

Tea & Essential Fatty Acids

This paper has been reprinted with the kind permission of Jason Crean Biology teacher, zoo consultant and speaker.

The History of Tea

- Began in China, 5000 years ago
- Emperor Shen Nung discovered tea by accident
- Brought to the U.S. by the Dutch in 1650

Types of teas

- **Green**
- **Black**
- **White**
- **Herbal**

Tea plant: *Camellia sinensis*

- Small, evergreen shrub
- Habitat: primarily grown in Japan, China
- The harvested leaves produce green, black, oolong and white teas
- Variance in flavors due to processing

What's the difference?

- **Green:** young leaves picked and dried quickly, minimally oxidized then fired
- **Black:** complete oxidation of the mature leaf prior to firing
- **Oolong:** leaves are rolled after harvesting, allowing the volatile oils to react with air. Very slow oxidation prior to firing
- **White:** picked before the leaf buds have opened (buds are covered with short, white hairs), leaves are steamed and dried quickly

Green Tea Health Benefits:

- Polyphenols (potent antioxidants):
 - scavenge free radicals (20-30 times the potency of vitamin E)
- Vitamin C: strengthens immune system
- Lowers LDL cholesterol
- Increases HDL cholesterol
- Reduces blood pressure
- Nutrients: carotene, B1, B2, B6. Folic Acid, Manganese, potassium

Other benefits

- American Journal of Clinical Nutrition found green tea significantly increased energy expenditure and fat oxidation
- American Association for Cancer Research found green tea has the ability to prevent gene damage (associated with the onset of cancer)
- Contains epigallocatechin-3-gallate (EGCG) which slows angiogenesis (tumor blood vessel growth)
- Clinical studies confirm green tea's role in reducing heart disease, incidence of stroke

Black Tea Health Benefits:

- Antioxidants keep blood vessels supple, promote healthy blood flow
- Flavonoids reduce incidence of atherosclerosis (narrowing of arteries)
- Tannins: Chelate heavy metals (lead and iron)

White Tea Health Benefits:

- Strongly inhibits mutagenicity (a result of unrepaired DNA damage), potent anti-cancer properties
- Abundant polyphenols (antioxidants)
- Aids the body in metabolizing carcinogens

Caffeine

- Green, black, oolong and white teas must be decaffeinated for birds
- Purchase teas that are decaffeinated by water and carbon dioxide (to retain the polyphenols) NOT ethyl acetate
- Herbal teas are naturally caffeine-free

Herbal Teas:

■ Chamomile:

- Significant increases in urinary hippurate (a breakdown product of polyphenols) which has antibiotic properties
- Increases in urinary glycine, an amino acid that has been shown to relieve muscle spasms
- Contains nerve relaxants (acts like a natural calmative/sedative)
- Beneficial for insomnia (and nightmares), pain, stress, hyperactivity, anxiety
- Digestive tonic, IBD

Herbal Teas:

- Rose hips

- Natural source of vitamin C and bioflavonoids. Potent blood, liver and kidney tonic. Use for fatigue, recovery from illness

- Peppermint

- G.I. upset, antiseptic properties, anti-viral

- Ginger root

- Improves circulation, anti-nausea, good for arthritis

- Anise seed (parsley family)

- Aids digestion, soothes cough, bronchitis

Herbal teas:

- St. John's Wort (Hypericum)

- Mental calmness, anti-anxiety, anti-OCD

- Raspberry leaf

- Rich in calcium, magnesium

- Considered a "female" tonic

- Echinacea

- Immune stimulation (interferon and T cell activity)

Herbal Teas:

- Essiac

- Founded in 1922 by Canadian nurse Rene' Caisse

- Several herbs, including burdock root, sheep sorrel, slippery elm, Indian rhubarb

- Used to restore health to thousands of individuals (cancer)

- Herbs are used to help cleanse the blood, nourish the immune system

Herbal teas:

- Rooibos ("Red" tea)

- Grown high in the mountains of South Africa

- Mineral rich (low tannins)

- Contains natural anti-spasmodics (helps with colic, indigestion, muscle fatigue)

- Rich in flavonoids, especially aspalathin, which is anti-allergenic, anti-inflammatory

- Contains alpha-hydroxy acid, antioxidants and SOD

- Potent anti-mutagenic components that inhibits chromosomal breakdown

- Abundant oligosaccharides that are anti-viral

Brewing hints:

- Use hot, not boiling water to make tea

- Let the tea cool completely before offering it to your birds

- Remove the tea bag before serving
- If your bird is suspicious, steep tea for a shorter period (make tea more dilute)
- Substitute tea for water when making cooked foods or baking
- Never completely replace water with tea!

Essential Fatty Acids EFA'S

- The "good" fats
- Avian requirements are substantial
- Critical for normal reproduction, feather production and a healthy immune system
- Needed for absorption of A,D,K,E
- Must be supplied by the diet
- Inactivated by heat, light, processing

Omega 3 (alpha-linolenic)

Needed for:

- Cell reproduction
- Production of eicosanoids
- Functional immune response
- Hormone synthesis

Deficiency causes:

- Stunted growth
- Vision impairment
- Motor incoordination
- Immune dysfunction (allergies, cancer)

Omega 6 (linoleic)

Needed for:

- Normal skin permeability
- Production of healthy, strong feathers
- Normal reproduction
- Proper organ function

Deficiency causes:

- Failure to gain weight
- Liver/kidney degeneration
- Behavioral disturbances

- Poor wound healing
- Infertility
- Poor feather development
- Scaly skin

Where to find EFA's

- Brazil nuts, pecans, walnuts, hazelnuts, pinenuts
- Pumpkin seeds
- Flax seed and oil
- Borage and primrose oil
- Palm Oil

My favorite oil: Coconut oil

- Richest known source of MCT's (instant energy!)
- Highly digestible, great for G.I. issues: Crohn's disease, irritable bowel syndrome, ulcers, and colitis
- Converts to instant energy, no insulin needed
- Can be heated without risk
- Excellent source of Lauric acid (antibacterial/antiviral/antifungal)
- Reduces the *risk of cancer* and other degenerative conditions
- Improves *cholesterol* levels and helps fight heart disease
- Relieves *arthritis*
- Helps balance the body's *metabolism and hormones*
- Promotes normal *thyroid function*
- Helps prevent or control *diabetes*
- Rejuvenates the skin *and protects against skin cancer*, age spots, acne, and other blemishes
- Helps prevent *osteoporosis*
- Reduces *allergic reactions*
- Supplies *fewer calories* than other fats
- Organic, cold or expeller-pressed, 76°F melting point

Go Nuts!

- Fun, healthy snack
- Low in saturated fat
- Cholesterol free
- Excellent source of protein, fiber, trace minerals and phytonutrients
- Contain 90% polyunsaturated "healthy" fat that helps maintain weight
- A critical part of a balanced diet