Complementary and Alternative Therapies for HD

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Complementary and Alternative Medicine (CAM) Definition

“CAM is a broad domain of healing resources that encompasses all health systems, modalities, and practices and their accompanying theories and beliefs, other than those intrinsic to the dominant health system of a particular society or culture in a given historical period.”

What is the “Politically Dominant” Health Care System?

Reflects broad acceptance as evidenced by “medical practice laws, legally recognized accreditation...., third party payment, privileged access to research moneys and to prestigious publication venues, high status, and so forth.”

Integrative Medicine

Combined conventional and CAM treatment approach
Why Consider CAM for HD?

- Despite the discovery of the gene responsible for HD in 1993, we don’t yet have a cure.

- Treatments for HD have lagged behind those of other neurological conditions; focus on the cure.

- Influence of predictive testing: what can a person who tests positive do while they’re still healthy?
HD Treatment Triad*

*Adapted from Jerry Lampson, [www.hdlighthouse.org](http://www.hdlighthouse.org)
Spirituality

- Multiple paths......organized religion, massage, relaxation, yoga, meditation

- No research has been published in this area, but PHAROS and PREDICT studies are collecting data via questionnaires from participants
Exercise

- HD study mice had delayed onset of HD symptoms when placed in a stimulating environment

- One study of 6 individuals with HD showed behavioral improvement with remotivation therapy

Exercise

- Mechanism: explored by Spires et al in UK:
  
  (J Neuroscience 2004;24:2270-6)

- Using study mice, mice were randomized to be placed in regular vs. enriched environments. Control mice with HD gene were also used.

- Results: those in enriched environments had improved coordination and had normal levels of brain growth factors.
Exercise….Does It Help in HD?

- Yes!
- Possibly neuroprotective
- Definitely helps symptoms of pain, decreased balance, walking difficulties
- Recommendation: exercise helps!
Diet and HD

Choose fruits and vegetables over unhealthy fatty foods
The HD CAG Expansion Causes a Number of Metabolic Changes

- People with HD have decreased body mass index (BMI) and over 3 years gain less weight than average Americans
- Increased 24 hr energy expenditure
- Cholesterol metabolism is abnormal in HD brain cells
- Altered glucose tolerance in people with HD
Diet Supplements in HD

- Trehalose, a naturally-occurring sugar molecule found in shellfish, honey, and mushrooms, helped HD mice.

Diet Supplements

Curcumin (spice turmeric) reduced protein clumping in HD cells in culture

More Diet Clues

- Fruits rich in polyphenols (blueberries, cranberries, strawberries, concord grape juice) can reduce oxidative stress and brain inflammation and can improve memory and motor behavior.

- Another polyphenol, green tea, may also help cells degrade abnormal protein.

Joseph et al, Ann NY Acad Sci 2007;1100:470-485
Kalfon et al, L Neurochem 2007;100:92-1002
A Role for Chocolate in HD?

- Cocoa contains a high concentration of flavanoids. These compounds reduce oxidative damage in animal and cell models.

More Diet Clues

- Fruits rich in polyphenols (blueberries, cranberries, strawberries, concord grape juice) can reduce oxidative stress and brain inflammation and can improve memory and motor behavior.
Diet in HD: What Can We Recommend?

- Eat a diet rich in polyphenol flavinoids (BB, other fruits, green tea, cocoa)
- Match caloric intake to energy requirements
- Consider using trehalose or honey in place of sugar
- Role for Turmeric.....needs more research
- Cholesterol......needs more research
Supplements in HD

- Coenzyme Q10
- Creatine
- Omega 3 Fatty Acids
Coenzyme Q10

- **Mechanism:** Improves energy metabolism in mitochondria
- **Source:** occurs in meats and seafood
- **Research:** benefit seen in HD mouse model, in brain energy metabolism in people with HD, and showed non-significant trend* of helping slow HD progression in HSG CARE-HD study.

*Not statistically significant. HSG, Neurology 2001;57;397-404
Coenzyme Q10

- **Dosage:** 1200-2400 mg/day
- **Safety:** established
- **Down-side:** cost (approx. $200/month)
Creatine

- **Mechanism:** improves energy metabolism in body and brain
- **Source:** protein-derived
- **Research:** improved brain metabolism and decreased blood levels of 8OH-DG; safe and tolerable in people with HD
Creatine

- Dose: 5-10 gm/day (possibly more)
- Safety: established at those doses
- Cost: relatively low
- Caution: kidney disease, diabetes

*Hersch et al, Neurology 2006;66:250-2*
Omega 3 Fatty Acids

- **Mechanism**: improves energy metabolism
- **Source**: seafood, plants (must be obtained from diet)
- **Research**: Modest help in large European trial; TREND-HD study showed no improvement in chorea, but many study participants felt a benefit
Omega 3 Fatty Acids

- **Dose:** 2 or more grams/day
- **Safety:** established, but beware of mercury contamination
- **Cost:** Low
- **Caution:** blood thinners, avoid falls