

ALL PROBLEMS NEED CREATIVE SOLUTIONS

MONTHLY MEDICAL NEWSLETTER

JANUARY 2021

This newsletter will highlight **the hottest news** released this month. In this edition, we will include updates on the coronavirus **vaccines**, a COVID-19 **fake news** detection system, a **gene therapy** strategy for tuberous sclerosis, updates in the world of **Chinese Medicine**, and the application of **stem cell therapy** for surgical skin flaps!

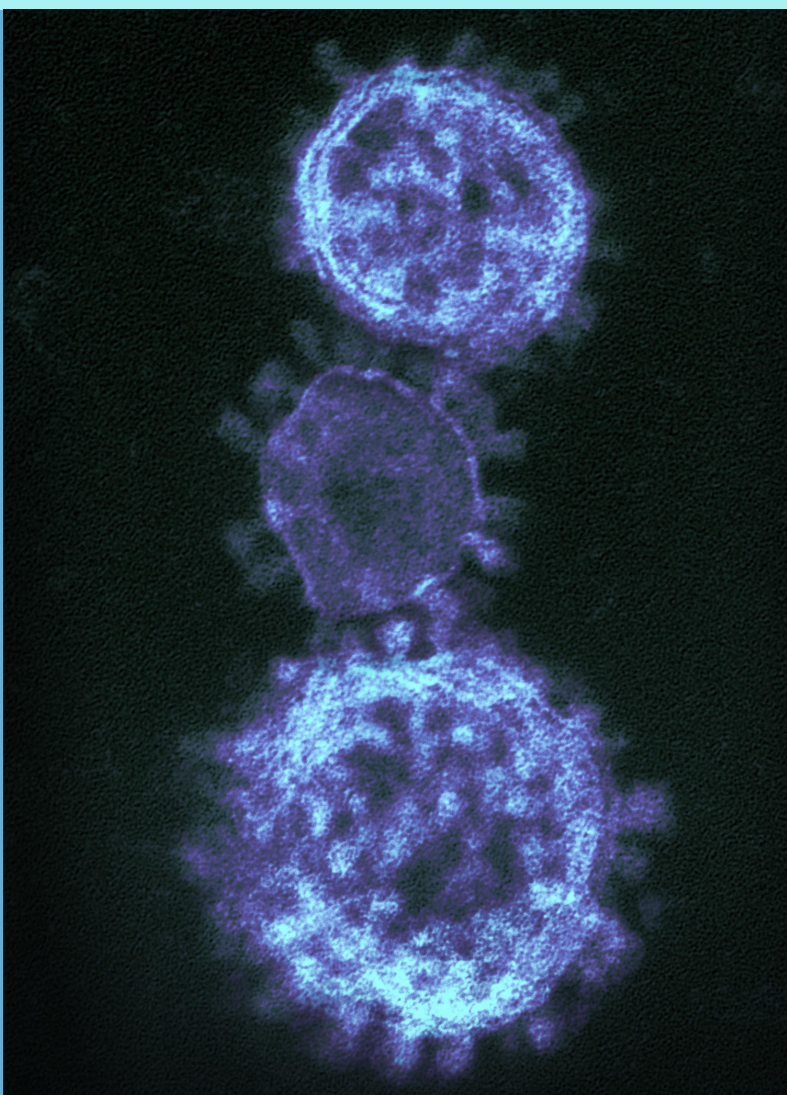
Does the Pfizer Vaccine Protect Against the New Strain of COVID-19?

By Alisha Khodabocus

Recently, there have been found to be **two new strains of Covid-19** in the U.K. and South Africa.

Both of these strains consist of the **N501Y** mutation in the virus's **protein**, which is the structure that vaccines target. Does this mutation make the Pfizer vaccine less effective?

- [A recent study by Pfizer](#) shows that there is **no decrease in effectivity** of the vaccine with the new strain- however, this study hasn't been peer-reviewed or fully conclusive
- Experts say that it's **unlikely** that any mutation will render the Pfizer vaccine **completely ineffective**
- Mutations that make the virus **more transmissible** will mean that more people will have to be vaccinated to reach **herd immunity**
- Overall, the Pfizer vaccine [should stay effective](#) against most strains of Covid-19





Can COVID-19 misinformation be filtered?

By Sejal Kaushik

Throughout the COVID-19 pandemic, people around the world have found themselves panicking. These feelings of fear and anxiety have been heightened through the spread of fake news, which spreads misinformation regarding the COVID-19 pandemic and ultimately leads to more chaos erupting.

A study conducted by students from the Institute of Information Technology revealed that, through the use of a trained transformer model, fake news can be filtered to an extent. Since it is so difficult to differentiate misinformation from credible information, the algorithm that they had written can be improved to produce better results. This could be a step in the right direction to eliminate fake news and prevent confusion and panic.

Effectivity of Stem Cell Therapy on Surgical Technique: Skin Flap

By Ryen Belle Harran

A skin flap is an **essential** surgical procedure. However, several **complications** may arise during its healing process, including:

- infection
- scarring/discoloration
- **distal necrosis** – inadequate blood flow to the surgical area, (leading to cell and eventually tissue death)
- and more.

This meta-analysis, published earlier this month in the Journal **Stem Cell Research & Therapy**, observed significantly reduced necrosis development on surgical skin flaps.

This is because **stem cells up-regulate VEGF**, a subcategory of signal proteins that promote early **angiogenesis** (the 2021-1





Effects of Gene Therapy on Tuberous Sclerosis in Mouse Models

By **Srusti Chandra**

Tuberous sclerosis is a genetic disorder that causes noncancerous tumors to grow in multiple, vital organs. Tuberin is a protein that inhibits cell growth and is coded by gene TSC2; mutations in TSC2 lead to cell overgrowth due to lack of tuberin and form tumors. This disorder is characterized by a shortened life span and brain damage.

A recent study, conducted at Massachusetts General Hospital (MGH), showed that gene therapy can be effective in treating it. The purpose of this research study was to restore function of TSC2 in mouse models and monitor the effects on tuberous sclerosis using an adeno associated virus (AAV) vector, which contains DNA that codes for tuberin. The mice were injected intravenously with AAV and the results showed that the mean survival rate was extended with reduction in brain damage.

Kidney Yang Deficiency Syndrome (KYDS): the Haima Duobian Pill

By **Ryen Belle Harran**

KYDS is a widespread neuroendocrine disorder, which tends to affect the **male** population. Indicators include:

- Feeling of **coldness** (esp. in the knees & back)
- Lumbar back pain (esp. for **slow walkers**)
- **Fertility**, urinary, and digestive issues
- And more.

Some treatments for KYDS include dietary and activity changes, as well as the use of the Haima Duobian pill (HDP). A recent research article, published in **Evidence-Based Complementary and Alternative Medicine**, describes the molecular effects of HDP on rat models (e.g. reduced levels of estradiol vs. increased levels of testosterone). Researchers found, that HDP alleviated pathological damage to reproductive organs and had an overall therapeutic effect.



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