Dynamic Chiropractic

Theories of Aging 101

John Maher, DC, DCBCN, BCIM

There are many theories of aging, but to keep things easy to understand, we will make two basic categories: oxidation reactions and suboptimal hormone levels.

Oxidation reactions occur when the combustion of oxygen that keeps us alive and well produces byproducts called oxygen free radicals. When this process occurs in metals, we call it rusting. When it happens in us, we call it aging!

Free radicals are molecules that have lost an electron. When this happens to oxygen, we call it singlet oxygen because it has only one of its electrons left. This is a highly unstable condition. To restore balance, the radical tries to steal an electron away from (or donate the remaining one to) another nearby molecule. In so doing, the free radicals create "molecular mayhem," disrupting, damaging and destroying nearby cells. If DNA is involved, mutations occur - a favored theory of a common cause of cancer. If low density lipids are involved, atherosclerosis ensues. Over time, free radical damage accumulates in all our tissues to one extent or another, thereby aging us.

Free radicals are not only produced inside us, but taken in through smoking, foods, air and water pollution, x-rays, sun exposure and various poisons, to name the most common sources. "Aging is a disease," says E.R. Stadtman, a researcher on aging at the National Institutes of Health. "The human life span simply reflects the level of free radical oxidative damage that accumulates in cells. When enough damage accumulates, cells can't survive properly anymore and they just give up."[1]

The other major theoretical cause of aging in this introductory overview is suboptimal hormone levels. As we age, some hormones begin a precipitous decline that strongly parallels the onset of aging signs and symptoms. These include human growth hormone, melatonin, DHEA, pregnenolone, androstenedione (made famous by Mark McGwire), testosterone, estrogen and progesterone.

Conversely, insulin levels tend to rise, culminating in adult onset diabetes. A relative rise in cortisol, the stress hormone, is all too common. Although thyroid hormone doesn't generally fall with age, many anti-aging doctors insist that slow thyroid function is common and, when present, definitely hastens aging and heart disease.

Human growth hormone (aka HGH), as the name implies, stimulates the growth of our tissues. Our internal organs, skin, muscles, nerves and bones are all stimulated to grow by HGH. As our levels of growth hormone shrink, so do we!

Melatonin helps us sleep and may help prevent cancer. One reason why people over 60 sometimes find it hard to go to sleep is declining melatonin levels.

DHEA is a building block out of which estrogen and testosterone are made. (It is first converted to androstenedione, however.) DHEA also boosts our immune systems and brains.
The sex hormones (testosterone, estrogen and progesterone) give us our sex drive; build up muscle, skin and bone; keep our minds sharp; protect our hearts; and help us feel and be

attractive.

Thyroid hormone helps keep us energetic and trim. Along with the above hormones, it helps us burn fat. That spare tire that develops around our bellies at middle age (central obesity) has a lot to do with lower hormone levels. That may be why that last diet didn't work!

Elevated insulin levels are associated with diabetes, prediabetes, and the mysterious sounding "syndrome X." When insulin no longer works well, known as insulin resistance, both insulin and (eventually) blood sugar rise. The excess blood sugar is forced into your tissues, damaging them with "advanced glycation end-products," known appropriately enough as "age"!

Cortisol levels don't decline with age. High levels of this stress hormone are catabolic. That means it catabolises you, or literally "eats you up inside."

Now that you have had a brief introduction as to some of the major factors in aging, let's do an overview of a rational anti-aging program.

First, regardless of age, we want to fill our bodies with an abundance antioxidants while doing our best to avoid oxidant poisons. (Some of us may even need to detoxify to rid our bodies of accumulated oxidants like heavy metals or pesticides.) This is done through a good diet and aggressive supplementation.

"We could save billions of dollars if we could delay the onset of chronic disease by as little as 10 years," says Dr. J. Blumberg of Tufts University, who advises adults to take antioxidant vitamin supplements.[2]

Second, we want to prevent "dysglycemia," syndrome X, diabetes and the accumulation of advanced glycation end products - remember age? - by good diet, supplements and exercise.

Third, we want to minimize stress and maximize our ability to handle it by balanced, healthy lifestyles and vitamins and herbs designed as stress handlers and relievers.

Finally, we want to restore our hormonal levels to more closely approximate those levels we had when we were young. Today, most anyone can afford to do so safely and without prescriptions.

"Replacing the hormones which decline with age, such as estrogen, testosterone, DHEA, melatonin, and now HGH, is as important as replacing normal levels of insulin is to a diabetic," says Ronald Klatz,MD, president of the American Academy of Anti-Aging Medicine (A4M).[3]

Admittedly, there are several dozen theories of aging. What I have presented here is most rudimentary. Nonetheless, I believe a rational anti-aging program that focuses on interventions and strategies based on the above theories will prove most efficacious. Such a program can be delivered in most states by the doctor of chiropractic as part of an adjunctive wellness and maintenance program. There are, after all, approximately 80 million baby boomers who appear to be in no hurry to become "senior citizens." Perhaps you are even one of them!

References

1. Carper J. *Stop Aging Now!* 1996, p. 16.
2. Ibid, p. 22.
3. Klatz RM. *The Hormones of Youth*. 1999, p. 6.