

MARCH 2021 MEDICAL NEWSLETTER



SPECIALTY SPOTLIGHT: CARDIOVASCULAR SURGERY

page 2

page 3 - The FDA's New Warning About Use of Fever Scanners for COVID-19

page 4 - The First 3 Years of Life of Low-Birth Infants

page 5 - Optimal Servings of Fruits and Vegetables for a Longer Life

page 6 - New Concussion Test Based on Saliva

Specialty Spotlight: Cardiovascular Surgery

Ryen Belle Harran

Once, a cardiologist was arrested by the **police**: quite literally a *cardiac arrest*.

Ha! Ha!...ehrm...

If you didn't get the joke - no worries. I'll admit it was pretty cheesy...But this brings us to the topic of **cardiac surgeons**!

Also referred to as **cardiovascular, cardiothoracic, thoracic, or congenital** heart surgeons, **cardiac surgeons** specialize in **surgical procedures** related to heart and the **organs surrounding it**.

Some of the most well-known treatments include **coronary artery bypass surgery, heart transplants, valve replacements, and repairs** of congenital heart conditions. And this list is only the tip of the iceberg!

After medical school, cardiac surgeons usually attend a **5-year general surgery residency**, and a **2-3 year surgery fellowship** in the cardiovascular or cardiothoracic fields.

Surgeons who wish to further **specialize** in pediatric cardiac surgery or heart transplant surgery are required to obtain the necessary **training**. All cardiac surgeons must be certified by the **American Board of Medical Specialists** and, like all physicians and surgeons, must obtain a **state license** through testing for the **USMLE** or the **COMPLEX-USA**.

According to [Salary.com](https://www.salary.com), cardiac surgeons generally earn an **annual average of \$489,366** as of February 2021, with a broad range of \$393,498-\$612,942. Nevertheless, this average changes based on different **locations of practice** and **specialties**.

Cardiac surgeons often are employed by **hospitals** and academic **medical centers**, although an increasing number of surgeons own and run **private practices**.

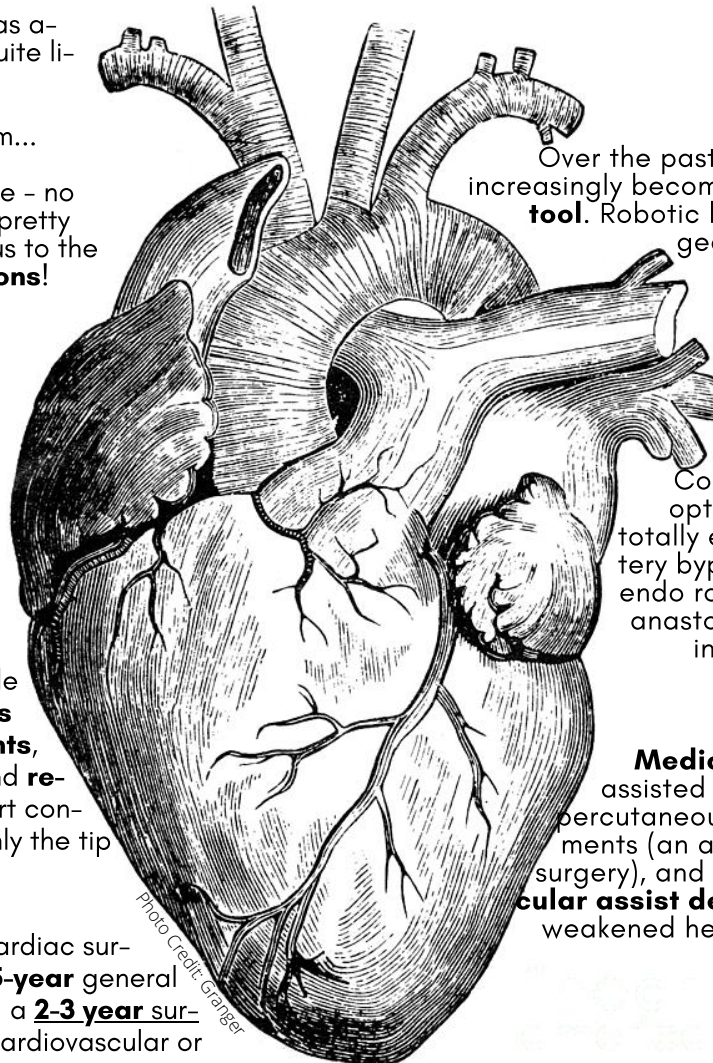


Photo Credit: Granger

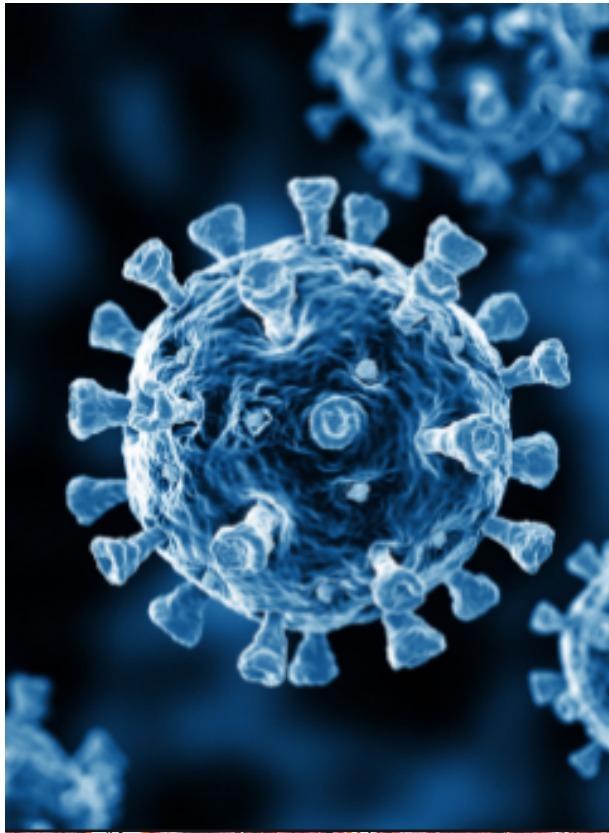
Over the past few years, **robots** have increasingly become a **preferred surgical tool**. Robotic heart surgery allows surgeons to perform **complex surgeries** which are minimally invasive.

This allows for patients to undergo a **shorter recovery time**. Common robotic treatment options include multi-vessel totally endoscopic coronary artery bypass surgery, hybrid epi/endo robotic-assisted ablation, anastomotic coronary devices, intra-aortic balloon pump devices, and more.

According to **UChicago Medicine**, advances in robot-assisted cardiac surgery include: percutaneous **aortic valve** replacements (an alternative to open-heart surgery), and improvements of **ventricular assist devices** (for patients with weakened hearts) and their insertion.

If you didn't get the joke - no worries. I'll admit it was pretty cheesy...

But this brings us to the topic of cardiac surgeons!



This month, the FDA has issued a warning against the improper use of fever scanners to monitor the spread of COVID-19. Learn more below!

The FDA's New Warning About Use of Fever Scanners for COVID-19

Alisha Khodabocus

What We Learned from the FDA's Warning

- Seven popular scanners are shown to compensate for lower-cost sensors by normalizing the temperature readings- this means that someone with a 100 degree temperature could be read as having a 98 degree temperature!
- The companies distributing these scanners include Certify Global Inc, Kogniz Inc, Opgal Optronic Industries Ltd, and Thermavis
- To avoid these inaccuracies, the FDA recommends the scanning of only one person, who shouldn't be wearing a hat or glasses and whose hair isn't in the way, at a time. Also, accuracy improves when the person is given time to adjust to the environment's natural temperature.

From the beginning of the pandemic, thermal imaging systems (including telethermographic systems, infrared thermographs, thermal cameras, and fever cameras) have been used to efficiently read the temperatures of individuals intending to enter public places like schools, grocery stores, and airports. However, the FDA has issued a warning against the improper use of these systems- this warning does not apply to the handheld, non contact thermometers you may have encountered during the pandemic!

The First 3 Years of Life of Low-Birth Infants

Ryen Belle Harran



Low birth weight (LBW) is often **associated** with a higher risk of insulin resistance, accumulation of fat in the abdominal area, metabolic syndrome, and **cardiovascular disease** by the time LBW infants reach adulthood. However, the greatest variation in weight gain rates has been observed within the first two years of life, where children show either significant "catch-up" or "catch-down" growth.

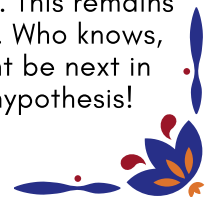
The authors of a recently-published **longitudinal study held in both Germany and Spain** wanted to test this. They compared growth, body composition development, neurodevelopmental outcomes, and much more, of **healthy term** infants with **preterm** infants. All received a target nutrient intake that followed the **European Society of Paediatric Gastroenterology, Hepatology, and Nutrition** recommendations.

The researchers found that very low birth preterm infant **growth** and **skinfold thickness** could be predicted based on the timing of birth relative to gestation. **Younger-than-average preterm** infants developed a significantly smaller head circumference within the first three years of life. Similarly, they were **significantly leaner** than infants born within the average term. **This remained the case throughout the first three years of life.** However, average preterm infants always "scored" between younger-than-average preterm and term infants.

In general, **very-LBW preterm** infants had lower **bone mineral content (BMC)** and **bone mass density (BMD)**, than average. **Younger-than-average** preterm infants displayed even lower BMC and BMD levels.

This study added to the growing evidence, that extremely preterm birth infants with low birth weight have **impaired neurological development.** Neither the given target energy nor protein intake were sufficient for healthier growth.

However, the researchers hypothesized that **increasing** these **energy and protein intake values** could improve growth and neurodevelopmental outcome. This remains yet to be tested. Who knows, **one of you** might be next in line to test this hypothesis!





"This research provides strong evidence for the lifelong benefits of eating fruits and vegetables and suggests a goal amount to consume daily for ideal health," Anne Thorndike, M.D., M.P.H., chair of the American Heart Association's nutrition committee and an associate professor of medicine at Harvard Medical School in Boston.

Optimal Servings of Fruits and Vegetables for a Longer Life

Srusti Chandra

An adequate consumption of fruits and vegetables is essential to reduce the risk of chronic health conditions such as cardiovascular disease and cancer. However, what are the optimal serving sizes? A recent [study](#) analyzed the dietary information of roughly 2 million participants from 29 countries and discovered evidence to support the '5-a-day' public health message. This message shares that 5 servings of fruits and vegetables daily are ideal for chronic disease prevention. Note that this study shows correlation and not causation.

The study revealed the following:

- Five servings of fruits and vegetables was associated with the lowest risk of death. Specifically, two servings daily of fruits and three serving daily of vegetables were associated with longer life.
- Those who consumed five servings of fruits and vegetables daily had a 13% lower risk of death from all causes; a 12% lower risk of death from cardiovascular disease; a 10% lower risk of death from cancer; a 35% lower risk of death from respiratory disease than those who consumed two servings of fruit and vegetables daily.
- Not all fruits and vegetables offer the same degree of benefit. Some fruits and vegetables that offered health benefits include green leafy vegetables and fruits and vegetables rich in beta carotene and vitamin C (e.g. citrus fruits, berries and carrots).



New Concussion Test Based On Saliva

Sejal Kaushik

Defined as an injury to the head that causes your brain to shake back and forth quickly, a concussion results in a disoriented state of mind that can sometimes lead to unconsciousness. There are over 3 million annual cases of concussions in the United States. Although many cases are mild and most likely will not cause brain damage, minor concussions may put one at greater risk of another, potentially more severe, concussion. Despite the frequency of cases, there is no test to determine if a concussion has occurred or not. Currently, a concussion is determined through an analysis of symptoms. However, a team based in Birmingham has recently made a discovery about concussions.

By analyzing saliva samples from rugby players who have experienced a concussion in the past and those who have not, the team discovered a panel of 14 small non-coding RNA that set the two groups apart. The test takes about one day, and is non-invasive. With this ground-breaking discovery, however, the time could be lowered and tests could be given on the sidelines of sporting events. The team had performed the saliva tests on men, which will prove to be a limitation for women: concussions in women are supposedly a bit different, so research would have to be expanded to include women as well. With further research, however, this could be game-changing for the sports industry, as well as everyday life.

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