NCD
Non-Communicable Disease
-Logic of Life-

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Our History - Starvation and Infectious Diseases

Great Rift Valley

Agriculture (~10K yrs ago) and Civilization (5K yrs ago)

Modern history

→ 14th Century in Europe, plague - city/more naturally immunized
→ As human mobility increases many indigenous people died of infectious diseases due to lack of immunity
→ 17-18th Century, Modern science, Industrial Revolution
→ End of 18th Century, Edward Jenner & small pox vaccination
→ More invasion, emmigration, slavery, more and more mobility
→ Thru 1950, TBC had been #1 killer, streptomycin 1943; 1946-48
→ Changing life style, suddenly Westernized
→ NCD has become #1 disease burden only recently, 20~30 years
→ What’s next??
Life and Environ; Salt

550 million - explosion of life/ Cambrian
Vertebrates; amphibians, reptiles to bird, mammals

Sear water -- 3.5% NaCl and low gravity (1/6G) --
Fresh water, River/ponds
  -- little NaCl and lower gravity (1/6G)

to Terrestrial life -- little NaCl and 1.0G gravity —
and Extracellular fluids- 0.9% NaCl
NaCl Intake of Terrestrial Mammals

Humans in stone ages

Carnivore vs Herbivore
History of Salt and Human Civilization

Via Salaria, Salary
Salzburg, Hall
Table salt, Nordic history
King Louis 14th
Gandhi’s salt march
Plasma level of angiotensinogen
T235M (threonine vs methionine)

TT - highest
TM - medium
MM – lowest
T mutation – blood pressure higher
M mutation- blood pressure lower

African Black >90%T
American Black 80-90%T
Caucasian in EU & US ~40-50%T
Japanese ~80%T
Principle of Survival

-sources not abundant in natural life environs, but essential for survival

Hypertension  salt <1.5gr/day
Obesity        food & energy storage
Type 2 diabetes glycogen storage/insulin when insulin rises?
Cholesterol   excess fat in natural environs?