NEWS IN BRIEF

Urban Green Space Cover and Mental Health

With the growing urbanization, more and more green areas have been replaced by massive human settlements and factories, causing many health problems in populations living in these areas. Green cover not only reduces the air pollution but it also attenuates the noise and heat levels in the cities. Acknowledging the role of trees in mitigating the climate crisis, governments, local organizations as well as corporates are now focusing on increasing the green cover in and around the cities to improve the ecosystems. Green spaces do not only include urban forests or parks, but also the trees in the streets, gardens or roof tops. Studies have shown that people living near urban green spaces have fewer mental health problems, better cognitive function, mood, have healthier babies and longer life expectancy compared to those living in areas without it.

Availability of green spaces vary significantly between different cities as well as even within cities. How much green space is good for health? This question has been bothering urban planners for long time. In order to find the answer to this question, a team of researchers from Spain studied a population-based sample of 3145 individuals aged 15–97 years in a cross-sectional study. Authors evaluated the relationship between 3-30-300 green space rule (every citizen should be able to see at least three trees (of a decent size) from their home, have 30 percent tree canopy cover in their neighbourhood and not live further than 300 m away from the nearest park or green space) and mental health status of the participants. Mental health was assessed using 12-item General Health Questionnaire (GHQ-12) and medical history (use of tranquilizer/ sedatives or antidepressants and psy-chiatrist or psychologist visits). After analyzing their findings, author concluded that participants meeting the 3-30-300 green space rule had better mental health compared to the others, thus generating an evidence to guide the planning of green cover in the urban areas.
(Environmental Research 05 December, 2022)

mRNA Vaccines to Combat Malaria

During October, 2021, World Health Organization recommen-ded widespread use of first anti-malarial vaccine - RTS, S/AS01 (RTS, S) malaria vaccine among children in areas with moderate to high *P. falciparum* malaria transmission, resulting in the significant reduction in the severe malaria cases. Despite the extensive preventive efforts, globally there were ~247 million cases of malaria and 6,19,000 malaria deaths in 2021.

A research team from George Washington University has developed two newer mRNA vaccines to curb malaria infection and its transmission. The team evaluated the efficacy of experimental vaccine candidates targeting - Pfs25 and PfCSP (*Plasmodium falciparum* circum-sporozoite protein) – interrupting the disease process of the parasite and its transmission. These vaccines were delivered as mRNA-Lipid Nano Particle (mRNA-LNP) in mice. Researchers found that these vaccines induced a powerful immune response regardless of whether they were given individually or in combination. They also suggest that to achieve malaria elimination goals, a combination of vaccines targeting both the infection stage and sexual/midgut stages is expected to provide effective ways to interrupt malaria transmission. With the advent of these vaccines, one of the oldest and most severe disease may be eliminated in the near future.
(*npj vaccines 01 December, 2022*)

Vitamin B12 Supplementation for Plant-Based Diets

Due to the efforts of the animal welfare organizations or change in the dietary choices, globally more and more people are turning towards the plant-based diets. Also, due to their anti-oxidant, anti-inflammatory, lipid-lowering, immunomodulatory effects, these diets are getting more attention. But every change comes with a cost, thus consuming plant-based diet only, increases the risk of deficiency of micronutrients like iron, calcium and vitamin B12 etc. Vitamin B12 is essential for DNA synthesis, red blood cell production and nervous system. As plants cannot synthesize vitamin B12, consumption of plant-based diets only increases the risk of development of cognitive deficits, depression, dyspnea, postural hypotension, muscle weakness, as well as mental and physical fatigue. In a recently published paper, authors suggest that vitamin B12 deficiency can manifest with subtle neurological symptoms like fatigue, depression, memory impairment even in the absence of hematological manifestations. They recommend daily supplementation of vitamin B12 for individuals taking strict plant based diets, especially in the high risk groups like, pregnancy, young infants of the mothers taking plant based diets and age > 60 years. They also advocated the estimation of B12 levels, if no supplements were taken during the last 6 months.
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