

***NATIONAL INSTITUTE OF OCCUPATIONAL HEALTH  
(ICMR-NIOH)***

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# American Journal of Epidemiology

Volume 190 Number 11 November 2021

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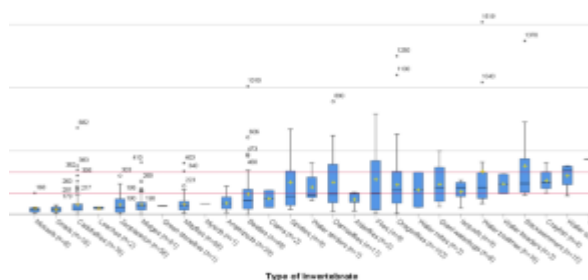


# Bulletin of Environmental Contamination and Toxicology

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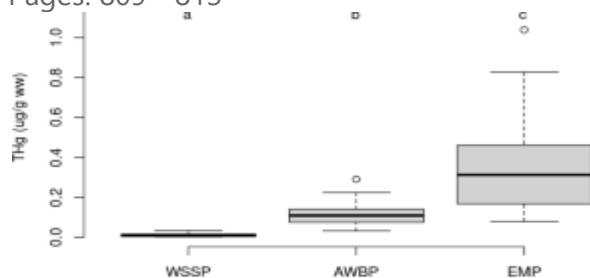
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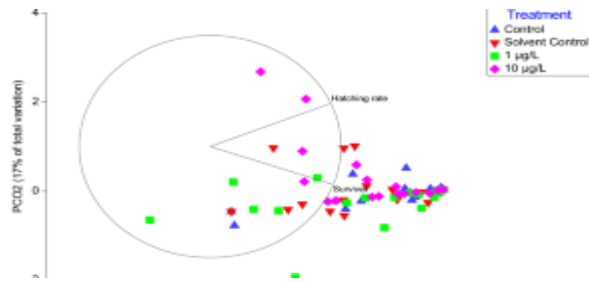
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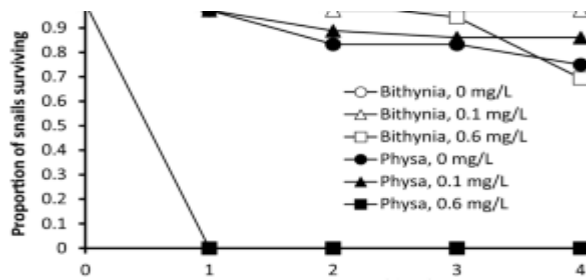
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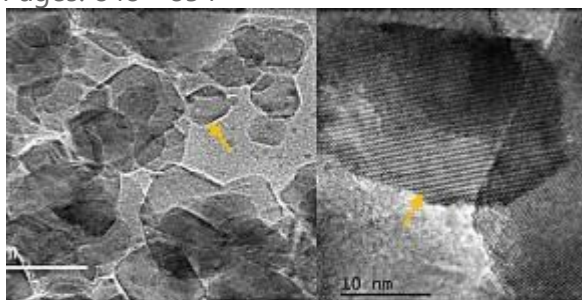
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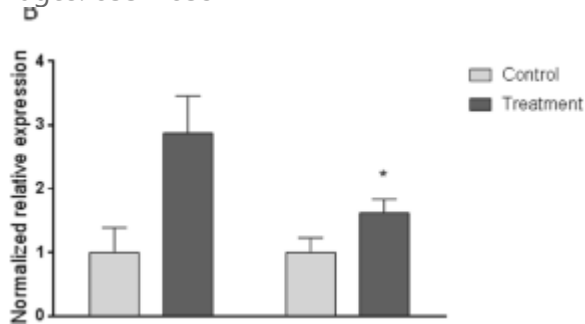
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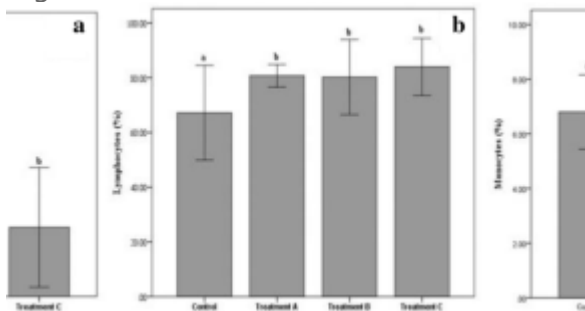
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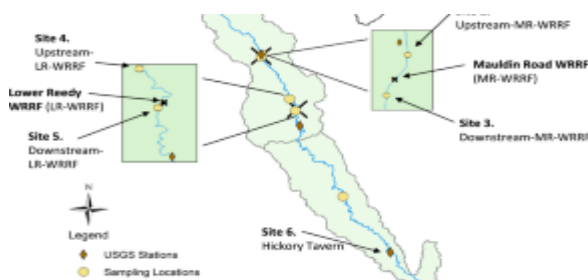
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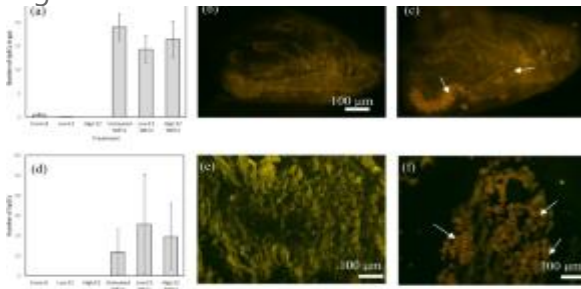
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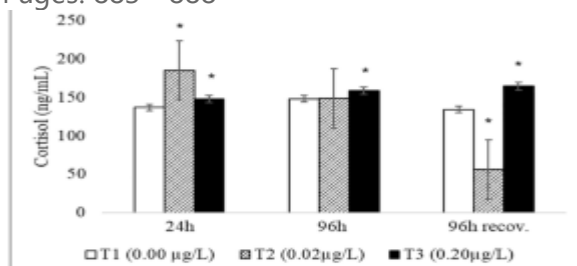
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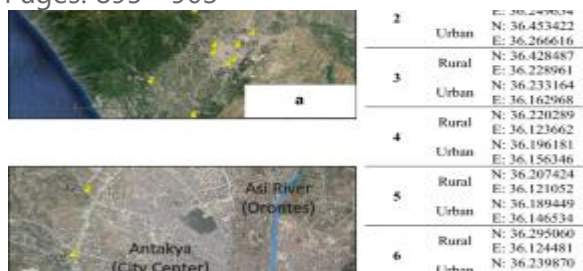
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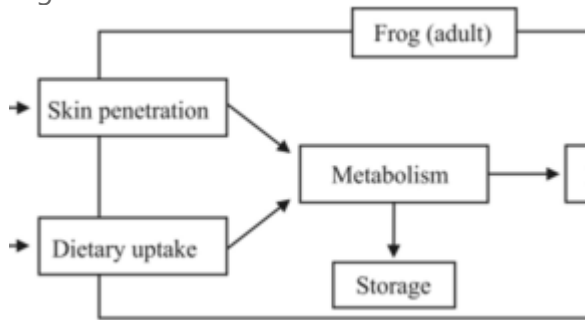
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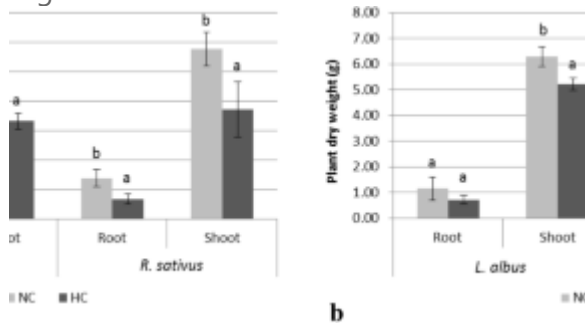
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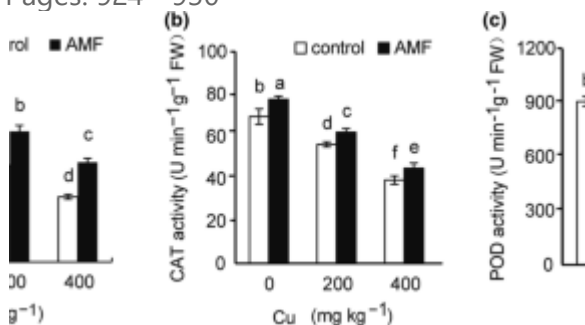
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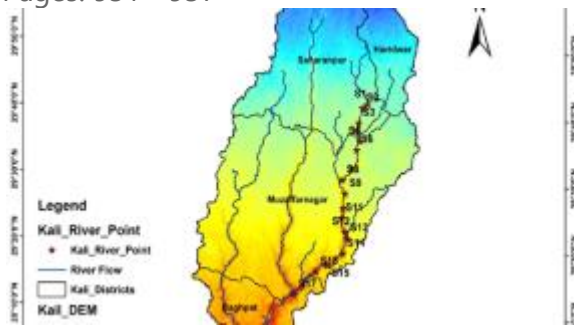
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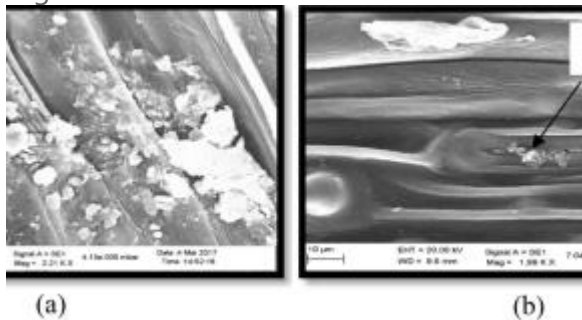
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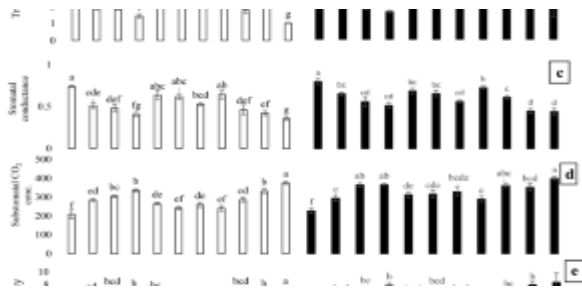
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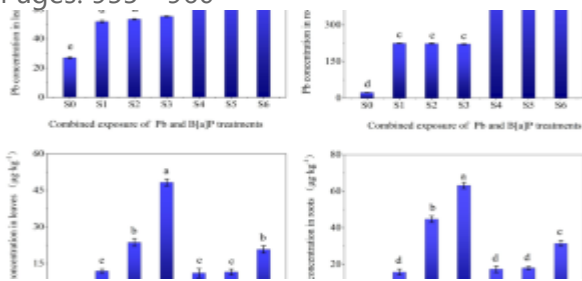
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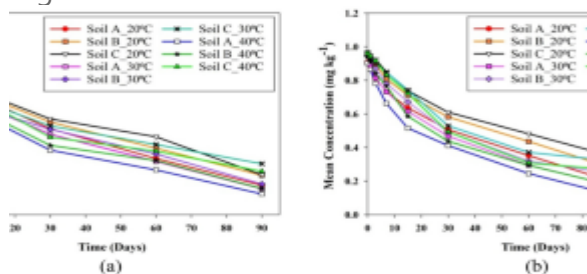
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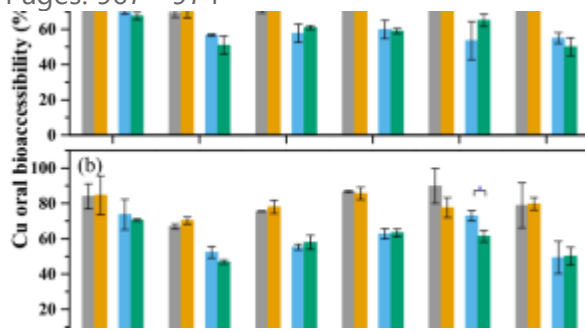
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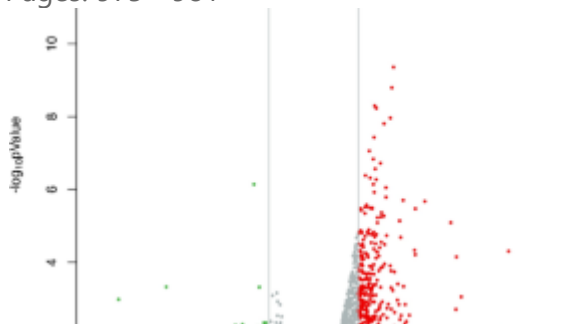
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# Bulletin of the World Health Organization

Volume 99(11); 2021 Nov 1

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1. doi: 10.2471/BLT.21.001121

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# Journal of Occupational and Environmental Medicine

November 2021 - Volume 63 - Issue 11

## Editor's Picks for November

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### [Intensity of Home-Based Telework and Work Engagement During the COVID-19 Pandemic](#)

Nagata, Tomohisa; Nagata, Masako; Ikegami, Kazunori; More

**Journal of Occupational and Environmental Medicine.** 63(11):907-912, November 2021.

### [Working at Home: The Impacts of COVID 19 on Health, Family-Work-Life Conflict, Gender, and Parental Responsibilities](#)

Graham, Melissa; Weale, Victoria; Lambert, Katrina A.; More

**Journal of Occupational and Environmental Medicine.** 63(11):938-943, November 2021.

### [Negative Employment Changes During the COVID-19 Pandemic and Psychological Distress: Evidence From a Nationally Representative Survey in the U.S.](#)

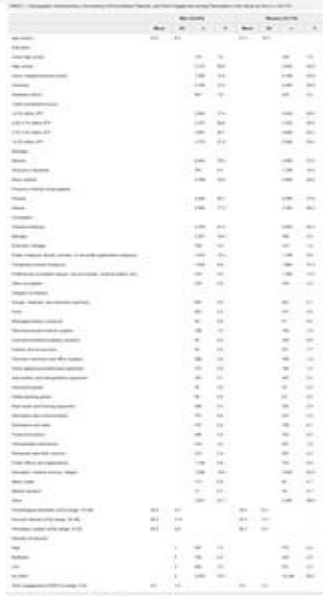
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**Journal of Occupational and Environmental Medicine.** 63(11):931-937, November 2021.

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### [Intensity of Home-Based Telework and Work Engagement During the COVID-19 Pandemic](#)

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115. [Study 115]	116. [Study 116]	117. [Study 117]
118. [Study 118]	119. [Study 119]	120. [Study 120]

**[American Frontline Healthcare Personnel's Access to and Use of Personal Protective Equipment Early in the COVID-19 Pandemic](#)**

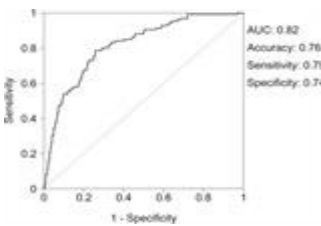
Rich-Edwards, Janet W.; Ding, Ming; Rocheleau, Carissa M.; More  
**Journal of Occupational and Environmental Medicine.** 63(11):913-920, November 2021.

FAST TRACK ARTICLE

Study	Study	Study
1. [Study 1]	2. [Study 2]	3. [Study 3]
4. [Study 4]	5. [Study 5]	6. [Study 6]
7. [Study 7]	8. [Study 8]	9. [Study 9]
10. [Study 10]	11. [Study 11]	12. [Study 12]
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19. [Study 19]	20. [Study 20]	21. [Study 21]
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103. [Study 103]	104. [Study 104]	105. [Study 105]
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112. [Study 112]	113. [Study 113]	114. [Study 114]
115. [Study 115]	116. [Study 116]	117. [Study 117]
118. [Study 118]	119. [Study 119]	120. [Study 120]

**[Working at Home: The Impacts of COVID 19 on Health, Family-Work-Life Conflict, Gender, and Parental Responsibilities](#)**

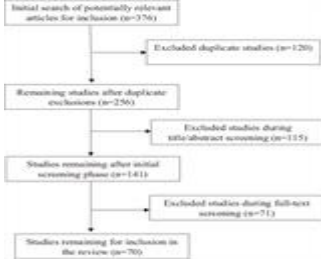
Graham, Melissa; Weale, Victoria; Lambert, Katrina A.; More  
**Journal of Occupational and Environmental Medicine.** 63(11):938-943, November 2021.



**[Time to a Negative SARS-CoV-2 PCR Predicts Delayed Return to Work After Medical Leave in COVID-19 Infected Health Care Workers](#)**

Villarreal, Jaime; Nieto, Sandra Valeria; Vázquez, Fabián; More  
**Journal of Occupational and Environmental Medicine.** 63(11):970-974, November 2021.

EDITORIAL



**[Aerosol Transmission of Infectious Disease and the Efficacy of Personal Protective Equipment \(PPE\): A Systematic Review](#)**

Locke, Laramie; Dada, Oluwabunmi; Shedd, Jacob S.  
**Journal of Occupational and Environmental Medicine.** 63(11):e783-e791, November 2021.



**[Improving Patient Outcomes in the Dual Crises of Climate Change and COVID-19: Proceedings of the Third Annual Clinical Climate Change Meeting, January 8, 2021](#)**

Senay, Emily; Bernstein, Aaron; Shephard, Peggy; More

**Journal of Occupational and Environmental Medicine.** 63(11):e813-e818, November 2021.

## BOOK REVIEWS

**[Robert B. Swotinsky, MD, MPH: The Medical Review Officer's Manual: MROCC Guide to Drug Testing, Sixth Edition, OEM Press, 2021](#)**

**Journal of Occupational and Environmental Medicine.** 63(11):e819, November 2021.

**[Book Review: The DOT Medical Examination: An Unofficial Guide to Commercial Drivers' Medical Certification, Seventh Edition](#)**

**Journal of Occupational and Environmental Medicine.** 63(11):e820, November 2021.

## LETTER TO THE EDITORS

**[Critical Points in Lemke's Total Worker Health Calculus](#)**

Kelly, Kevin M.; Newman, Lee S.; Cherniack, Martin; More

**Journal of Occupational and Environmental Medicine.** 63(11):e821-e822, November 2021.

**[In Response to a Rebuttal that Misses the Mark: Seeing the Forest for the Trees by Integrating Complex Systems Approaches Into Total Worker Health](#)**

Lemke, Michael Kenneth

**Journal of Occupational and Environmental Medicine.** 63(11):e823-e824, November 2021.

# Lung India

Nov-Dec 2021 - Volume 38 - Issue 6

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## Editorial

### **[What is the true burden of chronic obstructive pulmonary disease in India and what are its implications at a national level?](#)**

Salvi, Sundeep; Ghorpade, Deesha  
**Lung India.** 38(6):503-505, Nov-Dec 2021.

## Original Article

### **[Prevalence of chronic obstructive pulmonary disease in India: A systematic review and meta-analysis](#)**

Daniel, Roy Arokiam; Aggarwal, Praveen; Kalaivani, Mani; More  
**Lung India.** 38(6):506-513, Nov-Dec 2021.

### **[Comparison of outcome of surgery for tubercular and nontubercular empyema: An analysis of 285 consecutive cases](#)**

Kumar, Arvind; Lingaraju, C Vijay; Pulle, Mohan Venkatesh; More  
**Lung India.** 38(6):514-519, Nov-Dec 2021.

### **[Correlation of inhA mutations and ethionamide susceptibility: Experience from national reference center for tuberculosis](#)**

Sarin, Rohit; Bhalla, Manpreet; Kumar, Gavish; More  
**Lung India.** 38(6):520-523, Nov-Dec 2021.

### **[A Multicenter Study on the Safety and Efficacy of Bronchial Thermoplasty in Adults with Severe Asthma](#)**

Madan, Karan; Suri, Tejas M; Mittal, Saurabh; More  
**Lung India.** 38(6):524-528, Nov-Dec 2021.

### **[The increasing trend and the seasonal variation in attendance of diffuse parenchymal lung disease patients presenting to a pulmonary clinic in Eastern India](#)**

Bhattacharyya, Parthasarathi; Jana, Milan Kumar; Saha, Dipanjan; More  
**Lung India.** 38(6):529-532, Nov-Dec 2021.

### **[Prevalence and predictors of pulmonary embolism in patients with acute exacerbation of chronic obstructive pulmonary disease](#)**

Chaudhary, Nasir; Khan, Umar Hafiz; Shah, Tajamul Hussain; More  
**Lung India.** 38(6):533-539, Nov-Dec 2021.

## [Predictive factors for CPAP failure in obstructive sleep apnea patients](#)

Goyal, Abhishek; Joshi, Ankur; Mitra, Arun; More  
**Lung India.** 38(6):540-544, Nov-Dec 2021.

## [Functional impairment in bronchiectasis: Spirometry parameters versus St. George's Respiratory Questionnaire scores: Any co-relation?](#)

Singh, Priyanka; Katoch, C. D. S.; Vardhan, Vasu; More  
**Lung India.** 38(6):545-551, Nov-Dec 2021.

## [A follow-up study of post infectious obliterative bronchiolitis in adults and comparative analysis with chronic obstructive pulmonary disease](#)

Gothi, Dipti; Anand, Shweta; Patro, Mahismita; More  
**Lung India.** 38(6):552-557, Nov-Dec 2021.

## [Determining pulmonary function and the associated risk factors among stone quarry workers in a suburban area of Chennai, Tamil Nadu, India](#)

Arumugam, Elangovan; Rajkumar, Prabu; Dhanaraj, Baskaran; More  
**Lung India.** 38(6):558-563, Nov-Dec 2021.

### Review Article

## [Long COVID: "And the fire rages on"](#)

Tripathi, Awatansh Kumar Rajkumar; Pinto, Lancelot Mark  
**Lung India.** 38(6):564-570, Nov-Dec 2021.

### Case Report

## [Clinical and functional recovery in a patient with pulmonary hypertension after bariatric surgery](#)

Karna, Rahul; Hussain, Rahat; Jyothula, Soma SK  
**Lung India.** 38(6):571-573, Nov-Dec 2021.

## [Tocilizumab in COVID-19: enthusiasm vs. evidence](#)

Zeña-Huancas, Paola; León-Jiménez, Franco; Bryce-Alberti, Mayte; More  
**Lung India.** 38(6):574-576, Nov-Dec 2021.

## [Lung cancer masquerading as a paraneoplastic neurologic syndrome without a primary lung mass: Case report and review of literature](#)

Desai, Krisha; Aneja, Ankur; Luthra, Munish  
**Lung India.** 38(6):577-580, Nov-Dec 2021.



**[Colonic polyp-rare site of metastasis from primary lung carcinoma: Clinical presentations and outcome](#)**

Agrawal, Chaturbhuj; Goyal, Pankaj; Jain, Praveen; More

**Lung India.** 38(6):581-583, Nov-Dec 2021.

Commentary

**[Acute exacerbation of chronic obstructive pulmonary disease: The clot matters a lot!](#)**

Padmanabhan, Arjun; Mohammed, Soofia

**Lung India.** 38(6):584-585, Nov-Dec 2021.

Case Letter

**[A case of disseminated cryptococcosis in an immunocompromised host](#)**

Mehta, Asmita Anilkumar; Surendran, Divya; Shashindran, Nandita; More

**Lung India.** 38(6):586-587, Nov-Dec 2021.

Research Letter

**[Modified T-piece jet nebulizer with high-flow nasal cannula in a severe COVID-19 patient with intensive care unit delirium](#)**

Kumar, Neeraj; Kandrakonda, Pavan Kumar; Ahmed, Sarfaraz

**Lung India.** 38(6):588-589, Nov-Dec 2021.

Correspondence

**[India should speed up access to bedaquiline-based all-oral regimens, not procrastinate further](#)**

Udwadia, Zarir F; Furin, Jennifer

**Lung India.** 38(6):590-591, Nov-Dec 2021.

# Nature

Volume 599 Issue 7883, 4 November 2021

## This Week

### Editorial

- Editorial | 03 November 2021  
**Glass is the hidden gem in a carbon-neutral future**  
Recycling glass does not degrade it, and manufacturing it can be carbon-free. So why are many countries still burying glass in the ground?
- Editorial | 03 November 2021  
**The African Academy of Sciences is in crisis — responsibility must be shared**  
The pan-African science academy is in turmoil. Funders and fellows must jointly own the crisis, and work to stop it happening again.

### World View

- World View | 02 November 2021  
**Scientists: don't feed the doubt machine**  
From climate to COVID, naivety about how science is hijacked promotes more of the same.
  - Cecília Tomori

### Research Highlights

- Research Highlight | 25 October 2021  
**How climate change will make the hottest tropical days even more extreme**  
Dryness begets heat, and atmospheric moisture in the tropics is expected to be low on the hottest days in a warmer world.
- Research Highlight | 29 October 2021  
**Enigmatic Falklands 'fox' might have hitched a ride with humans**  
Findings suggest that people lived on the islands earlier than thought — and could have imported the canid called the warrah.

- Research Highlight | 29 October 2021  
**All in the mind: what the placebo effect looks like in the brain**  
When pain relief is expected, specific circuits in the brainstem become more active.
- Research Highlight | 26 October 2021  
**Marine urban sprawl is gobbling up Earth's coastlines**  
Jetties, docks and other artificial structures are fast replacing the natural ecosystems where sea meets land.
- Research Highlight | 29 October 2021  
**The faint little galaxies that could shed light on the early cosmos**  
Small galaxies seem to be forming stars the old-fashioned way: in splendid isolation.
- Research Highlight | 29 October 2021  
**How 'sleep misperception' fools people into thinking they don't sleep**  
Research on slumbering volunteers reveals the surprising stage when we feel most deeply asleep.
- Research Highlight | 27 October 2021  
**Baby bats try out their 'sonar' just after birth**  
Fruit-bat pups can send short echolocation clicks — and sense those of others — from day zero.

## Research

### News & Views

- News & Views | 03 November 2021  
**A whale of an appetite revealed by analysis of prey consumption**  
Reaching a deeper understanding of the ocean ecosystems that maintain whales might aid conservation efforts. Measurements of the animals' krill intake indicate that previous figures were substantial underestimates.
  - Victor Smetacek
- News & Views | 22 September 2021  
**A machine-learning algorithm to target COVID testing of travellers**  
Optimizing the testing of incoming travellers for COVID-19 involves predicting those who are most likely to test positive. A machine-

learning algorithm for targeted testing has been implemented at the Greek border.

- Ziad Obermeyer

- News & Views | 03 November 2021

**Relativity could ensure security for cash machines**

Entering your personal identification number using the keypad of a cash machine is notoriously insecure. A clever application of the special theory of relativity could make identification safer.

- Gilles Brassard

- News & Views | 13 October 2021

**A two-step hormone-signalling mechanism that drives physical activity**

In mice, the ovarian hormone oestradiol sensitizes neurons in a brain region called the hypothalamus to a melanocortin hormone that signals an energy surplus. Their dual activation increases physical activity.

- Stephanie L. Padilla

- News & Views | 25 October 2021

**Nanometre-scale imaging and AI reveal the interior of whole cells**

Efforts to generate nanoscale-resolution images of cell interiors have gained ground through the development and refinement of a microscopy method. The data sets are publicly available as resources for further discoveries.

- Jason R. Swedlow

- Lucy Collinson

**Perspective**

- Perspective | 20 October 2021

**Ethics of DNA research on human remains: five globally applicable guidelines**

In this Perspective, a group representing a range of stakeholders makes the case for a set of five proposed globally applicable ethical guidelines for ancient human DNA research.

- Songül Alpaslan-Roodenberg

- David Anthony

- Muhammad Zahir

## Articles

- Article | 03 November 2021  
**Experimental relativistic zero-knowledge proofs**  
A zero-knowledge proof, which can be used to verify secret information, is reported here with security that is enforced by the laws of special relativity.
  - Pouriya Alikhani
  - Nicolas Brunner
  - Hugo Zbinden
- Article | 03 November 2021  
**Signatures of bosonic Landau levels in a finite-momentum superconductor**  
Using torque magnetometry, the thermodynamic signatures of bosonic Landau level transitions are observed in a layered superconductor, owing to the formation of Cooper pairs with finite momentum.
  - A. Devarakonda
  - T. Suzuki
  - J. G. Checkelsky
- Article | 03 November 2021  
**Reconstruction of Bloch wavefunctions of holes in a semiconductor**  
Bloch wavefunctions of two types of hole in gallium arsenide are reconstructed by measuring the polarization of light emitted by collisions of electrons and holes accelerated by a terahertz laser.
  - J. B. Costello
  - S. D. O'Hara
  - M. S. Sherwin
- Article | 03 November 2021  
**Percolation transitions in compressed SiO<sub>2</sub> glasses**  
Amorphous–amorphous phase transitions in silicon dioxide are shown to proceed through a sequence of percolation transitions, a process that has relevance to a range of important liquid and glassy systems.
  - A. Hasmy
  - S. Ispas
  - B. Hehlen

- Article | 03 November 2021  
**Transition metal-catalysed molecular n-doping of organic semiconductors**  
 Electron doping of organic semiconductors is typically inefficient, but here a precursor molecular dopant is used to deliver higher n-doping efficiency in a much shorter doping time.
  - Han Guo
  - Chi-Yuan Yang
  - Xugang Guo
- Article | 03 November 2021  
**Episodic deluges in simulated hothouse climates**  
 Through an idealized set of simulations, with a model that incorporates key physics, research reveals dramatic swings between massive rainfall events and extended dry periods in hothouse climates.
  - Jacob T. Seeley
  - Robin D. Wordsworth
- Article | 03 November 2021  
**Carbon implications of marginal oils from market-derived demand shocks**  
 Here the non-linear relationship is revealed between carbon emissions reductions and oil demand reductions, which depends on the magnitude of demand drop and the global oil market structure.
  - Mohammad S. Masnadi
  - Giacomo Benini
  - Adam R. Brandt
- Article | 03 November 2021  
**Baleen whale prey consumption based on high-resolution foraging measurements**  
 A combination of 3D whale locations and acoustic measurements of prey density is used here to show that whales' consumption of krill is several times larger than often thought.
  - Matthew S. Savoca
  - Max F. Czapanskiy
  - Jeremy A. Goldbogen
- Article | 27 October 2021  
**Disease variant prediction with deep generative models of evolutionary data**  
 A new computational method, EVE, classifies human genetic variants in disease genes using deep generative models trained solely on evolutionary sequences.

- Jonathan Frazer
- Pascal Notin
- Debora S. Marks
  
- Article | 06 October 2021  
**5-HT modulation of a medial septal circuit tunes social memory stability**  
 Experiments in mice identify the medial septum as an extrahippocampal input region that is critical for social memory formation, and show that modulation of the medial septum by serotonin regulates the stability of social memories.
- Xiaoting Wu
- Wade Morishita
- Robert C. Malenka
  
- Article | 06 October 2021  
**Neurotoxic reactive astrocytes induce cell death via saturated lipids**  
 Astrocytes can respond to diseases and injuries of the central nervous system by driving the death of neurons and mature oligodendrocytes through the delivery of long-chain saturated fatty acids contained in lipoparticles.
- Kevin A. Guttenplan
- Maya K. Weigel
- Ben A. Barres
  
- Article | 22 September 2021  
**Efficient and targeted COVID-19 border testing via reinforcement learning**  
 A study reports the design and performance of a reinforcement learning algorithm that enabled efficient and targeted SARS-CoV-2 testing of passengers travelling to Greece in the summer of 2020.
- Hamsa Bastani
- Kimon Drakopoulos
- Sotirios Tsiodras
  
- Article | 06 September 2021 | Open Access  
**SARS-CoV-2 B.1.617.2 Delta variant replication and immune evasion**  
 A study of SARS-CoV-2 variants examining their transmission, infectivity, and potential resistance to therapies provides insights into the biology of the Delta variant and its role in the global pandemic.
- Petra Mlcochova
- Steven A. Kemp
- Ravindra K. Gupta

- Article | 13 October 2021  
**Unravelling the collateral damage of antibiotics on gut bacteria**  
This study systematically profiles the activity of several classes of antibiotics on gut commensal bacteria and identifies drugs that mitigate their collateral damage on commensal bacteria without compromising their efficacy against pathogens.
  - Lisa Maier
  - Camille V. Goemans
  - Athanasios Typas
- Article | 20 October 2021  
**Regulation of intestinal immunity and tissue repair by enteric glia**  
Enteric glial cells have tissue-wide immunoregulatory roles through the upregulation of IFN $\gamma$ -dependent genes both at steady state and after parasite infection, promoting immune homeostasis and CXCL10-mediated tissue repair after pathogen-induced intestinal damage in mice.
  - Fränze Progatzy
  - Michael Shapiro
  - Vassilis Pachnis
- Article | 13 October 2021  
**Oestrogen engages brain MC4R signalling to drive physical activity in female mice**  
A subset of oestrogen-sensitive neurons integrate melanocortin and oestrogen signalling to rebalance energy allocation in female mice leading to reduced sedentary behaviour and decreasing obesity in oestrogen-depleted female mice
  - William C. Krause
  - Ruben Rodriguez
  - Holly A. Ingraham
- Article | 27 October 2021  
**SLC25A39 is necessary for mitochondrial glutathione import in mammalian cells**  
SLC25A39 and its paralogue SLC25A40 have redundant roles in the import of glutathione into mitochondria of mammalian cells.
  - Ying Wang
  - Frederick S. Yen
  - Kıvanç Birsoy



- Article | 06 October 2021  
**Whole-cell organelle segmentation in volume electron microscopy**  
Focused ion beam scanning electron microscopy (FIB-SEM) combined with deep-learning-based segmentation is used to produce three-dimensional reconstructions of complete cells and tissues, in which up to 35 different organelle classes are annotated.
  - Larissa Heinrich
  - Davis Bennett
  - Destiny Nguyen
- Article | 06 October 2021  
**An open-access volume electron microscopy atlas of whole cells and tissues**  
Open-access 3D images of whole cells and tissues with combined finer resolution and larger sample size are enabled by advances in focused ion beam-scanning electron microscopy.
  - C. Shan Xu
  - Song Pang
  - Harald F. Hess
- Article | 13 October 2021  
**Systems-level effects of allosteric perturbations to a model molecular switch**  
Interface mutations in the GTPase switch protein Gsp1 (the yeast homologue of human RAN) allosterically affect the kinetics of the switch cycle, revealing a systems-level mechanism of multi-specificity.
  - Tina Perica
  - Christopher J. P. Mathy
  - Tanja Kortemme
- Article | 22 September 2021 | Open Access  
**Structural basis of gating modulation of Kv4 channel complexes**  
Cryo-electron microscopy structures of the voltage-gated potassium channel Kv4.2 alone and in complex with auxiliary subunits (DPP6S and/or KChIP1) reveal the distinct mechanisms of these two different subunits in modulating channel activity.
  - Yoshiaki Kise
  - Go Kasuya
  - Osamu Nureki

## Volume 599 Issue 7884, 11 November 2021

### This Week

#### Editorial

- Editorial | 10 November 2021  
[COVID is disrupting scientific careers around the world](#)  
Earlier generations faced fallout from the global financial crisis and a boost from emerging economies. Today, COVID-19 and concerns about diversity dominate.

#### World View

- World View | 09 November 2021  
[Simplify drug labelling to show benefits clearly](#)  
Regulators and researchers should give patients and physicians meaningful information to guide decisions.
  - Jonathan J. Darrow

#### Research Highlights

- Research Highlight | 04 November 2021  
[Maps reveal surprising details of Mongols' ancient capital](#)  
Sensors that peer underground chart the unexpected sprawl of Karakorum, established by the heir to Genghis Khan.
- Research Highlight | 03 November 2021  
[Deadline divide: women shy away from asking for extensions](#)  
Even when deadlines are flexible, women are less likely than men to seek extra time for assignments.
- Research Highlight | 04 November 2021  
[Dressed-up tumour cells make up a personalized cancer vaccine](#)  
A dose of silica-coated cancer cells helps to rally the immune system against malignancies in mice.
- Research Highlight | 05 November 2021  
[Worker ants vault to queenly rank after just one gene turns on](#)  
One master switch controls a wide range of behaviours in an ant that undergoes a radical makeover.

- Research Highlight | 05 November 2021  
[\*\*Scientists glimpse little galactic clusters on their way to greatness\*\*](#)  
Light from 11 billion years ago provides a view of galactic 'protoclusters' that could grow into behemoths.
- Research Highlight | 05 November 2021  
[\*\*Line in the sand: the physics of halting a dune on the march\*\*](#)  
A laboratory 'roundabout' helps scientists to determine the types of barrier that can halt an underwater dune's travels.
- Research Highlight | 03 November 2021  
[\*\*'Flash' droughts are quick-drying farm fields globally\*\*](#)  
Important crop-growing regions, such as Brazil, are susceptible to droughts that strike with alarming speed.

## Research

### News & Views

- News & Views | 27 October 2021  
[\*\*Bryozoan fossils found at last in deposits from the Cambrian period\*\*](#)  
Molecular evidence has long indicated that aquatic animals called bryozoans should be found among the fossils of the Cambrian period, around 541 million years ago. Yet they have been conspicuously absent, until now.
  - Andrej Ernst
  - Mark A. Wilson
- News & Views | 27 October 2021  
[\*\*The unexpected ancestry of Inner Asian mummies\*\*](#)  
The genomes of Bronze Age mummies from the Tarim Basin in northwest China suggest that these individuals were descended from an ancient Asian population that was genetically isolated, despite extensive cultural interactions in the region.
  - Paula N. Doumani Dupuy
- News & Views | 20 October 2021  
[\*\*Diet comparison suggests a lipid imbalance can slow tumour growth\*\*](#)  
Understanding how diet affects tumour growth could lead to better treatments. Analysis in mice reveals that a low-calorie diet, but not a

ketogenic diet, slows the growth of pancreatic cancer. This effect is mediated by lipid changes.

- Giulia Salvadori
- Valter D. Longo

- News & Views | 09 November 2021

**From the archive**

*Nature's* pages feature a textbook that takes a new approach for covering science, and an obituary of Charles Babbage.

- News & Views | 10 November 2021

**Global temperature changes mapped across the past 24,000 years**

Palaeoclimate data and models have been used to produce a comprehensive report of Earth's temperature changes over the past 24 millennia. The results suggest that modern warming differs from the gradual rise of the past 10,000 years.

- Shaun A. Marcott
- Jeremy D. Shakun

- News & Views | 19 October 2021

**Rhinoceros genomes uncover family secrets**

Genomes from living and extinct rhinos reveal that different species evolved as a result of geographic isolation. A comparison of DNA from different species also shows that rhinos have long displayed low genetic variability.

- Desiree Lee Dalton
- Stefan Prost

**Articles**

- Article | 10 November 2021

**An optical lattice with sound**

An optical lattice for trapping a Bose–Einstein condensate reported here includes photon-mediated atom–atom interactions that replicate acoustic modes in real crystals.

- Yudan Guo
- Ronen M. Kroeze
- Benjamin L. Lev

- Article | 29 September 2021

**Cascade of correlated electron states in the kagome superconductor  $\text{CsV}_3\text{Sb}_5$**

A study reveals a temperature-dependent cascade of different symmetry-broken electronic states in the kagome superconductor

CsV<sub>3</sub>Sb<sub>5</sub>, and highlights intriguing parallels between vanadium-based kagome metals and materials exhibiting similar electronic phases.

- He Zhao
- Hong Li
- Ilija Zeljkovic
  
- Article | 29 September 2021  
**Roton pair density wave in a strong-coupling kagome superconductor**  
A study reports unconventional superconductivity and a pair density wave in the kagome superconductor CsV<sub>3</sub>Sb<sub>5</sub>, and provides a basis for understanding the microscopic origin of correlated electronic states and superconductivity in vanadium-based kagome metals.
  - Hui Chen
  - Haitao Yang
  - Hong-Jun Gao
  
- Article | 10 November 2021  
**Bubble casting soft robotics**  
An all-in-one methodology for fabricating soft robotics reported here uses interfacial flows in elastomers that cure to produce actuators that can be tailored to suit applications from artificial muscles to grippers.
  - Trevor J. Jones
  - Etienne Jambon-Puillet
  - P.-T. Brun
  
- Article | 10 November 2021 | Open Access  
**In situ formation of ZnO<sub>x</sub> species for efficient propane dehydrogenation**  
Propene is obtained through propane dehydrogenation using catalysts that are toxic, expensive or demanding to regenerate with ecologically harmful compounds, but the ZnO-based alternative reported here is cheap, clean and scalable.
  - Dan Zhao
  - Xinxin Tian
  - Evgenii V. Kondratenko
  
- Article | 10 November 2021  
**Globally resolved surface temperatures since the Last Glacial Maximum**  
Paleoclimate datasets are integrated with a climate model to reconstruct global surface temperature since the Last Glacial Maximum, showing sustained warming until the mid-Holocene.

- Matthew B. Osman
- Jessica E. Tierney
- Christopher J. Poulsen
  
- Article | 10 November 2021  
**Dynamic slab segmentation due to brittle–ductile damage in the outer rise**  
 Numerical subduction models used to determine the consequences of bending-induced plate damage show that slab weakening and segmentation can occur at the outer-rise region of the subducting plate.
  - T. V. Gerya
  - D. Bercovici
  - T. W. Becker
  
- Article | 27 October 2021 | Open Access  
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- Zilin Li
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  - Evan C. Lien
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  - Andreas Naschberger
  - Rozbeh Baradaran
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- Qianqian Wang
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  - B. Y. H. Lam
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  - Peter Bellwood
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  - Zak Doric
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**Electrons reveal the need for improved neutrino models**  
Experiments on electrons interacting with atomic nuclei have shown that the models used to measure neutrino oscillations — and thereby possibly to understand the formation of the Universe — are less accurate than we thought.
  - Noemi Rocco
- News & Views | 25 October 2021  
**A massive effort links protein-coding gene variants to health**  
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- Yukinori Okada
- Qingbo S. Wang
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- M. Khachatryan
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**Quantum gas magnifier for sub-lattice-resolved imaging of 3D quantum systems**  
Existing techniques for high-resolution imaging of trapped quantum gases are limited to two-dimensional systems, but the approach described here works in three dimensions by magnifying the quantum gas with matter wave optics.
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- Dongxin Ma
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  - Salvatore Pascale
  
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**Triangulation supports agricultural spread of the Transeurasian languages**  
 A 'triangulation' approach combining linguistics, archaeology and genetics suggests that the origin and spread of Transeurasian family of languages can be traced back to early millet farmers in Neolithic North East Asia.
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**Exome sequencing and analysis of 454,787 UK Biobank participants**  
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  - Ewoud R. E. Schmidt
  - Hanzhi T. Zhao
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**Striatal indirect pathway mediates exploration via collicular competition**  
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  - Patricia González-Rodríguez
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**Cold-induced *Arabidopsis* FRIGIDA nuclear condensates for *FLC* repression**  
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  - Clare Lister
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**Early-life inflammation primes a T helper 2 cell–fibroblast niche in skin**  
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**Tumour DDR1 promotes collagen fibre alignment to instigate immune exclusion**  
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**Cell-type specialization is encoded by specific chromatin topologies**  
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  - Warren Winick-Ng
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**Transposon-associated TnpB is a programmable RNA-guided DNA endonuclease**  
 The RNA-directed nuclease TnpB from *Deinococcus radiodurans* can be reprogrammed to cleave DNA target sites in human cells.
  - Tautvydas Karvelis
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- Article | 03 November 2021  
**Few-fs resolution of a photoactive protein traversing a conical intersection**  
 Serial femtosecond crystallography (SFX) has provided significant understanding of time-resolved processes of various systems in biology, for example, rhodopsin, which underlies our vision. The approach involves femtosecond-length X-ray pulses directed at protein crystals and has been used to study various photoactive proteins. However, the function of proteins such as rhodopsin requires *trans*–*cis* isomerization of a chromophore, which involves crossing of a conical intersection—a funnel separating potential energy surfaces—at timescales faster than what can be achieved experimentally. Here, Ourmazd and colleagues report a machine learning analysis of SFX data of photoactive yellow protein, which resolves the protein passing through a conical intersection, providing information about the potential energy surfaces involved and achieving time resolution of less than 10 fs. This approach offers an opportunity to understand some of the fastest processes in biology by extracting even more information from SFX datasets.
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See page 711. Credit: NASA/JPL-Caltech/ASU/MSSS

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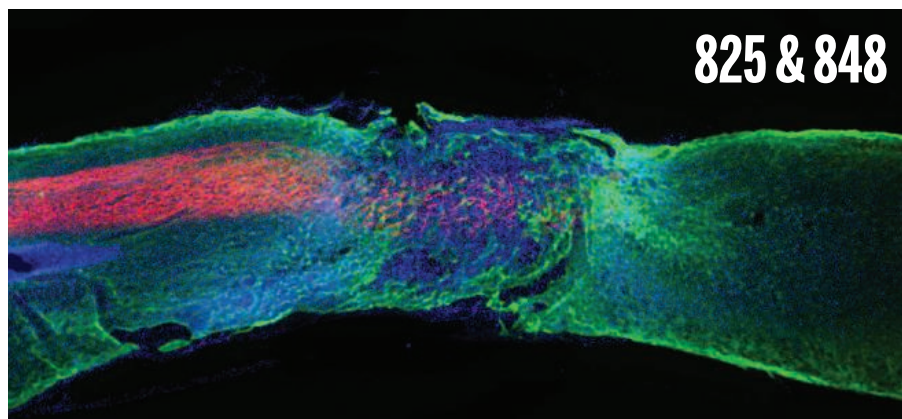
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A tiger rockfish (*Sebastes nigrocinctus*) nestled in a cluster of rocks. Tiger rockfish can live as long as 116 years. A genomic analysis of 88 species reveals the genetic underpinnings of rockfish life spans, which range from 11 years

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Photo: *Flip Nicklin/Minden Pictures*

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Peptide-stimulated regrowth of axons after injury to mouse spinal cord

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Blue laser light is used to show quantum statistics effects on light scattering in an ultracold Fermi gas.

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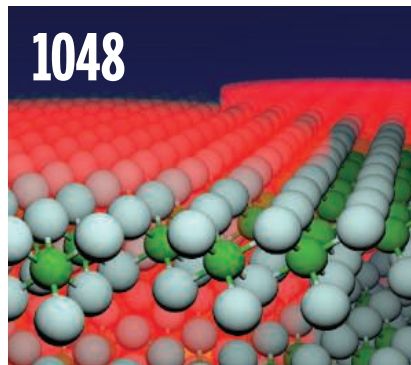
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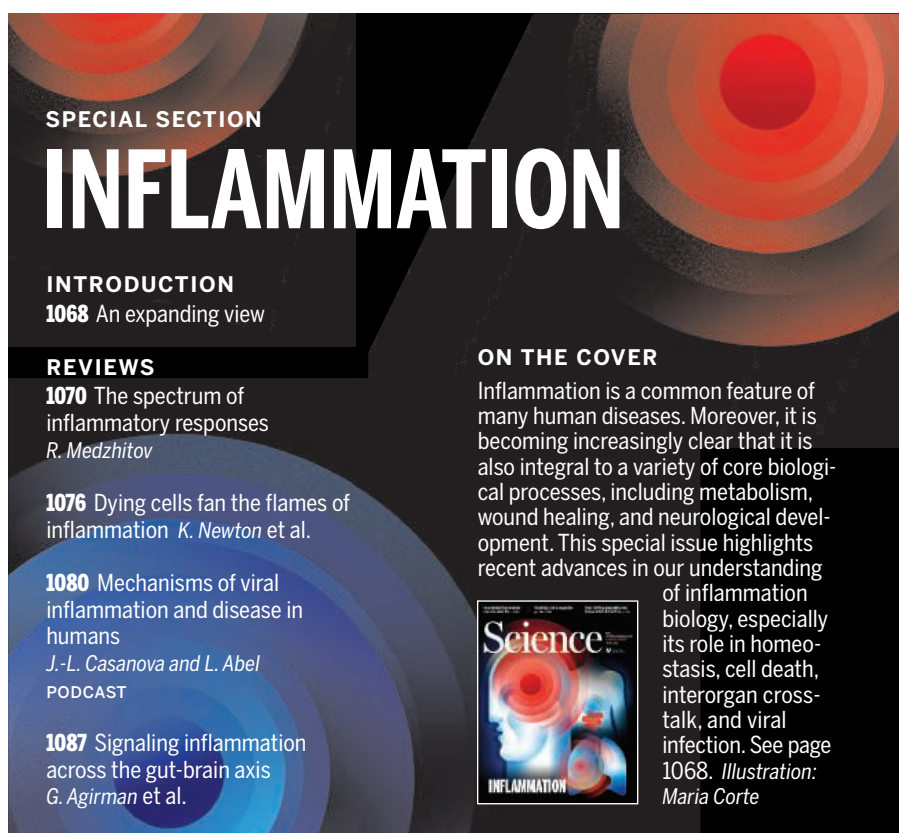
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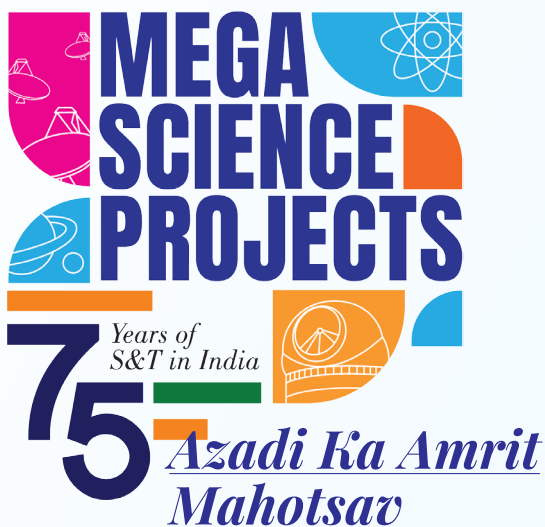
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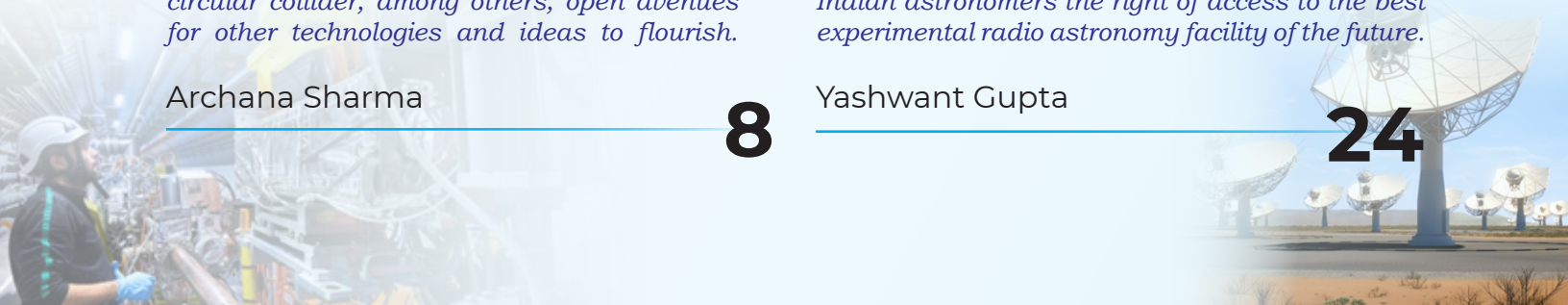
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November 4, 2021

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## NEW COVID-19

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### Phase 3 Trial of mRNA-1273 during the Delta-Variant Surge

L.R. Baden and Others

DOI: 10.1056/NEJMc2115597 | November 3, 2021

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### Neutralization of the SARS-CoV-2 Mu Variant by Convalescent and Vaccine Serum

K. Uriu and Others

DOI: 10.1056/NEJMc2114706 | November 3, 2021

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### Fundamentals of Public Health: Applying a Subpopulation Lens to Population Health

E. Fuentes-Afflick

N Engl J Med 2021;385:1729-1732 | Published Online October 30, 2021

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### Racial and Ethnic Diversity at Medical Schools — Why Aren't We There Yet?

J.P. Guevara, R. Wade, and J. Aysola

N Engl J Med 2021;385:1732-1734 | Published Online October 30, 2021

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### None of the Above — The Patient beyond the Multiple Choice



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C. Grinberg

N Engl J Med 2021;385:1734-1735 | Published Online October 30, 2021

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**New Creatinine- and Cystatin C–Based Equations to Estimate GFR without Race**

L.A. Inker and Others

N Engl J Med 2021;385:1737-1749 | Published Online September 23, 2021

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**Race, Genetic Ancestry, and Estimating Kidney Function in CKD**

C. Hsu and Others

N Engl J Med 2021;385:1750-1760 | Published Online September 23, 2021

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**Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine through 6 Months**

S.J. Thomas and Others

N Engl J Med 2021;385:1761-1773 | Published Online September 15, 2021

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**Efficacy of the mRNA-1273 SARS-CoV-2 Vaccine at Completion of Blinded Phase**

H.M. El Sahly and Others

N Engl J Med 2021;385:1774-1785 | Published Online September 22, 2021

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**Ticagrelor versus Clopidogrel in *CYP2C19* Loss-of-Function Carriers with Stroke or TIA**

Y. Wang and Others

DOI: 10.1056/NEJMoa2111749 | October 28, 2021

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**Peritoneal Dialysis**

I. Teitelbaum

N Engl J Med 2021;385:1786-1795

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I. de Almeida Mendes and V.O. Neves

N Engl J Med 2021;385:1796 | Published Online October 30, 2021

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### Thoracic Endometriosis

M.-L. Chen and C.-Y. Li

N Engl J Med 2021;385:e65

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### Copycat

B.W. Dietz, L.G. Winston, J.E. Koehler, and M. Margaretten

N Engl J Med 2021;385:1797-1802

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W.W. Williams, J.W. Hogan, and J.R. Ingelfinger

N Engl J Med 2021;385:1804-1806 | Published Online September 23, 2021

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### Audio Interview: Do We Have the Tools to End the Covid-19 Pandemic?

E.J. Rubin, L.R. Baden, and S. Morrissey

N Engl J Med 2021;385:e78

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N Engl J Med 2021;385:1807-1809

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N Engl J Med 2021;385:1810-1814

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Decline in Pathogenic Antibodies over Time in VITT

Published Online September 8, 2021

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Prevention of Covid-19 with the BNT162b2 and mRNA-1273 Vaccines

Published Online October 6, 2021

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Abelacimab for Prevention of Venous Thromboembolism

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Surgery with or without Fusion for Lumbar Spondylolisthesis

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More on CD19-CAR T Cells in Systemic Lupus Erythematosus

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VITT after ChAdOx1 nCoV-19 Vaccination

DOI: 10.1056/NEJMc2111026 | November 3, 2021

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Transfer of Fresh versus Frozen Embryos in Ovulatory Women



November 11, 2021

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## A Man with Pain and Erythema of the Left Hand

A 22-year-old man was admitted with pain and swelling of the hand. Over several hours, the pain progressed and bullae began to form. The patient had recently begun practicing taxidermy. What is the diagnosis?



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## Evaluation of the BNT162b2 Covid-19 Vaccine in Children 5 to 11 Years of Age

E.B. Walter and Others

DOI: 10.1056/NEJMoa2116298 | November 9, 2021

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S.B. Dusetzina

DOI: 10.1056/NEJMp2116586 | November 10, 2021

## The Future of SARS-CoV-2 Vaccination — Lessons from Influenza

A.S. Monto

N Engl J Med 2021;385:1825-1827 | Published Online November 6, 2021

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## History of Medicine: When Women and Children Made the Policy Agenda — The Sheppard–Towner Act, 100 Years Later

J.P. Baker

N Engl J Med 2021;385:1827-1829 | Published Online November 6, 2021

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N Engl J Med 2021;385:1829-1831 | Published Online October 13, 2021

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## A Randomized Trial of Intravenous Alteplase before Endovascular Treatment for Stroke

N.E. LeCouffe and Others

N Engl J Med 2021;385:1833-1844

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## Angiotensin Receptor–Neprilysin Inhibition in Acute Myocardial Infarction

M.A. Pfeffer and Others

N Engl J Med 2021;385:1845-1855

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## Pembrolizumab for Persistent, Recurrent, or Metastatic Cervical Cancer

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## 100,000 Genomes Pilot on Rare-Disease Diagnosis in Health Care — Preliminary Report

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DOI: 10.1056/NEJMoa2112299 | November 4, 2021

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R. Agarwal and Others

DOI: 10.1056/NEJMoa2110730 | November 5, 2021

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## Daprodustat for the Treatment of Anemia in Patients Not Undergoing Dialysis

A.K. Singh and Others

DOI: 10.1056/NEJMoa2113380 | November 5, 2021

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A.K. Singh and Others

DOI: 10.1056/NEJMoa2113379 | November 5, 2021

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S. Rajagopalan and P.J. Landrigan

N Engl J Med 2021;385:1881-1892



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S.S. Dhruva and R.F. Redberg

DOI: 10.1056/NEJMp2114960 | November 17, 2021

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Regulating Drug Prices while Increasing Innovation

R.M. Conti, R.G. Frank, and J. Gruber

N Engl J Med 2021;385:1921-1923 | Published Online November 13, 2021

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Drug-Pricing Debate Redux — Should Cost-Effectiveness Analysis Be Used Now to Price Pharmaceuticals?

P.J. Neumann, J.T. Cohen, and D.A. Ollendorf

N Engl J Med 2021;385:1923-1924 | Published Online November 13, 2021

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Graphic Perspective: Revival

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N Engl J Med 2021;385:1925-1927 | Published Online November 13, 2021

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B. Gentner and Others

N Engl J Med 2021;385:1929-1940

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## Early Treatment for Covid-19 with SARS-CoV-2 Neutralizing Antibody Sotrovimab

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N Engl J Med 2021;385:1941-1950 | Published Online October 27, 2021

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## Early Convalescent Plasma for High-Risk Outpatients with Covid-19

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N Engl J Med 2021;385:1951-1960 | Published Online August 18, 2021

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## Multiyear Factor VIII Expression after AAV Gene Transfer for Hemophilia A

L.A. George and Others

N Engl J Med 2021;385:1961-1973

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A. Mandl and Others

N Engl J Med 2021;385:1974-1980

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DOI: 10.1056/NEJMoa2113194 | November 15, 2021

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## 24-Hour Urinary Sodium and Potassium Excretion and Cardiovascular Risk

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DOI: 10.1056/NEJMoa2109794 | November 13, 2021

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## Secondary Antibiotic Prophylaxis for Latent Rheumatic Heart Disease

A. Beaton and Others

DOI: 10.1056/NEJMoa2102074 | November 13, 2021

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## Concomitant Tricuspid Repair in Patients with Degenerative Mitral Regurgitation

J.S. Gammie and Others



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DOI: 10.1056/NEJMoa2115961 | November 13, 2021

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**Insights into Salt Handling and Blood Pressure**

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N Engl J Med 2021;385:1981-1993

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**Retinopathy in Malignant Hypertension**

F. Poli and I.H. Yusuf

N Engl J Med 2021;385:1994 | Published Online November 13, 2021

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E.M. Varoni and S. Decani

N Engl J Med 2021;385:e73

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**CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL**

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**Case 35-2021: A 50-Year-Old Woman with Pain in the Left Upper Quadrant and Hypoxemia**

M.M. Chapman, V.V. Muse, J.E. Mojica, and M.N. Anahtar

N Engl J Med 2021;385:1995-2001

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**The Beginning of the End of Allogeneic Transplantation for Hurler Syndrome?**

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S. Kharbanda and C.C. Dvorak  
N Engl J Med 2021;385:2003-2004

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## Audio Interview: The Legal Basis for Covid-19 Restrictions and Mandates

E.J. Rubin, L.R. Baden, M.M. Mello, and S. Morrissey  
N Engl J Med 2021;385:e88

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## The Price of Freedom from Tricuspid Regurgitation

J. Chikwe and M. Gaudino  
DOI: 10.1056/NEJMe2116776 | November 13, 2021

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### **CLINICAL IMPLICATIONS OF BASIC RESEARCH**

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## Eliminating the “Hanger” from Hunger

J.N. Betley  
N Engl J Med 2021;385:2005-2007

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## Covid-19 Vaccination during Pregnancy and First-Trimester Miscarriage

Published Online October 20, 2021

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## Differential Kinetics of Immune Responses Elicited by Covid-19 Vaccines

Published Online October 15, 2021

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## Therapeutic Anticoagulation with Heparin in Patients with Covid-19

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## Long-Term Complications in Youth-Onset Type 2 Diabetes

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## Reframing Immune-Mediated Inflammatory Diseases

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## Mobility Assessment in Older Adults



November 25, 2021

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**CLINICAL DECISIONS**

## Treatment of Diabetes — To Pump or Not to Pump

J. O'Connell and Others | N Engl J Med 2021;385:2092-2095

This interactive feature about a person with type 1 diabetes mellitus and impaired awareness of hypoglycemia offers a case vignette accompanied by two essays supporting the use of a continuous glucose monitor paired with an insulin pump or a continuous glucose monitor with alerts.



[Read the opinions, share your comments, and vote at NEJM.org.](#)

Browse more cases and challenge yourself at the [Clinical Cases Resource Center](#).

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**PERSPECTIVE**

## A Divisive Ruling on Devices — *Genus Medical Technologies v. FDA*

P.J. Zettler, E.Y. Adashi, and I.G. Cohen

DOI: 10.1056/NEJMp2117295 | November 24, 2021

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## Why Is Aducanumab Priced at \$56,000 per Patient? Lessons for Drug-Pricing Reform

J.C. Robinson

N Engl J Med 2021;385:2017-2019 | Published Online November 20, 2021

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## Medicare Coverage of Aducanumab — Implications for State Budgets

R.E. Sachs and N. Bagley

N Engl J Med 2021;385:2019-2021 | Published Online November 20, 2021

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## The Little Things

J.C. Stuart

N Engl J Med 2021;385:2021-2023 | Published Online November 20, 2021

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**ORIGINAL ARTICLES**

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**Spinal Anesthesia or General Anesthesia for Hip Surgery in Older Adults**

M.D. Neuman and Others

N Engl J Med 2021;385:2025-2035 | Published Online October 9, 2021

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**Belzutifan for Renal Cell Carcinoma in von Hippel–Lindau Disease**

E. Jonasch and Others

N Engl J Med 2021;385:2036-2046

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**Live Birth with or without Preimplantation Genetic Testing for Aneuploidy**

J. Yan and Others

N Engl J Med 2021;385:2047-2058

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**Brief Report: Belzutifan, a Potent HIF2 $\alpha$  Inhibitor, in the Pacak–Zhuang Syndrome**

J. Kamihara and Others

N Engl J Med 2021;385:2059-2065

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**New Horizons in the Treatment of Osteosarcoma**

P.S. Meltzer and L.J. Helman

N Engl J Med 2021;385:2066-2076

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**Tinea Capitis Due to *Microsporum canis***

T. Wang and J.-Q. Chen

N Engl J Med 2021;385:2077 | Published Online November 20, 2021

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M. Petruzzi and F. della Vella  
N Engl J Med 2021;385:e77

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L.G. Winston, M.L. Winkler, A. Kheterpal, and J.A. Villalba  
N Engl J Med 2021;385:2078-2086

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J.P. Rathmell and M.S. Avidan  
N Engl J Med 2021;385:2088-2089

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## Changing the Course of an Orphan Disease

M. Schmidinger  
N Engl J Med 2021;385:2090-2091

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## Audio Interview: What's Gone Right in Our Battle against Covid-19

E.J. Rubin, L.R. Baden, and S. Morrissey  
N Engl J Med 2021;385:e95

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## Treatment of Diabetes — To Pump or Not to Pump

J. O'Connell, D.M. Nathan, T. O'Brien, and D.T. O'Keefe  
N Engl J Med 2021;385:2092-2095

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S. Mastenbroek, G. de Wert, and E.Y. Adashi  
N Engl J Med 2021;385:2096-2100

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W.J. Murphy and D.L. Longo  
DOI: 10.1056/NEJMcibr2113694 | November 24, 2021

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### A Nobel Prize for Sensational Research

M.J. Zylka  
DOI: 10.1056/NEJMcibr2116227 | November 24, 2021

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### A Noble Quest for Simplicity in the Chiral World

S.B. Tsogoeva  
DOI: 10.1056/NEJMcibr2116228 | November 24, 2021

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Published Online October 20, 2021

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### Vaccine-Induced Thrombocytopenia with Severe Headache

Published Online September 15, 2021

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### Efpeglenatide and Heart and Kidney Outcomes in Type 2 Diabetes

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Milrinone as Compared with Dobutamine in the Treatment of Cardiogenic Shock

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