How many times have you heard someone make a birthday toast with the wish, "Live long and prosper?" You've probably thought of this as nothing more than a good-humoured gesture. But science has demonstrated that humans have the potential to routinely live between 110 and 124 years. The reason most of us never achieve this life span is that we don't know how to slow the aging process.

What is aging?

Gerontologists (scientists who study aging) define aging as a continuous, universal, progressive, intrinsic and deleterious (CUPID) process that decreases an organism's ability to maintain homeostasis (balance) in the face of stressors and therefore increases the organism's likelihood of dying. Phew! That's a mouthful. Let's look at this more carefully.

Aging is Continuous. From conception to reproductive maturity, we are developing, not aging. We don't start to age significantly until between ages 20 and 30. Once begun, aging continues relentlessly.

Aging is Universal. We all age, regardless of gender, race or creed. "Normal aging" must be differentiated from the effects of specific disease processes that most commonly occur when we're older (e.g. diabetes, arthritis, cancer).

Aging is Progressive. The effects of aging accumulate and worsen with time.

Aging is Intrinsic. If you lived in an ideal environment free of stressors, ate an ideal diet and exercised the right amount, you might live a lot longer than average, but aging would still occur.

Aging is Deleterious. It's not fun or desirable, and most would love to be rid of aging signs and symptoms.

Why do we age?

Many theories have been proposed throughout the years, but why we age is likely due to a combination of biological factors. Following are the most popular theories.

Protein Alteration Theory: Age-associated impairments in cellular functions result from an accumulation of errors in DNA formation, protein and enzyme synthesis.
Free Radical Theory: Advancing age is associated with an accumulation of free radical damage. Free radicals are highly reactive atoms or molecules bearing unpaired electrons that can cause damage to proteins, enzymes, DNA and tissue. Simply eating and breathing can cause free radicals.

Organ System Theory: Certain organs decline with advancing age and their loss of function drives the systemic aging process. For example, age-related changes in the brain’s hypothalamus, pituitary and pineal glands cause the thyroid, thymus, adrenals, pancreas, testes and ovaries to produce less amounts of hormones such as testosterone, progesterone, estrogen and DHEA.

Gene Theory: Perhaps a certain gene is responsible for life span. If so, gene manipulation may be able to certain genes on or off to slow aging.

What is anti-aging medicine?
Anti-aging medicine is a model of health care based on the early detection, prevention and reversal (if possible) of aging. It is truly multidisciplinary, represented by advances in the fields of biochemistry, physiology, genetics, nutrition, exercise therapeutics, mind/body medicine and emerging medical technologies.

Although many health disciplines practice varying degrees of wellness medicine, usually medical, naturopathic or osteopathic physicians provide a comprehensive approach.

What is an anti-aging program?
There are several ways to address the aging process, which is unique to everyone because of age, symptoms, medical history and personal preferences. Whatever program appeals to you, first seek advice from a qualified health-care professional knowledgeable about anti-aging practices. He or she will conduct a complete examination and may order hormone analyses and blood chemistry panels, and tests to identify nutrient and antioxidant status, cardiac risk factors and tumor markers. An ideal anti-aging program will address the individual’s specific needs as identified during testing.
What comprises a typical anti-aging program?

Since each person is unique, no one recipe for anti-aging is appropriate or adequate for all. It does appear, however, that proper nutrition, regular exercise, natural hormone therapies and emotional health all contribute to longevity.

1. Proper nutrition. The old adage, "You are what you eat" could be rewritten to say, "You age how you eat." The number of calories you consume affects your level of free radical production. The types of food you eat determine the range and amounts of antioxidants available to neutralize free radicals. The types of fats you eat can change the balance between inflammatory and anti-inflammatory compounds. The timing of meals and the amount of carbohydrates affect insulin and hormone production.

There is no question that eating less lengthens life and reduces disease. The average male consumes about 3,300 calories daily from the typical western diet. It's been strongly suggested that lifespan could be increased by 30 to 40 per cent on a balanced, healthy diet providing 1,600 to 1,900 calories daily. Evidence obtained from the people of the Japanese islands of Okinawa supports this point. Okinawans eat an average 1,300 to 1,500 calories a day from high-quality vegetables, cereals and fish. They have the world’s longest life expectancy, with more centenarians (people over 100) per capita than anywhere else on the planet.

Many studies show that antioxidants limit free radical damage. Whole, unprocessed grains and organic produce provide vitamins A, C, E and nutrients such as zinc, selenium, coenzyme Q10 and lipoic acid. Quality oils from fish, flax and olive are also important.

Water is often overlooked as an anti-aging compound. Dehydration is common, as water is often dismissed in favour of coffee, tea, sodas and alcohol—all pro-aging substances. Skin integrity, brain mass, joint and detoxification function are all water-dependent. Drinking eight to ten glasses of clean, unadulterated water daily makes good sense.

2. Regular exercise. The expression “Use it or lose it” pretty much sums up the message that you can maintain memory, flexibility, strength and mental/cognitive function when you perform regular exercise.

- Take a walk after each meal to help digestion and burn calories.
- Take the stairs when possible. This raises your heart rate, improves cardiovascular fitness and provides a spurt of growth hormone.
- Get off the bus or taxi one or two stops/blocks before your destination. This gives you a little sunshine and stress reduction.

What Are Free Radicals?

Free radicals are highly reactive molecules capable of damaging cells and tissues. They are continually formed in the body and increased by injury, stress, pollution and illness. The more free radicals are formed, the more antioxidants are needed to neutralize them. Nutritional antioxidants—vitamins A, C and E, zinc and selenium—have a role in any healthy diet. Green and yellow vegetables, fruits, nuts, seeds and herbs all contain antioxidants.
• Exercise 30 to 40 minutes minimally, three to four times a week using a combination of aerobic, strengthening and flexibility activities.
• Exercise your brain. Do puzzles, play chess, read, dance and participate in hobbies. The most important muscle in the body is the one between the ears.

3. Hormone therapies. Hormones are chemical messengers that tell our cells and organs what to do. Different glands and organs produce different hormones (e.g., the testes make testosterone and the ovaries secrete estrogen and progesterone). Most anti-aging practitioners measure these hormones and replace those that have decreased. By using plant-derived hormones, synthetic hormones can be reduced or eliminated.

4. Emotional health. The mind-body connection is a powerful force. Reducing stress, playing more, re-invigorating the child within, meditating, praying, deep breathing, taking a midday nap, engaging in regular sexual activity and thinking young are some means to being young.

It’s never too late . . .

Anti-aging medicine’s basic purpose is to help people extend the useful years of their lives and improve the quality of those years. This is not attainable by just swallowing a few pills. It requires patience, discipline, motivation, and, most importantly, desire. It’s never too late to begin. May you live long and prosper.

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