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#RESEARCH

Vaping Increases Asthma Risk

The study identified an association between e-cigarette use and asthma in adolescents, who had never smoked conventional tobacco products.



Vaping increases the risk of asthma in adolescents, who have never smoked conventional tobacco products, a new study suggests.

Vaping, or the use of electronic cigarettes (e-cigarettes), among adolescents has grown dramatically over the past several years. Although e-cigarettes have fewer toxins than regular cigarettes, they still contain a mixture of harmful chemicals and raise the risk of respiratory diseases.

For the new study, published in *Preventive Medicine*, the researchers analysed data from a national survey of youth, to determine whether there is an association between 'vaping and asthma.' The researchers also sought to identify factors that may be associated with e-cigarette use in adolescents.

The team used data from the Youth Risk Behaviour Surveillance System, a national health dataset, set up by the Centers for Disease Control and Prevention, to track the health behaviours and outcomes of children and youth. This study used data collected between 2015 and 2019, that included information on e-cigarette use. The analysis included data on more than 3,000 adolescents, aged 13 to 17 in Texas and more than 32,000 adolescents in the United States, for comparison.

Additionally, Hispanic adolescents in Texas were, significantly, less likely to have used e-cigarettes than their non-Hispanic white peers. However, the researchers found no notable differences between racial and ethnic groups for the US, overall. More research is needed to identify factors that could be associated with lower e-cigarette use among Hispanic adolescents in Texas.

"Increasing knowledge about the harmful effects of e-cigarette use, implementing stricter regulations, and promoting alternative coping mechanisms for mental health are potential interventions to mitigate e-cigarette use," says lead author Taehyun Roh, assistant professor in the Epidemiology and Biostatistics department at the Texas A&M University School of Public Health.

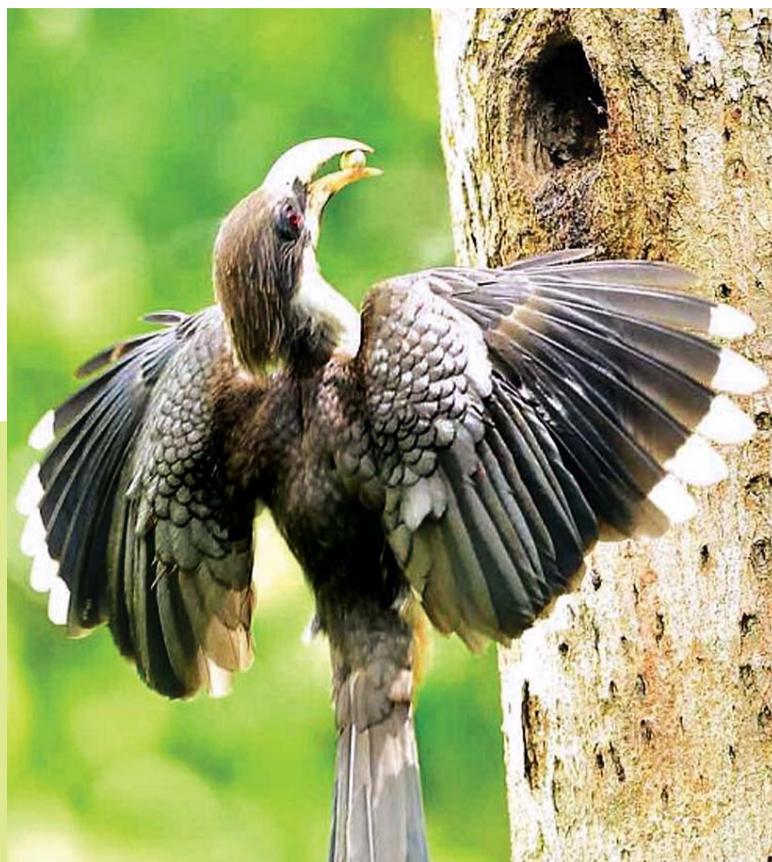
Given the burdens, presented by asthma and the growing use of e-cigarettes in adolescents, the researchers are hopeful that these findings will help inform public health efforts to reduce e-cigarette use.



Value for Time and Again

PART:1

These two were his fully-grown *millennial chicks* from a previous brood, who know what human millennials worked out, only in this generation. That it's easier to live off your parents than to work for your own living. *Hornbill youngsters* do that for a year or more, after they are fully fledged, until the parents finally kick them out, altogether. The interaction was fabulous to watch.



Mirza Yawar Baig
Naturalist and wildlife conservationist

He came with a lizard in his beak. A choice tidbit, most appreciated. But only if you're a *Sri Lanka Grey Hornbill* (*Ocyurus ginglymus*). The female lays up to four white eggs, in a tree hole, blocked off during incubation,

with a cement made of mud, droppings and fruit pulp. There is only one narrow aperture, barely wide enough for the male to transfer food to the mother and chicks. These birds usually live in pairs or small flocks, consisting of up to five birds (2 adults and 3 juveniles). They are omnivores, observed consuming berries, fruits, insects and small lizards. It feeds mostly on figs, although occasionally it eats small rodents, reptiles and insects.

We my friend, Iham Raji and I, were parked in our open *Toyota Hilux safari vehicle*, our cameras mounted on sandbags, placed on the roof of the cab and focused on the hole in the tree, which was the *Hornbill nest*. We could see the beak of the female from time to time as she threw out the waste from her nest, ensuring that it remained clean.

It was early morning and the forest was filled with birdsong. A *Shama* (*White-rumped shama-Copsychus Malabaricus*) alighted on a twig facing me, scarcely five feet away, and gave me a personal recital of his song. I wanted to photograph him but decided to let only my memory do the job, for the fear of scaring him away with my movement. The *Shama* has a



and went off into the forest. The female decided that the best way was to appeal to whatever nobility existed in the heart of her father, and simply begged. She did that so 'pathetically and effectively' that he eventually coughed up something for her. I say 'father' because that's who he was! These two were

his fully-grown *millennial chicks* from a previous brood, who know what human millennials worked out, only in this generation. That it's easier to live off your parents than to work for your own living. *Hornbill youngsters* do that for a year or more, after they are fully fledged, until the parents finally kick them out, altogether. The interaction was fabulous to watch.

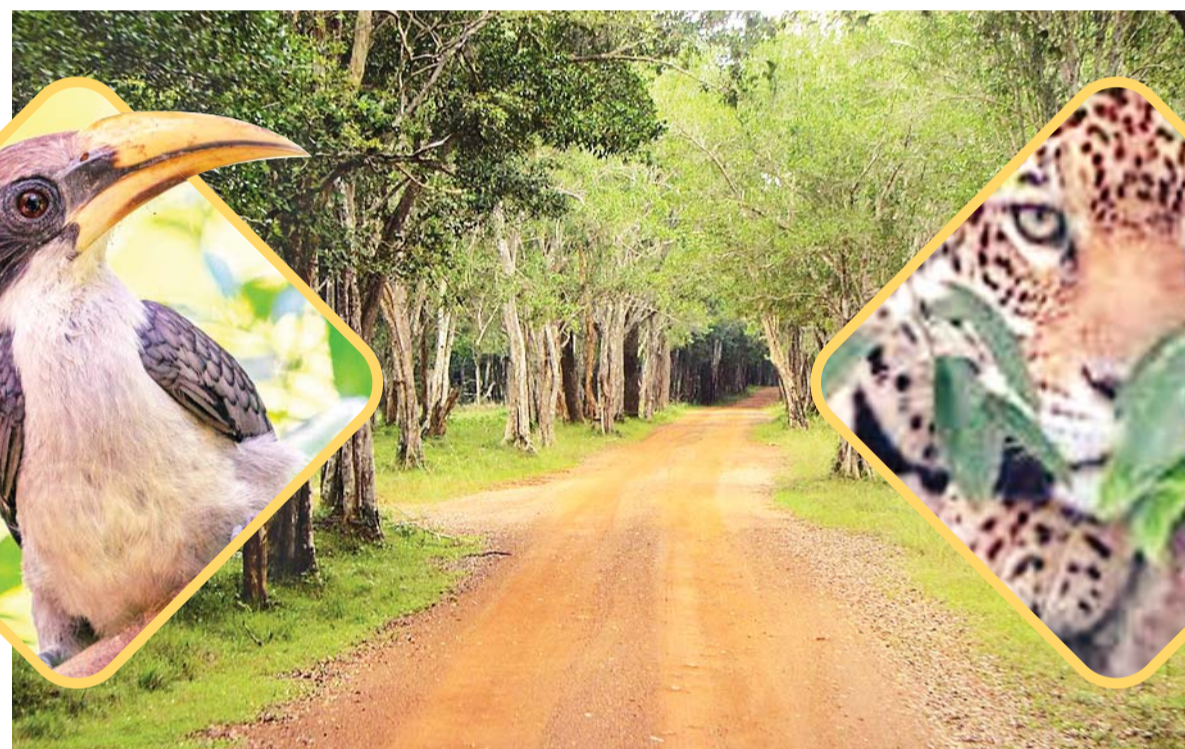
This is my greatest pleasure in *bird photography*, watching 'interaction' as birds afford you an opportunity that mammals and reptiles don't. Birds go about their lives as if you don't exist and allow you a glimpse into their lives. That's a privilege, which pays the patient, who value their time.

You may be surprised to see the use of the phrase, 'value their time,' in a context different from the usual. We imagine that our frenetic lifestyle is worthwhile and that the best use of time is to cram as much into it as possible, with no thought about what we get as a result. I believe that the best use of time is to consider the result, in whatever we propose to do with it,

black head, a brown waistcoat and a black tailcoat with two long tail feathers. On the back is emblazoned his white shield, on which he hasn't inscribed his coat of arms yet. The white shield, on the back, is very striking. But above all this, what impressed me was his 'attitude.' Confidence, curiosity, friendliness! *He came, he saw, he sang and he conquered my heart.*

Meanwhile, the *male Hornbill* came with his delicacy but looked extremely suspicious and skittish. I wondered whether we were the cause of his alarm or anything else, until I saw two other *Hornbills*, fully-grown juveniles, that flew in, as if they'd been lying in wait for him. One, which I think was the male, dive-bombed him, to try to make him drop his catch. That was fairly easily taken care of by the simple action of swallowing it. When this tactic didn't work, after trying it several times, the male gave up

#JUNGLEBOOK



So now there was the father, finally having got rid of his pesky brood, ready to feed his mate. But with what, I wondered. Because he had swallowed the *lizard* to save it from being eaten. Sounds oxymoronic but there it was! So, I watched. He looked all around. Called a few times to assure his mate that he still loved her. His raucous call, that can be music, only to a *female Hornbill's* ears.

It is nesting season and *Bulbuls* are busy building their nests. They are among the most vocal of birds and having this grass in its beak, didn't stop it from saying, "Excuse me, what, on earth, are you doing, simply sitting and watching that silly leopard, being drowsy? Don't you have other things to do?" Having got no response, he decided that he didn't have time to waste with me and flew off.

It was ingested. But the *lizard* was last in, first out. Then he was off.

The second trip was a repeat of the first. We wait and wait. The *Shama* takes pity on us and returns to sing us another song. Then, the juveniles return to check out if dad is back with food. The male chick is chased out of another part of the forest by a highly aggressive and territorial *Golden Oriole*. The GO is one-sixth or less in size but has ten times his courage. So, throwing all dignity to the wind, the *Hornbill chick* makes haste with the GO in hot pursuit. All he had to do was to stand and say, "Okay, do your worst." And the *Oriole* would have come face-to-face with his limitations. But this is a world of deception, even for birds, and noise counts more than action.

I sensed something behind us. I had been listening to some movement in the forest, with an occasional branch breaking, and dry leaves gently rustling. Could be *junglefowl* or *monkeys*? But as I turned around, I saw the biggest *cow elephant* that I've ever seen, in this part of the world. Sri Lankan

elephants are the biggest of Asian elephants and this one was proof. She came out of the forest like a shadow, in total silence. She turned and looked at us, in the *safari jeep*, barely 20 meters from her. Then, she turned and walked away with 'elephantine dignity' that only elephants can muster. No aggression, no posturing. Someone who knows herself and her own power, and has no need to demonstrate it to anyone. Someone who is content, even to let those intruding into her space, do so without protest, as long as they are respectful. Big question in my mind was what was she doing alone! Where was her family? We saw her twice more, both times alone. I wonder what that story is!

Meanwhile, the *Hornbill* returned. This time, regurgitating a series of red berries, one after another and passing them to his mate through the hole in the wall. It was amazing to see the precise nature of the sequence where he

and then, spend the time only if the result warrants it. Time is not money. Time is far more valuable than "money." Money can be earned, lost but replaced. Time is free, can be lost but never replaced. That's why I'm very careful with my time and consider sitting for six hours, watching a *Hornbill father* take care of his mate, while avoiding the raids of his children, one of the most beneficial uses of my time. That's how long it took us to get some decent photographs.

So, now there was the father, finally having got rid of his pesky brood, ready to feed his mate. But with what, I wondered. Because he had swallowed the *lizard* to save it from being eaten. Sounds oxymoronic but there it was! So, I watched. He looked all around. Called a few times to assure his mate that he still loved her. His raucous call, that can be music, only to a *female Hornbill's* ears. He flew from perch to perch, all around the nest-hole, to assure himself, from every angle, that the coast was clear. Then, he landed on the vertical trunk of the tree, on the lip of the nest-hole. Then, I loed and beheld. To my amazement, the lizard emerged. And after it, a large green beetle, a large black beetle, a large grey caterpillar, and one after another, a series of blackberries (not the phone, real ones). Not having been a *Hornbill* ever, in my career, nor privy to his loading sequence, I can't say if everything came out as



made his way out of the forest on my right and hurriedly crossed the open patch of the road and entered the undergrowth on my left. My dilemma was whether to photograph him and risk disturbing the *Hornbill*. But he solved my dilemma by taking off again, on his never ending quest, to keep his spouse happy. Never saw anyone work so hard at this! Reminded me of the picture that I see every morning in my mirror.

The *jungle* is full of surprises and wonders for the one who takes the 'time to look.' As we were driving in search of the *leopard*, the king of *Wilpattu* and indeed, *Sri Lanka*, we saw a small bird on its nest, incubating its eggs. It was so confident of its camouflage that it didn't budge, as I photographed it.

A *Sri Lankan Junglefowl* came out of the forest, followed by his hens. His blood-red comb, with the yellow blaze in the center, distinguishes him from the *Indian Red Junglefowl*, whom he resembles. He crowed to announce to the world that he was walking the earth and then, busied himself, scratching in the dirt.

As we were watching a *leopard*, sitting drowsily, through a gap in the bushes, a very busy *Red-vented Bulbul* landed on a twig near me, with a piece of grass folded like a bow tie in his beak. It is nesting season and *Bulbuls* are busy building their nests. They are among the most vocal of birds and having this grass in its beak, didn't stop it from saying, "Excuse me, what, on earth, are you doing, simply sitting and watching that silly leopard, being drowsy? Don't you have other things to do?" Having got no response, he decided that he didn't have time to waste with me and flew off.

Yeah! I know. Where's the scene of all this action? *Wilpattu National Park, Sri Lanka.*

To be continued
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#GUT HEALTH

Tofu By-product 'Cookies' Offer Lots Of Fibre

Conversion of food by-products has garnered attention, globally, in recent years

Scientists report using fermentation to create *okara biscuits* are palatable and good for gut health.

The production of soy-based products like *tofu* results in a solid by-product known as *okara*. About 4.4 million tons of *okara* are produced each year in China, Japan, and Korea alone. Commonly used as livestock feed, *okara* is becoming an 'ingredient of interest' for food due to its high fibre content.

While *okara* could be a good source of dietary fibre at a low cost, its fibrous texture and lack of flavour mean that more must be done for it to become an 'appealing ingredient.'

To address this challenge, assistant professor Kim Jung Eun and her research team from the National University of Singapore, department of Food Science and Technology, under the Faculty of Science, embarked on a series of studies to improve the attractiveness of *okara* as a source of dietary fibre and to provide scientific evidence of the health benefits of *okara*.

"Conversion of food by-products has garnered attention, globally, in recent years as a way to achieve sustainable food systems through discovering alternative uses and value of these by-products. Our studies demonstrate the value of incorporating nutritious *okara* into foods, and regular consumption of *okara* can improve the quality of an individual's daily diet through meeting the recommended fibre intake while additionally providing health benefits," says Kim.

In an earlier study published in *LWT* in 2020, Kim and her research team successfully enhanced the texture and flavour of *okara-containing biscuits* through fungal fermentation. Fermentation is common in food production, such as in bread and wine-making. Fungal fermentation breaks down large fibre molecules and undesirable flavour molecules in *okara*, producing biovalorised *okara*, which is characterized by nutritional improvements such as greater content of soluble fibre, free amino acids, along with greater anti-oxidant activity.

Biscuits, made with biovalorised *okara powder*, were sweeter, crispier, and less hard than biscuits

made with regular, non-biovalorised *okara*.

In the follow-up study, 15 healthy, middle-aged participants alternated among consuming biovalorised *okara*, non-biovalorised *okara*, and control biscuits, that did not contain *okara*, over 16 weeks. The participants also recorded their three-day food intake, for the researchers to understand their dietary habits, during the study.

"We used fermentation with food-safe microorganisms to incorporate *okara* into a palatable food product. In our study, we provided our participants with *okara* that



can be readily consumed in the form of biscuits, without major interference to their habitual lifestyle and diet," says Delia Lee, the first author of the study.

The research team found that participants, who ate biovalorised *okara* biscuits, had increased their total soluble fibre intake to the recommended levels. In contrast, participants, who ate regular biscuits, recorded nearly 10% lower soluble fibre intake.

Dietary fibre acts as 'food for our gut bacteria,' which break down dietary fibre to produce short-chain fatty acids (SCFA), which are molecules, essential for maintaining gut health as well as overall health status.

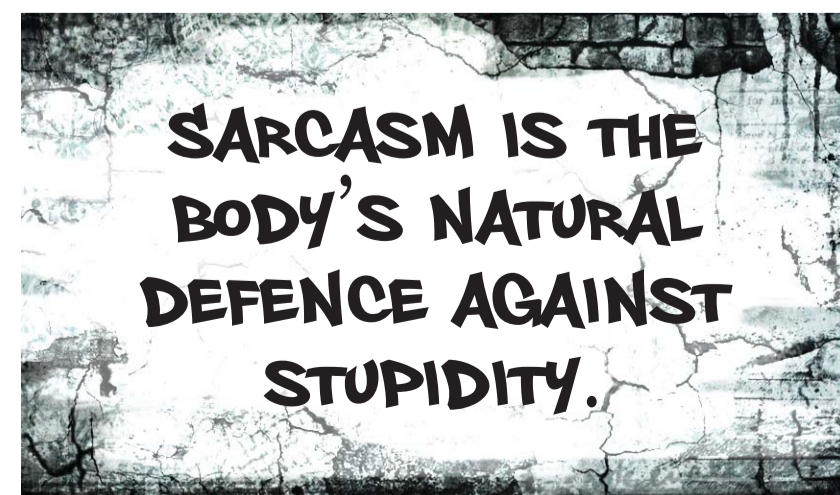
To determine whether biovalorised *okara* biscuits were beneficial to gut health, the NUS team analysed SCFA levels of the participants after consuming the biscuits. They discovered that consuming biscuits with biovalorised *okara*, brought about significantly higher SCFA levels in the bloodstream, compared to consuming biscuits with non-biovalorised *okara*. This was paired with a reduction in secondary bile acids, which are known to be harmful to cells in the gut. The researchers also found that consuming biscuits, with biovalorised *okara*, increased the abundance of *Bifidobacterium*, a bacterium ubiquitous in the gut, which yields health-protective effects.

"We assessed the SCFA levels in both, the blood and fecal sources, to discover the presence of a higher concentration of SCFA, circulating in the blood, post-intervention compared to SCFA that is found in fecal samples, demonstrating potential anti-inflammatory health benefits," says Lee.

In this recent study, Kim and her team have obtained positive results to support the integration of *okara* into meals, to augment the nutritional diet quality. They also found that biovalorisation is an attractive processing option to enhance *okara's* nutritional profile.

"Based on our current study we observed an improvement of gut health after regular consumption of *okara-containing biscuits*. We hope to further examine the effect of *okara-containing* foods in individuals with metabolic syndrome (Mets)," says Kim.

THE WALL



BABY BLUES



By Rick Kirkman & Jerry Scott



ZITS



By Jerry Scott & Jim Borgman