

OPINION

Iron Deficiency Or Anemia – A Common Nutrient Deficiency



Dr. Shafia Arshad

Iron deficiency is a common nutrient deficiency that occurs when the body doesn't have enough iron. It can lead to anemia.

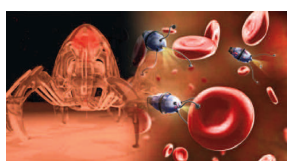
Iron deficiency is a common nutrient deficiency that occurs when the body doesn't have enough iron. It can lead to anemia, a condition in which the body doesn't have enough red blood cells to carry oxygen to the body's tissues.

Symptoms of this deficiency include tiredness, weakness, shortness of breath, and pale skin. It can also cause irritability, poor appetite, and impaired cognitive function.

It is most common in women, especially those who are pregnant or have heavy periods. Furthermore, it can also affect athletes, vegetarians, and people with gastrointestinal disorders. Children and teenagers are also at risk of this deficiency, particularly if they are experiencing rapid growth or have a poor diet.

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Nanobots – A Doctor Inside You



Amna Akhter

Tracking of the nanobots inside the body, making it advantageous in targeted drug delivery and personalized medicines.

Miniaturization of robots to nanoscale or nanobots is the idea presented by Richard, who firstly thought about swallowing the doctor in the 1950s. It was also the main idea of a movie came in 1966 in which the crew members of a ship were diminished to very small scale, so they can enter into the body of a person having a blood clot.

At that time it looked like a daydream but with the development in the fields of engineering, nanotechnology, biotechnology and biomaterials, this dream is actually coming true.

Many robots have been made at small scale. Nanobots also known as nanobots are the one having size in nanoscale (1 to 100 nanometers).

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Burden Of Endemic Of Dengue Virus In Pakistan



Laraib Abbas khan

There are several factors that contributed to the spread of dengue virus in Pakistan, these include deforestation, uncontrolled urbanization, agriculture, and different household practices.

According to the World Health Organization (WHO), dengue has primarily affected humans in South Asia.

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Pakistan's First Digital Census To Begin On Feb 1: Commissioner

Commissioner of Multan Division claimed that in the modern era, technology plays a significant role and that the census is a crucial tool for national planning.

First digital census of Pakistan will begin on February 1 and is crucial to determining the needs of the nation going forward, according to Ashfaq Ahmad Chaudhry, commissioner of Multan Division.

He was speaking to the inexperienced enumerators in this area on Saturday. According to him, a successful census depends on cooperation between the enumerators and the respondents. The first paperless digital census of Pakistan, which incorporates

geotagging, will run through March 4.

He claimed that in the modern era, technology plays a significant role and that the census is a crucial tool for national planning.

According to Director of Local Government Zahoor Hussain, 5 559 enumerators and 873 supervisors will work during the divisional census, and 9975 census blocks have been established. Every citizen would be able to upload his own data for the digital census on the portal.

On this particular occasion, Additional Deputy Commissioner Rizwan Nazir was present along with other officials. Meanwhile, the

Commissioner made an unannounced visit to Nishtar Hospital and received a briefing on the medications and equipment used there.

He claimed that the Punjab government's top priority was to build a hospital with modern amenities. To give the populace access to medical facilities, the health sector is being expanded. According to Dr. Rana Altaf, vice chancellor of Nishtar University, more patients were treated than the 1,700 available beds could accommodate.

Dr. Rao Amjad of MS Nishtar Hospital reported that 159 different drug items were available there. There were delivery rooms, emergency rooms, operating rooms, intensive care

units, neonatal emergency rooms, dengue and Corona wards, complete medicines, and free medicines.

A digital census uses digital tools and technology to conduct the census rather than more conventional techniques like paper forms or in-person interviews. This can involve the collection and analysis of data using online surveys, mobile apps, and other digital platforms.

A digital census aims to provide more accurate and current data while also increasing the efficiency and cost-effectiveness of the census process. Digital censuses may also provide extra features and functionality...[Read More](#)

PSO, SNGPL In A Debt Trap Due To Increasing Cost Of LNG



PSO is currently facing a significant financial burden as a result of its rising receivables, which have reached Rs620 billion, as it struggles to pay its debts to foreign LNG suppliers.

Pakistan State Oil (PSO) and Sui Northern Gas Pipeline

Limited (SNGPL) have found themselves in a debt trap as a result of the rising cost of liquefied natural gas (LNG). In the past, the power industry was a major offender when it came to payments due to PSO for the supply of furnace oil.

But as of right now, SNGPL is required to pay PSO a staggering Rs396 billion. Its debts, which totaled Rs277.8 billion in March last year, have been accruing ever since.

As a result of the company's inability to recover debts from domestic customers due to the lack of a legal framework, PSO's receivables against SNGPL have nearly doubled. Governments have continually delivered LNG to domestic consumers during the winter season to overcome the gas crisis.

Despite the fact that there is no legal framework in place to collect the money from domestic consumers, this is what is happening. PSO transports LNG cargoes to SNGPL...[Read More](#)

PCAA's Commercial Tower To House Aviation Science Museum

The Pakistan Civil Aviation Authority (PCAA) intends to build a 35-story high-rise office and commercial tower in the blue area on Islamabad's Jinnah Avenue.

The Pakistan Civil Aviation Authority (PCAA) intends to build a 35-story high-rise office and commercial tower in the blue area on Islamabad's Jinnah Avenue. The tower will have recreational features like an aviation science museum, an art gallery, a health centre, indoor sports facilities, child care facilities, and food courts.

Various CAA directorates and branches will also be housed in the tower, along with corporate offices of airlines, a centre for airline bookings...[Read More](#)

K-Electric Fails To Improve Pakistan's Power Production: NEPRA

The only means of progress were technology and competition. The technology is already available, but there is no competition, chairman NEPRA stated.

Touseef Hassan Farooqi, chairman of the National Electric Power Regulatory Authority (NEPRA), stated on Saturday that K-Electric, as a private company, performed better than other DISCOs because it drastically reduced Transmission and Distribution (T&D) losses from more than 40 percent to 15.5 percent. However, the biggest problem was that K-Electric failed to improve the power production in Pakistan.

"The only means of progress were technology and competition. The technology is already available, but there is no competition. Due to KE's exclusivity ending in July 2023 and the CTBCM of Pakistan allowing Karachi's businessmen to choose how to meet their electricity needs, including building their own power production plants, purchasing electricity from third parties, or acquiring from any other power producer," he added while exchanging views at a meeting during his visit to the Karachi Chamber of Commerce & Industry (KCCI).

KCCI Managing Committee Members: President KCCI Mohammed Tariq Yousuf, Senior Vice President Touseef Ahmed, Vice President Mohammad Haris Agar, Former President Muhammad Idrees, and Vice Chairman Businessmen Group Jawed Bilwani all attended the meeting.

According to Chairman NEPRA, the Competitive Trading Bilateral Contract Market (CTBCM) offers a roadmap for opening Pakistan's



wholesale electricity market. Its goal is to give large power consumers the option to buy electricity from DISCOs or another competitive supplier of their choosing.

According to him, it has been one of his top priorities over the past three years and five months to make sure that no project based on imported fuel or take-or-pay was approved; as a result, neither new licences nor tariffs were issued for projects based on imported fuel. He continued, "I am making every effort to bring about the green revolution in Pakistan, which is very important for our nation as the entire world now seriously considers how green you are."

He pointed out that the industrial support package, which gave large-scale manufacturing a 25% discount and small and medium businesses a 50% discount compared to their prior consumption...[Read More](#)

National Solar Energy Initiative Launched To Offer Cheaper Electricity

The time is now for Pakistan to switch to alternative forms of power generation in order to save valuable foreign currency and advance the country's industrial and agricultural sectors.

Investigating alternative energy sources has become crucial for reducing the country's fuel import bill and providing cheaper electricity to domestic, commercial, and industrial consumers in light of the economy's difficulties and fluctuating fuel prices both internationally and domestically.

The time is now for Pakistan to switch to alternative forms of power generation in order to save valuable foreign currency and advance the country's industrial and agricultural sectors. The

majority of the world's countries already use solar, wind, and hydropower as a significant portion of their energy base.

Since there hasn't been much progress in this area recently, the current administration has intensified efforts to reduce rising fuel

imports and make it simpler for the public to access clean, green, environmentally friendly, and cheaper solar energy.

To take advantage of solar energy's vast potential, the government, led by the prime minister, has launched the National



Solar Energy Initiative. According to the Minister for Power, the Federal Cabinet has approved a plan to produce solar power instead of spending money on expensive imported fuels.

According to the Federal Minister for Power, "Under this framework, three solar power plants are being planned, with one project in Layyah with a 1200 MW capacity and two projects in Muzaffargarh and Trimmu, each with a 600 MW capacity."

According to the Federal Minister for Power Division, when these projects are finished, consumers will have access to cheaper electricity. He continued, "This is the vision and com-

mitment of the Prime Minister to prioritise helping the country's poor people by providing cheaper electricity."

According to the minister, rural areas would also receive projects with a capacity of 1-4 MW, and both domestic and foreign investors have expressed a strong interest in investing in these projects. The government intends to add more than 10,000 MW of power to the national grid soon, so investors have been briefed on a 600 MW initial solar power project.

He mentioned the government's emphasis on cleaner and less expensive energy, saying that in recent years, the price of coal and oil had sharply increased...[Read More](#)



Experts Stress Need For Decarbonizing Energy Sector In Pakistan



In order to assist the Pakistani stakeholders and government in achieving the SDG-7 targets, the ESCAP developed the SDG-7 roadmap.

The experts emphasised the need for decarbonizing the energy sector in Pakistan on Sunday by lowering emissions, increasing energy efficiency, and increasing the proportion of renewable energy.

According to the experts, this can be done through active national advocacy and awareness campaigns.

The Sustainable Development Policy Institute, the Private Power and Infrastructure Board (PPIB), and the United Nations Economic and Social

Commission for Asia and the Pacific (UNESCAP) jointly launched the Sustainable Development Goal-7 (SDG-7) Roadmap for Pakistan (SDPI).

"We are falling short of managing global warming within 1.50C compared to 1990 levels, which reiterates the need to cut emissions significantly by improving energy access, energy efficiency, and cooking fuels," said Matthew Wittenstein, Section Chief, Energy Division, UNESCAP.

In order to assist the Pakistani stakeholders and government in achieving the SDG-7 targets, the ESCAP developed the SDG-7 roadmap.

Anis Zaman, an expert on ener-

gy at UNESCAP, stated that the goal of ESCAP was to create a national roadmap after consulting with all stakeholders. More than 93% of Pakistanis had access to electricity in 2021, but fewer than 50% could use eco-friendly cooking appliances like electric stoves.

He emphasised the importance of using better cooking stoves in both urban and rural areas, noting that the roadmap calls for renewable energy to account for 23.5% of all final energy consumption by 2030.

He claimed that the roadmap will assist Pakistan in achieving the unconditional decarbonization goal of the power sector by the year 2030, but that further investment of \$13.5 billion is necessary to completely decarbonize the energy sector.

In order to lower tariff prices, Muhammad Ayub, a former managing director of the National Transmission and Despatch Company (NTDC), emphasised the importance of using local resources.

He claimed that NTDC is placing a strong emphasis on solar and bioenergy, and that in the coming years, 3000 MW of solar energy will be added to the national grid.

He urged the participating private sector to encourage the use

of renewable energy in the country.

According to Sabieh Haider Bukhari, a representative of the National Energy Efficiency & Conservation Authority (NEECA), Rs 279 million in annual energy savings are possible if the market closure policy is strictly adhered to.

He emphasised the necessity of behavioural modifications for energy conservation and said that energy efficiency must be institutionalised, for which NEECA has contacted industry to stop the production of inefficient appliances.

Zulfiqar Ali, Director-General (Reforms), Board of Investment, reiterated the commitment to invest in introducing cost-effective technologies in the country to facilitate the government in meeting its energy commitments and strengthen the market for renewable energy technologies and products. Masroor Khan, National Project Manager, United Nations Industrial Development Organization (UNIDO), emphasised behavioural changes through advocacy campaigns to increase energy efficiency and conservation while highlighting the initiatives implemented in Chitral and the relationship between energy access and poverty...[Read More](#)

Punjab Cabinet Approves Withdrawal Of 18 Public Colleges' Autonomy

18 public colleges in Punjab that were granted autonomy by the boards of governors (BoGs) in 2010 have had their autonomy withdrawn with the approval of the Punjab Cabinet.

18 public colleges in Punjab that were granted autonomy by the boards of governors (BoGs) in 2010 have had their autonomy withdrawn with the approval of

that had been properly approved by the chief minister under Agenda No. 24, according to the source.

The HED also revoked the Assan Assignment Accounts (AAA) that 18 colleges had opened in 2019 to manage staff salaries and non-salary budget, the report stated.

The HED requested that the



the Punjab Cabinet. When the four-year BS programmes there began, 26 public sector colleges in the province were given autonomy.

The remaining 18 now hold the same position they did prior to their autonomy, with the Higher Education Department (HED) managing their administrative and financial affairs rather than the BoGs. Eight of them were later converted into universities. The policy change was approved by the Punjab Cabinet at its 8th meeting, which was held on December 29, 2022.

The cabinet, working with the finance department, S&GAD, law department, and PA department, had passed the summary

financial department transfer the first, second, and third quarter funds of the fiscal year 2022-2023 from the colleges' Assan Assignment Accounts (AAA) to the corresponding district account offices for handling under regular salary through the Office of the Accountant General, Punjab.

The decision was made following a 12-year battle by the Punjab Professor and Lecturers Associations (PPLA), which had resisted the autonomy of the colleges for a variety of reasons.

The PPLA leadership began to oppose the creation of BoGs in 2011-12, branding it as the "privatisation of higher education." Up until 2013...[Read More](#)

World Renowned Veterinary Expert Dr. Kathio Passes Away

Dr. I. H. Kathio, a well-known veterinarian who was born in Pakistan and a graduate of Sindh Agriculture University, died in the USA at the age of 69 from a heart condition.

The vice chancellor of Sindh Agriculture University expressed his sorrow over the passing in the United States of Dr. Inayatullah Kathio (I. H. Kathio), a world renowned veterinary expert and alumnus of the institution.

Dr. I. H. Kathio, a well-known veterinarian who was born in Pakistan and a graduate of Sindh Agriculture University, died in the USA at the age of 69 from a heart condition. His illness started over the summer, according to Dr. Kathio's daughter, McKayla Kathio.

Dr. Kathio, a veterinary expert, was born in Naseerabad, Larkana district, on September 8, 1953. In 1978, he earned his DVM from Sindh Agriculture University's Faculty of Animal Husbandry and Veterinary Sciences.



He earned his Ph.D. and post-doctoral degree from Georgetown University, Missouri, Columbia University, and Iowa University before moving to Washington in 1981 on a fellowship. He worked as a veterinarian for the Government of Sindh, a research officer for the FAO, and a consultant for the UNDP.

Before relocating to Washington, D.C., in 1981 on a fellowship, he received his Ph.D. and post-doctoral degree from Georgetown University, the University of Missouri, Columbia University, and Iowa University. He held positions with the FAO as a research officer, the UNDP as a consultant, and the Sindh Government as a veterinarian.

Dr. Kathio used to participate in veterinary science programmes on various American television channels, such as Fox TV, Hazelton TV, Philadelphia TV, and PAX TV, as well as write scientific articles for international newspapers. Due to his close ties to US and Pakistani political leaders, he also held the status of a Pakistani diplomat. Since 2002, Kathio has operated animal clinics in the US city of Pittston and Mexico, where he previously...[Read More](#)

Government Proposes Rs17.5B Subsidy For Buying E-Bikes

In the subsidy leasing model of e bikes, govt and the consumer each contribute Rs 100,000, while the banks provide Rs 70,000 as a loan with a 50% government credit guarantee.

In order to diversify fuel consumption and contribute to the reduction of carbon emissions, the Ministry of Industries and Production has developed a plan to produce 100,000 e-bikes in the first 18 months. To promote the purchase of relatively more expensive e-bikes, the ministry has suggested a subsidy of Rs 17.5 billion over the course of three years.

Following the presentation of the plan at the most recent cabinet meeting, the prime minister forwarded it to the Economic Coordination Committee for additional discussion and work on the financial model.

According to the plan, the government would put down subsidy of Rs. 90,000 for an electric bike with an estimated price of Rs. 170,000, and the buyer would put down Rs. 10,000, making the total initial payment of Rs. 100,000. It is alleged that the bank would give loans if the govern-



ment provided guarantees.

A 24-month instalment plan has also been provided through the proposed scheme, under which the customer will pay Rs. 4,310 per month, which consists of the Rs. 2,917 principal, Rs. 1,109 in interest payments, and Rs. 284 in insurance payments (2 pc).

According to the plan, the ministry anticipates producing and selling 15,000 e-bikes in the current fiscal year and 60,000 and 100,000 e-bikes in the following two fiscal years, for a total of 175,000 e-bikes produced over the three-year period.

Secondhand Smoking Causes 31,000 Deaths Every Year In Pakistan

WHO predicts that this number won't go down significantly in the upcoming years despite health warnings, cessation campaigns, and expanded tobacco control measures.

In Pakistan, smoking contributes to 166,000 annual deaths, 31,000 of which are caused by secondhand smoking.

The World Health Organization predicts that this number won't go down significantly in the upcoming years despite health warnings, cessation campaigns, and expanded tobacco control measures. These combustible cigarettes not only endanger the environment but also the human body.

The industry's carbon footprint from the production, processing, and transportation of tobacco is equivalent to one-fifth of the CO2 produced by the commercial airline sector each year, according to the WHO report "Tobacco: Poisoning Our Planet," which furthers the effects of global warming.

According to experts, the ultimate goal of completely eliminating the risks of climate change is to stop smoking, but doing so can be difficult and risky. Scientists around the world have been working for years to develop potentially less harmful substitutes that smokers can switch...[Read More](#)

Second Day Of Future Fest Witnesses 10,000 Attendees & 70 Exhibitors

Naeem Zamindar, the founder of Neem, performed an interactive meditation piece titled "How to Awaken the Giant" on the second day of Pakistan's biggest tech conference and expo.

Over 10,000 people attended the second day of Future Fest, Pakistan's largest tech conference and expo, along with 70 exhibitors and 60 speakers.

The Special Assistant to the Prime Minister on Youth Affairs delivered a stirring keynote on the importance of involving Pakistan's dynamic youth in a variety of technological endeavours in order to ensure a prosperous and promising future.

Naeem Zamindar, the founder of Neem, performed an interactive meditation piece titled "How to Awaken the Giant" on the second day of Pakistan's biggest tech conference and expo.

Keynote speakers included Ikram Sehgal, chairman of the Pathfinder Group; Usman Asif, CEO of DevsInc; Sadaf Abid, CEO of Circle; AVM(R). Dr.

Rizwan Riaz, pro-rector for research, innovation, and commercialization at RIC NUST; Khawar Naeem, country head of 10 Cent; Wasif Hussain, creative director of Collabs; Haasan Rizwan, founder and CEO of SABAQ; Habib Saqib, founder and head of business at FasalPay; Adnan Qureshi, Project Fairs; and Haasan Rizwan

On the second day of Future Fest, an important memorandum of understanding was signed between Telematics Private Limited, a local distributor in Pakistan known for selling Saudi-made tracing devices, and Tracking.me, a company that sells hardware and software made in Saudi Arabia.

This comes after Prince Fahad bin Mansour Al Saud made a strong announcement earlier on the eve of Future Fest about the creation of a dedicated Saudi-Pakistan Tech House and his announcement of creating 300+ additional projects for his com-



pany Isla Interactive with a 100 million project value, creating more than 1000+ jobs in Pakistan, Saudi Arabia, and around the world.

Around 50 sessions were held later in the day, including master classes, fireside chats, and panel discussions with top business executives who discussed a variety of topics, including web3, scaling tech, worldview, gaming, storytelling, policy, governance, and ed-tech and skills.

Undoubtedly, Future Fest 2023 is hosting a historic delegation of Saudi startups and venture capitalists who are meeting with Pakistani businesses and important stakeholders to explore investments, partnership acquisitions, and talent recruitment.

The event has brought together leaders from more than 50 industries to foster discussion on the future of life itself. Its goal is to use technology to pave the way for Pakistan's future...[Read More](#)

Pakistan Needs Effective Plan To Protect Water Resources

The nation's water supplies, however, are running out as time goes on. In the upcoming years, it is anticipated that there will be a severe water shortage on a global scale.

In order to protect its water resources and stop the depletion of underground water, Pakistan must develop a practical and effective plan.

Water is one of the fundamental necessities of life, and Pakistan is blessed with an abundance of water resources, claims an expert. The nation's water supplies, however, are running out as time goes on. In the upcoming years, it is anticipated that there will be a severe water shortage on a global scale.

Saiga Imran, the deputy director of the Pakistan Council of Research and Water Reservoirs (PCRWR), said that the country was feared to face an acute shortage of fresh water. She continued, "The country has quite a limited supply of fresh water."

She claims that the main factor contributing to the depletion of water resources is climate change...[Read More](#)

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Engr. Mazhar Ali Shah

*The technical issue /
negligence was converted in to
political issue. As such, no lesson
learned for future*



Saving Manchar Lake And Other Areas From Repeated Disasters

Due to heavy rains in Baluchistan, rainwater reaches FP Bund, breaches it, and floods and damages Manchar lake, Khairpur Nathan Shah and whole area.

Whenever there are heavy rains in Balochistan, rainwater reaches Flood Protective (FP) Bund and breaches it (years 1978, 95, 2007, 10 and 22) and floods or damages Manchar lake, Khairpur Nathan Shah and whole area.

Up to 2007 when water breached FP bund, immediately breaches were being controlled, by controlling water between second line of defense Main Nara Valley Drain (MNVD) banks and FP bund up to Manchar Lake. Then the water was released as per capacity of drain-in Manchar Lake to drain-out in River. That was the proper procedure as per standard operating procedures. Manchar Lake and other areas were always safe and whole water was safely drained off.

Unfortunately during 2010, floodwater was diverted to Supro Bund that is third line of defense, which is usually not

regularly maintained. In result Supro Bund immediately breached and whole area of Qamber, Mehar, Khairpur Nathan Shah (city) talks, was under floodwater. Then the whole pressure was on Lake.

The quantum of water was four times more than the capacity of the Lake, and draining out from the lake was nearly nil. In the result, water over topped banks and the lake collapsed. There were extra huge losses.

Then without proper detailed investigation / technical evalua-

tion, a billion rupees were spent on raising level and strengthening the banks, to make them safe to hold water pressure in the future. The technical issue / negligence was converted in to political issue. As such, no lesson learned for future.

During year 2022 Balochistan rainwater repeated the same action and even there were more damages, as more area was flooded. Again no investigation/ proper evaluation/ knowing real causes of such repeated damages, even after spending Rs. a

billion with in 10 years, no any benefit from such works.

Now the department should consider and prepare alternate proposals to save the area from such repeated disaster and get Manchar Lake safe.

Way forward to Safe Manchar Lake
Evaluate the actual causes / mistakes, to avoid such mechanism in the future.

Consider to notifying area between Flood Protective Bund and Main Nara Valley Drain as flood zone and if there is more

water, it may be accommodated there to reduce pressure on Manchar and other areas.

Area near Manchar lake up to the Indus link be notified as flood emergent zone, for safety of the Lake, for getting water diverted there, to drain out in to the Indus safely from Larkana-Sehwan bund.

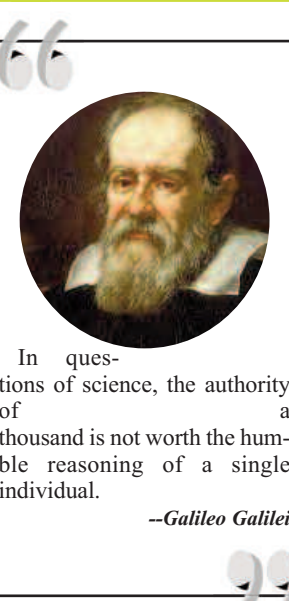
If possible, Manchar may be provided a spillway of maximum capacity, to get the level of lake in safe limits.

Or Manchar converted in to a proper dam, which will be a sweat water bank.

Till that World Bank loan may not be spent without proper solving technical issues. But all cuts and breaches may be properly repaired from maintenance and repair department to get the area safe from normal rains.

Conclusion

Immediately a team of experts comprising foreign experts and senior most experienced engineers, who had worked in that area, may be engaged for evaluation / knowing actual defects/causes and designing / suggesting alternate proposals for sustainable project to get the area and the Lake permanently safe.



In questions of science, the authority of a thousand is not worth the humble reasoning of a single individual.

--Galileo Galilei



Dr. Shafja Arshad



Amna Akhter



Iron Deficiency Or Anemia – A Common Nutrient Deficiency

Iron deficiency is a common nutrient deficiency that occurs when the body doesn't have enough iron. It can lead to anemia.

Iron deficiency is a common nutrient deficiency that occurs when the body doesn't have enough iron. It can lead to anemia, a condition in which the body doesn't have enough red blood cells to carry oxygen to the body's tissues.

Symptoms of this deficiency include tiredness, weakness, shortness of breath, and pale skin. It can also cause irritability, poor appetite, and impaired cognitive function.

It is most common in women, especially those who are pregnant or have heavy periods. Furthermore, it can also affect athletes, vegetarians, and people with gastrointestinal disorders. Children and teenagers are also at risk of this deficiency, particularly if they are experiencing rapid growth or have a poor diet.

There are several causes of iron deficiency. One of the most common is blood loss, which can occur due to heavy periods, gastrointestinal bleeding, or surgery. A diet that is low in iron can also contribute to deficiency. Vegetarians and vegans, in particular, may need to be more mindful of their iron intake, as plant-based sources of iron are not as easily absorbed by the body as animal-based sources. In addition to the symptoms mentioned

above, it can lead to more serious health problems if left untreated. Anemia, which is a common complication of iron deficiency, can cause fatigue, shortness of breath, and a decreased ability to exercise. It can also increase the risk of infections and complications during pregnancy.

To prevent this deficiency, it's important to eat a varied and balanced diet that includes iron-rich foods. Good sources of iron include red meat, poultry,

including pills, liquids, and injections. Your healthcare provider will recommend the best form for you based on your individual needs and circumstances.

If you have already been diagnosed with iron deficiency, it's important to follow your healthcare provider's recommendations for treatment. This may include taking iron supplements and making dietary changes. It's also important to have regular check-ups with your healthcare

A diet that is low in iron can also contribute to deficiency. Vegetarians and vegans, in particular, may need to be more mindful of their iron intake, as plant-based sources of iron are not as easily absorbed by the body as animal-based sources

fish, beans, lentils, tofu, nuts, seeds, and fortified cereals. Vitamin C can also help the body absorb iron, so it's important to include foods that are rich in vitamin C in your diet.

If you think you may be at risk for iron deficiency, talk to your healthcare provider. They can help you determine whether you need to take iron supplements or make any dietary changes. Iron supplements are available in various forms,

provider to ensure that your iron levels are improving and to monitor for any complications.

In conclusion, iron deficiency is a common and often overlooked health issue that can have serious consequences if left untreated.

By paying attention to your diet and seeking medical attention if you are at risk or experiencing symptoms, you can prevent it and maintain a good health.

Nanobots – A Doctor Inside You

Tracking of the nanobots inside the body, making it advantageous in targeted drug delivery and personalized medicines.

Miniaturization of robots to nanoscale or nanobots is the idea presented by Richard, who firstly thought about swallowing the doctor in the 1950s. It was also the main idea of a movie came in 1966 in which the crew members of a ship were diminished to very small scale, so they can enter into the body of a person having a blood clot.

At that time it looked like a daydream but with the development in the fields of engineering, nanotechnology, biotechnology and biomaterials, this dream is actually coming true.

Many robots have been made at small scale. Nano-robots also known as nanobots are the one having size in nanoscale (1 to 100 nanometers).

These nanoscale devices are destined to perform many different tasks like to manipulate, sense, signal and process information.

The energy for movement of nanobots inside the body can be driven by chemical, physical or biohybrid systems. The chemical nanobots convert the energy of chemicals inside the body into movement while

physical nanobots obtain energy from external source such as light waves, ultrasound waves and magnetic field. In biohybrid nanobots, motile microorganism are used as source of locomotion.

Another feature of utmost importance in medical research is localization, which enables tracking of the nanobots inside the body, making it advantageous in targeted drug delivery and personalized medicines.

Nanobots can be used inside the body for number of biomedical application mainly because they are biocompatible.

They can cross the blood-brain barrier, which is the main difficulty when using the traditional neuropharmaceuticals and thus can be used to treat neurological diseases and brain tumor by targeted drug delivery.

Nanobots can be used to assist in minimally invasive surgery as they can penetrate deep into the tissues under controlled regulation and tracking.

A computational model of a nanobot have also been suggested that can be proven fruitful in treating diabetes and can be practically applied in the in vivo testing.

Most of these applications are tested on animal models such as rats, pigs and mice which have shown that still

there are gaps that are needed to be filled in propulsion, localization and design of nanobots that would be suitable for use in human models.

When seen in Pakistan, the cancer charts in top 5 most prevalent disease in Pakistan. Nanobots are programmed that are able to identify 12 various types of cancerous cells with surprising selectivity and accuracy.

As a lot of number of blood vessels are formed round a cancer cell, these nanobots are able to cut off the supply of blood to vessels by the help of coagulation factor, thus causing the shrinkage of tumor cell leading toward tissue death. The use of nanobots will overcome the limitation of chemo and radiotherapy.

For purpose of targeted drug delivery a special payloads are present on their surface that are able to recognize a protein nucleolin that is present in high amount on tumor cells not on normal cells thus play a role like Notorious Trojan horse by control releasing of its drug cargo in fighting against the cancer enemies.

These successful trails are being done on mammals for lungs, breast, ovarian, and melanoma cancer. But nanotechnology is still in its initial phases of development in Pakistan due to lack of research resources and institutes offering it.



Laraib Abbas Khan

Several trials and studies are being done using biotechnological approaches for its treatment. One of them is the use of stem cell therapy. It is a regenerative therapy used for repairing damaged cells and preventing diseases using stem cells



Burden Of Endemic Of Dengue Virus In Pakistan

There are several factors that contributed to the spread of dengue virus in Pakistan, these include deforestation, uncontrolled urbanization, agriculture, and different household practices.

According to the World Health Organization (WHO), dengue has primarily affected humans in South Asia. The healthcare sector reports that dengue virus in Pakistan has lethal effects among the population due to unhealthy food, edibles, and poor sanitation.

Dengue virus (DENV) causes a deadly dengue virus infectious disease that leads to severe public health concerns. The first outbreak of dengue occurred in 1779 in Egypt, Indonesia, Jakarta, and Cairo. The prevalence of dengue infection showed 30 folds increase in the last 50 years.

Globally, 3,643,763 cases and 3,380 deaths due to dengue virus infection are reported since 23 November 2022. The region of Asia reported 1,024,726 cases and 2,197 deaths, Africa reported 3,427 cases and 17 deaths, Australia and the Pacific reported 2,517 cases and no deaths, and the USA reported 2,551,093 cases and 1,169 deaths by November 2022.

In Pakistan, 25,932 cases and 62 deaths were reported between January and September 2022. The increased prevalence during mid-June was due to excessive flooding and another factor is the higher migration rate between Pakistan, Iran, and Afghanistan because of trade.

By September 2022, among the total 25,932 cases, 14% were reported from Balochistan, 25% from KPK, 29% from Punjab, and 32% from Sindh. About 80% of cases were asymptomatic.

Dengue virus is transmitted by *Aedes aegypti* and *Aedes albopictus* which are present indoors, in uncovered containers filled with water, and outdoors feeding on humans respectively.

The transmission of the virus occurs through mosquito bites, from an infected person to a mosquito to a healthy person, from pregnant mother to baby, through blood transfusions, and organ transplantation.

Symptoms of infection appear within 4–7 days, some infected persons do not show symptoms and others show febrile illness.

Dengue fever patient suffers from joint pain, body rashes, headache, low platelets, and white blood cell levels, muscle pain, and lymph node swelling. Dengue hemorrhagic fever is characterized by increased per-

meation of blood vessels, causing leakage.

The dengue shock syndrome is characterized by severe loss of blood and other body fluids, heart pumping becomes difficult causing the decreased flow

of atrial blood leading to tissue injury and failure of organs. Various tests are used to detect dengue infection including PCR, ELISA, complement fixation, and neutralization tests.

Currently, no antiviral drug or

vaccine is available to treat dengue infection. But certain measures are taken such as rest, taking painkillers, and drinking plenty of water and fluids.

Several trials and studies are being done using biotechnological approaches for its treatment. One of them is the use of stem cell therapy. It is a regenerative therapy used for repairing damaged cells and preventing diseases using stem cells.

A study was conducted on mice infected with dengue in Malaysia. The administration of these cells showed increased liver functions and damaged cell repair cells. But this study is currently limited and requires more research.

No specific treatment is available for dengue virus in Pakistan. Doctors recommend painkillers with acetaminophen, bed rest, and plenty of water and fluids. Doctors advise to not use medicine with aspirin, ibuprofen, and other non-steroidal anti-inflammatory drugs (NSAIDs).

There are several factors that contributed to the spread of dengue virus in Pakistan, these include deforestation, uncontrolled urbanization, agriculture, and different household practice like water-filled containers, and plant pots.

One of the major factors is

climate change, which contributes to increased temperature and precipitation favorable for the spread of dengue by mosquitoes.

Pakistan governmental health departments implement health measures to prevent the spread of infection such as insecticidal sprays to kill mosquito larvae, waste management, and destroying mosquito breeding sites.

WHO supports the Pakistan government to establish data and report collection centers, strengthen disease surveillance in all hospitals, provides diagnostic kits, pesticides, medicines, health care providers, and trainees. WHO also collaborates with the Pakistan health ministry to raise campaigns.

There are several control measures to prevent and control the infection of dengue virus in Pakistan, such as prevention of breeding of mosquitoes in water-filled containers, the use of coils, vaporizers, and repellents, wearing full-sleeved clothes, monitoring and surveillance of mosquitoes and the virus.

Anti-Dengue Day is celebrated on 2nd July to spread awareness about a dengue virus infection, and encourage the public to take part in dengue control.



The region of Asia reported 1,024,726 cases and 2,197 deaths, Africa reported 3,427 cases and 17 deaths, Australia and the Pacific reported 2,517 cases and no deaths, and the USA reported 2,551,093 cases and 1,169 deaths by November 2022



Ayesha Ajaz

Pakistan lies in a unique place where geography, geology, and the environment support biodiversity



Biofuels From Microalgal Biorefineries: Aspiring For Sustainability

Despite the enormous potential of Pakistan to utilize microalgal biorefineries, there are certain obstacles in the production of biofuels in Pakistan.

Due to the rise of industrialization and extreme exploitation of natural resources like fossil fuels, the world now faces a major energy crisis, global climatic change, and environmental pollution. Pakistan is no exception, thus if today's energy crisis is left unresolved, it will cripple the country's economy which has already been struggling.

Pakistan, being a developing country, has long been under the crushing influence of an energy crisis that has drained its economy. With the rapid increase in its population, the gap between demand and supply has also increased.

The status of Pakistan's demand and supply gap in 2020 was reported to be approximately 2000 MW with the demand growing at around 7% per annual growth rate of utilization.

Moreover, recent data indicate that the transport sector of the country is leading in the consumption of energy by

17.40 million tons. This has resulted in a greater dependence on exports. In order to meet its energy demand, there



Microalgal Biorefineries are attractive feedstock for biofuel production. When compared to other organisms, microalgae can be grown utilizing water and atmospheric carbon dioxide, which lowers manufacturing costs

is an urgent need for the country to look for sustainable and renewable energy sources.

Today's energy crisis, if left as it is, will cripple Pakistan's economy, which has already been struggling. Switching to biofuels such as biodiesel, bioethanol, and biogas is one solution.

Why Microalgal Biorefineries?

Microalgal Biorefineries are attractive feedstock for biofuel production. When compared to other organisms, microalgae can be grown utilizing water and atmospheric carbon dioxide, which lowers manufacturing costs.

Additionally, deteriorated land can be used to grow microalgae.

High growth rates, effective carbon mitigation by lowering the amount of heat-trapping greenhouse gases, and the removal of food sector competition from the biofuel production process are all perks of microalgae.

Microalgae contain organic and inorganic compounds as

secondary metabolites, which are produced by various metabolic pathways within their body. These compounds are the precursors for the commercially important products of microalgae.

Microalgal Biorefineries in Pakistan

Microalgae grow in multiple habitats and produce many important co-products.

Luckily, Pakistan lies in a unique place where geography, geology, and the environment support biodiversity.

Moreover, the rich saline environments and varied water in Pakistan promote a large algal flora.

If the existing feedstock resources are utilized responsibly and adaptable policies are created in the right direction, Pakistan has a significant potential to produce biofuels and become self-sufficient in energy.

Hurdles in the way and solutions to tackle

Despite the enormous potential of Pakistan to utilize microalgal biorefineries, there are certain obstacles in the production of biofuels in Pakistan. Lack of cooperation from the government,

an unclear policy on fuels, and Pakistan's limited access to the fuel market; hinder the adoption of biofuels on a national scale.

Moreover, a lack of expertise and funds for research and development, and never-ending political issues have worsened the country's economy.

Therefore, it is now crucial to promote biofuel production in Pakistan with the aid of local incentives and persuading international partners diplomatically.

Infrastructure development, education initiatives, awareness for the public, commercialization, and government involvement are some other strategies for ensuring that microalgal biorefineries are utilized in Pakistan.

"There is no energy crisis, only a crisis of ignorance" R. Buckminster Fuller.



AI Navigation Assistance Benefiting Captains In Setting Sail

Boat manufacturers are focusing heavily on technologies and artificial intelligence at CES in Las Vegas that make it simpler for both weekend sailors and seasoned sailors to set sail.

AI-backed navigation assistance and autonomy are assisting captains in setting sail for sunsets or simply mooring in a port without incident, whether on pleasure yachts or deep-sea cargo ships.

Boat manufacturers are focusing heavily on technologies and artificial intelligence at the CES technology show in Las Vegas that make it simpler for both weekend sailors and seasoned sailors to set sail.

"On the water, there is wind,

currents, sometimes waves, the boat does not stay in place, you always have to compensate," said Johan Inden, president of the marine business at Swedish company Volvo Penta. AI-backed navigation assistance refers to the use of artificial intelligence (AI) technology to provide guidance and assistance with navigating from one location to another.

For more than ten years, the company's boats have helped mariners maneuver using a simple joystick that holds a ship in position or thrusts it sharply to the right or left. Volvo Penta unveiled a prototype in 2018 that was capable of letting the boat dock by itself, but customers weren't ready to park

their ships at the click of a button, Inden said.

Instead, the company developed the docking assistance system "that gives the captain a certain level of control" when mooring the boat, a moment "that remains one of the most stressful in sailing." In general, the idea is to improve "safety, comfort, relaxation" and eventually make boating more accessible, he said.

A boat prototype by US company Brunswick offers the best trajectory to enter a port, avoid collisions and finds available places to dock a boat and does the job without human intervention. Another software program, offered by Hyundai's Avikus, can help maximize

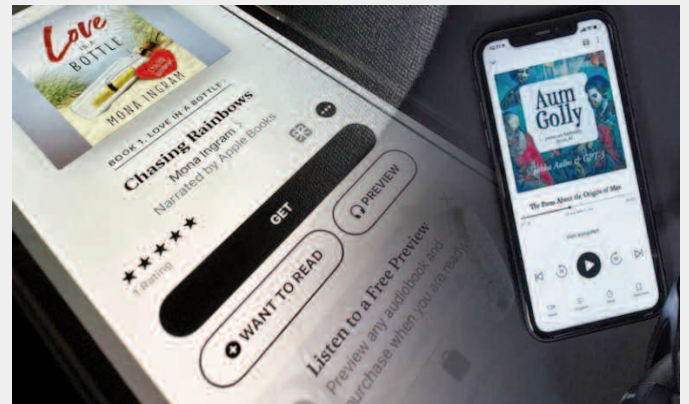
pleasure at sea.

One setting will ensure that the boat is ideally positioned for sunbathing or will find the best spot to enjoy the sunset and get there in time to see it.

The goal, according to company executive Carl Johansson, is to provide fuel savings, safety, and "peace of mind." For merchant mariners, autonomous sailing is in test phase. In Norway, an autonomous electric cargo ship has been transporting fertilizer from factory to port since last year, with the aim of reducing truck traffic.

While in Japan, an automated full-sized ferry has been in operation between two islands since last year, though for now with a crew on board...[Read More](#)

Apple Quietly Launches AI-Narrated Audiobooks



This new feature is just the beginning of tough competition with companies like Spotify and Amazon for a market that experts project could be worth more than \$35 B (\$29 B) by 2030.

Apple has quietly released a selection of books with artificial intelligence-narrated narration AI audiobooks, so it is evident that it believes there is a demand for the latter, reported the Daily Mail.

The robotic, artificial character of Apple's AI voices makes it clear that they won't be taking the place of Fry's warm, dulcet tones anytime soon, but as the technology advances, they might eventually sound more human-like.

This new feature is just the beginning of the tough competition with companies like Spotify and Amazon for a market that experts project could be worth more than \$35 billion (\$29 billion) by 2030.

The robot-voiced audiobooks, which employ text-to-speech translation, can be found by searching for "AI narration" in the Books app on Apple devices.

This displays a list of romantic or fiction books that are "narrated by computerised voice based on a human narrator" and are available for both free and paid downloads. There are two different AI voice types to pick from and they both have an American accent and only speak English.

Madison is a soprano and Jackson is a baritone; however, two more voices, Helena, and Mitchell will soon be available for non-fiction publications. The tech giant, as per the outlet's report, claimed that it produced high-quality audiobooks from ebook files using the sophisticated speech synthesis technology it had created.

Those who support AI-narrated audiobooks believe it might provide publishers and authors with a new market if they had previously been unable to finance switching from print to audio.

With Apple suggesting that digital narration technology will make authoring audiobooks more accessible...[Read More](#)

BMW i Vision Dee Is The Vision Of Future Digital Experience



Future digital functions will go far beyond the level of voice control and driver assistance systems we are familiar with today.

The BMW Group shared its vision of the future digital experience, both inside and outside the vehicle, at the Consumer Electronics Show 2023 in Las Vegas. BMW i Vision Dee is the futuristic mid-size sedan with a new and pared-down design language. The name "Dee" stands for Digital Emotional

Experience — and that is precisely its aim: to create an even stronger bond between people and their cars going forward.

Future digital functions will go far beyond the level of voice control and driver assistance systems we are familiar with today.

The BMW Head-Up-Display extends across the full width of the windscreens, providing a glimpse of the next vehicle generation. From 2025 onwards, this innovation.,

BioNTech Signs MoU With UK Govt To Provide Cancer Therapies

BioNTech intends to make the most of the UK's well-regarded clinical trial network, genomics and national health data resources, the company said in the Jan. 6 release.

In a sign of BioNTech's growing confidence and ambitions, the mRNA leader has struck a deal directly with the U.K. government to recruit patients for trials of the German biotech's cancer immunotherapies. The Memorandum of Understanding is underpinned by the goal of seeing 100,000 U.K. patients to provide with personalized cancer therapies either via a trial or



as an approved treatment by 2030.

With the U.K. singled out as one of BioNTech's key markets, the top-level collaboration will also extend to infectious disease vaccines and see the company invest in both a research hub in Cambridge, England and a regional headquarters in London.

BioNTech intends to make the most of the UK's well-regarded clinical trial network, genomics and national health data resources, the company said in the Jan. 6 release. Next up will be the selection of candidates, trial sites and the "set-up of a development plan with the aim of being ready to enroll the first cancer patient in the second half of 2023," the company said.

"The UK successfully delivered COVID-19 vaccines so quickly because the National Health Service, academia, the regulator and the private sector worked together in an exemplary way," BioNTech CEO Ugur Sahin, M.D., said in the release.

"This agreement is a result of the lessons learnt from the COVID-19 pandemic as we all experience...[Read More](#)

Visible Light Communication To Consider As Future's Promising Technology



Recent studies show that a Visible Light Communication (VLC) transmitter not only emits visible light signals but also leaks RF signals during the transmission.

Wireless technologies have changed our world, with more and more objects in our physical world connected to the Internet. While you may have just started taking advantage of

5G wireless technology, researchers around the world are already working hard on the future: 6G. Visible Light Communication (VLC) is widely considered a promising technology for the coming 6G networks.

However, recent studies show that a Visible Light Communication (VLC) transmitter not only emits visible light signals but also leaks RF signals during the transmission.

Now, a team of researchers at the University of Massachusetts Amherst has invented a low-cost, innovative way to harvest the waste energy from VLC by using the human body as an antenna...[Read More](#)

Graffity Releases Two Augmented Reality Games Using AR Glasses



Graffity has released two AR games for AR glasses in collaboration with Nreal and Qualcomm Technologies, leveraging their experience in AR game development.

GrooveWave and SushiCraft are two augmented reality games that Graffity has released using AR glasses. At CES 2023, the business worked with Qualcomm Technologies and the startup Nreal to do this.

The Nreal Light AR glasses are used to play the rhythm game Groove Wave. Lenovo's ThinkReality A3 glasses and the Snapdragon Spaces Developer Platform are both used in the augmented reality sushi-making game SushiCraft.

Graffity has additionally

enrolled in the Snapdragon Spaces Pathfinder programme to make use of Snapdragon Spaces technology and realise fresh concepts in augmented reality. Graffity will be present at CES to network with potential partners and share its patented multiplayer AR technology as well as its expertise in game design and development.

In 2017, the Tokyo-based augmented reality entertainment company Graffity was established. Pechabato, the first multiplayer AR shooting game ever released, was previously made available in Japan. Downloads of that game totaled 230,000. Leap Trigger, a second multiplayer shooting game it produced...[Read More](#)

India Not Producing Quality Research Material says, Govt Adviser Claims

The experts highlighted opportunities and challenges in science and technology in country. Kailselvi pointed out that India faces challenges in doing science at par with global standards.

India has some 255 researchers per million inhabitants even as the country produces more than 40,000 PhDs annually but still India is not producing quality research material, Ajay Sood, principal scientific adviser to the government said at an event at the Indian Science Congress January 3, 2023.

The United States, in contrast, has over 4,300 researchers per million inhabitants, Sood pointed out. "The number of publications in India has increased, but I am not happy about the quality of research material," he said at a press briefing following the event.

Quality research material is essential for producing accurate and reliable research findings. In order to conduct high-quality research, it is important to use materials that are relevant, reliable, and valid.

The number of publications in high-impact journals was very low, according to the Comptroller and Auditor General of India (CAG) report released December 20, 2022.

The impact factor is a measure used to evaluate the importance of a journal. An impact factor of 10 or more is considered excellent. Only five publications had an impact factor of more than 10. The rest was published in journals with an impact factor of less than five. Sood was joined by M Ravichandran, secretary, Union

Ministry of Earth Sciences, S Chandrasekhar, secretary to the Government of India, Department of Science and Technology, N Kalaiselvi, director-general, Council of Scientific and Industrial Research and Alka Sharma, senior advisor of the Department of Biotechnology.

The experts highlighted opportunities and challenges in science and technology in the country. Kailselvi pointed out that India faces challenges in doing science at par with global standards...[Read More](#)

