Diet, inflammation, and low testosterone

By David R. Seaman, DC, MS

In recent years, low testosterone (low T) has become big business. “Low T” is promoted in television commercials, radio spots, and print/internet news sources. Not surprisingly, “low T” ads have led to a surge in testosterone prescriptions (1). But is this the way to go?

The alternative/complementary medicine field has also responded by providing alternatives to treating “low T.” This is part of the problem, as it represents an attempt to treat “low T” that is similar to the medical approach, which does not take into consideration the biochemical nature of a man with low levels of testosterone. For example, one popular “natural medicine” website promotes the notion that liver cleansing can improve “low T,” as liver cirrhosis is associated with reduced testosterone. While cirrhosis is associated with “low T” (2), there is no evidence that liver cleansing, such as consuming olive oil potions, has any metabolic effect other than causing one to eliminate insoluble olive oil soaps in the stool that are shaped like gallstones (3). Other foolishness is also promoted at these websites, such as the notion that supplementing with vitamin D will increase your testosterone levels by 30%, which can be interpreted as being quite substantial depending on one’s statistical viewpoint. It turns out that after one year of supplementing with 3,332 IU per day of vitamin D, total testosterone increased from an average of 10.7 to 13.4 nmol/l (4). In other words, after one year of supplementation, testosterone remained in the low range of normal (9-55 nmol/l), which means that just supplementing with vitamin D has essentially no effect on testosterone levels.

The proper way to view “low T” is to understand that it is a proinflammatory state, which is true for most chronic conditions (5). It is now very clear, that the over-consumption of sugar, flour, and refined oils, which represent close to 60% of the average American’s caloric intake, is associated with the development of chronic inflammation, which involves the accumulation of excess body fat (6,7), which promotes “low T.”

Historically, accumulating body fat has been viewed merely as a storage source of excess calories, but now we know that as fat cells swell in size, a substantial change occurs in the cellular anatomy and metabolic activity of adipose tissue. In the lean state, adipose tissue contains a population of anti-inflammatory immune cells that release anti-inflammatory cytokines. As fat cells swell in size, anti-inflammatory immune cells are replaced with pro-inflammatory immune cells that continuously release pro-inflammatory cytokines (7). This is a state of chronic inflammation, in which men live for years, until succumbing to a chronic disease. Every time these men overeat sugar, flour, and refined oils, there is a postprandial production of inflammatory chemistry that gets superimposed over the prevailing chronic state. Over time, multiple organs/tissues suffer from being bathed in this chronic inflammatory chemistry, including leydig cells (8).

Leydig cells produce testosterone in men and they are sensitive to the prevailing biochemistry to which they are exposed. It turns out that the chronic inflammatory state described above, which is characteristic of the metabolic syndrome and type 2 diabetes, leads to an inhibition of leydig cell production and release of testosterone (8). This underproduction of testosterone cannot be improved by taking drugs or supplements, as many people have been misled to believe.

The underlying cause of "low T" must be addressed, which is consistent with how all chiropractors are trained to think. The most common cause of "low T" is the pro-inflammatory metabolic syndrome, which can easily be addressed by chiropractors via diet, supplementation, stress management, and exercise (7,9). I have also created a YouTube video to help educate laymen about this process, which can be watched at DeFlame Nutrition.

References

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