

CROSSROADS

THE OFFICIAL NEWSLETTER OF THE PREMED SCENE



Rising Stars in Medicine: Anvita Ravi

Dear medical newsletter readers,

Happy September! We hope you've had a strong start to the new semester. Today, we bring you the most updated news in the field of medical research! Siri Nikku is your next Rising Stars in Medicine writer, talking about Dr. Anvita Ravi and her work with the PurpLE clinic. Next, Ashby Glover introduces a new treatment for brain cancer. Then, Mahima Bhat focuses on the health benefits of forest bathing. Finally, Siri Nikku talks about the risk factors in children with Sickle Cell Anemia. Please enjoy reading The Premed Scene's September 2023 Medical Newsletter!

Alana Saidou

See what else is inside:

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Rising Stars in Medicine: Anvita Ravi

By: Siri Nikku

Dr. Anvita Ravi, MD, MPH, MSHP, FAFAP- CEO, and Co-Founder, PurpLE Health Foundation is a board-certified family medicine physician, public health scientist, and internally recognized expert in gender-based violence and trauma-informed care. Dr. Ravi graduated from Washington University in St. Louis, earned her Medical Degree from the University of Michigan School of Medicine, got her Masters in Public Health from Yale University, and her Masters in Health Policy research from the University of Pennsylvania School of Medicine/Robert Wood Johnson Foundation Clinical Scholars Program. She is also the CEO and co-founder of the PurpLE Health Foundation, which is a non-profit organization that progresses the health of communities through funding and investing in taking care of the several aspects of the health of women and girls who have endured gender-based violence. Before founding this foundation, Dr. Ravi established the PurpLE clinic in New York, which is a primary care center for survivors of traumatic issues like sex trafficking and abuse. Dr. Ravi has also been a part of publications focusing on trauma, human trafficking, and healthcare delivery in poorer settings. She also conducts forensic examinations for anyone looking for asylum and is a huge part of teaching marginalized people who have dealt with being incarcerated. Currently, Dr. Ravi is the Vice Chair of the American Medical Association's Women Physicians Section Governing Council and is a member of the National Quality Forum's Prevention and Population Health Standing Committee. Additionally, she is a consultant to the United States Office for Victims of Crime Training and Technical Assistance Center. Even more, Dr. Ravi constantly writes and talks at events in the US on how the healthcare system needs to change completely to help individuals who have dealt with any form of abuse and exploitation.

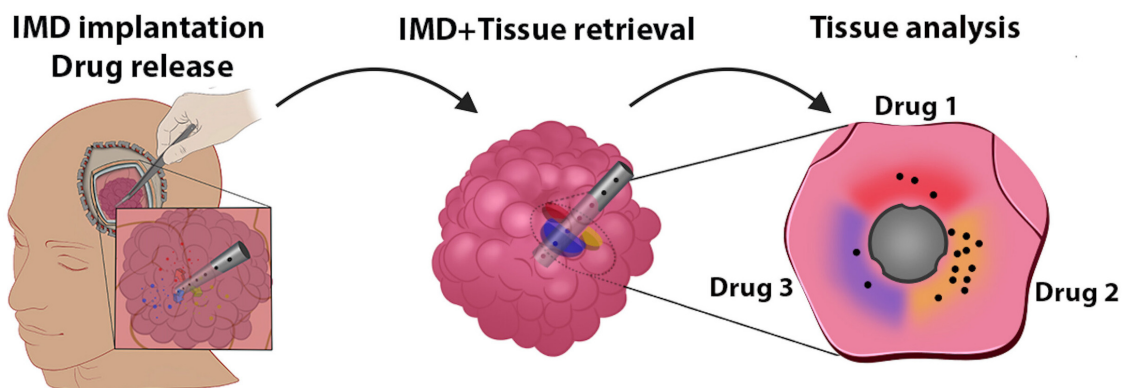
References:

<https://www.nmqf.org/40-under-40-awardees/2021/anita-ravi>

Rice-Grain Sized Device Promising In Treatment of Brain Cancer

By: Ashby Glover

Researchers from Brigham and Women's Hospital have created a new device that has promising implications for the future of neuro-oncology. The device, which is the size of a grain of rice, is implanted in a patient's brain tumor for two to three hours during surgery before it is removed. During this time, it injects small doses of different drugs and collects data on how the drugs affect the tumor's micro-environment.



This device is particularly promising for the treatment of gliomas, an especially deadly type of brain and spinal cord tumor that is notoriously difficult to treat because they lack predictive biomarkers. Because of this, it is necessary to test the reaction of cancer material to a variety of drugs to determine the best treatment. This clinical trial "provides the first-in-human evidence that drug-releasing intratumoral microdevices (IMDs) can be safely and effectively used to obtain patient-specific... drug response profiling." (1)

"The ability to bring the lab right to the patient unlocks so much potential in terms of the type of information we can gather, which is new and exciting territory for a disease that has very few options at present." (2)

-Pier Paolo Peruzzi, MD, PhD

Peruzzi, Pierpaolo, et al. "Intratumoral Drug-Releasing Microdevices Allow in Situ High-Throughput Pharmaco Phenotyping in Patients with Gliomas." *Science Translational Medicine* 15, no. 712 (2023). <https://doi.org/10.1126/scitranslmed.adi0069>.

Brigham and Women's Hospital. "Microdevices implanted into tumors offer new way to treat brain cancer." *medicalxpress.com*. September 6, 2023. <https://medicalxpress.com/news/2023-09-microdevices-implanted-tumors-brain-cancer.html>



Shinrin-Yoku's (Forest Bathing)

Health Benefits

By: Mahima Bhat

Shinrin-Yoku, often referred to as forest bathing, is a time-honored Japanese practice that offers profound health benefits through immersion in nature. This therapeutic technique involves fully engaging with a forested environment, stimulating your senses, and embracing the tranquility of the natural world. Research has shown that Shinrin-Yoku not only provides mental and emotional relief but also offers significant physical advantages, making it a holistic approach to well-being.

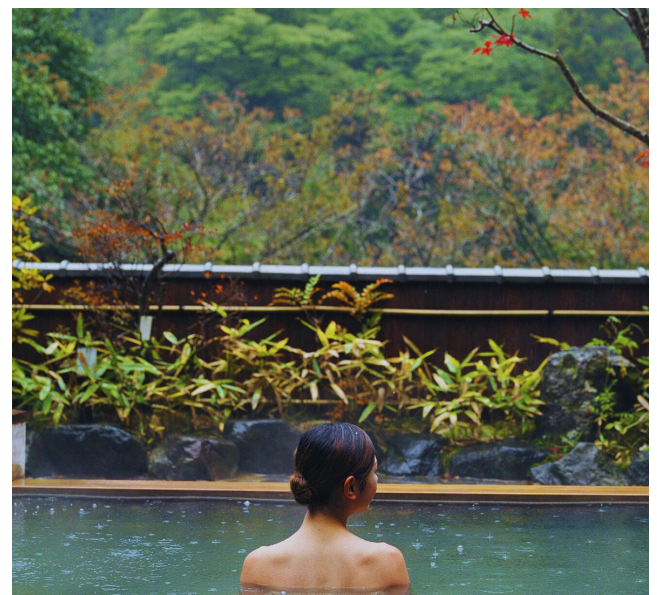
Numerous studies have shown that spending time in nature, particularly in lush, green forest environments, can have a profound impact on mental and physical health. Forest bathing has been associated with reduced levels of stress hormones like cortisol, lowered blood pressure, and improved heart rate variability. These physiological changes are indicative of a

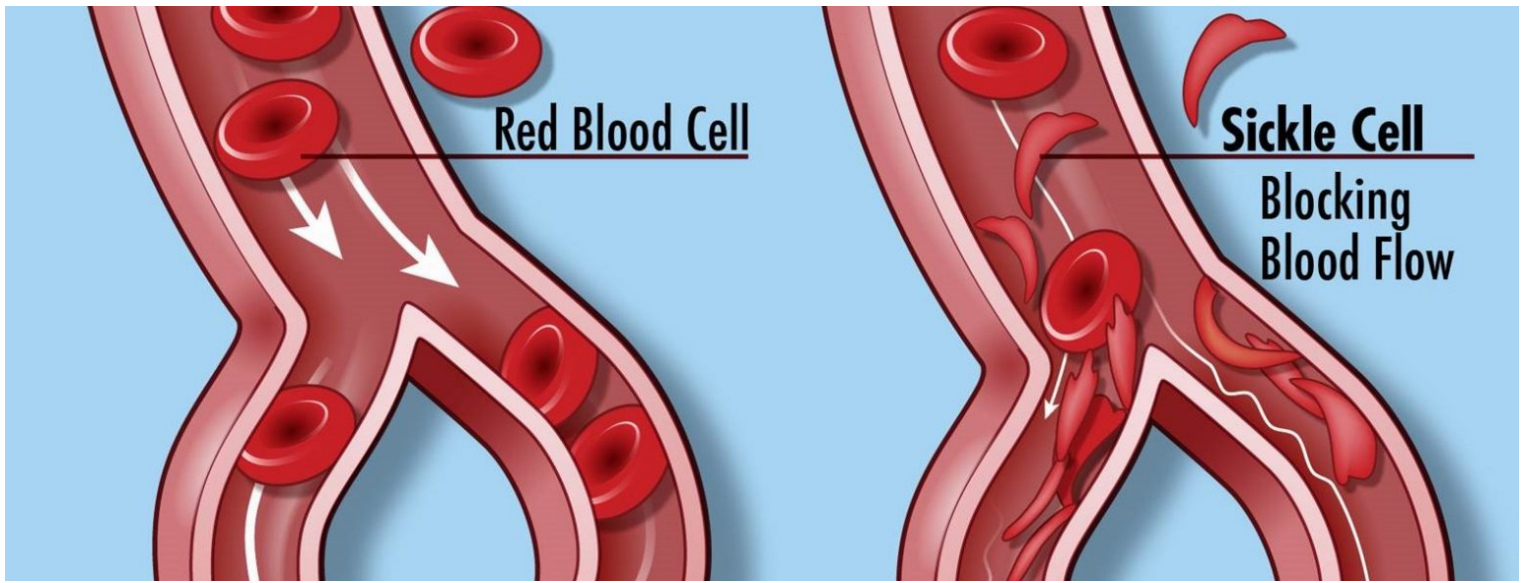
relaxation response, fostering a sense of calm and tranquility.

On the mental health front, forest bathing has demonstrated positive effects on mood and emotional well-being. Participants in forest bathing experiences have reported reduced symptoms of anxiety and depression, increased feelings of vitality, and heightened creativity. The sensory and mindful connection with nature during Shinrin-Yoku promotes relaxation, reduces the mental fatigue associated with urban life, and fosters a greater sense of connectedness to the environment. As a result, forest bathing has gained recognition as a natural and accessible way to improve overall wellness, offering a peaceful respite from the stresses of modern living while nurturing both the body and the mind.

References:

<https://utswmed.org/medblog/forest-bathing/>.





Underweight Risk Factors in Children with Sickle Cell Anemia

By: Siri Nikku

Sickle cell anemia (SCA) is a blood disorder that is inherited genetically. Healthy and functional red blood cells are round and are able to transport oxygen throughout the body. Individuals with SCA have red blood cells that resemble the shape of a C and a “sickle.” These red blood cells become hard and sticky, clogging smaller blood vessels. There are rare forms of SCA, such as HbSD, HbSE, and HbSO, where individuals with the disorder have an abnormal type of hemoglobin (“D,” “E,” or “O”).

A study looks into how children aged 5 to 12 years old who have sickle cell anemia are more at risk for undernutrition. Children with SCA often are shorter in height, low in body mass index (BMI) and nutritional status. It is even worse for children who live in lower-income countries to be more affected by being underweight and having SCA; there is a higher chance of them being hospitalized compared to children without SCA who are at a healthy BMI. The methods of the study consisted of a cross-sectional study in both low- and high-income areas to figure out if there was a pattern in biological risk factors being underweight and having SCA for children aged 5-12 years old.

The children, all of whom had SCA, were observed in countries such as Nigeria vs. the United States and countries in Europe. About half of the participants were male and female, with the age ranges all being between 5-12 years. For the results of the study, about 88% of the participants from the low-income category met the criteria for being underweight, and 22.7 % met the criteria for being severely underweight, which is much higher than the percentage of the participants from high-income countries. In contrast, about 25.7% were underweight, and 0.7% were severely underweight. When looking at the category of older children with SCA, it was seen that those who were older with SCA had a higher percentage in the underweight and severely underweight categories. Even for both low-income and high-income cohorts, being older and having SCA showed a pattern of being underweight or severely underweight. The discussion mentions that due to both low-income and high-income countries having older children with SCA being underweight, there’s a biological risk factor of older children being more at risk for being underweight, no matter what the status of the country they live in. Being underweight seems to correlate to lower hemoglobin levels from sickle cell anemia, especially for children who are older. It is still not determined why but further research will be conducted to figure out the reasons.

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<https://ashpublications.org/bloodadvances/article/doi/10.1182/bloodadvances.2023009711/498126>

<https://www.cdc.gov/ncbddd/sicklecell/facts.html>

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