



TAC/BSE/PA/2022-23-260BM

04.11.2022

Corporate Relationship Department
BSE Limited
PJ Towers
Dalal Street,
Mumbai - 400 001
Dear Sir,

Ref: Security Code: 506808

Sub: Copies of Unaudited Financial results for the Quarter and Financial Year ended 30th September, 2022 published in Newspapers.

Pursuant to Regulation 30 of the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015, please find enclosed copies of Unaudited Financial results for the Quarter and Financial Year ended 30th September, 2022 published in Trinity Mirror (English version) and Makkal Kural (Tamil version) on 01.11.2022.

You are requested to take the same on record.

Thanking You,

Yours Truly,
**For Tuticorin Alkali Chemicals
and Fertilizers Limited.**

GOPALAN
RAMACHANDR
AN

Digitally signed by GOPALAN RAMACHANDRAN
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G.Ramachandran
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Encl : As above.

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Health Matters



Developing resilience during COVID period

When the world shut down in March of 2020 because of the COVID-19 pandemic, people the world over experienced profound psychological stress to varying degrees. Now, a new study takes advantage of the unique situation and longitudinally studied the demographic, neurobiological, and psychological factors that contributed to individuals' risk or resilience to mental health disruptions related to the stress.

While "resilience" is a broad term with many connotations, the authors describe it as the ability of an individual to resist the negative impacts of illness, stress, or trauma, in line with a recently proposed definition. Psychological factors, such as coping abilities, help people protect themselves from harmful experiences and are associated with resilience to trauma.

The researchers assessed data from over 2,000 participants collected as part of the Barcelona Brain Health Initiative. They analysed the change in participants' anxiety

and depression symptoms from two years before to during the first year of the pandemic. The researchers analyzed the data to identify participants with resilience, which they defined here as the lack of development of anxiety or depression over the pandemic.

Before the pandemic, all participants reported normal or mild symptoms, and in terms of measures of resilience, reported medium-high coping skills and low-to-moderate stress levels. Across the sample, scores reflecting depressive and anxiety symptoms increased, particularly in women, but the changes were mediated by individual differences in coping skills and perceived stress.

Resilience has also been linked in previous studies to structural and functional characteristics of specific brain areas and circuits, including the default mode network (DMN), which is associated with mind-wandering activity. To examine these influences, the researchers made use of brain imaging data

that had been collected on over 400 participants before the pandemic. The data showed that brain connectivity within the DMN explained much of the individual resilience and the psychological influences on mental health.

David Bartrés-Faz, PhD, from the University of Barcelona and a senior author of the study, said, "Our findings show that psychological aspects such as coping strategies should be considered within the context of each individual biological complexity. We found evidence of how the specific configurations of brain networks (such as the DMN) were meaningful to understand responses to stress -- even years later -- in the context of the COVID-19 pandemic. Therefore, the combination of individual psychological factors and specific biological substrates can predict the risk of vulnerability to anxiety and depression symptoms during a prolonged stress factor."

At risk for diabetes? Cut the carbs, says new study

While low-carb diets are often recommended for those being treated for diabetes, little evidence exists on whether eating fewer carbs can impact the blood sugar of those with diabetes or prediabetes who aren't treated by medications.

According to new research from Tulane University, a low-carb diet can help those with unmedicated diabetes - and those at risk for diabetes - lower their blood sugar.

The study compared two groups: one assigned to a low-carb diet and another that continued with their usual diet. After six months, the low-carb diet group had greater drops in hemoglobin A1c, a marker for blood sugar levels, when compared with the group who ate their usual diet. The low-carbohydrate diet group also lost weight and had lower fasting glucose levels.

"The key message is that a low-carbohydrate diet, if maintained, might be a useful approach for preventing and treating Type 2 diabetes, though more research is needed," said lead author Kirsten Dorans, assistant professor of epidemiology at Tulane University School of Public Health and Tropical Medicine.

Approximately 37 million



Americans have diabetes, a condition that occurs when the body doesn't use insulin properly and can't regulate blood sugar levels. Type 2 diabetes comprises more than 90% of those cases, according to the Centers for Disease Control and Prevention (CDC). Type 2 diabetes can severely impact quality of life with symptoms such as blurred vision, numb hands and feet, and overall tiredness and can cause other serious health problems like heart disease, vision loss

and kidney disease. The study's findings are especially important for those with prediabetes whose A1c levels are higher than normal but below levels that would be classified as diabetes. Approximately 96 million Americans have prediabetes and more than 80% of those with prediabetes are unaware, according to the CDC. Those with prediabetes are at increased risk for Type 2 diabetes, heart attacks or strokes and are usually

not taking medications to lower blood sugar levels, making a healthy diet more crucial.

The study involved participants whose blood sugar ranged from prediabetic to diabetic levels and who were not on diabetes medication. Those in the low-carb group saw A1c levels drop 0.23% more than the usual diet group, an amount Dorans called "modest but clinically relevant." Importantly, fats made up around half of the calories eaten by those in the low-carb group, but the fats were mostly healthy monounsaturated and polyunsaturated fats found in foods like olive oil and nuts.

Dorans said the study doesn't prove that a low-carb diet prevents diabetes. But it does open the door to further research about how to mitigate health risks of those with prediabetes and diabetes not treated by medication.

"We already know that a low-carbohydrate diet is one dietary approach used among people who have Type 2 diabetes, but there is not as much evidence on effects of this diet on blood sugar in people with prediabetes," Dorans said. "Future work could be done to see if this dietary approach may be an alternative approach for Type 2 diabetes prevention."

School policing may lead to student substance abuse

In a new study, public health researchers find that the prevalence of school discipline - core elements of the school-to-prison pipeline - predict subsequent school-average

levels of substance use and developmental risk. First author Seth Prins, PhD, a researcher at Columbia University Mailman School of Public Health, and co-authors analyzed 11 years of data from 4,800 schools and more than 4,950,000 students in California. They found that the prevalence of exclusionary school discipline (suspension and expulsion) and school-based police



contact predicted higher school levels of binge drinking, drinking, smoking, using cannabis, using other drugs, and violence/harassment. They found also that the prevalence of school discipline also predicted lower levels of reported community support,

feeling safe in school, and school support. "Our findings are surprising to nobody who has been on the front lines of the fight against the mass criminalization of kids, especially in communities that have faced systematic

disinvestment in social infrastructure and enormous investments in policing," says Prins, an assistant professor of epidemiology and sociomedical sciences. Prins and his co-authors argue that school discipline is not developmentally appropriate or responsive (and may be harmful) to adolescent health and developmental need. Furthermore, they say, heavy investments in school securitization and policing divert resources from school and community supports and services that might address the root causes of student disciplinary and health problems.

According to a report by the ACLU, more than 10 million students attend schools with police but no counselor, nurse, psychologist, or social worker. And 90 percent of students in public schools experience staffing ratios for those positions that fail to meet professional standards.

Training the immune system to be tolerant

Haemophilia A is the most common severe form of haemophilia. It affects almost exclusively males. The disease can usually be treated well, but not for all sufferers. A study at the University of Bonn has now elucidated an important mechanism that is crucial for making the therapy effective. The results could help better tailor treatment to patients.



Haemophilia A patients have a defect in a protein that is important for blood clotting: factor VIII. Most patients therefore receive an intravenous injection of the functional clotting factor every few days as treatment. But frequently, and especially at the start of treatment, the immune system recognizes the injected agent as foreign to the body and attacks it. This is the most serious complication of haemophilia treatment because factor VIII can then no longer work.

In these cases, immune tolerance therapy, which was also developed at the University Hospital Bonn (UKB) more than 40 years ago, often helps. This involves regularly injecting the haemophiliacs with a high dose of factor VIII over several months. The immune system thereby gets used to the injected protein and tolerates it. The underlying immune mechanisms are unknown. "However, this doesn't always work," explains Prof. Dr Johannes Oldenburg, Director of the

Institute for Experimental Haematology and Transfusion Medicine at the UKB. "In about 30 percent of patients, tolerance induction does not lead to success. So your body's own defenses continue to attack and destroy the factor VIII protein, which means that factor VIII cannot be used for treatment. We wanted to know the reason for this."

To this end, the team looked at two cell types in the immune system, B cells and regulatory T cells. B cells recognize foreign molecules in the body and produce antibodies against them, which switch off the function of the molecule. For factor VIII, this means that it is no longer effective in haemophilia treatment.

Regulatory T cells prevent an immune response from being too strong or lasting too long. The researchers have now found a new type among them that can act specifically against certain B cells rather than just non-specifically against all immune responses. "We

were able to show that immunotolerance therapy results in the generation of regulatory T cells that exclusively induce B cells against factor VIII to commit suicide," says Dr. Janine Becker-Gotot of the Institute of Molecular Medicine and Experimental Immunology (IMMEI) at UKB. "These T cells have a sensor that allows them to recognize and attach to the corresponding B cells. In addition, they have the ability to push the self-destruct button on the surface of B cells."

This button is a molecule called PD-1. By activating it, it starts a program in the B cell that results in its death. Every active B cell has this button. "Our experiments enabled us for the first time to detect regulatory T cells that can activate this self-destruct button only in very specific B cells, in order to specifically prevent unwanted immune responses," explains IMMEI Director Prof. Dr. Christian Kurts.

The more PD-1 buttons the B cells against factor VIII carry on their surface,

the easier it is for them to be driven to suicide by immune tolerance therapy. "The amount of PD-1 varies from person to person," Becker-Gotot explains. "If it's very low to begin with, there's a good chance that many inhibitor-producing B cells will survive and continue to neutralize the injected factor VIII."

Interestingly, B cells also produce more PD-1 once they come into contact with regulatory T cells. "We can now test how strong this reaction is," the researcher says. "If PD-1 levels go up shortly after starting immune tolerance therapy and then stay up, that's a clear sign that the treatment is going to be successful." The team is currently developing a blood test that can be used to detect whether or not immune tolerance therapy is working in patients during the prolonged treatment.

"Our findings have great basic scientific value," explains Prof. Kurts, who is a member of the Transdisciplinary Research Area "Life & Health" at the University of Bonn and, like Dr. Becker-Gotot and Prof. Oldenburg, a member of the Cluster of Excellence ImmunoSensation. "And not just for haemophilia, but also for other congenital disorders where missing proteins are replaced therapeutically. In the long term, they could also be used to develop new treatments."

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STATEMENT OF UNAUDITED FINANCIAL RESULTS FOR THE QUARTER AND HALF YEAR ENDED 30TH SEPTEMBER 2022

Particulars	Quarter ended			Half Year ended		Year ended
	30.09.2022	30.06.2022	30.09.2021	30.09.2022	30.09.2021	31.03.2022
	Unaudited	Unaudited	Unaudited	Unaudited	Unaudited	Audited
Total income from operations	11,983.54	11,255.34	2,839.36	23,238.88	4,537.10	18,056.54
Net Profit / (Loss) from ordinary activities before tax	2,063.60	1,446.44	(1,833.49)	3,510.04	(3,536.07)	(3,397.39)
Net Profit / (Loss) for the period after tax (after Extraordinary items)	2,063.60	1,446.44	(1,833.49)	3,510.04	(3,536.07)	(3,397.39)
Total Comprehensive Income/(Loss)	2,041.81	1,446.44	(1,815.27)	3,488.25	(3,517.85)	(3,387.79)
Equity Share Capital	12,186.76	12,186.76	12,186.76	12,186.76	12,186.76	12,186.76
Earnings Per Share (before extraordinary items) (of Rs.10/- each)						
Basic :	1.69	1.19	(1.50)	2.88	(2.90)	(2.79)
Diluted:	1.69	1.19	(1.50)	2.88	(2.90)	(2.79)
Earnings Per Share (after extraordinary items) (of Rs.10/- each)						
Basic :	1.69	1.19	(1.50)	2.88	(2.90)	(2.79)
Diluted :	1.69	1.19	(1.50)	2.88	(2.90)	(2.79)

Note: The above is an extract of the detailed format of Quarterly / Half yearly Financial Results filed with the Stock Exchange under Regulation 33 of the SEBI (Listing and Other Disclosure Requirements) Regulations, 2015. The full format of the Quarterly / Half yearly Financial Results are available on the Stock Exchange website - www.bseindia.com and on the Company's website - www.tacfert.in

Place : Chennai
Date : October 31, 2022

G.RAMACHANDRAN
MANAGING DIRECTOR