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COVID-19

1. **COVID-19, a double-edged sword for the environment: a review on the impacts of COVID-19 on the environment.** D Atoufi H, Lampert DJ, Sillanpää M. Environ Sci Pollut Res Int. 2021 Sep 23:1-10. doi: 10.1007/s11356-021-16551-1. Online ahead of print. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8460194/
   This review paper discusses the most relevant impacts of the COVID-19 pandemic on the environment. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) originated in Wuhan, China, in December 2019. The disease has infected 70 million people and caused the death of 1.58 million people since the US Food and Drug Administration issued an Emergency Use Authorization to develop a vaccine to prevent COVID-19 on December 11, 2020. COVID-19 is a global crisis that has impacted everything directly connected with human beings, including the environment. This review discusses the impacts of COVID-19 on the environment during the pandemic and post-COVID-19 era. During the first months of the COVID pandemic, global coal, oil, gas, and electricity demands declined by 8%, 5%, 2%, and 20%, respectively, relative to 2019. Stay-at-home orders in countries increased the concentrations of particles in indoor environments while decreasing the concentrations of PM2.5 and NOX in outdoor environments. Remotely working in response to the COVID-19 pandemic increased the carbon, water, and land footprints of Internet usage. Microplastics are released into our environment from the mishandling and mismanagement of personal protective equipment that endanger our water, soils, and sediments. Since the COVID-19 vaccine cannot be stored for a long time and spoils rapidly, more awareness of the massive waste of unused doses is needed. So COVID-19 is a double-edged sword for the environment.

2. **Noncommunicable diseases, climate change and iniquities: what COVID-19 has taught us about syndemic.** Di Ciaula A, Krawczyk M, Filipiak KJ, Geier A, Bonfrate L, Portincasa P. Eur J Clin Invest. 2021 Sep 22:e13682. doi: 10.1111/eci.13682. Online ahead of print. https://onlinelibrary.wiley.com/doi/pdf/10.1111/eci.13682

CONCLUSIONS: We are accumulating unhealthy populations living in unhealthy environments and generating unhealthy offspring. The winning policy should tackle structural inequities through a syndemic approach, to protect vulnerable populations from present and future harms.

3. **Impact of COVID-19 on greenhouse gases emissions: A critical review.** Kumar A, Singh P, Raizada P, Hussain CM. Sci Total Environ. 2021 Sep 17;806(Pt 1):150349. doi: 10.1016/j.scitotenv.2021.150349. Online ahead of print.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8445775/
The global outburst of coronavirus 2019 (COVID-19) has posed severe challenges to human health, environment, energy and economy all over the world. The stringent measures to control the spread of COVID-19 results a significant slowdown in economic activities which in turn affected the environment by reducing the greenhouse gas (GHG) emissions, specifically lower atmospheric CO2 levels. Considering that, the present study intends to highlight the substantial impact of COVID-19 pandemic on GHG emissions, by systematically reviewing the available scientific literatures. The study further outlined the variation in GHG emissions by comparing the data focused on pre-pandemic, during pandemic, and post-pandemic (predictions) scenarios. Further, the assessment on elevating CO2 levels, global economic, and energy impacts of COVID-19 has also been reviewed. Also, the possible recovery plan for the framework of sustainable environmental and energy development is presented. Finally, the review concludes with an insightful summary involving the challenges and future outlook towards sustainable development goals in a hope that the present study can help the researchers to assess the global environmental and energy related consequences.

4. **Ambient air pollution and COVID-19 risk: Evidence from 35 observational studies.** Zang ST, Luan J, Li L, Yu HX, Wu QJ, Chang Q, Zhao YH. Environ Res. 2021 Sep 15;204(Pt B):112065. doi: 10.1016/j.envres.2021.112065. Online ahead of print.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8440008/
RESULTS: A total of 35 articles were eligible for the meta-analysis. For long-term exposure to AP, COVID-19 incidence was positively associated with 1 μg/m3 increase in nitrogen dioxide (NO2; effect size = 1.042, 95% CI 1.017-1.068), particulate matter with diameter <2.5 μm (PM2.5; effect size = 1.056, 95% CI 1.039-1.072), and sulfur dioxide (SO2; effect size = 1.071, 95% CI 1.002-1.145). The COVID-19 mortality was positively associated with 1 μg/m3 increase in nitrogen dioxide (NO2; effect size = 1.034, 95% CI 1.006-1.063), PM2.5 (effect size = 1.047, 95% CI 1.025-1.1071). For short-term exposure to air pollutants, COVID-19 incidence was positively associated with 1 unit increase in air quality index (effect size = 1.001, 95% CI 1.001-1.002), 1 μg/m3 increase NO2 (effect size = 1.014, 95% CI 1.011-1.016), particulate matter with diameter <10 μm (PM10; effect size = 1.005, 95% CI 1.003-1.008), PM2.5 (effect size = 1.003, 95% CI 1.002-1.004), and SO2 (effect size = 1.015, 95% CI 1.007-1.023).
CONCLUSIONS: Outdoor air pollutants are detrimental factors to COVID-19 outcomes. Measurements beneficial to reducing pollutant levels might also reduce the burden of the pandemic.

5. **Study of solid waste (municipal and medical) management during the COVID-19 pandemic: a review study.** Fadaei A. Rev Environ Health. 2021 Sep 15. doi: 10.1515/reveh-2021-0092. Online ahead of print.
   The COVID-19 pandemic has resulted in a global emergency crisis and created waste management challenges worldwide. Such a critical point has changed solid waste (municipal and medical) management prospects and posed fact challenges to the health decision-makers and policy-makers to make decisions to ensure sustainable management of the environment. One of the most negative **prospects** of COVID-19 pandemic is the increased waste generation, especially plastic waste in developing and developed countries. This study systematically reviews the potential influences of the COVID-19 pandemic on medical and municipal waste, and discusses the corresponding measures and policies of solid waste management in several countries. The results show that the highest and lowest quality of final disposal is observed in Finland with 75% recycling and in India with 90% open dumping, respectively. In many countries, the medical waste showed an increase by 350-500%.The pandemic has brought particular problems to the disposal capacity of municipal waste and medical waste across the world. We think that this point of view study provides valuable data for scientists, policy makers, health decision-makers, consultants, medical staff, medical supplies, those working in public health sector, and field engineers responsible for solid waste management.

6. **COVID-19, Air Pollution and Mental Illness: Heads of the Same "Beast"?** Balducci PM, Menculini G, Attademo L, Bernardini F, Tortorella A. Psychiatr Danub. 2021 Sep;33(Suppl 9):172-173.
   The Covid-19 outbreak are generating relevant consequences under several aspects. Covid-19 pandemic together with air pollution and a dysfunctional anthropization/urbanization might affect public and mental health with a synergistic effect. The current paper explore hypothesis about existing links among Covid-19, air pollution and mental illness.

7. **Investigating the current status of COVID-19 related plastics and their potential impact on human health.** De-la-Torre GE, Pizarro-Ortega CI, Dioses-Salinas DC, Ammendolia J, Okoffo ED. Curr Opin Toxicol. 2021 Sep;27:47-53. doi: 10.1016/j.cotox.2021.08.002. Epub 2021 Aug 13. https://www.sciencedirect.com/science/article/pii/S2468202021000371
   The COVID-19 pandemic led to a sudden global increase in the production, consumption, and mismanagement of personal protective equipment (PPE). As plastic-based PPE such as disposable face masks and gloves have become widely used, human exposure to PPE-derived pollutants may occur through indirect and direct pathways. This review explores the potential health impacts related to plastic-based PPE through these pathways. Face masks release microplastics, which are directly inhaled during use or transported through the environment. The latter can adsorb chemical contaminants and harbor pathogenic microbiota, and once consumed by organisms, they can translocate to multiple organs upon intake, potentially causing detrimental and cytotoxic effects. However, more research is required to have a comprehensive overview of the human health effects.

8. **Citizen science: A way forward in tackling the plastic pollution crisis during and beyond the COVID-19 pandemic.** Ammendolia J, Walker TR. Sci Total Environ. 2021 Aug 27;805:149957. doi: 10.1016/j.scitotenv.2021.149957. Online ahead of print.
   https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8441093/
   The COVID-19 pandemic has resulted in an unprecedented surge of production, consumption, and disposal of single-use plastics (SUPs) and personal protective equipment (PPE) by the public. This widespread use of mostly plastic items like face masks and disposable gloves has led to global reports of improper disposal of potentially infectious PPE both in our urban and natural environments. Due to international travel restrictions during the pandemic, many research programs targeted at measuring plastic pollution were halted. These disruptions to research programs have stunted the ability to assess the true quantities of SUPs and PPE being mismanaged from the waste stream into the environment. This article calls for increased citizen science participation in collecting plastic pollution data both during and post pandemic. By initiating this dialogue and raising attention to the importance and potential of citizen science data collection, data can be used to develop globally informed plastic pollution mitigation strategies.

Health Impacts of Climate Change

9. **Exposure to ambient air pollution during childhood and subsequent risk of self-harm: A national cohort study.** Mok PLH, Antonsen S, Agerbo E, Brandt J, Geels C, Christensen JH, Frohn LM, Pedersen CB, Webb RT. Prev Med. 2021 Nov;152(Pt 1):106502. doi: 10.1016/j.ypmed.2021.106502. Epub 2021 Sep 16.

https://www.sciencedirect.com/science/article/pii/S0091743521000864

A growing body of evidence indicates that exposure to air pollution not only impacts on physical health but is also linked with a deterioration in mental health. We conducted the first study to investigate exposure to ambient particulate matter with an aerodynamic diameter of less than 2.5 μm (PM2.5) and nitrogen dioxide (NO2) during childhood and subsequent self-harm risk.

10. **Clean air for healthy lungs - an urgent call to action: European Respiratory Society position on the launch of the WHO 2021 Air Quality Guidelines.** Andersen ZJ et al. Eur Respir J. 2021 Sep 24:2102447. doi: 10.1183/13993003.02447-2021. Online ahead of print.

11. **Effects of air pollution and green spaces on impaired lung function in children: a case-control study.** Zhang J, Wang Y, Feng L, Hou C, Gu Q. Environ Sci Pollut Res Int. 2021 Sep 23. doi: 10.1007/s11356-021-16554-y. Online ahead of print.
    For every interquartile range (IQR) increase in the mixture of six air pollutants at the lag1, lag2, and lag3 periods, the risks of getting impaired lung function were increased by 53.4%, 34.7%, and 16.9%, respectively. The protective effect of greenness at lag2 period (odds ratios (OR)) = 0.022 (95% confidence interval (CI): 0.008-0.035)) was stronger than that at lag1and lag3 periods, respectively. Separate and combined effects of most air pollutants at different lag periods exerted hazardous effects on the lung function of students. Exposure to greenness had protective effects on the lung health of children.

12. **Tracking progress on health and climate change in Europe.** Romanello M et al. Lancet Public Health. 2021 Sep 22:S2468-2667(21)00207-3. doi: 10.1016/S2468-2667(21)00207-3. Online ahead of print.
https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(21)00207-3/fulltext
Left unabated, climate change will have catastrophic effects on the health of present and future generations. Such effects are already seen in Europe, through more frequent and severe extreme weather events, alterations to water and food systems, and changes in the environmental suitability for infectious diseases. As one of the largest current and historical contributors to greenhouse gases and the largest provider of financing for climate change mitigation and adaptation, Europe's response is crucial, for both human health and the planet. To ensure that health and wellbeing are protected in this response it is essential to build the capacity to understand, monitor, and quantify health impacts of climate change and the health co-benefits of accelerated action. Responding to this need, the Lancet Countdown in Europe is established as a transdisciplinary research collaboration for monitoring progress on health and climate change in Europe. With the wealth of data and academic expertise available in Europe, the collaboration will develop region-specific indicators to address the main challenges and opportunities of Europe's response to climate change for health. The indicators produced by the collaboration will provide information to health and climate policy decision making, and will also contribute to the European Observatory on Climate and Health.

13. **The Impact of Wildfires on Mental Health: A Scoping Review.** To P, Eboreime E, Agyapong VIO. Behav Sci (Basel). 2021 Sep 21;11(9):126. doi: 10.3390/bs11090126.
https://www.mdpi.com/2076-328X/11/9/126
An increased rate of mental health disorders post-wildfire has been found in both the adult and pediatric population, with a number of associated risk factors, the most significant being characteristics of the wildfire trauma itself. Several new terms have arisen in the literature secondary to an increased awareness and understanding of the impact of natural disasters on mental health, including ecological grief, solastalgia, and eco-anxiety. There are a number of patient factors and systemic changes that have been identified post-wildfire that can contribute to resilience and recovery.

14. **Effect of urban air pollution on CRP and coagulation: a study on inpatients with acute exacerbation of chronic obstructive pulmonary disease.** Tang L et al. BMC Pulm Med. 2021 Sep 18;21(1):296. doi: 10.1186/s12890-021-01650-z.
https://bmcpulmmed.biomedcentral.com/articles/10.1186/s12890-021-01650-z
CONCLUSION: Exposure of patients with AECOPD to high PM levels on the day before hospitalization was associated with an increased CRP level and shortened PT. Moreover, PM2.5 had a greater effect on CRP level and PT than mean aerodynamic diameter of ≥ 10 μm (PM10). AECOPD patients with severe GOLD class were more sensitive to PM2.5-induced shortening of PT than those with other GOLD classes.

15. **Associations between air pollution and biomarkers of Alzheimer's disease in cognitively unimpaired individuals.** Alemany S et al. Environ Int. 2021 Sep 16;157:106864. doi: 10.1016/j.envint.2021.106864. Online ahead of print.

https://www.sciencedirect.com/science/article/pii/S016041202100489X
CONCLUSION: In a population of cognitively unimpaired adults with increased risk of AD, long-term exposure to air pollution was associated with higher levels in biomarkers of AD pathology. While further research is granted to elucidate the mechanisms involved in such associations, our results reinforce the role of air pollution as an environmental risk factor for AD.

16. **Viral respiratory infections and air pollutants.** Loaiza-Ceballos MC, Marin-Palma D, Zapata W, Hernandez JC. Air Qual Atmos Health. 2021 Sep 15:1-10. doi: 10.1007/s11869-021-01088-6. Online ahead of print.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8441953/
The evidence suggests that exposure to air contaminants induces inflammatory states, modulates the immune system, and increases molecules' expression that favors respiratory viruses' pathogenesis and affects the respiratory system. However, the mechanisms underlying these interactions have not yet been fully elucidated, so it is necessary to develop new studies to obtain information that will allow health and policy decisions to be made for the adequate control of respiratory infections, especially in the most vulnerable population, during periods of maximum air pollution.

17. **Exposure to Air Pollution in Relation to Risk of Dementia and Related Outcomes: An Updated Systematic Review of the Epidemiological Literature.** Weuve J, Bennett EE, Ranker L, Gianattasio KZ, Pedde M, Adar SD, Yanosky JD, Power MC. Environ Health Perspect. 2021 Sep;129(9):96001. doi: 10.1289/EHP8716. Epub 2021 Sep 24.
https://ehp.niehs.nih.gov/doi/pdf/10.1289/EHP8716
DISCUSSION: Strong conclusions remain elusive, although the weight of the evidence suggests an adverse association between PM2.5 and cognitive decline. However, we note a continued need to confront methodological challenges in this line of research.
https://doi.org/10.1289/EHP8716.

18. **Cohort studies of long-term exposure to outdoor particulate matter and risks of cancer: A systematic review and meta-analysis.** Yu P, Guo S, Xu R, Ye T, Li S, Sim MR, Abramson MJ, Guo Y. Innovation (N Y). 2021 Jul 13;2(3):100143. doi: 10.1016/j.xinn.2021.100143. eCollection 2021 Aug 28.
https://www.sciencedirect.com/science/article/pii/S2666675821000680
Robust evidence is needed for the hazardous effects of outdoor particulate matter (PM) on mortality and morbidity from all types of cancers. To summarize and meta-analyze the association between PM and cancer, published articles reporting associations between outdoor PM exposure and any type of cancer with individual outcome assessment that provided a risk estimate in cohort studies were identified via systematic searches. Of 3,256 records, 47 studies covering 13 cancer sites (30 for lung cancer, 12 for breast cancer, 11 for other cancers) were included in the quantitative evaluation. The pooled relative risks (RRs) for lung cancer incidence or mortality associated with every 10-μg/m3 PM2.5 or PM10 were 1.16 (95% confidence interval [CI], 1.10-1.23; I2 = 81%) or 1.22 (95% CI, 1.02-1.45; I2 = 96%), respectively. Increased but non-significant risks were found for breast cancer. Other cancers were shown to be

associated with PM exposure in some studies but not consistently and thus warrant further investigation.

19. **Fine Particulate Matter (PM(2.5)) and Chronic Kidney Disease.** Zhang Y, Liu D, Liu Z. Rev Environ Contam Toxicol. 2021 Aug 26. doi: 10.1007/398_2020_62. Online ahead of print.
In this review, we focus on the worldwide epidemiological evidence linking PM2.5 with chronic kidney disease and the effect of PM2.5 on the chronic kidney disease (CKD) progression. At the same time, we also discuss the possible mechanisms of PM2.5 exposure leading to kidney damage, in order to emphasize the contribution of PM2.5 to kidney damage. A global database on PM2.5 and kidney disease should be developed to provide new ideas for the prevention and treatment of kidney disease.

WE ACT

20. **Developing and implementing core competencies in children's environmental health for students, trainees and healthcare providers: a narrative review.** Goldman RH, Zajac L, Geller RJ, Miller MD. BMC Med Educ. 2021 Sep 24;21(1):503. doi: 10.1186/s12909-021-02921-3.
https://bmcmededuc.biomedcentral.com/track/pdf/10.1186/s12909-021-02921-3.pdf
Knowledge of the health impacts of environmental exposures (such as pollution disasters, poor air quality, water contamination, climate change) on children's health has dramatically increased in the past 40 years. The World Health Organization (WHO) estimated that 23% of all deaths worldwide were attributable to the environment, and 26% of deaths in children less than 5 years old could be prevented with removal of environmental risks factors. Yet, little has permeated medical education, leaving pediatric providers ill equipped to address these issues. To address this gap, members from the Pediatric Environmental Health Specialty Units, a United States nationwide network of academically affiliated experts who have created numerous environmental health educational materials and programs, have identified fifteen core environmental health (EH) competencies needed by health care providers to enable them to effectively address environmental health concerns. These competencies can serve as the foundation for the development and implementation of relevant educational programs. The core EH competencies are based upon these foundational elements: 1) Definition of "children's environmental health" that describes how environmental exposures (positive and negative) in early life influence the health and development in childhood and across the entire human life span 2) Children are not "little adults" and so have unique vulnerabilities to environmental hazards; 3) Environmental health inequities exist, causing some children to have a disproportionate amount of unhealthy exposures and consequently a greater risk of adverse effects; 4) Climate change will translate to numerous adverse health effects that will particularly affect children worldwide. In this article, the authors describe the core environmental health competencies and provide resources, online tools, strategies, and examples targeted to all levels of training and practice to better enable leaders and educators to bring this important content to the forefront.

21. **Climate change research and action must look beyond 2100.** Lyon C et al. Glob Chang Biol. 2021 Sep 24. doi: 10.1111/gcb.15871. Online ahead of print.

https://onlinelibrary.wiley.com/doi/10.1111/gcb.15871
Anthropogenic activity is changing Earth's climate and ecosystems in ways that are potentially dangerous and disruptive to humans. Greenhouse gas concentrations in the atmosphere continue to rise, ensuring that these changes will be felt for centuries beyond 2100, the current benchmark for projection. Estimating the effects of past, current, and potential future emissions to only 2100 is therefore short-sighted. Critical problems for food production and climate-forced human migration are projected to arise well before 2100, raising questions regarding the habitability of some regions of the Earth after the turn of the century. To highlight the need for more distant horizon scanning, we model climate change to 2500 under a suite of emission scenarios and quantify associated projections of crop viability and heat stress. Together, our projections show global climate impacts increase significantly after 2100 without rapid mitigation. As a result, we argue that projections of climate and its effects on human well-being and associated governance and policy must be framed beyond 2100.

22. **Code red will become code blue for humanity: an urgent call for action in the anesthesia community.** Ip VHY, Sondekoppam RV, Özelsel TJP. Can J Anaesth. 2021 Sep 22:1-2. doi: 10.1007/s12630-021-02116-w. Online ahead of print.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8457775/
Climate change has become an urgent matter as the headlines across the globe focus on “Code Red for humanity” in the wake of the release of the first part of the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) on 9 August 2021.1 Healthcare professionals are in a dilemma given that climate change is detrimental to human health, but at the same time, healthcare is a major contributor to carbon emission.2 Given the ensuing situation, healthcare providers have the moral obligation to implement environmentally sustainable initiatives to mitigate our environmental burden.

23. **Communicating about climate change - Who is listening, who isn't and why: Implications for medical professionals.** Foong LH, Huntley R. J Paediatr Child Health. 2021 Sep 21. doi: 10.1111/jpc.15717. Online ahead of print.
https://onlinelibrary.wiley.com/doi/full/10.1111/jpc.15717
Community concern about climate change in the community in general is strong and getting stronger but greater action on climate change is contingent upon whether the public sees strong links between climate effects and personal and community wellbeing in the present as well as the future. Medical and health-care professions can be effective messengers about the impacts of climate given their trusted status and ability to draw connections between climate change and physical and mental health.

24. **Carbon Footprint of General, Regional, and Combined Anesthesia for Total Knee Replacements.** McGain F, Sheridan N, Wickramarachchi K, Yates S, Chan B, McAlister S. Anesthesiology. 2021 Sep 16. doi: 10.1097/ALN.0000000000003967. Online ahead of print.
https://pubs.asahq.org/anesthesiology/article/doi/10.1097/ALN.0000000000003967/117564/Carbon-Footprint-of-General-Regional-and-Combined
CONCLUSIONS: All anesthetic approaches had similar carbon footprints (desflurane and nitrous oxide were not used for general anesthesia). Rather than spinal being a default low carbon

approach, several choices determine the final carbon footprint: using low-flow anesthesia/total intravenous anesthesia, reducing single-use plastics, reducing oxygen flows, and collaborating with engineers to augment energy efficiency/renewable electricity.

25. **A framework to address cognitive biases of climate change.** Zhao J, Luo Y. Neuron. 2021 Sep 14:S0896-6273(21)00626-7. doi: 10.1016/j.neuron.2021.08.029. Online ahead of print.
We propose a framework that outlines several predominant cognitive biases of climate change, identifies potential causes, and proposes debiasing tools, with the ultimate goal of depolarizing climate beliefs and promoting actions to mitigate climate change.

26. **A mixed method study on global warming, climate change and the role of public health nurses from the perspective of nursing students.** Ergin E, Altinel B, Aktas E. Nurse Educ Today. 2021 Sep 14;107:105144. doi: 10.1016/j.nedt.2021.105144. Online ahead of print.
IMPACT: Global warming, climate change, their effects on health and the roles and responsibilities of nurses need to be included in the nursing curricula so that health professionals who can take measures against global warming, climate change and their health effects can be educated.

27. **Nursing's mandate in climate change.** Mitchell PH. Int Nurs Rev. 2021 Sep;68(3):279-280. doi: 10.1111/inr.12704.
https://onlinelibrary.wiley.com/doi/full/10.1111/inr.12704
Science tells us that human-induced climate change is real and threatening health and well-being everywhere. Nurses have a key role as individuals and collectively to mitigate these effects. We are obligated to action, advocacy, and policy change at both a personal and professional level in this global emergency. This includes working to achieve climate justice and the United Nations' Sustainable Health Goals, which have a strong focus on climate action.

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News & Commentary

Climate change and the different roles of physicians: a critical response to "A Planetary Health Pledge for Health Professionals in the Anthropocene". Wiesing U. Med Health Care Philos. 2021 Sep 16:1-4. doi: 10.1007/s11019-021-10051-2. Online ahead of print.

WHO cuts air pollution limits to save millions of lives. Taylor L. BMJ. 2021 Sep 23;374:n2349. doi: 10.1136/bmj.n2349.

Nature, COVID-19, disease prevention, and climate change. Lovejoy TE. Biol Conserv. 2021 Sep;261:109213. doi: 10.1016/j.biocon.2021.109213. Epub 2021 Jun 9.

Hurricane Ida shows the one-two punch of poverty and climate change. Flowers CC. Nature. 2021 Sep;597(7877):449. doi: 10.1038/d41586-021-02520-8.

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