

**Toxic Fat**  
**Barry Sears, PhD**  
**2008**

"The underlying cause of chronic disease comes from increased production of a natural fatty acid called arachidonic acid (AA), which can be incredibly toxic at high concentrations. This is the toxic fat that is key to not only understanding our obesity epidemic but also providing the linkage between obesity and chronic disease." P. 2

"Classic inflammation hurts; silent inflammation slowly kills." P. 25

"All forms of inflammation (including silent inflammation) are ultimately controlled by a group of hormones known as eicosanoids."

"It is the balance of eicosanoids in your body that is the ultimate key to wellness."

"All eicosanoids are ultimately derived from dietary fat, in particular the polyunsaturated essential fatty acids that must be supplied by the diet."

"Virtually all chronic diseases can be viewed as a consequence of a continuing imbalance of good and bad eicosanoids." P. 259

"There are only three such essential fatty acids that can be made into eicosanoids:  
Dihomo-gamma-linolenic acid (DHGLA)  
Arachidonic acid (AA)  
Eicosapentaenoic acid (EPA)" P. 19

Smoking marijuana dramatically increases appetite; it gives one the "munchies." This is because of the chemical tetrahydrocannabinol or THC.

The brain makes its own endocannabinoid hormones, making one dramatically more hungry, from the toxic fat arachidonic acid. P. 39

Silent inflammation causes both insulin and leptin resistance. P. 45

Sleep deprivation and stress create both insulin and leptin resistance.

"From AA come all the pro-inflammatory eicosanoids that in excess accelerate chronic disease." P. 77

"From DHGLA come very powerful anti-inflammatory eicosanoids that accelerate cellular rejuvenation." P. 77

"EPA dilutes AA concentration in cell membranes, making it difficult to make pro-inflammatory eicosanoids." P. 77-8

"It is excess insulin that makes you fat and keeps you fat" p. 87

**The Numbers**

TG = triglycerides  
 HDL = high density lipoprotein (good) cholesterol

If the TG/HDL ratio is greater than 4, you probably have Toxic Fat Syndrome because it means you have insulin resistance.

If your fasting insulin is greater than 10 uU/ml you have increased activity of the delta-5-desaturase enzyme that is the key to the production of arachidonic acid. Ideally, fasting insulin should be less than 5 uU/ml. "The lower your fasting insulin levels, the longer and better you are going to live." P. 77

"The true marker of Toxic Fat Syndrome is the AA/EPA ratio. If it is greater than 10, then you have Toxic Fat Syndrome, regardless of how good you look in a bathing swimsuit. A good ratio is 3, and the ideal ratio is about 1.5." p. 78

Chronic disease people tend to have an AA/EPA ratio greater than 20. p. 78

**Markers of Malignant Toxic Fat:** p. 80

- AA/EPA > than 15
- Fasting insulin (uU/ml) > than 15
- TG/HDL ratio > than 4

	Dangerous	Poor	Good	Ideal
AA/EPA	>15	10	3	1.5
Fasting Insulin	>15	10	5	<5
TG/HDL	>4	3	2	<1
AA/DHGLA				< 3

Condition (p. 113)	Amount of EPA + DHA Required
No chronic disease	2.5 grams / day
Overweight, obese, type 2 diabetes, heart disease, before starting any weight-loss program	5 grams / day
Chronic pain	7.5 grams /day
Neurological Disorders	10 grams / day

"You will also need to take at least one hundred times more EPA compared to the levels of supplemented GLA not to have problems." P. 268

"The AA/DHGLA ratio will indicate where you stand in terms of the body's ability to increase cellular rejuvenation (anti-aging)." P. 259

"The AA/EPA ratio will tell you the extent of silent inflammation in the body." P. 258