

## MORE ON HEART DISEASE... *Hmm...* CAN WE JUST TALK?

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Last time I ended promising to tell you about cellular energy and how vitally dependent we are on it for health and *life*. I know I've talked about this before, but in review and then perhaps in a little more depth:

Adenosine triphosphate – ATP – is the most basic form of biological energy. It is generated through the mitochondria of our cells in a process known as the Krebs cycle. It is responsible for keeping all of our cells respiring optimally, and when this is happening everything about us just works better. Cells can detoxify easily, easing allergies and so-called autoimmune illnesses (save that subject for another chapter!). When cellular energy is abundant the muscles form and function very well. When cellular energy is in short supply the muscles fail, and remember... the heart is a muscle. Do you know that since the advent of statin drug therapy, which interferes with ATP production, the incidence of heart *failure* has doubled?

Although certain conditions seen in children can be improved by nutritionally boosting ATP production – migraines, cyclical vomiting syndrome to name a couple of them – most people suffering from low ATP are over thirty. This is because that as we age our cells have fewer mitochondria; as fatty acids are drawn over the mitochondria the energy is produced. Fewer mitochondria equals less energy. This decline in cellular energy, or ATP, has been called the “decline of life’s energy,” or DOLE. In my favorite paper on ATP and DOLE<sup>1</sup> (which I think you would find fascinating), this process is explained:

*“Mitochondria are the energy producing organelles that exist in every cell of the body. The energy created by mitochondria is in the chemical form of ATP. The sum composite of all the integrated energies of cells of an organism at any given time can be considered the ‘life-force’ of that organism. As the organism senesces, there is a progressive decline of this life-force, i.e. a progressive decline of life’s energy (DOLE). **In humans beyond 30 years of age, life-force declines in an exponential descending spiral.** The decrease in the body’s energy is observed as a steady decline in the ability to perform work. The loss of the ability of the cells of the body to produce energy forms the basis of this ‘whole body physical energy’ decline. As a consequence, all people and animals experience age-related alterations in body composition. For example, as the body’s cellular energy level declines lean body mass shrinks, adipose mass expands, muscle strength declines, neural and defense mechanisms fail, and cells slowly but consistently lose the capacity to function. The degree to which this has occurred, the extent of the decline, is the body’s ‘DOLE status’.”*

Okay, so what does all of this DOLE talk have to do with heart disease? Plenty. You’re not thirty anymore, right? This means your cells are already starting to perform like older cells – producing less energy. One of the things I recommend to all of my adult clients is to use something in supplemental form that keeps ATP levels more youthful. This strategy is a cornerstone when it comes to delaying the aging process and preventing degenerative disease. When your doctor tells you your cholesterol is too high and puts

you on a statin drug to keep your liver from producing cholesterol, you're cellular energy suffers a brutal blow. This is because the medication will not only prevent the liver from producing cholesterol, but it will also prevent the production of Coenzyme Q10 and l-carnitine, and these are crucial to the production of ATP. ATP is important in all metabolic processes but especially when it comes to muscular health – *hello!* The heart is a muscle!!

So... as if it weren't bad enough that your cellular energy was already declining with every passing day, you're paying some pharmacy a lot of money every month to simply speed up the process! When you think of that and then consider that high cholesterol (> 350 total cholesterol!) is only seen to correlate with heart disease in a very small percentage of the male population in their 30's and 40's, you might want to think twice before embarking on such a path!

Well. If high cholesterol isn't the cause of heart disease, I say let's investigate the things that really are. Just to keep you interested, I'll leave you with these key words.... inflammation, calcium, homocysteine, trans- and polyunsaturated fats... to name a few. What to do about it? I have a few suggestions that I am pretty sure the pharmaceutical rep I saw walking into a local doctor's office the other day while I was gassing up didn't have any literature on! Hmm... okay, I'll give away a few more key words – Vitamins D3 and K2; vitamins B12, B6, and folic acid; vitamin C, l-lysine, and proline; fish oil.

**Decline of life's energy theory of ageing 1. Revitalization of energy metabolism and ageing mitochondria** Geoffrey F Grant & Tyler Parr *Office of Research and Biotechnology, ME 1-806, University of North Texas Health Science Center, 3500 Camp Bowie Blvd, Fort Worth, Texas 76107, USA*