



Physicians Week

As human history has advanced, the science and practice of medicine has evolved over time, bringing the world into the modern era of physicians, who treat patients for a plethora of reasons and with a wide range of treatments. As medical doctors, physicians gain knowledge through many years of medical school and residency, often working long hours and practicing under stressful conditions. Physicians are instrumental in keeping their patients' healthy and, many times, providing life-saving care. Certainly, these folks deserve a time of extra recognition, and that's what Physician's Week is all about!

#ENVIRONMENT

Trees Near Highways Cut Air Pollution From Traffic

To achieve a more comprehensive reduction in the health hazards associated with highways, municipalities can improve air quality by making it safe, pleasant, and convenient for people to get where they need to go without a motor vehicle. Changes could include expanding public transportation, and developing and improving bicycle and pedestrian infrastructure, for example.



One should plant more trees along highways because they provide benefits that go beyond aesthetics. A new study finds that trees and bushes 'planted near highways' significantly reduce air pollution caused by motor vehicles, which has been linked to a host of illnesses.

Over two three-month periods, researchers sampled air quality at five sites along metro Atlanta interstates and highways. When compared to similar sites without vegetation, the researchers found a 37% reduction in soot and a 7% reduction in ultrafine particles at sites with natural or ornamental vegetation.

The findings appear in the journal *PLOS ONE*. "Trees and bushes near roadways don't solve the problem of air pollution caused by motor vehicles, but they can help reduce the severity of the problem," says lead author Roby Greenwald, associate professor in the Georgia State University School of Public Health.

A growing body of evidence has linked motor vehicle pollution to conditions such as asthma, chronic bronchitis, lung cancer, and heart attacks.

Solutions to the problem of elevated pollution levels near roadways are urgently needed, Greenwald and his colleagues note, because 45 million people in the United States live, work, or attend school within 300 feet of a major highway.

Roadside vegetation reduces air pollution through several mechanisms, including by creating a large surface area onto which small particles adhere.

The new study builds on previous research into the role that 'vegetation' can play in reducing air pollution by sampling at several sites over an extended period and incorporating the views of the National Institutes of Health.



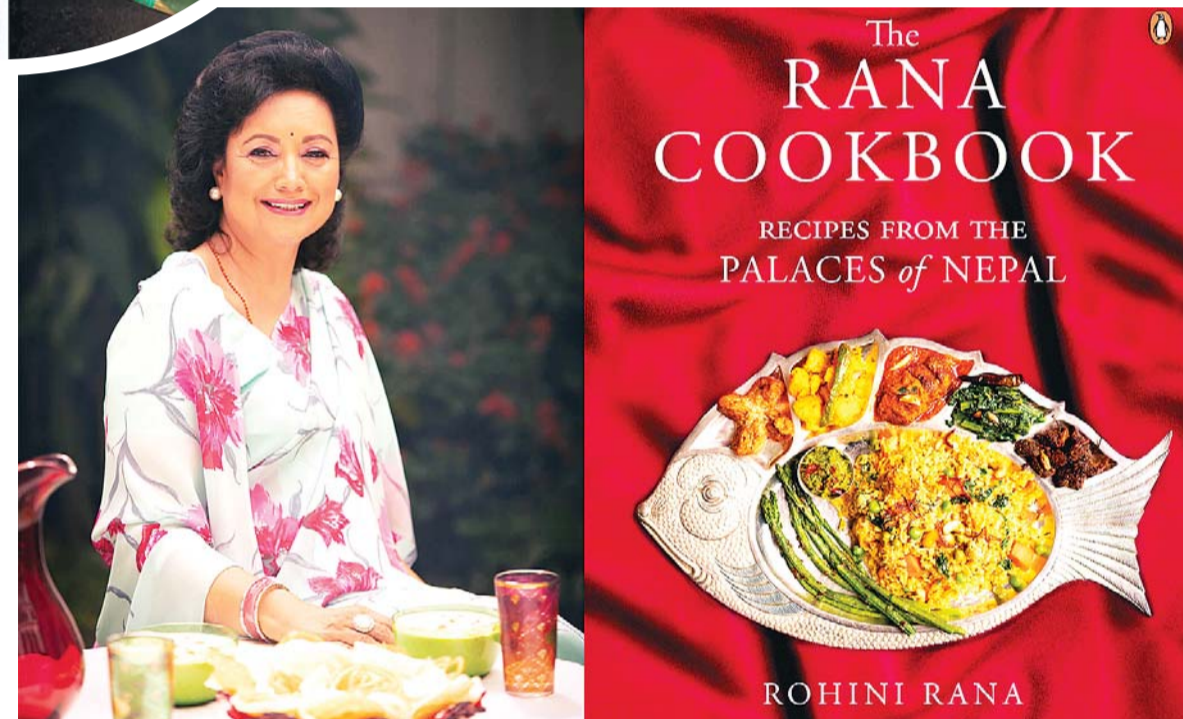
Cooking? Nepal's Rana dynasty shows how

The bird species including junglefowl, partridge, pheasants, ducks, quail and peacocks were hunted by the Ranas themselves, on their many *Shikar trips* or by their trained *Shikaris* (trained hunters), separately maintained by each *Rana* household to ensure the constant flow of fresh meat to their tables. The only bird that did not reach their ornate platters was the common chicken, because it pecked at dirt and droppings. So, it was not considered hygienic. With the waning of *shikar trips* and *shikaris*, the chicken finally found its way to the cooking pot, although in a separate kitchen.



Courtesy: *The Rana Cookbook: Recipes from the Palaces of Nepal*, by Rohini Rana, Penguin Viking.

#FINE-DINING



Rohini Rana
Writer

The Ranas ruled Nepal for just over a century as Prime Ministers, and are famous to date for their stucco, colonial style palaces, beautifully manicured gardens, magnificent jewelry, palace intrigues and autocratic rule. This glamorous, colorful regime that shaped the history of the country for 104 years, imported ideas concerning architecture, dress and even administration from far off Europe but in the field of *culinary art*, they did not stray too far from their homeland. The local cuisine was influenced to a certain extent by the *khasmas* (cooks), brought in from Mughal India after the looting of Lucknow during Jung Bahadur's time.

The festivals and ceremonies always brought on more pomp and pageantry, making the menus more elaborate than ever. The tables groaned under the display of various delicacies. The main ceremony, which totally involves and rotates around food is the *'Chaurasi Bhanjan'*. This ceremony is still a must during *Parsi* (rice feeding of a child), *Bartaman* (sacred thread ritual) and *Biyah* (wedding). This tradition goes back to the epical story of the *Ramayana* and the wedding celebration of Sita's marriage to Ram, where King Janaka is supposed to have served 84 *Chaurasi* (varieties of food) at the banquet. The display is usually served in beautifully handcrafted silver platters, surrounding one massive platter (*thali*) consisting of one *paathi* of cooked rice, decorated with boiled eggs and dried fish, topped by a *bhadrai* bird. The heads of a wild boar, goat, a whole duck and fish would be smeared with a preservative paste of mustard oil and turmeric powder and proudly displayed with a variety of other meats, vegetables, fruits and sweetmeats, comprising the 84 dishes that the lucky child or bridal couple were expected to partake of.

In the old days, the wild boar used to be hunted in the jungles of the *Terali*. Many succulent recipes were tried and perfected



and still are a favorite in any celebration. Various other wild game, mainly from the deer family, found their way to the silver platters of the Rana households.

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Khasi Ko Tandruk (Mutton Gravy)

Preparation time: 45 minutes Serves: 8 persons

- Ingredients**
- 1 kg mutton
 - 2 1/2 cup mustard oil
 - 1 1/2 tsp. turmeric powder
 - 2 Tbsp. cumin powder
 - 1 Tbsp. coriander powder
 - 1 tsp. timur powder
 - 1 Tbsp. Kashmiri mirch
 - 1 1/2 Tbsp. red chili powder
 - 1 1/2 cups onion paste
 - 3 Tbsp. garlic paste
 - 2 Tbsp. ginger paste
 - 3 Tbsp. ghee
 - 1 Tbsp. sugar
 - 1 tsp. carom seeds
 - 1/4 tsp. fenugreek seeds
 - 1 tsp. jimbu
 - 1 cup fried onions
 - Salt to taste
 - Whole spices
 - 4 bay leaves
 - 4 cloves
 - 2 cinnamon sticks
 - 5 small cardamoms

Recipe credit to Col. Jeevan SJB Rana, son of Rukmani Rajya Laxmi, grand daughter of Maharaja Padma SJB Rana.



Courtesy: *The Rana Cookbook: Recipes from the Palaces of Nepal*, by Rohini Rana, Penguin Viking.

Preparation

Cut the mutton in 2 inch cubes and place in a large bowl. Add all the ingredients from section 2 and salt and mix well. Marinate overnight or for 6 hours. Heat the oil till it

smokes and add the fenugreek and carom seeds, jimbu, bay leaves and whole spices and let it crackle. Add the sugar and marinated meat. Stir and cook for 20 minutes till the oil separates. Add 3 cups of water

and pressure cook for 4 whistles. Let the pressure cooker cool open and add 1 cup of fried onions and cook till the water dries and the oil floats on top. Garnish with coriander and serve.

Tare Ko Chara (Fried Chicken Gravy)

Preparation time: 1 hour Serves: 6 persons

- Ingredients**
- 1 kg chicken cut in approximately 2 inch pieces
 - 1/2 cup mustard oil
 - 1/2 cup ghee
 - 1/2 tsp. asafoetida powder
 - 1 1/2 cup sliced onions
 - 1 1/2 cup chopped tomatoes
 - 3 Tbsp. garlic paste
 - 3 Tbsp. ginger paste
 - 2 tsp. cumin powder
 - 1 1/2 tsp. coriander powder
 - 1 tsp. turmeric powder
 - 1 tsp. chili powder
 - 1 1/2 tsp. Kashmiri mirch powder
 - 1 Tbsp. ground *kudke achar* (if available)
 - 2 Tbsp. chopped green coriander for garnish
 - Salt to taste



Recipe credit to Mr. Nanda SJB Rana Baber Mahal, family of Maharaja Chandra SJB Rana.

Preparation

Make 1/4 inch slits in the chicken pieces and keep aside. Heat mustard oil in a heavy bottomed pan till it smokes and add ghee and asafoetida powder and onions. Stir till they are light golden color. Then add ginger and garlic paste and stir for further 5 minutes, till the

raw smell dissipates. Add the chicken, salt and turmeric powder and stir from time to time till the chicken changes color to a light brown. Now, add the cumin, coriander and chili powders. Stir for 2 minutes and add the tomatoes and *kudke achar*. Lower the heat and keep stirring till all the

ingredients are well integrated and chicken is cooked and the oil separates. You can add 1/2 cup of water, if the chicken is not cooked. After the chicken is cooked, add 1/2 teaspoon whole spice powder (*garam masala*) to the dish. Stir and garnish with chopped coriander leaves and serve.

#HEAT INDEX

Feel The Burn

The temperature alone does not accurately reflect the *heat stress* that people feel



A new study concludes that the *heat index*, essentially how hot it really feels, has increased much faster than has the measured temperature, about three times faster.

That means that on some extreme days, what the temperature feels like is between 8 and 11 Fahrenheit (5 to 6 Celsius) hotter than it would, without climate change.

The study, using data from June, July, and August of 2023, highlights a problem with communicating the dangers of rising temperatures to the public.

The temperature alone does not accurately reflect the *heat stress* that people feel. Even the heat index itself, which takes into account the "relative humidity" and thus the capacity to cool off by sweating, gives a conservative estimate of *heat stress*, according to study author David Roms, a professor of Earth and Planetary Science at the University of California, Berkeley.

In 2022, Roms co-authored a paper pointing out that the way most government agencies calculate the *heat index* is inaccurate, when dealing with the temperature and humidity extremes that we're seeing today. This leads people to underestimate their chances of suffering *hyperthermia* on the hottest days and of their chances of dying.

Dangerous Heat

"The reason that it feels much hotter than you'd expect from the increase in ambient temperature alone is that 'global warming' is affecting the interplay between humidity and temperature," Roms says. In the past, relative humidity typically dropped when the temperature increased, allowing the body to sweat more and thus feel more comfortable.

But with climate change, the relative humidity remains about constant as the temperature increases, which reduces the effectiveness of sweating to cool the body.

"To deal with the irreversible temperature increases that we already experience, people need to take precautions to avoid hyperthermia," Roms says. He advised that, for those in extreme heat situations and unable to take advantage of air conditioning, you can use shade and water as your friends.

"You can cool yourself in water. Get a wet rag, run it under the



faucet, get your skin wet, and get in front of a fan. As long as you are drinking enough water and you can keep that skin wetted in front of the fan, you're doing a good thing for yourself."

How Hot It Really Feels

Roms, an atmospheric physicist, got interested several years ago in how the human body responds to global warming's increased temperatures. Although the heat index, defined in 1979, is based on the "physiological stresses" induced by heat and humidity, he noted that the calculations of the heat index did not extend to the extremes of heat and humidity experienced today.

Roms and graduate student and now postdoctoral fellow Yi-Chuan Lu extended the calculation of the *heat index* to all combinations of

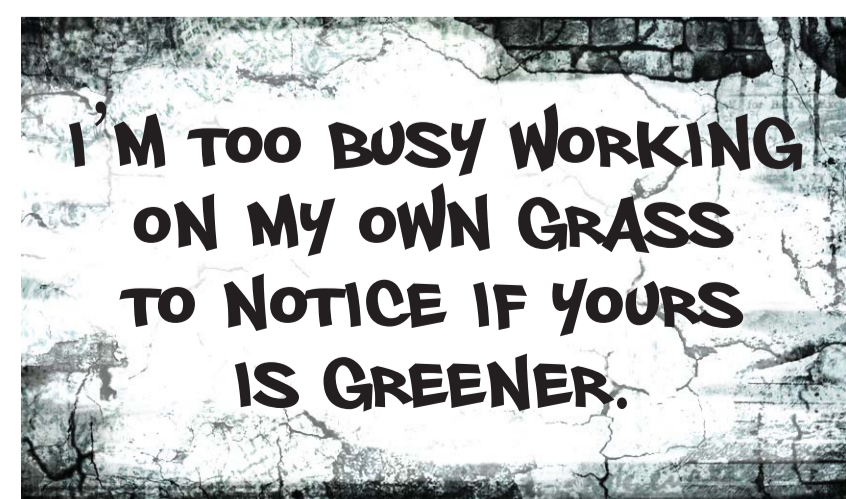
temperature and humidity, enabling its use in even the most extreme heat waves.

The fact that people can survive high temperatures is a testament to the power of "evaporative cooling" to cool the body, though intense sweating requires the heart to pump more blood to the skin to shed heat, which is part of *heat stress*. In a 2023 paper, Roms and Lu argued that what many have referred to as the "maximum survivable temperature," a wet bulb temperature of 35 C (equivalent to a skin temperature when sweating of 95 F close to the average person's core body temperature), would actually rarely lead to death in a young and healthy adult, though it would cause hyperthermia. The "wet bulb temperature" is what a thermometer measures when a wet rag is wrapped around it. So, it takes account of the cooling effects of sweat.

"Heat index is very much like the wet bulb thermometer, only it adds the metabolic heat that a human has, and that a thermometer does not have," Roms says. "We think if you kept your skin wet and you were exposed to 167 degrees, even though we're approaching something like a setting on the oven, you'd still be alive. Definitely not happy. But alive."

"If humidity goes ahead and burns the fossil fuel available to it, then it is conceivable that half of Earth's population would be exposed to unavoidably hyperthermic conditions, even for young, healthy adults," Roms says. "People, who aren't young and healthy, would be suffering even more, as would people who are laboring or are out in the sun, all of them, would be suffering potentially life-threatening levels of *heat stress*."

THE WALL



BABY BLUES



By Rick Kirkman & Jerry Scott

ZITS



By Jerry Scott & Jim Borgman