ANTHROPOLOGY NEWS DIARY

(AND)

23.08.2021

FOR UPSC CSE MAINS

This series provides compilation of daily CURRENT AFFAIRS of Anthropology. It is aimed at addressing the requirement of aspirants to add contemporary aspects of the subject to the answers. It also helps in understanding the trends of anthropology across India and the world.

NOTE: Please attempt the questions given at the end of the document and can upload on the telegram channel: Sosin for Anthropology Q&A, for peer review.
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Note - For convenience, the respective reference links have been dropped at the end of every topic.
A. BIOLOGICAL ANTHROPOLOGY

1. Genome Editing in ISS

● A team of U.S. scientists has developed a CRISPR-based method for studying how eukaryotic cells repair DNA in space.
● Such DNA damage may lead to cancer and other detrimental health effects, raising questions about the safety of long-duration space travel.
● Therefore, which specific DNA-repair strategies are employed by the human body in space may be particularly important.
● The new technique developed by Dr. Sebastian Kraves and his colleagues use CRISPR/Cas9 genome editing technology to create precise damage to DNA strands so that DNA repair mechanisms can then be observed in better detail than would be possible with non-specific damage via radiation or other causes.
● Using the CRISPR/Cas9 system to study DNA repair in space has several advantages over previously established models,
● First, this system does not utilize radiation or other reagents that cause widespread, non-specific DNA damage and are unsafe to use during spaceflight.
● Second, because the DSB is generated at a precise location in the genome, any changes in DNA sequence following repair can be easily identified and tracked using methods previously validated on the International Space Station (ISS), namely, polymerase chain reaction (PCR) and DNA sequencing.
● It’s not just that the scientists successfully deployed novel technologies like CRISPR genome editing, PCR, and nanopore sequencing in an extreme environment, but also that we were able to integrate them into a functionally complete biotechnology workflow applicable to the study of DNA repair and other fundamental cellular processes in microgravity.
● These developments fill our team with hope in humanity’s renewed quest to explore and inhabit the vast expanse of space.

Reference:
http://www.sci-news.com/space/space-crispr-cas9-genome-editing-09816.html

2. Processed Food & Cardiovascular Disease

● A study published in the Journal of the American College of Cardiology found that higher consumption of ultra-processed foods is associated with an increased risk of CVD incidence and mortality, with each additional daily serving found to further increase risk.
● The consumption of ultra-processed foods makes up over half of the daily calories in the average American diet and are increasingly consumed worldwide. As poor diet is a major modifiable risk factor for heart disease, it represents a critical target in prevention efforts.
● Ultra-processed foods are ubiquitous and include many foods that are marketed as healthy, such as protein bars, breakfast cereals, and most industrially produced breads.
● Population-wide strategies such as taxation on sugar-sweetened beverages and other ultra-processed foods and recommendations regarding processing levels in national dietary guidelines are needed to reduce the intake of ultra-processed foods.
● There’s a need to implement policies that increase the availability, accessibility, and affordability of nutritious, minimally processed foods, especially in disadvantaged populations.
• At the clinical level, there is a need for increased commitment to individualized nutrition counseling for adopting sustainable heart-healthy diets.
• When foods are processed it may remove beneficial nutrients and other naturally occurring benefits, while adding non-beneficial nutrients and food additives. Processing also changes the physical structure of foods.
• The consumption of ultra-processed foods is linked with being overweight/obese, high blood pressure, metabolic syndrome, and Type 2 diabetes.
• The researchers examined incident hard CVD (sudden and non-sudden coronary death, heart attack and fatal/non-fatal stroke) and hard coronary heart disease (sudden and non-sudden coronary death and heart attack).
• During an average of 18 years of follow-up, a total of 648 cardiovascular events occurred, including 251 cases of hard CVD and 163 cases of hard coronary heart disease (CHD). There were 713 deaths during the follow-up period, including 108 CVD deaths.
• Participants with the highest intakes of ultra-processed foods had higher accident rates compared to those consuming the least amount of ultra-processed foods.
• Each daily serving of ultra-processed food was associated with a 7% increase in the risk of hard CVD, a 9% increase in the risk of hard CHD, a 5% increase in overall CVD and a 9% increased risk in cardiovascular disease mortality.
• Researchers also found that intake of bread was associated with an increased risk of hard CVD, hard CHD and overall mortality, while ultra-processed meat intake was associated with an increased risk of hard CVD and overall CVD.
• Salty snack foods were associated with increased risk of hard CVD and CHD, while consumption of low-calorie soft drinks were associated with increased risk of overall CVD.
• Study limitations include the observational nature of the study, as well as the potential for measurement error in dietary assessment and under- and over-estimation of ultra-processed food intake due to misclassification.

Reference:

3. Diet, Dentition and Linguistics
• Anthropologists used a novel data analysis of thousands of languages, in addition to studying a unique subset of celebrities, to reveal how a soft food diet -- contrasted with the diet of hunter-gatherers -- is restructuring dentition and changing how people speak.
• Their findings, published in Scientific Reports, counter the longstanding belief within the field that maintains that languages are susceptible to the same pressures and so are essentially immune to external factors.
• Languages change -- we can see this in any language -- but the thinking has long been that all languages have the same pressures, that there is no difference across populations that make some people more prone than others to use certain sounds.
• Mercury’s four additional teeth -- a hereditary dental condition -- caused a famously unusual overbite. (Mercury was embarrassed by the protrusion but resisted any oral surgery believing the anomaly contributed to his exceptional four-octave vocal range.) And Phelps also presented a unique alignment issue.
● In studying thousands of languages, the researchers established two linguistic camps -- hunter-gatherers, whose diets have changed little and whose mouths get a lot more wear, and non-hunter-gatherers. Everett’s extensive previous research on indigenous peoples in the Amazon -- whose diets remain akin to those of hunter-gatherers -- aided the study.

● Previous research on the subject has examined whether languages have this sound, or they don’t.

● These new findings provide a better understanding of why languages -- which are a key distinguishing characteristic for anthropologists and a key aspect of being human -- take the shape they do, how they diverge, and what factors impact their evolution.

Reference: https://www.sciencedaily.com/releases/2021/01/210114180614.htm

B. TRIBAL/ COMMUNITY AFFAIRS

1. Bolivian Tribes & Aging

● A study published by the Journal of Gerontology, Series A: Biological Sciences and Medical Sciences has shown that indigenous people of the Tsimane tribe in the Bolivian Amazon have a much better brain and heart health as compared to the rest of the western society.

● The research was conducted by scientists who performed CT scans on adults of the Tsimane tribe. The research showed that they experience a 70% slower reduction in their brain volume throughout their lives than in adults of Western populations, concluding that their better cardiovascular health is what contributes to keeping their brains more healthy than people in other societies.

● The scientific community has classified the Tsimane people of Bolivia to be persons with above average heart health with an extremely active lifestyle. A study published in the Lancet concluded that the Tsimane people have the lowest levels of coronary atherosclerosis, or coronary artery disease, out of any recorded population.

● Interestingly, despite their excellent cardiovascular health, the Tsimane people have an average life expectancy of 53 years. This is due to diseases and infections, and without a healthcare infrastructure, it is common for isolated tribes to succumb to treatable illnesses.

● However, they are five times less likely to develop heart disease due to their vigorous lifestyle, and healthy and fibrous diet of vegetables, fish and meat.

● In contrast, even though the life expectancy of people in “modernised” societies is 79-82 years, they are more likely to develop heart disease due to their sedentary lifestyle and a diet that is high in processed fats and carbohydrates.

● The scientists also compared their CT scans with individuals of three different populations across the U.S. and Europe to determine the brain volume or size according to age.

● It is here that they concluded that shrinkage in brain size in accordance to age was 70% less in the Tsimane people, proving that they experience much less brain atrophy than industrialized populations.

● This means that industrialized populations are more prone to neuron loss in their old age than the Tsimane people, resulting in diseases like Alzheimer’s or dementia.

2. Forest Fires & Honey Output

- Forest fires, coupled with soaring temperatures in and around Similipal Biosphere Reserve in Odisha’s Mayurbhanj district, are likely to affect the honey output, jeopardizing the livelihoods of tribal people in the district.
- Collection and cultivation of raw honey is an important occupation for forest dwellers, especially for the around 2,000 families belonging to particularly vulnerable tribal groups like Khadia, Mankadia, who live near the reserve.
- State-owned Odisha Forest Development Corporation (OFDC) and Tribal Development Cooperative Corporation of Odisha (TDCC) have provided honey boxes to tribal people in different villages near the reserve for honey production.
- Honey is one of the sources of income for tribal people in the area, Sanjukta Basa, a social worker, said. An estimated 500-700 quintals of honey were produced in the district and supplied across the country under the name ‘Similipal Honey’.
- Tribal people, especially the Khadia tribe, will be the worst-hit due to the forest fires.
- The honey harvesting season is from April to June. Wild honey bees make hives every year on the same trees, which tribal people term as ‘honey trees.’ They spend more than a week in the forests to collect honey, he said. The honey bees could not have stayed in the jungle when the entire area was engulfed in the smoke.


UPSC Previous year questions based on today’s concept:

1. Tribes & Forests (10 Marks - 1997)
2. Genome Study (L.Q. – 1990)

DAILY PRACTICE QUESTION/S FOR MAINS 2021.

Pl do not forget to upload your answer sheet for a peer review on the telegram channel:

Sosin for Anthropology Q&A

1. Genome editing (15 Marks)