

Overview on Aging East & West

Perhaps William Shakespeare's famous poem, *The Seven Ages of Man*, from As You Like It, best encapsulates the western view on aging.

All the world's a stage,
And all the men and women merely players,
They have their exits and entrances,
And one man in his time plays many parts,
His acts being seven ages.
At first the infant,
Mewling and puking in the nurse's arms.
Then, the whining schoolboy with his satchel
And shining morning face, creeping like snail
Unwillingly to school.
And then the lover,
Sighing like furnace, with a woeful ballad
Made to his mistress' eyebrow.
Then a soldier,
Full of strange oaths, and bearded like the pard,
Jealous in honour, sudden, and quick in quarrel,
Seeking the bubble reputation
Even in the cannon's mouth.
And then the justice
In fair round belly, with good capon lin'd,
With eyes severe, and beard of formal cut,
Full of wise saws, and modern instances,
And so he plays his part.
The sixth age shifts
Into the lean and slipper'd pantaloon,
With spectacles on nose, and pouch on side,
His youthful hose well sav'd, a world too wide,
For his shrunk shank, and his big manly voice,
Turning again towards childish treble, pipes
And whistles in his sound.
Last scene of all,
That ends this strange eventful history,
Is second childishness and mere oblivion,
Sans teeth, sans eyes, sans taste, sans everything.

(The concept is from medieval times—no wonder!) One possible deep root for why western culture seems so youth obsessed, practicing what some call, “amortality”. Go to any lengths to stem the tide!

East

Ashrama The Four Stages of Life

1. Brahmacharya (student life) to @ age 24. Education and learning to live a virtuous life (*dharma*).
2. Grihastha (household life) @ 24-48. Marriage, ownership of home, raising a family, enjoyment of life, family, community, production of wealth and sustenance for benefit of these in other life stages (*artha* and *kama*).
3. Vanaprastha (forest-dweller life) @ 48-72. Retreat. Turning over acquiring and running “the world,” home, business, political system, etc. to next in line age-wise.
4. Sannyasa (renounced life) @ 72+ or anytime prior if becoming a renunciate. Renunciation of material gains, disinterest in worldly affairs, lessening or release of property. Focus on *moksha*, peace and deeper goal of life.

Abhinivesha – ingrained desire for continuity, a natural drive found “firmly established even in the wise”. Resistance to change.

Rasayana: The Path of Juice

Two separate words:

Rasa = the first liquid tissue that nourishes all the tissues of the body.

Ayana = its circulation/ also just the right amount.

Rasayana also refers to the nourishment and purification of all vital tissues to enhance quality and span of life, increase intellect, immunity, and enhance physical strength.

Some procedures: Sweating, dhoutis (natural cleansing actions), massage, yoga postures and multi-dimensional movement, controlled fasting, breathing, sleep, meditation, visualization, aspects of nature, use of herbs and diet, regimens, ethical lifestyle. This all results in a “cellular ease” = harmony and resilience.

West

Gerontology looks at normal aging versus changes brought on by disease, and why older adults are more vulnerable to disease. Some topics include:

1/ Natural Decline

Aging: changes occurring of lifespan. Saw these things in very healthy older people:

↓ hearing

↓ brain volume

↓ lung capacity / elasticity of lung tissue

↓ digestive enzymes diminish

↓ flexibility of blood vessels

↓ stroke volume of heart

↓ Sexual fluids and sperm

2/ Sirtuins

Looked for what **triggers** aging in cells and tissues. What biological processes underlie these changes? Look at genes, environment and behavior (including diet).

Scientists studied organism’s ability to withstand disease. They looked for genes that control aging and susceptibility for disease. About 20 “longevity genes” were found. They looked at a technique proven to extend life in organisms, “caloric restriction”, intake of 30-40 % less than daily recommended allowance. Through this scientists found a type of gene = **sirtuins**. Caloric restriction doesn’t work without these genes! They have to do with the body’s regulatory network and work to control health during times of biological adversity. If stressed, these cells turn on to protect the organism with the result being it lives longer!

Some molecules that turn on sirtuins enzymes are found in plants. One type is called **resveratrol**. Plants make the molecules when they are stressed. One theory is we ingest these molecules when we consume veggies and fruits. They bind to the enzyme and activate it.

3/ Genetic Changes

Epigenetics looks at what happens to genes due to the environment of organisms (like people). Over time DNA gets damages, so of it gets repaired, some does not, and some is repaired with mistakes make. These become variants. Scientists are looking at what variants help some people resist disease and help people survive disease.

4/ Telomeres

The stretch of DNA at the ends of chromosomes are called **telomeres**. They protect strands from fraying like plastic on the ends of shoelaces. When telomeres get too short they:

- A) die
- B) stop dividing, becoming senescent, have both beneficial and potentially dangerous effects
- C) Divide abnormally becoming potentially dangerous

5/ Oxygen Free Radicals

Oxygen free radicals are bi-products of energy production. They react with and create instability in surrounding cells. Other sources of oxygen free radicals are sun exposure, smoking, toxins. This is called oxidation. Cells basically pass the instability along. People did a lot to counter free radicals by taking tons of anti-oxidents, like vitamin C and E. HOWEVER it was discovered that some free radicals are used by immune system to destroy bacteria, and used by the nervous system as well.

6/ Inflammation

With normal aging, immune cells lose their ability to communicate well. Inflammation is a function of the immune system, and is something that helps fight off invaders. Often older adults have **chronic inflammation**. For instance, food allergies can create a state of constant inflammation if gone unchecked. Chronic inflammation leads to risks for diseases (like heart disease, arthritis, etc.) Nasal mucus, the tonsils, the lymphatic system, the thymus, and the spleen can all be positively affected by yoga practices aimed at these areas of immune system.

Some Resources:

Rasayana Products from Maharishi Ayurveda: www.mapi.com

Stages of Life: <http://www.swamij.com/four-ashrams.htm>

Great general booklet on Aging from US Dept of Health and Human Services/NIH/NIA:
<https://d2cauhfh6h4x0p.cloudfront.net/s3fs-public/biology-of-aging.pdf>

David Sinclair's TEDMED on Resveratrol: <https://www.youtube.com/watch?v=DekHXlnXAwk>

On Yoga Therapeutics: <http://www.yogajournal.com/article/health/western-doctors-prescribing-yoga-therapy/>

General simple article on yoga's anti-aging benefits: <http://www.mindbodygreen.com/0-16957/5-anti-aging-benefits-of-yoga.html>

General piece on exercise as an anti-aging practice (and I love Dr. Sanjay Gupta!)
<http://www.everydayhealth.com/news/best-anti-aging-medicine-exercise/>