

Featured Topic: Glutathione (5 slides)

Terry Talks Nutrition

IMPROVING THE HEALTH OF AMERICA

Glutathione

- The body can make two antioxidants – the rest must be obtained in the diet
- One is superoxide dismutase and the other is **glutathione**
- Mechanism of action
 - Neutralizes free radicals
 - Regenerates spent antioxidants including Vitamins C and E
 - Helps the immune system fight off infections and cancer
 - Critical for detoxification: sends poisonous toxins through the liver and out of the body
- Glutathione is critical to life
 - All cells in the body can synthesize glutathione
 - People born unable to properly metabolize glutathione usually suffer from serious illnesses and will probably die early in life

The Two Faces of Glutathione

- Glutathione occurs in two forms
- The desirable form – reduced glutathione
 - Active form
 - Able to neutralize free radicals and provide all the health benefits of glutathione
 - Abbreviated as GSH
- The undesirable form – oxidized glutathione
 - Inactive glutathione
 - Must be regenerated to be effective
 - Abbreviated as GSSG

Low glutathione levels

- A healthy child has about **99% of their glutathione in the active form**, and 1% or less in the inactive form
- A healthy young adult has about **90% of their glutathione in the active form**, and about 10% in the inactive form
- But the older we get, the less active glutathione we have, and the more inactive glutathione is present
- In fact, **by age 65 we have up to 50% less of the active form of glutathione**

Other factors which reduce glutathione levels

- **Disease**
- **Poor nutrition**
- **Toxins and pollution**
- **Infections**
- **Trauma**
- **Drugs—especially acetaminophen**
- One study found that children with autism have only 60% active glutathione (and 40% in the inactive form)

Restoring glutathione levels

- The difficulty with supplemental glutathione is that it breaks down rapidly when taken orally
- The only effective way to get glutathione in its active form was to have it injected
 - Inconvenient
 - Very expensive (up to \$1000 a treatment)
- New research has found a way to stabilize glutathione so that it remains in its active form

French Research on Glutathione

- French researchers have patented a stable, oral glutathione
- Tablet dissolves in the mouth
- Shown in clinical research to increase glutathione ratios (active versus inactive) **230%** over unprotected glutathione
- Also improved glutathione ratios 73% better than NAC – a glutathione precursor

Who can benefit from glutathione?

- Much of the research on glutathione has focused on brain diseases, especially Parkinson's disease
- Also use for
 - Cancer
 - Autism
 - Diabetes
 - Depression
 - Arthritis
 - Lyme disease
 - HIV/Aids
 - Any disease of the brain/nervous system

Take 150 mg of active (reduced) glutathione twice or three times daily, allowing it to dissolve under the tongue. Don't eat or drink until the tablet has dissolved.

Reducing Carbohydrate Intake to Control Type 2 Diabetes (1 slide)

Terry Talks Nutrition

IMPROVING THE HEALTH OF AMERICA

Cut Carbs – Reduce Blood Sugar

- Researchers wanted to see the effects of reducing carbohydrates WITHOUT also losing weight in people with Type 2 diabetes
 - Weight loss reduces blood sugar levels – the researchers wanted to see the effects on blood sugar with a moderate diet change alone and NO weight loss
- Developed two controlled diets
 - Typical diabetic diet (control): 50% carbs, 17% protein, 33% fat
 - “Low carb” diet: 30% carbs, 30% protein, 40% fat
- Everyone spent six weeks on each diet, with a washout period (normal eating) between
- Results: Both diets were associated with lower blood sugar levels, but versus the standard diet, the low carb diet was associated with
 - 83% greater reduction in HbA1c levels
 - 95% greater reduction in fasting blood sugar levels
 - 2.4% reduction in liver fat versus a small increase in liver fat when on the standard diabetic diet

A closer look at: aspirin (3 slides)

Terry Talks Nutrition

IMPROVING THE HEALTH OF AMERICA

The history of aspirin

- The modern drug we call aspirin is based on a natural compound called salicin found in willow bark and other plants
 - Willow bark has been used as an anti-inflammatory and pain reliever for thousands of years
- In the 1800s, chemists extracted salicin from willow bark and created synthetic versions – first salicylic acid, and then chemists at the Bayer company in Germany perfected what we now call aspirin: **acetylsalicylic acid**
 - NOTE: In the body, salicin from willow bark is converted to salicylic acid
- Aspirin became the most commonly used drug in the world

Aspirin is not without problems

- Aspirin use is associated with stomach and intestinal bleeding (ulcers), nausea, kidney problems, asthma, and even an increased risk of stroke
 - Aspirin use has been associated with a 43% increase risk of a major bleeding event
- Aspirin should never be given to children under age 16 as it can increase the risk for Reye's syndrome, which can lead to permanent brain injury or death

Alternative to Aspirin

- Willow bark – the original!
 - Gentler on the stomach than synthetic aspirin
 - Can be used for pain and inflammation – shown in clinical studies to be especially effective for back pain
 - In a study of white willow versus other conventional drugs or treatments for back pain, **40% of the white willow group was pain free in 4 weeks**, while only 18% of the conventional treatment group was pain free
- Combine with curcumin, boswellia, devil's claw and DLPA to relieve pain and inflammation

**Can you “turn back time” with food?
(1 slide)**

Terry Talks Nutrition

IMPROVING THE HEALTH OF AMERICA

4 Foods that Can Help You Stay Young

- **Nuts:** healthy fats, fiber, vitamins and minerals
 - Research: Daily serving of nuts is associated with a 30% reduced risk of death from heart disease; eating nuts twice a week means 27% less risk of age-related weight gain
- **Blueberries:** one of the highest antioxidant levels of any fruit
 - Research: daily blueberry consumption significantly increased blood flow in the brain, as well as brain activity and memory
- **Eggs:** Protein, Lutein, and Zeaxanthin
 - Research: 2-4 eggs a week was associated with 62% reduced risk of macular degeneration versus not eating eggs
- **Olive Oil:** healthy fats and antioxidants
 - Research: middle aged and older adults who had the highest intake of olive oil were the least likely to have sun-damaged skin; in animal studies, olive oil increased memory and learning and prevented brain changes associated with Alzheimer's disease and dementia