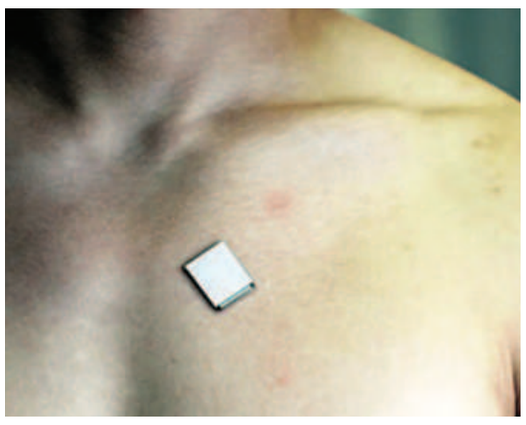

The wearable ultrasound sensor is roughly the size of a postage stamp, can be worn for up to 24 hours, and works even during strenuous exercise.

Wearable cardiac ultrasound device allows measurements during stress testing

Increasingly, the miniaturisation of electronic technology allows tiny microsensors attached to the skin to take continuous physiological measurements — heart rate, oxygen saturation, and even blood pressure.

Now, researchers describe a thin (8 µm), stretchable strip of sensors that can be applied to the chest to obtain continuous cardiac ultrasound images — in multiple orientations — that are equivalent to those produced by current commercial ultrasound. The device sends data to a computer which generates real-time estimates of stroke volume, cardiac output, ejection fraction, wall-motion abnormalities, and chamber size; these estimates compare favourably to those of current ultrasound devices.

The principal utility of the device is that it can obtain ultrasound images not only before and after, but also during, cardiac exercise stress testing. This concurrent collection avoids false negative results that can occur when pathological changes generated by exercise have returned to normal by the time the postexercise images are obtained.

More experience with this remarkable technology will be required to determine its clinical value during exercise testing, its potential for ambulatory monitoring, and its possible role in evaluating other conditions such as aortic aneurysms or pleural effusions that threaten to expand. It represents another potentially important step in real-time physiological monitoring and another example of the increasingly important marriage of bioengineering and medicine.

DO NOT SCRATCH!
What to do when your eczema itches?

STAR HEALTH DESK

Atopic dermatitis (AD) can be a long-lasting condition that causes severe, itchy rashes. At times, you may feel like you cannot stop scratching, which can lead to other problems.

With scratching, breaks in the skin can also get infected, causing impetigo, blisters, and swelling. These blisters can ooze fluid or crust over time, causing rough areas and scabs on the skin.

Here is what you can do to help your skin heal and try to prevent infections. When your skin is damaged or broken:

Try not to scratch: Some people scratch so much they bleed, and that is a setup for infection. Instead of scratching with your nails, try to press the area with your fingertips. Keeping your nails short will help. You can also try to cover your inflamed skin. You may be less tempted to scratch if you cannot see it.

Mirror scratching: Try this when the itch is on just one side of your body. It may sound like a magic trick, but it is more than an optical illusion. Say your left arm itches. Look into a mirror and focus on your reflection's left arm, which is actually your right. Scratch there as you watch, and your brain gets the message that your eczema itch was taken care of.

Moisturise your skin: Damages skin has a hard time holding onto water. Applying a thick emollient multiple times a day can protect and soothe cracked skin while sealing in moisture. Greasy ointments like mineral oil and petroleum jelly often work best, but find a product that you like. You may need to try a couple to see which brands help your skin the most.

Oils from the pantry: One study found that sunflower seed oil does more to soften skin than a popular cream -- and it is a lot cheaper. Coconut oil nourishes and helps lessen inflammation. Look for the word "virgin" on the label: That means it was processed without losing its natural healing properties. As good as olive oil is for cooking, though, it is a no-go for your itchy skin.

Soak in an oatmeal bath: Colloidal oatmeal (finely ground oatmeal) has special compounds that can help strengthen your skin barrier. Add the oatmeal to a lukewarm -- not hot -- bath and soak for 10 to 15 minutes. When you get out, gently pat your skin dry and apply moisturiser right away.

Apply wet wraps: During a severe flare, a wet wrap can soothe inflamed skin and help lock in moisture. Dampen a clean gauze or a cotton cloth with warm water, then gently press it onto your skin. Cover it with a layer of dry cloth or gauze. For best results, keep the wraps in place for several hours or overnight. Try not to let them dry out.

Take allergy meds: When your itching is intense, an over-the-counter antihistamine can give short-term relief.

Topicals: Menthol has a cooling effect that cancels out itch, but higher than a 1%-3% concentration could irritate. Store your topicals in the fridge.

Know when to ask for more help. Call your doctor if your:

- Condition gets in the way of your daily routine or keeps you from sleeping.
- Skin shows signs of an infection (like pus, red streaks, or yellow scabs).
- AD does not improve even after you try different home remedies.
- AD is severe or covers a lot of your body.

HAVE A NICE DAY

Our second brain

DR RUBAIUL MURSHED

From our immune system to our mood, our gut affects everything. My father used to say that most diseases started in the gut. Scientists call the gut-regulating enteric nervous system (ENS) the 'little brain' or 'second brain.'

Researchers found 'gut brain connection' or 'brain theory'. They explained that a lesser-known nervous system in our guts (second brain) communicates with the brain in our head. Together, 'our two brains' play a key role in certain diseases in our bodies and overall health and wellbeing.

The ENS is our 'gastro-intestine' nervous system. Through an extensive neural circuit this complex network works with the body's central nervous system (CNS) to control our digestive system. Researchers first called the gut a second brain because it communicates via neurons and neurotransmitters. That means basically, our gut sends signals to our brain, and our brain sends signals to our gut. The 'fight or flight' response concept, the brain to send signals to the gut, causing gastrointestinal issues. Likewise, irritation in the gastrointestinal system will send signals to the brain causing mood changes.

Serotonin, the 'feel-good hormone,' stabilises our well-being and happiness. So, we might think that it is mainly produced in the brain. But the digestive tract produces about 90 percent of this well-known brain neurotransmitter. While we usually concentrate our focus on diet and exercise to improve our health; we often overlook sleep. It can restore energy levels and heals both physical and cognitive damage. There is a strong connection between diet and sleep. Low-fiber, high-saturated-fat diets may impair sleep.

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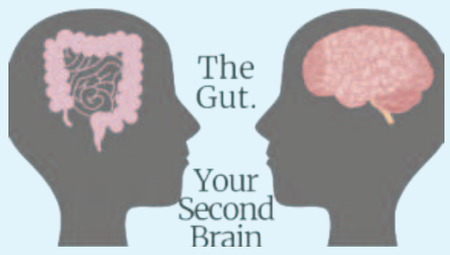

United Kingdom (UK) soft drink taxes associated with decreased obesity in girls

STAR HEALTH REPORT

Study tracking childhood obesity in England from 2014-2020 found 8% reduction in obesity among 10-11 year old girls coinciding with 2018 soft drinks industry levy.

The implementation of the two-tier soft drinks industry levy in the UK in 2018 was associated with an 8% reduction in obesity among 10-11 year old girls, with the greatest reductions seen in those living in the most deprived areas, according to a new study published on 2023 in open accessed PLOS Medicine by Nina Rogers of University of Cambridge School of Clinical Medicine, UK, and colleagues.

Childhood obesity rates in England have risen in recent decades, with around 10% of 4-5 year old children and 20% of 10-11 year old children living with obesity in 2020. There is strong evidence that consumption of sugar sweetened beverages increases the risk of obesity and other serious diseases. In April 2018, the UK soft drinks industry levy (SDIL) went into effect to incentivise soft drinks makers to reduce the sugar content of drinks.

In the new study, researchers followed students in state-maintained English primary schools, aged 4-5 and 10-11 over time between September 2013 and November 2019. The researchers compared the obesity levels 19 months following the SDIL with predicted obesity levels had the SDIL not happened, controlling for each child's sex and the level of deprivation of their school area.

In 10-11 year old girls, there was an absolute reduction in the obesity rate of 1.6 percentage points. The greatest reductions were seen in girls in the most deprived quintiles (any of five equal groups into which a population can be divided according to the distribution of values of a particular variable), with an absolute reduction of 2.4 percentage points in obesity occurrence in the most deprived quintile.

In 10-11 year old boys, there was no overall change in obesity rates, and no obvious pattern of changes in relation to deprivation, though a 1.6% absolute increase in obesity rate was observed in the least deprived quintile (equivalent to a 10.1% relative increase). In younger children, no overall associations were found between the SDIL and obesity levels.

"Our findings suggest that the UK SDIL led to positive health impacts in the form of reduced obesity levels in girls aged 10-11 years," the authors say. "Further strategies are needed to reduce obesity prevalence in primary school children overall, and particularly in older boys and younger children."

Does a healthful eating pattern extend life?

Nearly everyone believes that an unhealthful diet has adverse consequences, including heightened risk for early death. A prospective cohort study was conducted to examine the associations of dietary scores for 4 healthy eating patterns with risk of total and cause-specific mortality, which was published in the JAMA Internal Medicine recently.

Analysis showed that, for each eating pattern, participants in the most-healthful quintile had significantly lower risks for death (14%–20% lower) than participants in the least-healthful quintiles.

Healthful eating also was associated inversely with death due to cardiovascular disease, cancer, respiratory disease, and neurodegenerative disease. Similar results were obtained among various racial and ethnic groups.