

THE ANTI-INFLAMMATORY DIET (AID): A CLINICIAN'S GUIDE

What Is It?

The Anti-Inflammatory Diet (AID) is a general name for an approach to eating that is intended to decrease inflammation (and related pain). It can have an impact on a number of chronic diseases.

How Does It Work?

- Certain essential fatty acids, including omega-6's and omega-3's, are used to produce eicosanoids (e.g., prostaglandins and leukotrienes, and thromboxanes). Omega-6's lead to the production of pro-inflammatory compounds (e.g., PGE2 and LT2) and omega-3's to less inflammatory (e.g., PGE1, PGE3, and LTB5) compounds.
- Omega-3 fats, which are anti-inflammatory, alter gene expression and cell receptor signaling.
- Certain foods have more antioxidant effects. They are less likely to create free radicals, and they are linked to lower C-reactive protein (CRP) levels.
- Maintaining a healthy glycemic index/load keeps CRP levels down.
- A healthy gut microbiome seems to be linked to lower levels of inflammation.

How Do I Use It?

There are some key elements of an AID, including

1. **Keep non-fish animal fats intake low.** They contain arachidonic acid, which is pro-inflammatory, increases clotting, vasoconstriction, and vasospasm. Wild sources of meat seem to be better. Visible fat should be trimmed off a cut of meat
2. **Eat more fish.** Tilapia, anchovies, and wild salmon are safe options, whereas fish higher up the food chain, like sharks, swordfish, and golden base are less ideal because of mercury levels. Aim for 2-3 servings of fatty, cold-water fish weekly.
3. **Limit omega-6 fats** such as corn, soy and vegetable oil. Coconut oil that hasn't been hydrogenated is probably okay, because it contains a lot of medium-chain fatty acids that the liver readily absorbs. Extra virgin olive oil is a healthy choice.
4. Eat more **omega-3's**. Go for 1-2 gms of docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) daily. Omega-3 eggs are an option. 1 gm of fish oil has about 0.5-1 gm of combined omega-3's, so a standard dose of fish oil is 3-4 gms daily. To treat inflammatory conditions, consider 4-5 gms of fish oil daily.
5. Keep **vegetable and fruit intake** high. This is correlated to lower levels of inflammatory markers. Remember that corn and potatoes really don't count as vegetables.
6. Eating **whole grains** is linked to lower CRP levels.
7. Eating dietary **fiber** slows digestion and can reduce inflammation – go for at least 22 gms daily.
8. Eating **legumes**, four servings per week, has been found to reduce CRP,
9. Eating five or more servings of **nuts and seeds** weekly also lowers inflammatory markers.
10. Eat anti-inflammatory **herbs and spices**. Examples include turmeric, rosemary, ginger, oregano, clove, cumin, cayenne, and boswellia.
11. **Don't char food**, as charring is linked to inflammation.

12. Pay attention to **glycemic load**. (For more on the glycemic index, see the Endocrine Health module on the Whole Health Library Website. The website is reviewed on page 209 of the binder.)
13. **Avoid obesity**, which is in and of itself is an inflammatory state. Even with healthy eating, portion size should be controlled.
14. Ensure adequate **magnesium** intake (6 mg/kg daily).

The Mediterranean and Okinawan diets are excellent examples of AID's.

When Should I Use This?

AIDs can be used in any chronic disease where inflammation is a component. Key examples with good associated research include:

- Coronary heart disease
- Type 2 diabetes
- Rheumatoid arthritis and other autoimmune diseases
- Chronic obstructive pulmonary disease
- Alzheimer's
- Inflammatory bowel disease
- Allergies and asthma (including eczema)
- Cancer
- Depression (really depressed are particularly likely to improve)

What Should I Watch Out For?

- This diet is quite safe.
- Remind people that inflammation isn't all bad. We need it, just not chronically and not in excess. The goal is to decrease "meta-inflammation," chronic, low grade damaging processes that use the same pathways as acute inflammation. But fevers, swelling, and activation of the immune system are important to our health. It is not helpful to completely eliminate omega-6 fats.
- You may be asked to run titers of omega-3 levels. Most clinicians will try the diet first and only consider more investigations if it is not effective with time. People need not have an elevated CRP to benefit from this diet.

Any Other Tips?

- The AID can take a while to be effective. Patients should try it for at least six weeks, if not longer.
- Be sure to complement an AID with other ways to lower inflammation:
 - Limit alcohol
 - Balance glucose, so that there aren't large insulin spikes (insulin is pro-inflammatory)
 - Ensure adequate sleep
 - Keep stress levels low
 - Maintain a healthy mix of gut microorganisms

- Many people assume they can just eat or supplement with alpha-linolenic acid (ALA – not to be confused with alpha-lipoic acid). ALA is found in flax oil. Less than 1% of it is converted into DHA and EPA, which are needed for the anti-inflammatory effect.
- For vegetarians, there are algae-derived omega-3 supplements available.

Additional Resources

Sharp, S. The Anti-Inflammatory Diet: Clinical Tool, Food and Drink Module. Whole Health Library Website. Available at: <http://projects.hsl.wisc.edu/SERVICE/curriculum/index.html>. Accessed August 8, 2016.

Kohatsu W. The Antiinflammatory diet. In: Rakel, D, ed. *Integrative Medicine*. 3rd ed. Philadelphia, PA: Elsevier Saunders; 2012: 795-802.

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