

The Ecology of Longevity

Combining TCM and biomedical perspectives

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Is there an Elixir of Life?

Qin Shi Huang's physicians
scoured the world in search of it



The Philosopher's Stone
in Western culture



The Chinese medical classic *Huangdi Neijing* 黄帝内经 (“*The Yellow Emperor’s Canon of Medicine*”) deemed immortality unattainable.

It opined that Man’s natural lifespan averages 100 years.

Most of us fail to meet that target because we do not look after ourselves properly.

The ecology of longevity

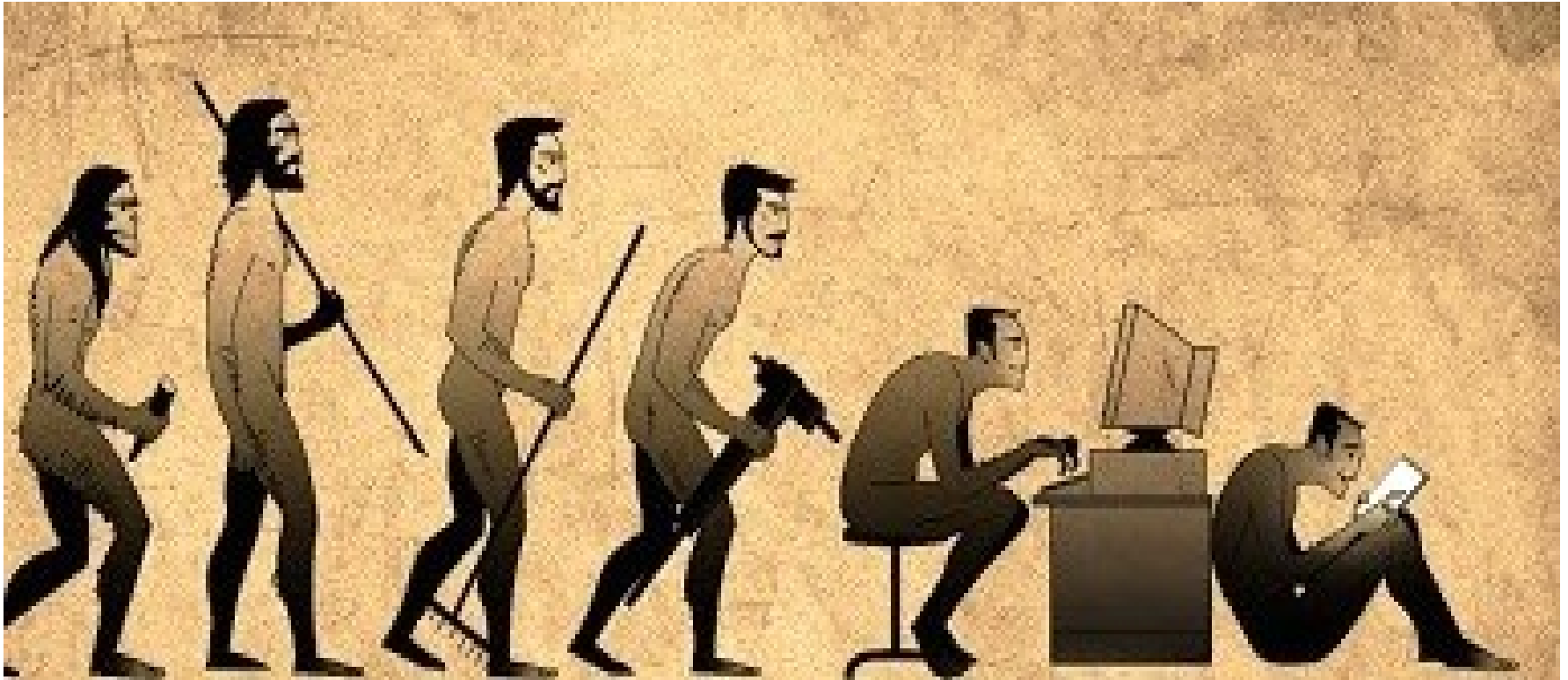
Two paths to longevity:

1. **Medical interventions** (metformin, resveratrol, stem cells etc) to prolong life (lengthen telomeres). This may confer longevity but unclear if it comes with health and quality of life.
2. **Lifestyles** that keep us **healthy in body and spirit**. According to the Huangdi Neijing, people do not live long lives only because they fail to look after themselves properly.

In today's talk, we focus attention on the human being in nature as part of an eco system. Optimize lifespan by prudent management of this eco system.

The Genesis of Health Problems

Humans evolved over a million years as hunter-gatherers; over the last few centuries, sedentary lifestyles developed



The living environment “radically mutated”* but not human genes that were adapted for hunter-gatherers

- The **Industrial Revolution** of the 18th century escalated our physical decline. Machines did the work of our arms and legs.
- Diet and food sources changed
- Prolonged daily stress became the norm
- No time for the body to adapt by natural selection

Walk, gather, hunt	→	Machines, sedentary jobs
Short-term stress	→	Prolonged stress *
Whole foods	→	Processed foods + sugar
Plants as medicine	→	Pharmaceuticals

- We cannot go back to the hunter-gatherer life, but there are groups of people in the world who have similar healthy lifestyles in the **Blue Zones**

* Ilardi “Depression is a disease of civilization,” TED talk

** Harms the parasympathetic nervous system

The Blue Zones

with world's highest rate of centenarians

1 in 3 live past 90 in good health

Sardinia, Okinawa, Loma Linda (California), Costa Rica, Ikaria (Greece), Bama (Guangxi, China)

1. **Physically active** but not necessarily with vigorous cardiovascular exercises. Use limbs, not machines, to do work and move around
2. Strong sense of **community spirit**
3. **No prolonged stress** (our bodies were evolved to cope well with only short stress that trigger our fight or flight response)
4. **A reason to live** (“*ikigai*”)
5. **No common “healthy” diet** – from vegetarian and no alcohol in Loma Linda to lamb and red wine in Sardinia.

Chinese *yangsheng* 养生

- Lifestyles in the blue zones are similar to those prescribed by *yangsheng*
- *Yangsheng* is more than health preservation.
- It is the holistic **cultivation of life** to enjoy its full richness, with physical health, a tranquil mind, and a fulfilled spirit.



Some aspects of Yangsheng in Chinese culture

cultivating the body	(养身)	diet , exercise, regularity
cultivating the heart	(养心)	calm and tranquility ; emotions
cultivating character	(养性)	developing character (e.g. resilience)
cultivating morals	(养德)	a benevolent heart (仁)*
cultivating the spirit	(养神)	nourish the spirit

There is no exact equivalent of *yangsheng* in Western culture

* Thupten Jinpa in *A Fearless Heart* (2015) provides clinical evidence that compassionate heart and benevolent acts have a long-term beneficial effects on the brain, resulting in a more emotionally healthy person

The four pillars of *Yangsheng*



- Nourishing the mind and spirit,
- Regularity in living habits,
- Daily walking, breathing, and qigong exercises (no necessity for intensive cardiovascular exercises)
- Moderate and appropriate diet

1. Nourishing mind and spirit

qi qin shu hua 棋琴书画

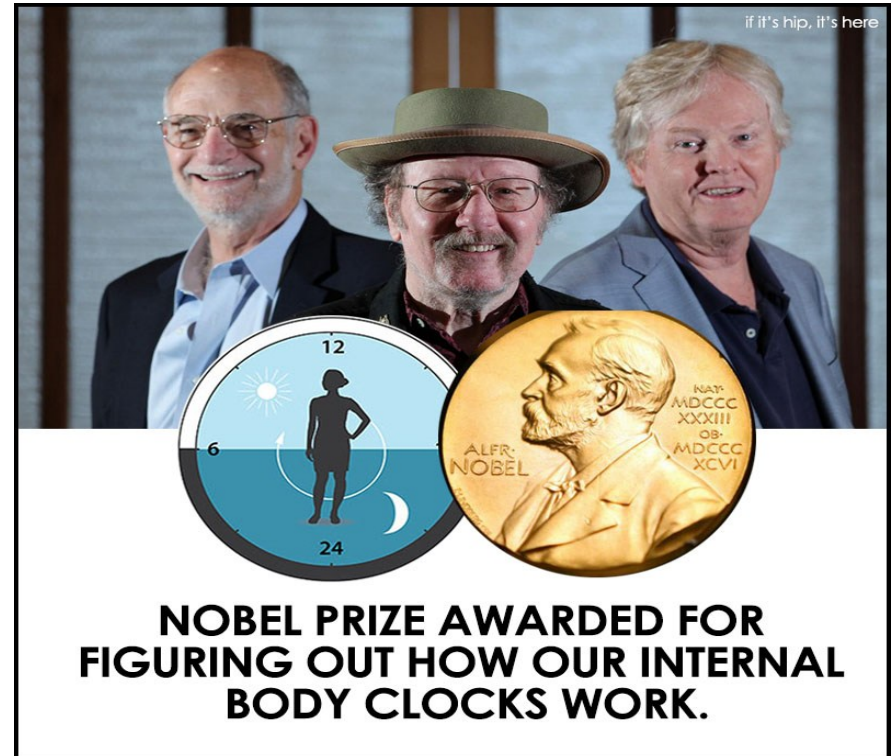


2. Regularity

Qing emperor Qianlong rose at 5am, held court at 6am, slept at 9pm. Reigned 60 years, died at 88.



Explaining the **Circadian cycle** (2017 Nobel) that was described 3000 years ago in the *I-Ching (The Book of Changes)*



3. Movement and Exercise

Studies show *QIGONG* improves alertness and mobility and strengthens the immune system



A



B



Clinical trials show that *TAIJIQUAN* prevents falls, improves cognitive functions, and helps Parkinson & COPD patients



4. Moderate and appropriate diet

- 70-80% full at each meal
- Eat variety of grains and different colours of fruits and vegetables
- Diet must suit the individual's constitution, age, activity, and climate
- Tonics must be appropriate for age and the nature of deficiencies in the person (qi, blood, *yin*, *yang*)

Blue zone lifestyles are in accord with *Yangsheng*

Blue zones

Regular schedules facilitate communal activities

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Physically active but not vigorous cardiovascular exercises.

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Low stress levels

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No common diet. Varies from vegetarian to mostly meat

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Mentally and spiritually active – singing, dancing, close communal interactions – delays dementia

TCM *yangsheng*

Regularity in living habits; interactions through board games, music

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Qigong exercises for nurturing *qi* and flow. Countryside walks, gardening

.....

Plain needs; little ambition

.....

Diet fits individual constitution and climatic environment

.....

Calligraphy, painting, chess, music -- keeps the mind and spirit youthful even in old age

What is the healthiest diet for you?

Some popular Western diets

- **The Atkins Diet:** low carbohydrates, high protein, saturated fats up to 20%.
- **Vegetarian** and vegan diets: claimed by some as the panacea for all
- **Ornish Diet:** Plant-based diet but includes eggs without yolk and non-fat dairy. Claim - heart healthy, controls diabetes, lowers BP. Restricts fat to 10% of total calories; take whole grain *carbos* (65% or more).
- **Mediterranean Diet:** Emphasis is on of plant foods, fresh fruits as dessert, beans, nuts, cereals, seeds, olive oil, cheese and yogurts, moderate amounts of fish and poultry, **Favoured by most physicians** for preventing cardiovascular disease and diabetes, building stronger bones and delaying dementia.

But diets vary widely across blue zones

- **Okinawans** eat vegetables and pork
- **Sardinians** eat lamb and drink red wine
- **Ikarians** follow the Mediterranean diet
- **7th day Adventists** are vegetarians, no alcohol

- TCM *yangsheng* advocates a diet that suits your individual constitution and living environment. *No one-size-fits-all diet.*

Cultural evolution favours diets that fit living environments. Examples:

Sichuan people eat hot spicy food to induce sweating (damp climate)

Mongolians lived harsh lives, drank horse milk, ate lamb grains and sweet fruits

Southerners in China use less oil and salt, suitable to a warmer climate and artistic pursuits among the gentry.

Northerners lived in cold climates, excelled in war and martial arts, and ate more salty and oily foods.

TCM Tonics for Seniors

Why do seniors need tonics?

- As we get to senior years, organ and physiological functions decline
- Chronic illnesses — atherosclerosis, metabolic syndrome, osteoporosis, arthritis, and cancer appear at a higher rate after the age of 60.
- Tonics give us a way of fighting the odds by strengthening organ and physiological functions that are in decline.

衣 + 卜 = 补

In TCM “*bu*” means to replenish the body that has deficiency (虚 *xu*) in qi, blood, *yin* or *yang*

Tonic foods and herbs

Qi tonics: Chinese yam, millet, chicken, peanuts, astragalus, ginseng, liquorice

Yin tonics: white fungus, bird's nest, black sesame, black beans, duck, turtle, wolfberry, lily bulb, *yuzhu*, *maidong*, *shihu* (dendrobium orchid stem)

Blood tonics: pork liver, sea cucumber, raisins, spinach, longan, red dates, *danggui*, *heshouwu*

Yang tonics: chives, walnut, lamb, shrimps, sea horse, *duzhong*, wine, cordyceps, horny goat grass

Combining the best of both worlds

Follow Western nutritional guidelines (for healthy blood sugar levels and prevention of cardiovascular disease, e.g. a Mediterranean diet)

But also follow the TCM paradigm (Choose diet to suits individual constitution and environment)

Combining Mediterranean and Chinese diets:

In each example, a Mediterranean diet is followed, but the choices of food differ according to the person's (TCM) constitution

Example 1: A person with **weak qi and blood** (pale, afraid of cold, thready pulse)

Grains/Carbos: Chinese yam, millet, potato

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Veges and fruits: peanuts, raisins, spinach, red dates, longan, walnut, almonds

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Meats: chicken, pork liver, sea cucumber

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Alcohol: rice wine, yellow wine, red wine

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Teas: oolong, pu'er

.....
Herbs: astragalus (*huangqi*), *danggui*, Chinese yam, Chinese ginseng, liquorice, fuling

Example 2: A person with **yin deficiency** (thirsty, warm hands and feet, dry eyes, hot flashes, night sweats)

Grains: buckwheat, beehoon, rice porridge

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Veges and fruits: white fungus, black sesame, water cress, bitter melon, black beans

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Meats: duck, turtle, bird's nest

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Alcohol: beer, dry light white wine, apple cider

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Teas: green tea, jasmine, chrysanthemum

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Herbs: wolfberry, lily bulb, *yuzhu*, *maidong*, American ginseng, shihu (dendrobium)

In a nutshell

- Modern living violates the conditions under which humans evolved in nature as hunter-gatherers
- The blue zones have preserved some of the good aspects of the lifestyle of our evolutionary origins
- Chinese *yangsheng* achieves the same objectives by advocating regularity in living, avoiding prolonged stress, eating in moderation what suits our constitutions, and exercising to strengthen *qi*, and nourish the spirit
- It is appropriate to take **tonics** in our senior years to overcome the senescence (the decline in physiological functions)

For further reference on TCM and longevity

