appendicitis, etc…
  - Inflammation ≠ Infection
- Classic signs
  - Rubor (redness)
  - Calor (heat or warmth)
  - Tumor (swelling)
  - Dolor (pain)
  - Functio laesa (lost function)

**All, some, or none of these signs may be observed in certain instances.**

Acute vs. Chronic Inflammation

- **Acute**
  - Normal process
  - Rapid onset
  - Signs present for a few days or weeks
- **Examples**
  - Skin injury
  - Sore throat
  - Sprained ankle
  - Acute pancreatitis
  - Acute diverticulitis

- **Chronic**
  - Abnormal
  - Does not benefit body
  - Prolonged period (months or even years)
- **Can result from**
  - Infection
  - Environmental antigen
  - Autoimmune reaction
  - Chronic irritant of low intensity that persists

*Chronic inflammation is involved in a number of disease states.*
Chronic Inflammation’s Harm

- Illnesses linked to chronic inflammation
  - Heart disease
  - Cancer
  - Alzheimer’s disease
  - Metabolic syndrome
  - Physical disability
  - Obesity
  - Type II Diabetes
  - Muscle loss with aging
- Can spread to nerves or damage connective tissues
- A “Slow Burn” – Walter Willett
  - Nutrition Dept Chair, Harvard School of Public Health

Inflammatory Markers: HS-CRP, TNF-a, IL-6

Inflammation and Neuropathy

- Vasculitis (often from diabetes)
  - Can cause nerve damage in isolated areas
  - Mononeuropathy multiplex -or-multifocal mononeuropathy
- Connective tissue disorders & chronic inflammation
  - Can cause direct and indirect nerve damage
  - Inflamed protective tissue, spreads to nerve fibers
- Inflammation resulting from autoimmune disorders
  - Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)
  - Guillain-Barre Syndrome (Acute IDP)
  - Multifocal motor neuropathy

**Destructive effects of abnormal immune system activity cause many previously idiopathic neuropathies.**
SAD Diet is Pro-Inflammatory

- Standard American Diet (SAD) is heavy on foods that promote inflammation
  - Highly processed foods
  - Refined carbohydrates, “enriched” flour
  - Added sugars
  - Saturated and trans fats, wrong omega-6:omega-3 ratio
  - Cholesterol
  - Fast food

Anti-Inflammatory Dietary Guidelines

- Lots of fruits and veggies
- Olive oil, nuts and legumes
- Minimal saturated and trans fats
- Include good sources of omega-3 fatty acids
  - Fatty fish: Salmon, Tuna, Herring, Mackerel, Sardines
  - Plant sources: Walnuts, Flaxseed, Pumpkin seeds
- Plenty of whole grains (not refined or “enriched”)
- Lean protein (less red meat and full-fat dairy)
- Avoid processed foods and refined carbohydrates
- High intake of dietary fiber
- Spice it up!
Mediterranean Diet

- **High in:**
  - Fruits and vegetables
  - Whole grains
  - Olive oil
  - Beans, nuts, legumes, and seeds
  - Seafood (omega-3 FAs)
  - Herbs and spices

- **Moderate in:**
  - Poultry, dairy, eggs, cheese, and yogurt
  - Red wine (polyphenols, resveratrol)

- **Low in:**
  - Red meats
  - Processed foods
  - Unhealthy fats
  - Sweets
Dr Weil’s Anti-Inflammatory Food Pyramid

Anti-Inflammatory Foods to Fight Pain

- Cherries
- Hot Peppers
- Ginger
- Edamame (unprocessed, boiled soybeans)
- Turmeric (Curcumin)
- Salmon, Herring, Sardines
- Yogurt
- Coffee
- Mint

See handout for more details regarding target and recommended dose.
More Foods that Fight Inflammation

- Dark leafy greens (good source of Vitamin E)
- Nuts (particularly almonds and walnuts)
- Tomatoes
- Beets
- Ginger and Turmeric
- Garlic and Onions
- Olive oil
- Berries
- Tart cherries or tart cherry juice
- Dark chocolate (sparingly) 70% pure cocoa

Anti-Inflammatory “Natural Medicines”

- Bromelain
- Cat’s Claw
- Devil’s Claw
- Ginger
- Phellodendron (topically)
- Stinging nettle
- Turmeric
- Willow bark

Check with your doctor before beginning any "natural medicines", herbal remedies, or supplements.
Vitamins Essential to Nerve Health

- Vitamin E (Alpha-tocopherol)
- Vitamin B1 (Thiamin)
- Vitamin B6 (Pyridoxine)
- Vitamin B12 (Cobalamin)

Deficiencies in these vitamins may cause neuropathy

Supplements for Treating Neuropathic Pain

<table>
<thead>
<tr>
<th>Name</th>
<th>Effectiveness</th>
<th>Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetyl-L-Carnitine</td>
<td>*Possibly Effective</td>
<td>1500-3000 mg/day divided</td>
</tr>
<tr>
<td>Adenosine</td>
<td>Insufficient Evidence</td>
<td>Via injections</td>
</tr>
<tr>
<td>Alpha Lipoic Acid</td>
<td>*Possibly Effective</td>
<td>600-1200 mg/day</td>
</tr>
<tr>
<td>Biotin</td>
<td>Insufficient Evidence</td>
<td>Consult your doctor</td>
</tr>
<tr>
<td>Capsicum</td>
<td>Possibly Ineffective</td>
<td>Topical administration</td>
</tr>
<tr>
<td>Gamma Linolenic Acid</td>
<td>*Possibly Effective</td>
<td>360-480 mg/day</td>
</tr>
<tr>
<td>Inositol</td>
<td>Likely Ineffective</td>
<td>Consult your doctor</td>
</tr>
<tr>
<td>Magnesium</td>
<td>*Possibly Effective</td>
<td>UL=350 mg/day</td>
</tr>
<tr>
<td>Marijuana (nerve pain)</td>
<td>Insufficient Evidence</td>
<td>Consult your doctor</td>
</tr>
<tr>
<td>Vitamin B6 (Pyridoxine)</td>
<td>Insufficient Evidence</td>
<td>Consult your doctor</td>
</tr>
</tbody>
</table>

*Reputable scientific references suggest that the product might work for a specific use ... and at least one study (in humans) found that the product might be effective.
Supplements for Nerve Health

<table>
<thead>
<tr>
<th>Supplement Name</th>
<th>Claim</th>
<th>Recommended Dose</th>
</tr>
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<tr>
<td>Folic Acid</td>
<td>May promote nerve repair</td>
<td>400 mcg/day</td>
</tr>
<tr>
<td>Phosphatidyl Choline</td>
<td>Supports healthy nerve function</td>
<td>1000-15000 mg/day</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>Protects nerve cells and encourages normal growth</td>
<td>Consult your doctor</td>
</tr>
</tbody>
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*Check with your doctor before beginning any “natural medicines”, herbal remedies, or supplements.*

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Supplements to Consider

- Acetyl-L-Carnitine
- Alpha-Lipoic Acid (ALA)
- Vitamin B12 (get checked)
- Fish Oil
- Gamma Linoleic Acid
- Magnesium
- Multivitamin-mineral

*Check with your doctor before beginning any “natural medicines”, herbal remedies, or supplements.*
Other Ways to Reduce Inflammatory Markers

- Lose excess weight (and maintain it!)
- Exercise (30 min daily)
  - Aerobic
  - Moderate weightlifting
  - Don’t overdo it
- Get sufficient, good quality sleep
- Stay calm
  - Angry, hostile people have higher CRP levels
  - Stress hormones can trigger an inflammatory cascade

Questions?
Thank you!

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