

3.4

Urban populations typically exhibit:

- Chronic under-nutrition
- High levels of infection
- Shortened lifespans
- High infant mortality (“graveyards of babies”)

Cities were less healthy than rural life (until less than 100 years ago-global infant mortality)

- Rates dropped due to sewer systems (not medicine)

Law of Natural Urban Decrease

- Urban mortality is so high that cities depends on in-migration from countryside to maintain population
- Tested to see if this law also applies to older cities (Teotihuacan Culture)
 - Preserved extremely well; covers 8 square miles, at its peak it had 200,000 residents
 - Commoners lived in neighborhoods of apartment complexes
 - There were rich and poor neighborhoods as well as ethnic neighborhoods
 - Could clearly put together the inhabitants and their dwelling because they buried the dead below the floors
 - Occupied AD 200-650
 - There were generations of crafts-people (not farmers)
- Tlajinga 33 burial population
 - 68 graves for 68 individuals; refuse piles for 42 individuals (ritual acts of warriors, cannibalism represented by the 42)
- Porotic hyperostosis (anemia) - was rare
- Low life expectancy (survived to 1 year, lived 28.6 years)
- Infant mortality = 30%
- Lots of biological stress markers (teeth, bones)
 - Tlajinga 33 had four times the health risk of enamel hypoplasias than ventilla; tibial periostosis was more prominent in Tlajinga 33; wealth is linked to health
- Overall at Teotihuacan
 - High infant mortality and low life expectancy
 - Law of natural urban decrease was needed
 - Level of health = 17th century London
 - Cross-cultural implications of an ‘urban’ health
- Immigration and assimilation and Teotihuacan led to studies on the bone chemistry
- Homelands and migration: strontium ratio $86\text{Sr}/87\text{Sr}$
 - Bedrock, soil, groundwater, humans
- Ratio in food chain varies place to place depending on local geology

- Ratio is permanently fixed in tooth enamel when teeth form
- Ratio not permanent in bone because bones renew (using Sr ratio from local food and water)
- 180/160
- Differences in local rainwater; (reflects pattern of temp, humidity, altitude, distance from sea); taken up in food chain
- Comparing bones to teeth
 - o Ratio permanently fixed in tooth enamel when teeth form
 - o Ratio not permanent in bone because bones renew (using Sr ratio from local food and water)
 - o Teeth will have homeland (childhood) ratio
 - o Bones will reflect the change over time
- Total time-span seen in teeth is 6 months to 15 years Tlajinga 33
- 29% of inhabitants were long-term immigrants that grew up elsewhere
- No association with gender
- No maintenance of homeland traditions in burial, diet (assimilated)

Oaxaca Barrio

- Ethnic neighborhood of 12 apartments (700 people)
- Maintain Oaxaca burial traditions
- Sample of 56 burials analyzed
 - o Showed that the oldest people were biologically from Oaxaca
 - o Later immigrants from Oaxaca and Oaxaca colonies elsewhere
 - o Children moving around a great deal (with mother)
 - o Ex #409: born in Teo, more to Oaxaca, return
- 80% of burial population were immigrants, or born in Teo but spent part of their childhood elsewhere