



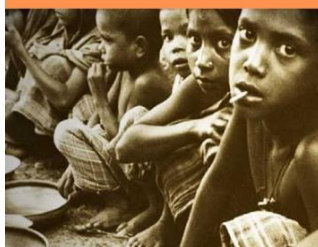
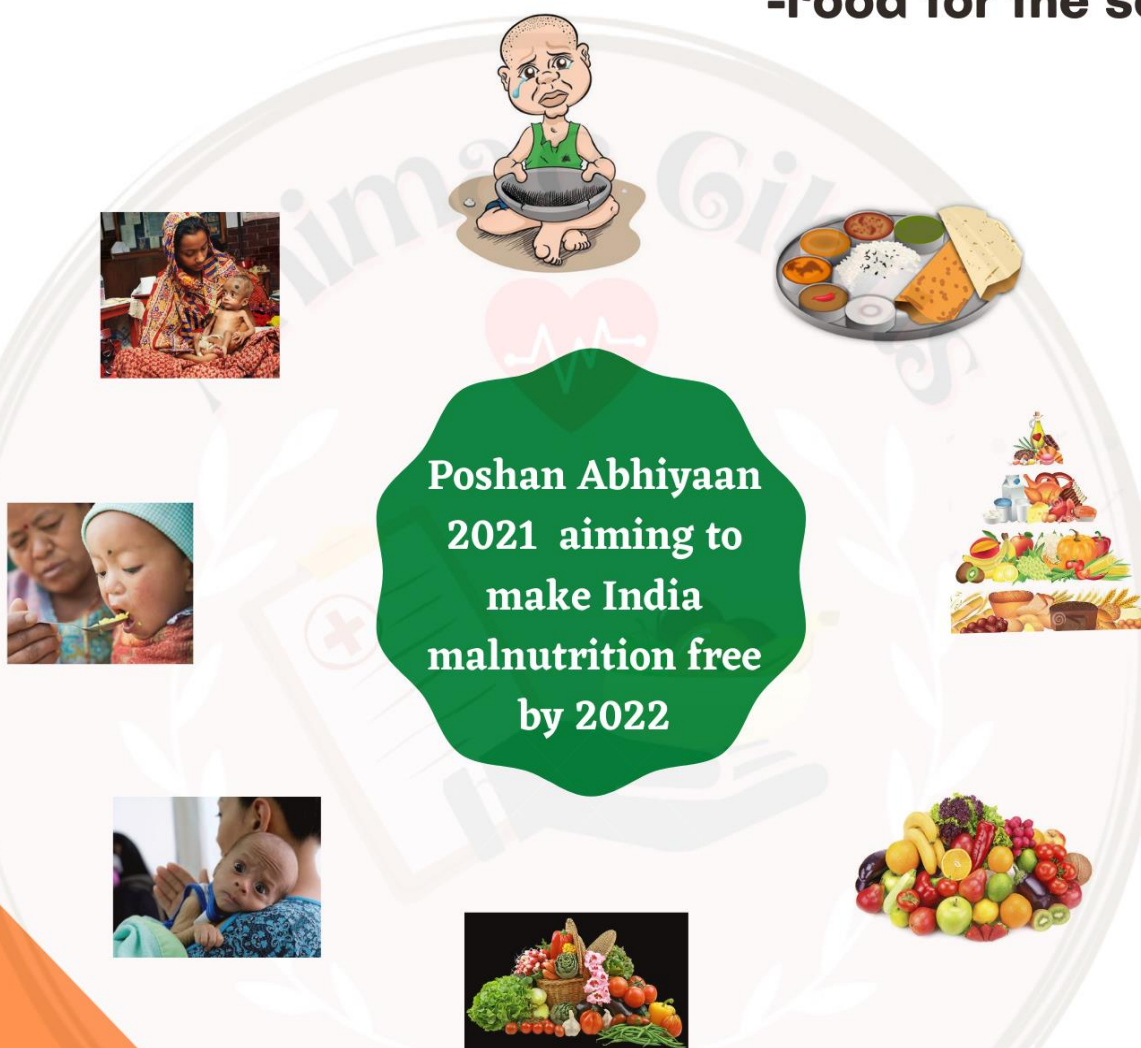
Issue: September, 2021



A magazine by  
Department of Food & Nutrition  
**Women's College, Calcutta**

# ANIMAE CIBUS

-Food for the soul



Poshan Abhiyaan is launched to identify  
SAM children across all districts and  
provide them care and Nutrition in  
targeted manner



सही पोषण - देश रोशन

## Foreword

### **A message from the Teacher-in-Charge**

*Dear students, fellow colleagues and esteemed readers, I bid you all good health and happiness in these trying times that we pass through now. Humanity perhaps faces its greatest challenge ever in the form of the biggest pandemic caused by the tiniest of organisms on the planet, which has inflicted the heaviest of losses. Yet all is not lost as mankind fights back with its toughest resolve against the microscopic corona virus. It is said that a battle is won not on the battlefield but in the minds of the people. Hence it is only natural that we promote good health and mental well-being of all around us in order that we may overcome all the odds and emerge victorious. Nutrition being one of the most crucial elements of ensuring good health assumes significant prominence in this situation, especially so where a large portion of the Indian populace reels under the huge economic burden of the pandemic and stares at a looming threat of malnutrition in the coming days.*

*The fourth Rashtriya Poshan Maah is being celebrated in the month of September 2021 as part of the annual event calendar of POSHAN ABHIYAAN which aims to eradicate*

*malnutrition in our country by the year 2022. It is only opportune that the department of Food & Nutrition of the Women's College, Calcutta is starting the maiden journey of its e-magazine, "Animae Cibus". In the current situation where teaching and the classroom ecosystem has taken an online route, this e-magazine provides a platform for the students not only to celebrate "Rashtriya Poshan Maah" but also to foster an environment where ideas are shared, be it through academic articles, creative writings or simple fun activities. I welcome all onboard this wonderful venture and look forward to the success of this magazine in the years to come.*



*--Dr Indrani Sen*

## Faculty Speak

*Food for the body is not enough. There must be food for the soul.*

*- Dorothy Day*

*Dear readers, it is indeed a privilege to introduce you to the maiden edition of the e-magazine "Animae Cibus", published by the department of Food and Nutrition. As the translation of the name says, this e-magazine is a platform for our students to explore the connection between them and the world around through the medium of food thus becoming food for their souls.*

*The world of food is not only limited to the art of making delicacies, photographic captures of food or the science behind it. It weaves the very lives of the people involved into an intricate fabric which binds them together.*

*Our students will no doubt be carrying out valuable research in the area of food and nutrition in the days to come. We are sure that our e-magazine will provide a fertile ground for our next-gen researchers to publish their academic*

*pursuits in form of scientific articles as well as share information about other cutting-edge research happening in the field of food and nutrition all around the world.*

*Let us stretch our brains a bit by learning about the science behind the world of food. The teasers or the crosswords sprinkled across the pages will provide much needed exercise for our brains.*

*Through our e-magazine we also hope to bring some much-needed cheer to our monotonous lives especially during this prolonged pandemic which has us caged inside our homes for the better part of a year now. We will explore the world of food around us through some amazing and refreshing recipes shared by our students which you may even try at home.*

*Last but not the least we would also get to know more about the lives of the students and their many other talents through literary pieces and photo galleries sections.*

*We hope that you will enjoy reading our e-magazine. With your support and blessings, we are sure this magazine will continue to provide soul food to its readers for a long time to come.*



*Dr Sohini Roy*

*Faculty of Dept of Food & Nutrition  
Women's College, Calcutta*

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## **Faculty Speak**

*The nutritional needs of a normal person are modified according to the demands of growth and development at different stages of life. Balanced diet prevents precipitation of deficiency symptoms of any nutrient and protects the person from any nutritional disorder. Persons prone to malnutrition are infants, pre-school children, adolescents, pregnant woman and elderly people.*

*Malnutrition can be defined as an impairment of health resulting from a deficiency, excess or imbalance of nutrients. Malnutrition is most commonly found in poor developing countries. Poverty, unhygienic environment, infections and infestations, illiteracy etc. are major factors for causing malnutrition. Food availability is the basic prerequisite for combating malnutrition. Adequate quantity and quality of food should be made available*

*to all individuals at a price which is affordable. Those below poverty line need special attention.*

*Nutrition awareness is important to motivate people to consume available foods. Health measures for ensuring biological utilisation of consumed foods are necessary. Early detection of malnutrition is also important. The long term solution for the problem of malnutrition is to improve the consumption of protective foods by the affected population through economic upliftment and increased production of such foods.*

*Our e-magazine "Animae Cibus" is a milestone that unfolds the imagination of the young minds and gives life to our thoughts and aspirations. It unleashes a wide spectrum of creative skills of our students.*



*Arpita Srīmanī*  
*Faculty of Dept of Food & Nutrition*  
*Women's College, Calcutta*

## Faculty Speak

*The Food and Nutrition Department of Women's College, Calcutta celebrates the month of September as 'Nutrition Month' in consonance with the annual event calendar of POSHAN Abhiyaan. However the present year portrays a different situation as for the last one and half years the Covid-19 pandemic has engulfed ourselves in a severe panic state. Uses of masks & sanitizer and maintaining social distancing become the integral part of our daily life. People are now scrambling for rapid vaccination.*

*However it is axiomatic that nutrition plays an important role in combating the severity of Covid-19 infections. It is now established that the menace of Covid-19 somehow could be averted if nutritious and balanced diet is taken. Inclusion of vegetables, fruits, fish, meat, dry-fruits etc in daily diet, which are rich source of anti-oxidants, is very much essential to lead a healthy life.*

*In present situation many persons suffer from mental disturbances and here also nutrition attributes an active role to keep oneself in a good state of mind.*

*Now contemplating the significance of nutrition in our daily life, the Food and Nutrition Department of Women's College, Calcutta has taken an endeavor to publish an e Magazine under the name of 'Animae Cibus' in this Nutrition Month. It is expedient that such publication would create awareness regarding the growing importance of the values of nutrition in our daily life.*



*Dr Debarati Mukherjee Datta  
Faculty of Dept of Food & Nutrition  
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## **Faculty Speak**

*Poshan Abhiyaan, a Government of India flagship programme, has been launched with a holistic goal in order to improve overall nutritional outcomes for children, adolescent girls, pregnant women and lactating mothers. It is a convergence mission with a vision to combat malnutrition in a targeted approach. The 'Poshan Maah', celebrated throughout the month of September, is a unique approach to achieve the noble goals of Poshan Abhiyaan with swiftness in a harmonized manner. During this month, initiatives are taken from multi-ministerial departments like Women and Child Development Department, Health and Family Welfare Department, School Education and Literacy Department, Panchayati Raj, Rural Development and Urban Development to ensure a healthier*

*future for women and children. The 4<sup>th</sup> Rashtriya Poshan Maah aims to be celebrated throughout the month of September'2021 with four themes like Plantation activity on Poshanvatika; Yoga and AYUSH for nutrition; Regional nutrition kit distribution to Anganwadi beneficiaries; Identification of SAM children and Community kitchen for SAM children.*

*Building a nation involves strengthening citizenry with systematic nutritional management (Poshan) for Women and Child well-being. Hope this maiden edition of the e-magazine, 'Animae Cibus', published by the Department of Food and Nutrition, Women's College Calcutta, during the month of Poshan Maah may successfully leave its footprint in the minds of the readers.*



*Dr. Sanjukta Kar*

*Visiting Faculty*

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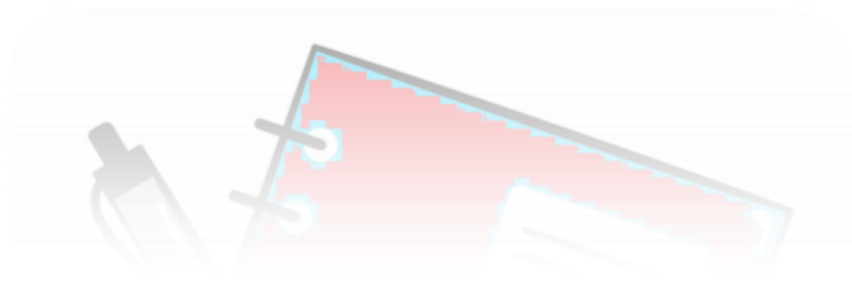
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# *Knowledge Share*



## Malnutrition Under The Age Of 5 Years: Indian Scenario

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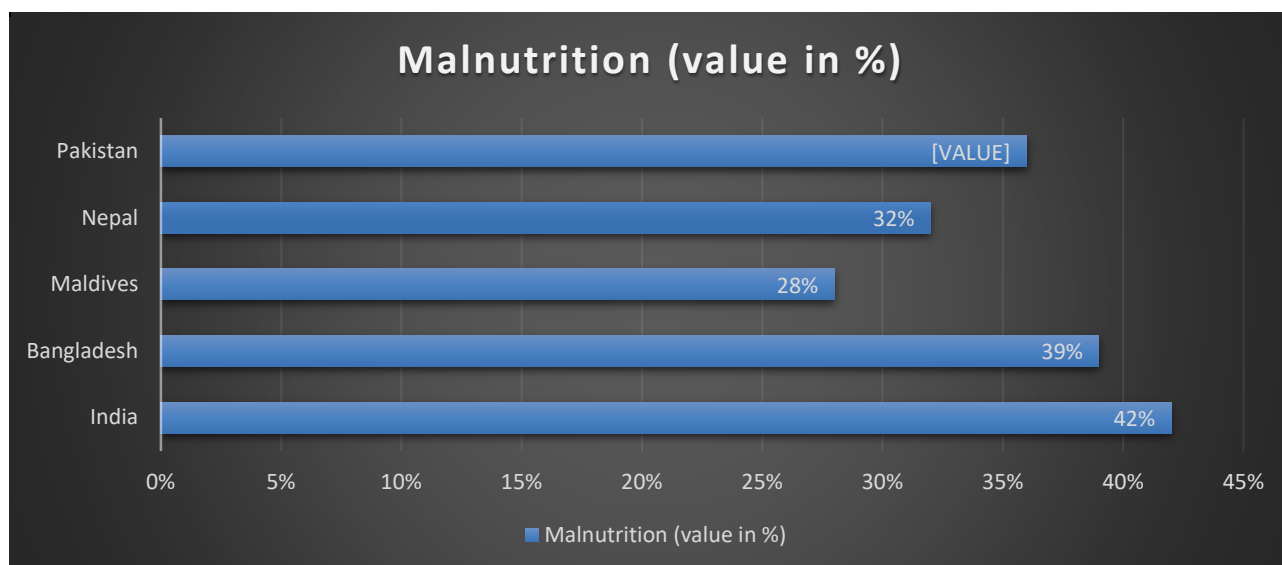
**INTRODUCTION:** Malnutrition which is prevalent worldwide is affecting all age groups specially those who are vulnerable and belong to the weaker sections of the society. It accounts for 3.5 million deaths universally, and is also responsible for 35% morbidities among children under 5 years. It includes under nutrition (wasting, stunting, underweight), deficient intake of vitamins and minerals, overweight, non-communicable diseases related to the dietary pattern. Malnutrition can also result if the individual's protein and calorie intake are not sufficient for growth or they are unable to utilise them properly i.e., either they consume less or consume in greater amounts than needed). Underweight can be of 3 types: stunting (low height for age), wasting (low weight for height) and underweight (low weight for age) whereas over nutrition can be due to abnormal or excessive fat for height. Poor nourishment may lead to physical or mental retardation in children, which may give rise to transmittable disease. Severe malnutrition can be due to nutritional deficiencies which account for 1-5% of deaths in hospital based mortality statistics from developing countries.

**DOUBLE BURDEN OF MALNUTRITION IN 5 SOUTH ASIAN COUNTRIES:** Double burden of malnutrition refers to the prevalence of both under nutrition and over nutrition (overweight/obesity). It is a serious problem in South Asian Countries. According to the World Report on Nutrition (2018), near about 39% of children with stunting was found from South Asian countries. A study was done based on the Demographic and Health Survey from 5 South Asian Countries like Bangladesh, India, Pakistan, Maldives and Nepal. The years were 2014, 2015-16, 2009, 2016 and 2012-13 for Bangladesh, India, Maldives, Nepal and Pakistan respectively. Children aged between 24-59 months were taken for the survey.

**Table 1:** Childhood under nutrition and over nutrition in 5 South Asian Countries:

Countries	Survey year	Underweight (%)	Overweight (%)
India	2015-16	38	Between 2-4
Bangladesh	2014	37	Between 2-4
Nepal	2016	29	Between 2-4
Pakistan	2012-13	28	7
Maldives	2009	19	9

**Diagram 1:** Combined Prevalence of Both forms of Malnutrition:



**CONCLUSION:** Malnutrition is still threatening in India as well as other developing countries. Many initiatives are being undertaken by the Government in order to prevent malnutrition. Several community based intervention programmes are undertaken which have proved to be beneficial. Proper Education and Nutrition programmes, if implemented can raise awareness among the community which can alleviate malnutrition. In some countries like Bangladesh, Nepal, Nigeria malnutrition is decreasing astonishingly in terms of wasting. The number of children with over weight is increasing in the recent years. If proper knowledge and awareness can be created among the people, incidence of malnutrition can be successfully reduced.

## References

- Hossain F B, Shawon S R, Al-Abid S U, Mahmood S, Adhikary G and Bulbul M I. 2020. "Double Burden of Malnutrition Aged 24-59 months by Socioeconomic status in 5 South Asian Countries: evidence from Demographic and Health Survey", *BMJ open* 10(3): 1-12.
- Hossain S, Chowdhury P B, Biswas R K and Hossain M A. 2020. "Malnutrition Status of children Under 5 Years in Bangladesh: A Socio demographic Assessment", *Children and Youth Services Review* 117: 1-9.
- Narayan J, John D and Ramadas N. 2018. "Malnutrition in India: Status and Government Initiatives", *Journal of Public Health Policy* 40(1): 126-141.
- Pelletier D L, Frongillo E A, Schroeder D G and Habicht J P. 2014. "The Effects of Malnutrition on Child Mortality in Developing Countries", *Bulletin of The World Health Organization*, 1995 73: 443-448.

## Role of Vitamin C on Immunity with an Emphasis on Covid-19

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*"If you take a reasonable amount of vitamin C regularly, the incidence of the common cold goes down. If you get a cold and start immediately, as soon as you start sneezing and sniffing, the cold just doesn't get going."*

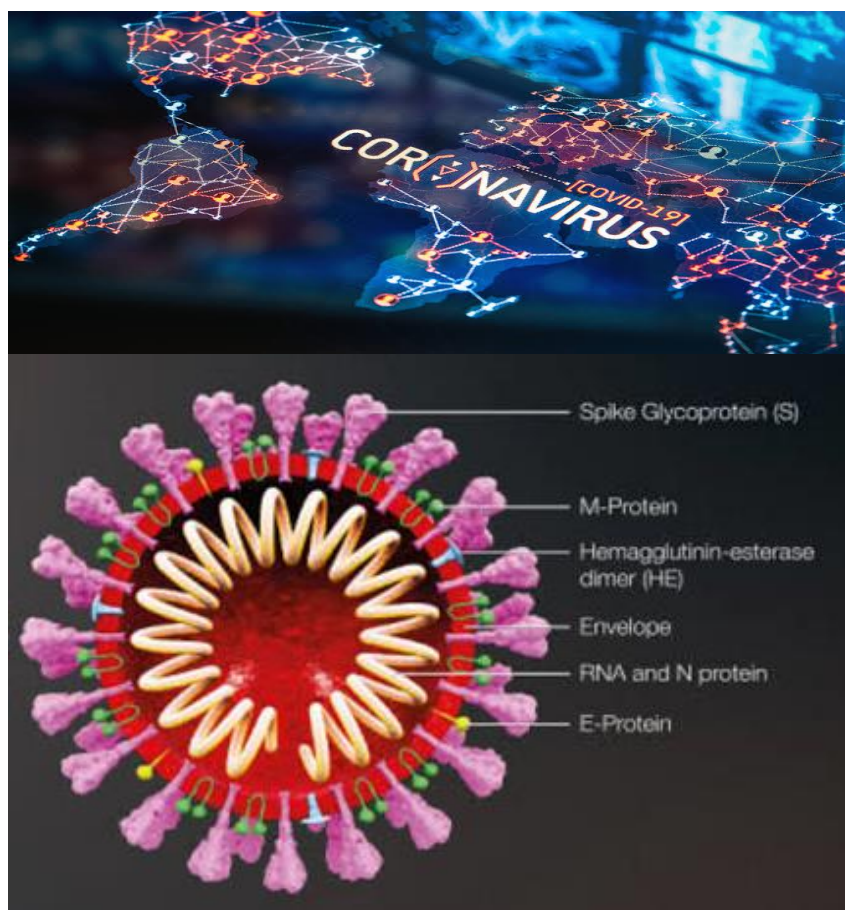
*- By Linus Pauling*



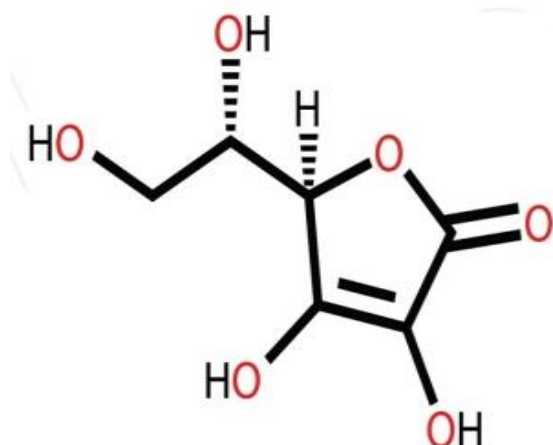
Nowdays globally novel corona virus is speeded as pandemic disease throughout the world. This disease is also known as COVID-19 and caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2).

The first COVID case was found in Wuhan, China, and then it was speeded throughout the world. There is no specific antiviral drug that may treat COVID-19. Thus the management of COVID-19 is supportive.

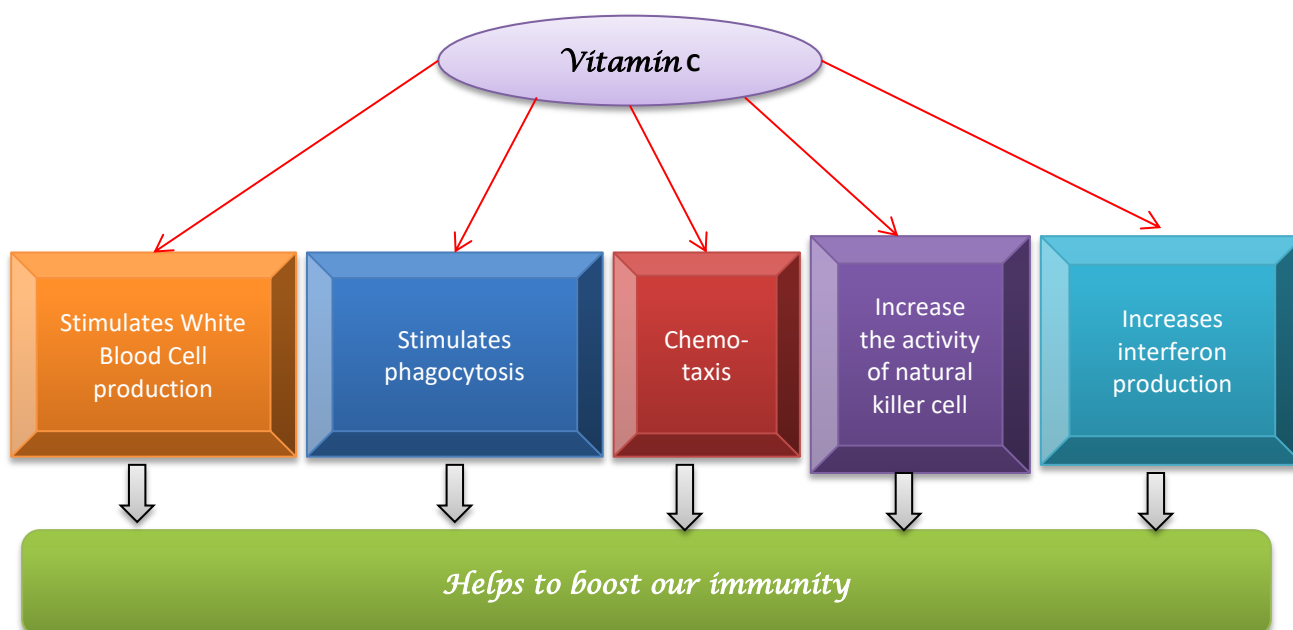
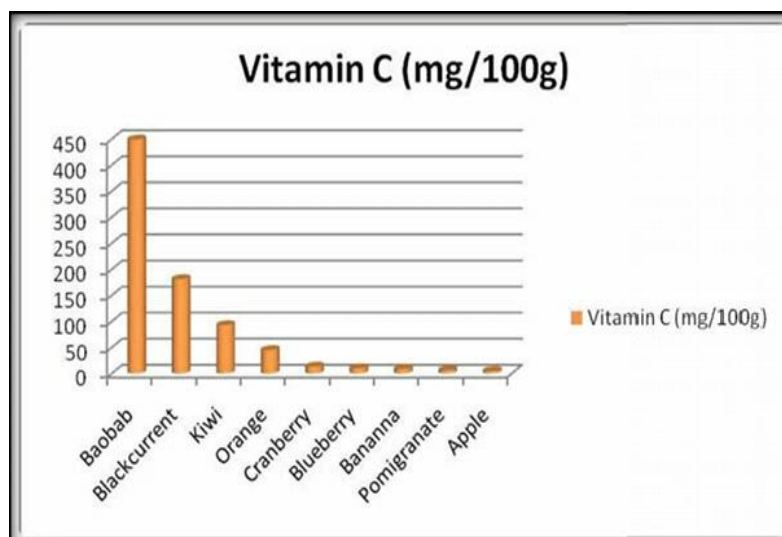
Vitamin C has been used in the management of COVID -19 as it has a capacity to improve the immunological responses against COVID 19.

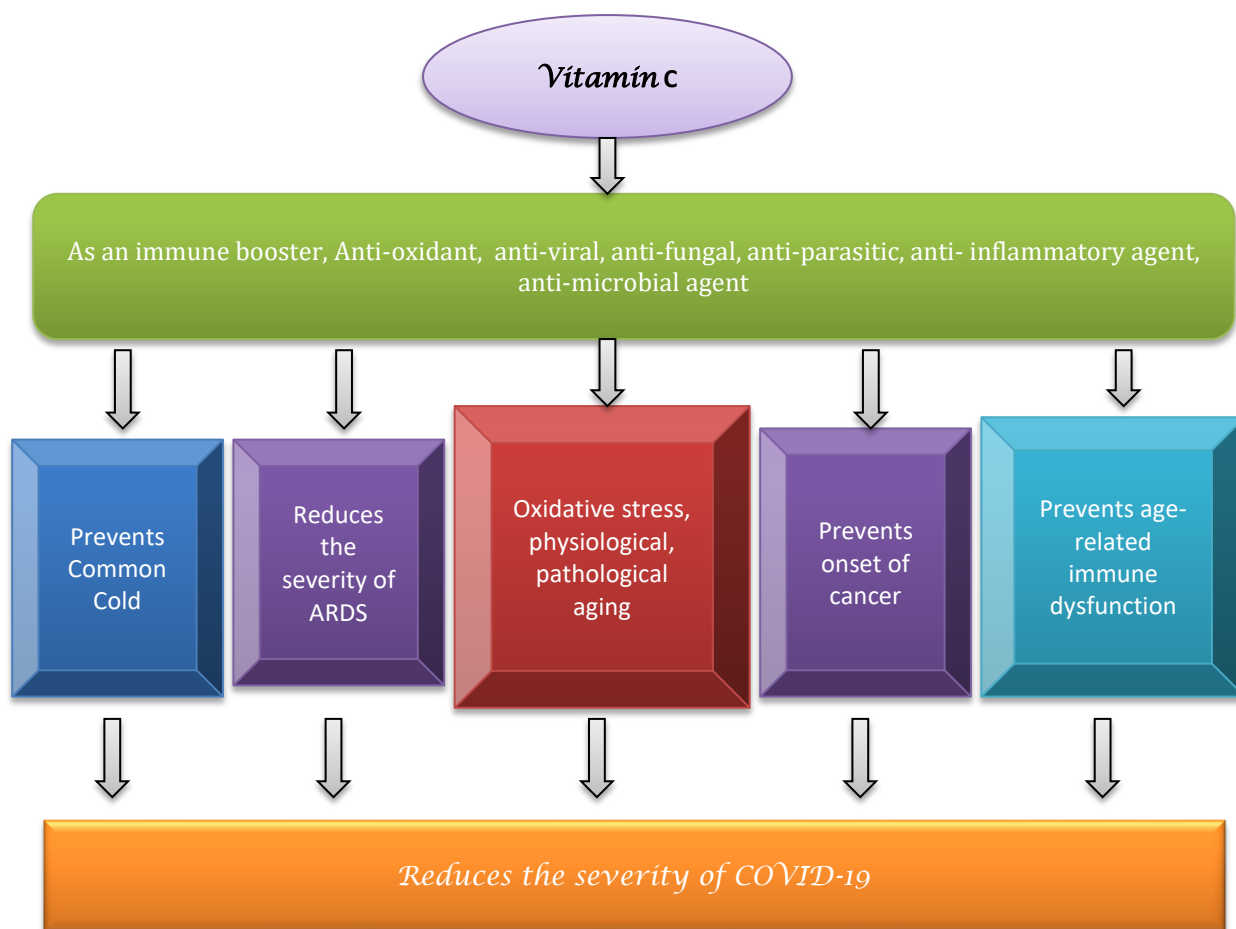


Vitamin C (Ascorbic Acid) is a water soluble vitamin whose active form is L-ascorbic acid. It is abundantly found in fresh fruits especially citrus fruits. The richest sources of ascorbic acid are citrus fruits like lemons, oranges, limes, tomatoes, papaya, green chilli, green and red peppers, strawberries, green leafy vegetables like broccoli etc.

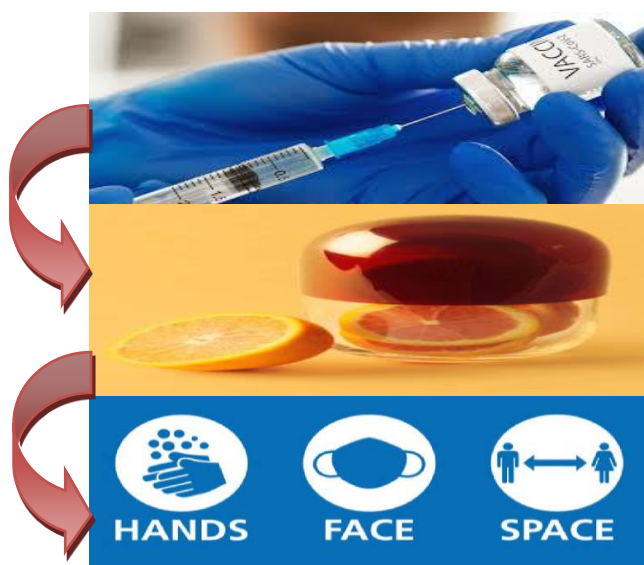


L-ascorbic acid





Vitamin C act as a multipurpose vitamin thereby reduce the lung infection as well as maintain the normal plasma concentration. Oral administration of vitamin C of 6 gm per day can reduce the risk of viral infections. It has been shown in China that vitamin C about 10-20 gm/day gave to fifty severe COVID-19 patients and shown that oxygenation index is become normal and the patients recovered and released after a certain period of time.



As the vaccines and effective antiviral drugs take long time to develop and it is more uncertain, it is needed to explore an alternative preventive option to boost up our immunity. Though at present the

management of COVID-19 is supportive but vitamin C plays an important role in the management of COVID-19. Due to its anti-immune capacity, it may reduce the severity and the duration of COVID-19 as

well as helps to support the recovery. Along with this we need to wash hand, use sanitizer, cover face with mask and maintain a safe distance to protect ourselves from corona virus.

## References:

1. Huijskens, M. J. A. J., Walczak, M., Koller, N., Briedé, J. J., Senden-Gijsbers, B. L. M. G., Schnijderberg, M. C., Bos, G. M. J., & Germeraad, W. T. V. (2014). Technical Advance: Ascorbic acid induces development of double-positive T cells from human hematopoietic stem cells in the absence of stromal cells. *Journal of Leukocyte Biology*, 96, 1165-1175. DOI: [10.1189/jlb.1TA0214-121RR](https://doi.org/10.1189/jlb.1TA0214-121RR)
2. Arvinte, C., Singh, M., Marik, P. E., (2020). Serum Levels of Vitamin C and Vitamin D in a Cohort of Critically Ill COVID-19 Patients of a North American Community Hospital Intensive Care Unit in May 2020: A Pilot Study. *Medicine in Drug Discovery*, 1-4. DOI: <http://dx.doi.org/10.1016/j.medidd.2020.100064>
3. MAGGINI, S., WENZLAFF, S., & HORNIG, D. (2010). Essential Role of Vitamin C and Zinc in Child Immunity and Health. *The Journal of International Medical Research*, 38, 386 – 414
4. Carr, A. C. (2020). A new clinical trial to test high dose vitamin C in patients with COVID-19. *Critical Care* 2020, 24. DOI: <https://doi.org/10.1186/s13054-020-02851-4>
5. Cheng, R. Z. (2020). Can early and high intravenous dose of vitamin C prevent and treat coronavirus disease 2019 (COVID-19)? *Medicine Drug Discovery* 2020, 5. DOI: <https://doi.org/10.1016/j.medidd.2020.100028>

## Effective Role of Saffron And Its Bioactive Components In The Treatment Of Depression, Anxiety And Insomnia

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Nowadays depression, anxiety and insomnia are the common scenario in our society. There are so many drugs available in the market. But in long-term therapy, it has some adverse effects. To overcome these adverse affects, many Scientists did research on saffron which got wonderful result without any side effects? Saffron is one of the well known and expensive herbs which acts as a colouring agents. It has been used as spice from ancient days. It is collected from the dried stigmas of the plant i.e. *Crocus sativus* L. It has different bioactive components named as Carotenoids, Crocins, Crocetin, picrocrocin and safranal. Functions of saffron depend on the presence and composition of its bioactive components. All we know depression is a state of low mood and lack of activity. Anxiety is uncontrollable feelings of fear which impairs person function. Insomnia is a sleeping disorder. Main aim of this study was to find out its effective role, effective dosages and its mechanism of action. So many studies have done, some of them listed below -----

SUBJECTS	QUANTITY OF DOSES	DOSES	EFFECTS/ACTIVITY
66 subjects	15.5mg	Saffron with placebo	Improved sleeping quality and duration
Animal	>3.5%	Oral saffron dose	Overcome anxiety and depression
Patient under MMT	30mg	Crocins or 2 placebo tablets	Reduced side effects and improved mental health
12-16 years of youth	14mg	Affron, a standardize saffron extract	Saffron was nicely tolerated and it had a ability to reduce headache in subject

Study indicates that saffron has effective role to modulate the levels of serotonin, dopamine, norepinephrine, glutamate and GABA A neurotransmitter in the brain. Saffron and its active compounds have the positive effect on sleep quality and sleep duration. Safranal was found to activate the sleep promoting neurons from the ventro lateral preoptic nucleus (VLPO) and inhibit the wakefulness promoting neurons. Oral administration of saffron improved both

acute and long term depressive like behaviors. Repeated oral administration reduced the effects of anhedonic behavior (inability to experience pleasure from enjoyable activities). Studies shown that saffron supplementation was well bearable with many adverse events. Preclinical studies suggested saffron have an effective mechanisms of action along with antioxidant, anti inflammatory properties and can able to modulate BDNF expression and HPA-axis. In conclusion, this study provides strong evidence that saffron can be potential for the treatments of depression and anxiety because it has strong interaction with the serotonin and noradrenaline system. To find out its effective role, longer studies with more patients and longer duration are needed for more effective results. Future studies are needed to clear the idea of mechanism of action. This study has risk of biasness. Study needs lots of cooperation of the patients and also others subjects. Study ensures that saffron can be used as the anti depressant drug in the alternative treatment of depression compared with classical antidepressant drugs.



## References:

- Ghadrdoost, B., Vafaei, A. A., Rashidy-Pour, A., Hajisoltani, R., Bandegi, A. R., Motamedi, F., ... & Pahlvan, S. (2011). Protective effects of saffron extract and its active constituent crocin against oxidative stress and spatial learning and memory deficits induced by chronic stress in rats. *European journal of pharmacology*, 667(1-3), 222-229.
- Hausenblas, H. A., Saha, D., Dubyak, P. J., & Anton, S. D. (2013). Saffron (*Crocus sativus* L.) and major depressive disorder: a meta-analysis of randomized clinical trials. *Journal of integrative medicine*, 11(6), 377-383.
- Kashani, L., Eslatmanesh, S., Saedi, N., Niroomand, N., Ebrahimi, M., Hosseinian, M., ... & Akhondzadeh, S. (2017). Comparison of saffron versus fluoxetine in treatment of mild to moderate postpartum depression: a double-blind, randomized clinical trial. *Pharmacopsychiatry*, 50(02), 64-68.
- Khalatbari-Mohseni, A., Banafshe, H. R., Mirhosseini, N., Asemi, Z., Ghaderi, A., & Omid, A. (2019). The effects of crocin on psychological parameters in patients under methadone maintenance treatment: a randomized clinical trial. *Substance Abuse Treatment, Prevention, and Policy*, 14(1), 1-8.
- Khazdair, M. R., Boskabady, M. H., Hosseini, M., Rezaee, R., & Tsatsakis, A. M. (2015). The effects of *Crocus sativus* (saffron) and its constituents on nervous system: A review. *Avicenna journal of phytomedicine*, 5(5), 376.
- Lopresti, A. L., Drummond, P. D., Inarejos-García, A. M., & Prodanov, M. (2018). Affron®, a standardised extract from saffron (*Crocus sativus* L.) for the treatment of youth anxiety and depressive symptoms: a randomised, double-blind, placebo-controlled study. *Journal of affective disorders*, 232, 349-357.
- Marx, W., Lane, M., Rocks, T., Ruusunen, A., Loughman, A., Lopresti, A., ... & Dean, O. M. (2019). Effect of saffron supplementation on symptoms of depression and anxiety: a systematic review and meta-analysis. *Nutrition reviews*, 77(8), 557-571.
- Orio, L., Alen, F., Ballesta, A., Martin, R., & Gomez de Heras, R. (2020). Antianhedonic and Antidepressant Effects of Affron®, a Standardized Saffron (*Crocus Sativus* L.) Extract. *Molecules*, 25(14), 3207. doi:10.3390/molecules25143207
- Pachikian, B. D., Copine, S., Suchareau, M., & Deldicque, L. (2021). Effects of Saffron Extract on Sleep Quality: A Randomized Double-Blind Controlled Clinical Trial. *Nutrients*, 13(5), 1473. doi:10.3390/nu13051473

## Impact Of Gut-Microbiota On Circadian Cycle

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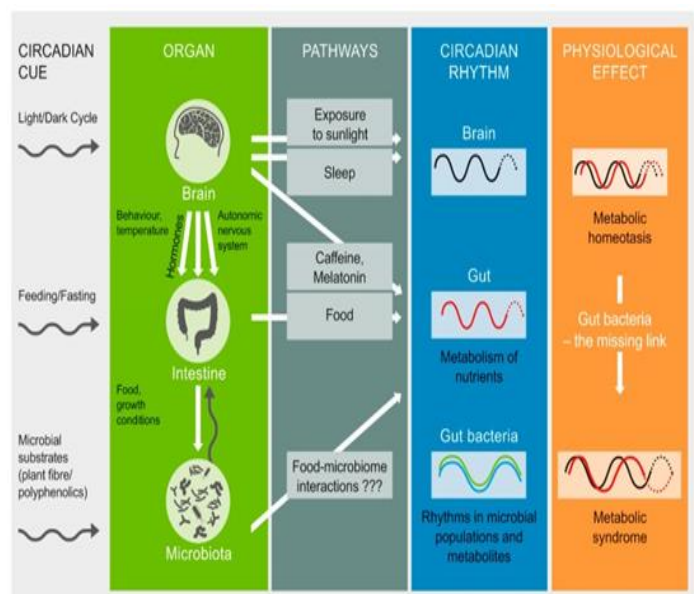
**Introduction:** Good sleep and a healthy diet are essential for maintaining a healthy gut microbiome. Manipulating daily rhythms of gut microbial abundance and activity may alter the biological time. Numerous studies have shown that the intestinal microbiota can regulate sleep and condition through the brain-gut axis. The altered microbiota may affect the function of the nervous system, thereby reducing a human ability to cope up with psychological and physical stress making them more liable to stressful life events and thereby affects the circadian cycle. The gut bacteria modulate host rhythms via Neurotransmitters like GABA ( $\gamma$ -amino butyric acid), noradrenaline, dopamine. Lifestyle stressors like altered sleep and eating patterns may disturb the host circadian system and also influence the gut microbiome.



**Circadian Cycle:** It's the natural cycle of physical, mental and behavior changes that the body goes through in a very 24 hours cycle. In mammals, the rhythm is controlled by the suprachiasmatic nucleus (SCN) of the hypothalamus. Besides this, the clock is present in most of the tissues of the liver, gut, heart, retina. The circadian clock network is key to maintain many physiological processes, especially metabolism and immune function. Disruption of this technique is related to various diseases such as- obesity, Diabetes, Cancer etc. Different organisms have different circadian responses to the light-dark cycle; humans are diurnal, or active during the day (in response to light), and rodents are nocturnal, or active at night. Many factors can disrupt the biological time.

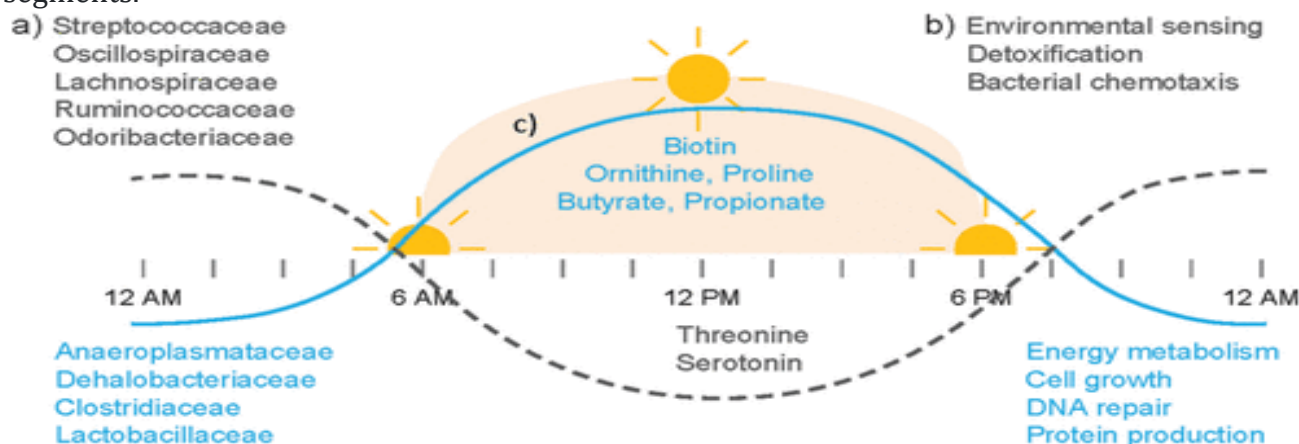
Such as-

- Environmental insults
- Gene polymorphisms, or behavior
- Jet lag
- Shift work
- "western" high-fat diet.



**Abnormal Light/dark cycle:** Many studies alter the light-dark cycle to look into its effect on circadian rhythmicity. Rhythmicity in bacterial adherence to the gut wall was influenced by multiple host factors. The effect of host's

feeding patterns was evident when microbial rhythmicity was phase-reversed by restricting the feeding to the light-phase in wild-type mice. However, Gut microbiota was affected in mice with mutations within the clock genes indicating a central role for host clock-controlled mechanisms in regulating gut microbiota. Circadian disruption for a period of 4 weeks supported a regime of constant light exposure was also studied in ad libitum-fed mice. It absolutely was found to extend *Ruminococcustorques* and reduce *Lactobacillus johnsonii*, organisms that will have roles in impairing and protecting the integrity of intestinal barrier, respectively. The role of light exposure on gut microbiota was also studied by subjecting ad libitum-fed mice to constant darkness for 2 weeks. In keeping with the studies, constant darkness disrupted microbial rhythmicity in both small and enormous intestinal segments.



[Circadian oscillation of the gut microbiome, like a) bacteria, b) functional pathways, c) bacterial metabolites. line, peaks at resting/dark phase. Solid line, peaks at active/light phase.]

## Conclusion:

There is growing evidence supporting not only an interaction, but also bidirectional communication between circadian rhythms and also the gut microbiota. Strong data linking biological time and gut microbiota dysfunction lie with their interactions with psychiatric illness and neurodegenerative disease. Further, the examination into metabolic disorders may be a crucial step within the right direction, and more research work has to be done to look at not only how both the microbiota-gut-brain axis and circadian rhythms influence disease, but also how they interplay with each other within the context of disease.

## References:

1. Li, Y., Hao, Y., Fan, F., & Zhang, B. (2018). The Role of Microbiome in Insomnia, Circadian Disturbance and Depression. *Frontiers in Psychiatry*, 9. doi:10.3389/fpsyt.2018.00669.
2. Liang, Xue; FitzGerald, Garret A. (2017). Timing the Microbes: The Circadian Rhythm of the Gut Microbiome. *Journal of Biological Rhythms*, (), 074873041772906-. doi:10.1177/0748730417729066.
3. Teichman, E. M., O'Riordan, K. J., Gahan, C. G. M., Dinan, T. G., & Cryan, J. F. (2020). When Rhythms Meet the Blues: Circadian Interactions with the Microbiota-Gut-Brain Axis. *Cell Metabolism*, 31(3), 448–471. doi:10.1016/j.cmet.2020.02.008.
4. Parkar, Shanthi; Kalsbeek, Andries; Cheeseman, James (2019). Potential Role for the Gut Microbiota in Modulating Host Circadian Rhythms and Metabolic Health. *Microorganisms*, 7(2), 41-. doi:10.3390/microorganisms7020041.

## Cardamom : Is It A Worthy Nutraceuticals?

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Cardamom (*Elettaria cardamomum*) is an herb whose seeds are used to make medicine as nutraceuticals. Cardamom is used for digestion problem including heartburn, irritable bowel syndrome (IBS), constipation, liver and gallbladder complaints, and loss of appetite. Cardamom powder supplementation also used in asthma, obesity, diabetes, cardiovascular disease, cancer, gastric ulcer, improves glucose tolerance as a nutraceutical. Nutraceuticals are medicinal foods that play a role in maintaining well being, enhancing health, modulating immunity and thereby preventing as well as treating specific diseases. Nutraceuticals have proven their health benefits and disease prevention capability, but should be taken according to their acceptable recommended doses.

Cardamom exhibits bronchodilatory effect, mediated through  $\text{Ca}^{2+}$  antagonist mechanism, which provides pharmacological basis for its application in the disorder of hyperactive status of respiratory system, known as asthma. Dietary supplementation of Greater cardamom favorably modifies lipid profile and significantly enhances fibrinolytic activity and total antioxidant status in patients with ischemic heart disease. The results strongly indicate that aspirin-induced gastric ulcer is associated with gastric mucosal damage and a significant disturbance to the antioxidant status and inflammatory biomarkers. Such deleterious effects were effectively eliminated by the oral supplementation of cardamom.



Cardamom has been used for traditional therapeutic applications, including the management of asthma, teeth and gum infections, cataracts, nausea, diarrhoea and also heart, digestive and kidney disorders, useful in diabetes as a nutraceutical. Administration of Greater cardamom significantly ( $P < 0.001$ ) reduced atherogenic lipids without significant alteration in HDL-cholesterol. Cardamom has digestive, carminative, anti-inflammatory, anti-microbial, aphrodisiac and diuretic properties. It boosts digestion and stops nausea, vomiting. So, Cardamom can be used as a nutraceutical in controlling various diseased conditions.

## References:

- 1) AlAli, M., Alqubaisy, M., Aljaafari, M. N., AlAli, A. O., Baqais, L., Molouki, A., ... & Lim, S. H. E. (2021). Nutraceuticals: Transformation of Conventional Foods into Health Promoters/Disease Preventers and Safety Considerations. *Molecules*, 26(9), 2540
- 2) Alves, Q. L., Camargo, S. B., & Silva, D. F. (2019). Role of nutraceuticals in the prevention and treatment of hypertension and cardiovascular diseases. *Journal of Hypertension and Management*, 5, 37.
- 3) Heimesaat, M. M., Mousavi, S., Weschka, D., & Bereswill, S. (2021). Anti-Pathogenic and Immune-Modulatory Effects of Peroral Treatment with Cardamom Essential Oil in Acute Murine Campylobacteriosis. *Microorganisms*, 9(1), 169.
- Khan, A. U., Khan, Q. J., & Gilani, A. H. (2011). Pharmacological basis for the medicinal use of cardamom in asthma. */// Bangladesh Journal of Pharmacology///*, 6(1), 34-37.
- 4) Qiblawi, S., Kausar, M. A., Shahid, S. M. A., Saeed, M., & Alazzeah, A. Y. (2020). Therapeutic Interventions of Cardamom in Cancer and Other Human Diseases. *Journal of Pharmaceutical Research International*, 74-84.

## Heal The Gut Health Of Sam Children With Probiotics

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MSc 4<sup>th</sup> Semester

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Severe Acute Malnutrition (SAM) is a major challenge in low income, developing countries among infants under 5 years. Severe Acute Malnutrition is defined by a very low weight for height (below -3z scores of the median WHO growth standards), by severe wasting (visible), or by the presence of nutritional oedema. SAM affects about 20 million of children & causes deaths up to 1 million of children annually by increasing susceptibility of death from infections.

Acute diarrhoea due to the gut dysbiosis condition is a common mortality factor & indicator of poor prognosis among children suffering from SAM. Diarrhoea is common in malnourished children due to the variety of bacterial, viral and parasite organisms in intestinal tract. Human gut microbiota is the complex eco-system of human body with a close interaction of microbes, nutrients &  $10^{14}$  numbers of host cells of bacteria, archaea, fungi & viruses. But gut microbiota dysbiosis condition i.e. increased no. of bad bacteria & decreased no. of good bacteria in human may be involved in the development of acute malnutrition. Introduction of Probiotics "A live micro-organisms" into the diet of children plays an important role to prevent & treat diarrhoea.

According to FAO/WHO panel (FAO/WHO 2001) Probiotic is defined as "Live micro-organisms which, when administered in adequate amounts, confer a health benefit on the host." There are numerous health benefits of Probiotic such as it is beneficial not only in gastrointestinal diseases (diarrhoea, IBD, IBS, necrotizing colitis etc.) but also in some lifestyle disorders (CVD, obesity, diabetes etc.).

Consumption of natural probiotic i.e. human milk, a rich source of probiotic species *Lactobacillus fermentum* is really beneficial to prevent infectious & antibiotic-associated diarrhoea among infants. *Lactobacillus rhamnosus* (LGG), *Bifidobacterium lactis* and *Saccharomyces boulardii* are some of probiotic species, important to prevent and treat acute diarrhoea. Addition of probiotic rich foods in the diet such as- yogurt, soy milk, probiotic infant cereal & infant formula, fermented milk and vegetable products are also effective for treating diarrhoea.



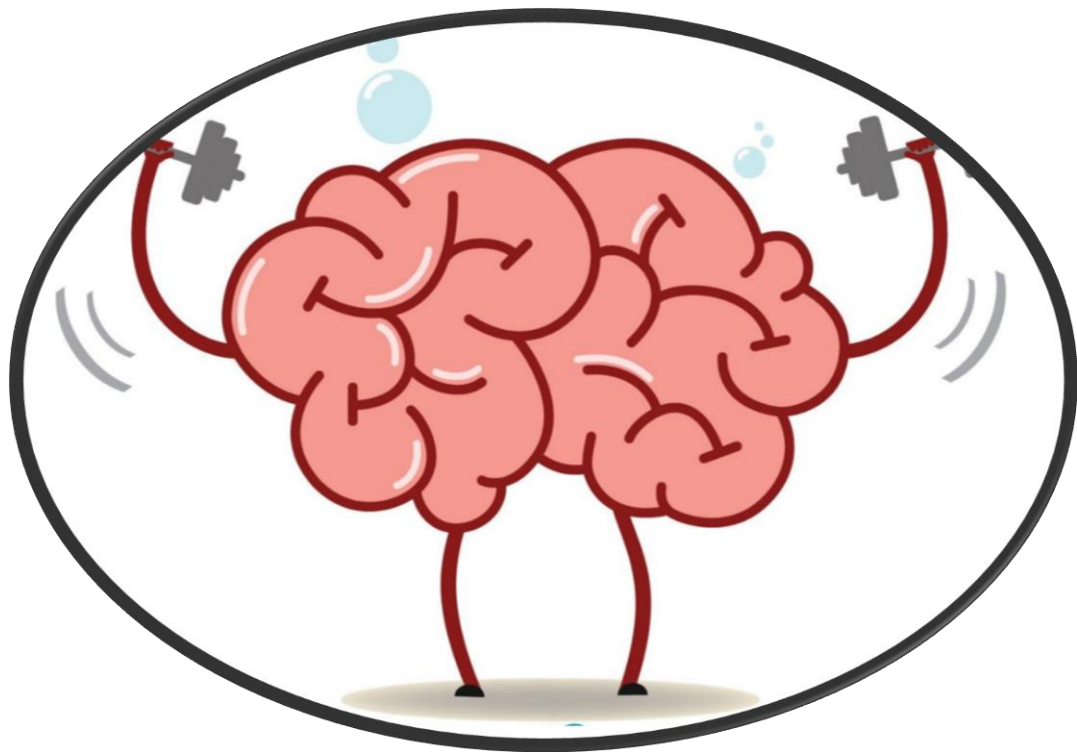
Probiotic acts on infant gut different mechanisms of actions, such as-

- **Trophic interaction-** Probiotics metabolize simple and complex carbohydrates which produce growth substrate for commensal & probiotic consumption increases short chain fatty acids production- butyrate which favors the growth of commensal and prevent the growth of pathogen.
- **Direct interaction-** Probiotics directly modify gut environment by producing inhibitory and stimulatory factors, bacteriocins etc. which improves gut colonization.
- **Indirect interaction-** Probiotics administration also influence the gut microbiota indirectly through host response modification, production of secretory Ig- A and by increasing gut barrier epithelial integrity which prevents enter of pathogens from outside of the gut into inside and thus maintain gut physio- chemical environment.

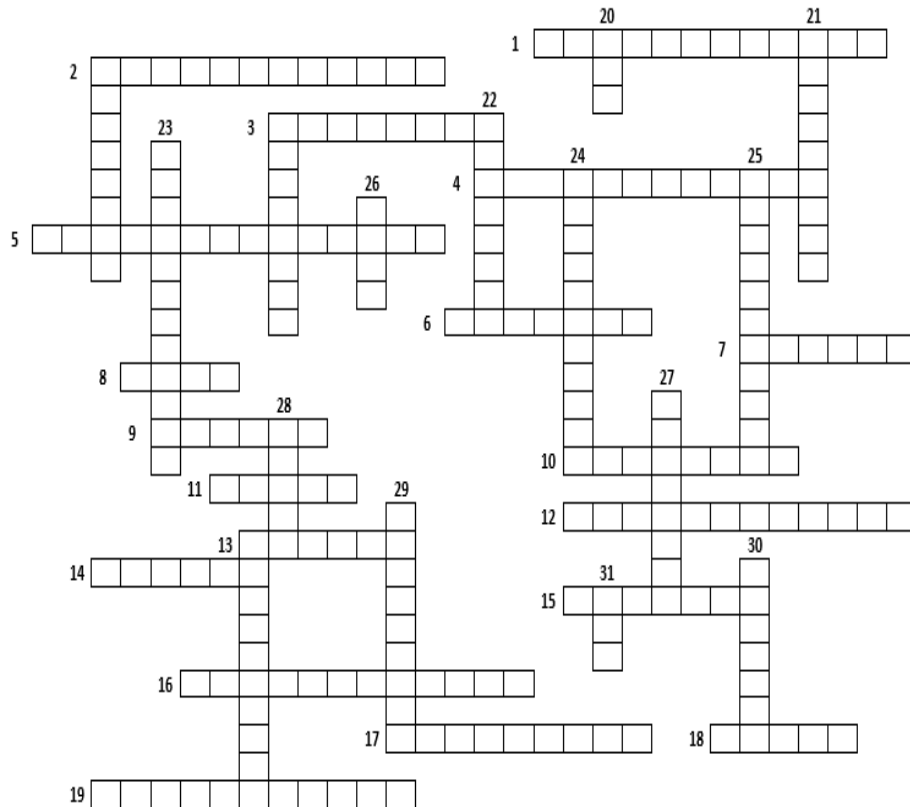
### References:-

1. Castro-Mejía, J. L., O'Ferrall, S., Krych, Ł., O'Mahony, E., Namusoke, H., Lanyero, B., Kot, W., Nabukeera-Barungi, N., Michaelsen, K. F., Mølgaard, C., Friis, H., Grenov, B., & Nielsen, D. S. (2020). Restitution of gut microbiota in Ugandan children administered with probiotics (*Lactobacillus rhamnosus* GG and *Bifidobacterium animalis* subsp. *lactis* BB-12) during treatment for severe acute malnutrition. *Gut microbes*, 11(4), 855–867.
2. Grenov, B., Namusoke, H., Lanyero, B., Nabukeera-Barungi, N., Ritz, C., Mølgaard, C., Friis, H., & Michaelsen, K. F. (2017). Effect of Probiotics on Diarrhea in Children With Severe Acute Malnutrition: A Randomized Controlled Study in Uganda. *Journal of pediatric gastroenterology and nutrition*, 64(3), 396–403.
3. Bhutta ZA, Berkley JA, Bandsma RHJ, et al. Severe childhood malnutrition. *Nature reviews. Disease Primers*. 2017 Sep;3:17067. DOI: 10.1038/nrdp.2017.67. PMID: 28933421; PMCID: PMC7004825.

# *Train Your Brain*



## Nutriword-Puzzle



### Across:-

1. Macronutrients that provide energy.
2. It is a diet that contains balanced amount and proper proportions of all the necessary nutrients.
3. A simple sugar or hexose sugar that found in honey and in many ripe fruits, one with six carbon atoms in it.
4. Abnormally rapid heartbeats, over 100 beats per minute.
5. It is a heat treatment process that preserves

food by high temperature below 100°C.

6. It is a condition in which the decrease in the total amount of RBCs or hemoglobin in the blood.
7. It is a process of getting older.
8. It's something that nourishes our body and provides what's needed, something to be healthy, grow and develop also.
9. It is a substance which is used to identify the presence of starch.
10. Are the constituents or ingredients of

food that promotes our growth, provides energy and maintains life?

11. It is the clear liquid that has no colour, taste or smell.
12. It is a health problem occurs due to inadequate intake of fiber.
13. It is a disease that occurs during less intake of iodine.
14. A number of \_\_ are grown in different countries which includes oats, maize etc.
15. It is a condition that means have too much of body fat.
16. A state of poor nutrition can result from insufficient or unbalanced diet or from inability to absorb foods.
17. It is a science of food, that using for growth, metabolism and repair.
18. It is a microorganism which is used in bread making.
19. Animal sterols that are normally synthesized by the liver.

**Down: -**

2. It is a food borne illness caused by *Clostridium botulinum*.
3. It is a method of food preservation using very low temperature
20. It is the average daily dietary intake

level that is sufficient to meet the nutrients requirements.

21. Organic compounds containing an amino group and carboxyl group and hydrogen atom that are the building blocks of proteins.
22. Hormone that plays various role in female's body.
23. Abnormal loss of bone tissue resulting in fragile porous bones attributable to a lack of calcium.
24. Ultra-low-density lipoproteins which transport lipids from intestine to other parts of the body.
25. A harmful reduction in the amount of water in the body.
26. It is a compulsive eating disorder in which people eat nonfood items like chalk.
27. It is a severe condition to the deficiency of protein and energy.
28. It is a fermented soya product.
29. The period of developing inside the womb between conception and birth.
30. Daily practices to maintain health and prevent spread of diseases.
31. It is a value derived from the mass (weight) and height of an individual.

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- Presented by

Srayasree Ghosh, Jayeeta Banerjee, Aishwarya Manna, Tanisha Dhar,  
Sukriti Bera

BSc. 6<sup>th</sup> Semester

# *Knock-out*



*--A Short Skit*

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## A WAR OF WORDS BETWEEN BREAST MILK AND FORMULA MILK

- Formula milk: This morning is full of joy

(Walking down the park, he comes across a familiar face)

Ahh! O my god! What a pleasant surprise! How are you sir? How are you enjoying your retired life?

- Breast milk: Oh!!!! I'm fine... thank you very much!!! But sir why do you say that I'm retired?
- Formula milk: Oh, you are not, really?? But you look old enough to retire.
- Breast milk: Hmm!!! I may have been around for a long time, but I am still fit and fine. My value only increases with my age, but how would you know ... you are just a novice..
- Formula milk: Ha HaHa Ha!!!!!! Absolutely not, old man .... your time is over, I am the popular one now. But don't feel too bad, people will always remember you even if you are not around.
- Breast milk: Hold on!!!! Do you mean that my time is over and you are far better than me??!! That is funny indeed!!
- Formula milk: Of course!! Nowadays everyone trusts & loves me for their newborns much more than you.
- Breast milk: Oh!! You are so mistaken. You have no idea how much people still depend on me.
- Formula milk: Oh really!! Let's play a little game and find out whose who. So, tell me what qualities do you have?
- Breast milk: You have no idea I am the best in the world declared by the American Academy of Pediatrics & American Medical Association and also World Health Organization (WHO)

They recommended

BREAST  
MILK IS  
THE BEST  
MILK

that

NEWBORN BABIES  
SHOULD BE  
BREAST FED

## Did You Know that?

### Breast feeding

Defend against infection and allergy and protect against a number of chronic condition.

Contain taurine which is a important neurotransmitter and neuromodulator for brain and retina.

It also have some hormones like TSH, calcitonin, oxytocin, corticosteroid and growth factor.

Helps to strengthen the immune system of new born by providing antibodies. And lowers the risk of infection like diarrhoea, respiratory infections and SIDS(Sudden Infant Death Syndrome).

Contain lactalbumin(amino acid which present only in breast for the new born.

Controls brain serotonin synthesis which keep the baby's mood happy.

Contains immunoglobulin like IgA, IgG, and IgM which are defensive against many bacteria and virus.



Helps to destroy influenza, poliomyelitis and diphtheria by engulfing their causative agent.(Macrophage activities)

- Some studies suggest that children who were exclusively breast fed have slightly higher IQs than children who are formula fed.
- Main point I don't cost a cent I am beneficial for the mother too
- I help to shrink the uterus so they are able to return to their pre-pregnancy shape and weight quickly.
- Studies also suggest that breast feeding helps to lower the risk of breast cancer, High blood pressure, diabetes and CVD and may also help to decrease the risk of uterine and ovarian cancer.



Breast feeding builds a strong bond between mother & baby

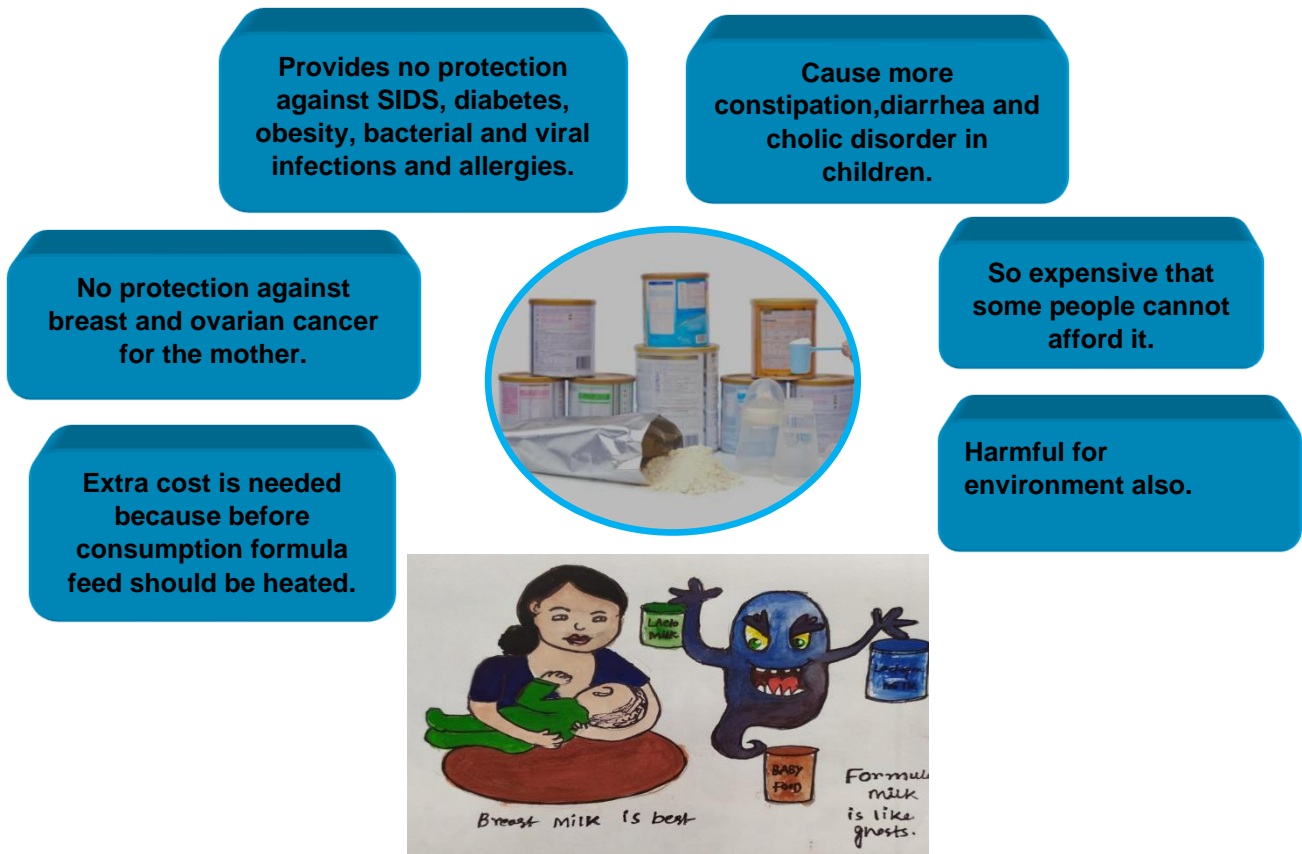


Feeding of formula milk does not make any strong bond between mother & baby

- Formula milk:Ok Ok, Stop!!! I need to go somewhere; I will talk to you later.
- Breast milk:Ha Ha Ha Ha!!!! So you want to run away now???

Wait Sir Wait!!Don't you want to know what people think about you.

## Formula feeding



- **Formula Milk**:I don't believe you one bit. I know people love me a lot and depend on me.
  - **Breast Milk**: Don't stay in a fool's paradise. Just because you appear in TV ads doesn't mean people like you a lot.
  - **Formula Milk**: hmmmff !!  
[formula milk makes a hasty getaway without speaking anymore]

Once again it is proven that not only is **breast milk** the best but it is a must for infants.

- Presented by

*Madhurima Roy and Anuska Satpati*

*MSc. 3<sup>rd</sup> Semester*

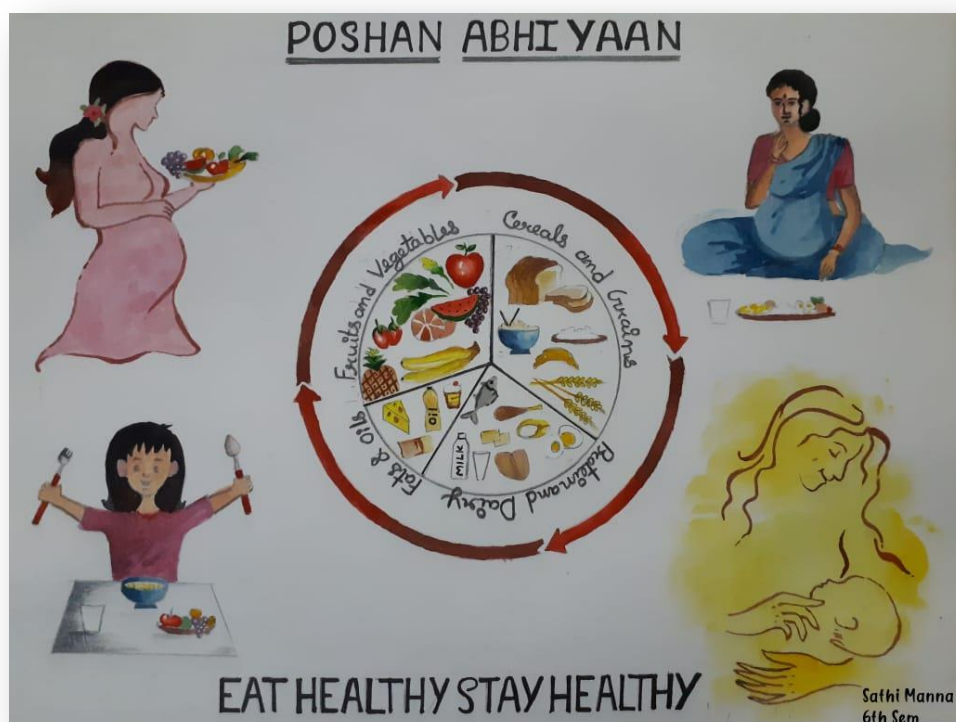
# *The Fine Touch*





*Eat Healthy, Stay Healthy, Make The Planet Healthy*

*Anamika Paul  
BSc. 2<sup>nd</sup> Semester*



*Sathi Manna  
Bsc. 6<sup>th</sup> Semester*

# নিউট্রিশনের পাঁচালী

- Madhurima Saha (MSc. 4<sup>Th</sup> Semester)

I am a Student of Nutrition.  
শোনাতে চলেছি  
পাঁচালী of Post-graduation.  
খাদ্য পুষ্টি- পরিপাক  
জীবনে এনেছে দুর্বিপাক।  
বিপাক, শ্বসন, রেচন, স্নায়ু  
প্রতিনিয়ত কমিয়ে দিচ্ছে আয়ু।  
Diabetes, Blood-pressure, Ulcer  
করছে জীবন হারখার।  
Oil-Butter না Milk-Egg!  
এইভাবেই বাড়ছে headache.  
Kidney, Liver, Ulcer, Fever  
এসব নিয়েই করছি suffer.  
Epidemiology-র Cohort Study,  
ভগবান! একি জিনিস দেখালি!  
সঙ্গে আবার Food Science  
সাথে নিয়ে Nutrition Science.  
Biochemistry-র reaction,  
নেই কোনো end production.  
Syllabus-এর ভীষণ চাপ  
জীবন হাঁসফাঁস।  
এই আমাদের Nutrition  
যা দিয়েছে আমাদের Graduation.

শেষ নয় এতেই...অন্ত থেকে আরম্ভ এতেই।  
Statistics আছে পিছেই  
যাতে আছে probability মিশেই।  
সঙ্গে আছে physiology  
যার নামেই বাড়ে ধুকপুকানি।  
Research-এর পেপার ঘাটা  
বুঝি সামনে দেখি মরুভূমির মরীচিকা।  
Microbiology- র ব্যাকটেরিয়া  
জীবন আমার দিশেহারা।  
Diet মানে নয় রোগা হওয়া  
Diet মানে রোগের থেকে জয়লাভ পাওয়া।  
এই আমাদের Nutrition  
যা দিয়েছে আমাদের Post-Graduation.  
আমাদের বিষয় নয় রান্না করা  
আমাদের বিষয় পুষ্টিতে ভরা।  
যদি হতে চাও Healthy & fit  
So follow the healthy tips.  
Reduction of weight is necessary?  
Diet chart is mandatory.  
Nutrition মানেরান্নাকরা  
ঝেড়েফেলুনভুলধারণা।  
So respect nutrition  
Get an easy solution.



# অপুষ্টি

- শৌর্যশ্রী ভট্টাচার্য (BSc. 6<sup>th</sup> Semester)

অপুষ্টি অনিচ্ছাকৃত, অপুষ্টি অনাহৃত

অপুষ্টির কড়াল গ্রাসে, দৈন্য আজ মৃত ।।

খাদ্যাভাবে পেটের মোচর ;

অগোচরেই সচরাচর—

শিব ডুবেছে দুধসাগরে,

শব জমেছে একনাগাড়ে ।

ভাতের থালা শুকনো আজও, বিবর্ণ চোখ মুখ

পিপ্তি পড়া পেটের জ্বালা বুঝবে কী উন্নয়ন-এ-মুক ?



Shilpa Majhi  
BSc. 6<sup>th</sup> Semester



Dwipannita Guha  
BSc. 4<sup>th</sup> Semester

# সদ্যজাতের প্রথম চিঠি

---দিশানী সাহা (BSc. 6<sup>th</sup> Semester)

ছোট আমি পৃথিবীর বুকে আজই নিলাম entry,  
মাতৃদুগ্ধ পান করেই হবো আমি ভীষণ healthy।।

আগামী ছ-মাস মাতৃদুগ্ধই হবে আমার প্রধান খাদ্য,  
এটি পুষ্টি সমৃদ্ধ, লঘু, তরল এবং সহজপাচ্য।।

মাতৃদুগ্ধের কোলোস্ট্রাম বাড়াবে আমার অনাক্রম্যতা,  
একই সাথে এটিই আমায় দেবে দীর্ঘস্থায়ী সুস্থতা।।

মাতৃদুগ্ধের গ্লুকোজ ও ফ্যাটি অ্যাসিডই আমার শক্তির উৎস,  
এবং এর প্রোটিন, ফ্যাট হজম করাও আমার পক্ষে সহজসাধ্য।।

মস্তিষ্কের বিকাশ আমার করবে ট্রিপটোফ্যান,  
মাতৃদুগ্ধই করবে আবার বিভিন্ন ভিটামিন, খনিজলবণ প্রদান।।

লাইসোজাইম, ম্যাক্রোফেজেস নামক সব রোগ প্রতিরোধক উপাদান,  
বসন্ত, হাম, পোলিও, ইনফ্লুয়েন্জা সহ বিভিন্ন রোগের করবে অবসান।।

মাতৃদুগ্ধই করবে আমার চোয়াল শক্ত,  
মাতৃদুগ্ধই পান করে হবো আমি প্রফুল্ল ও তৃপ্ত।

# শিশুর সুস্থতা- কমায় মায়ের ব্যস্ততা

-----দীপাঙ্খিতা গুহ (BSc. 4<sup>th</sup> Semester)

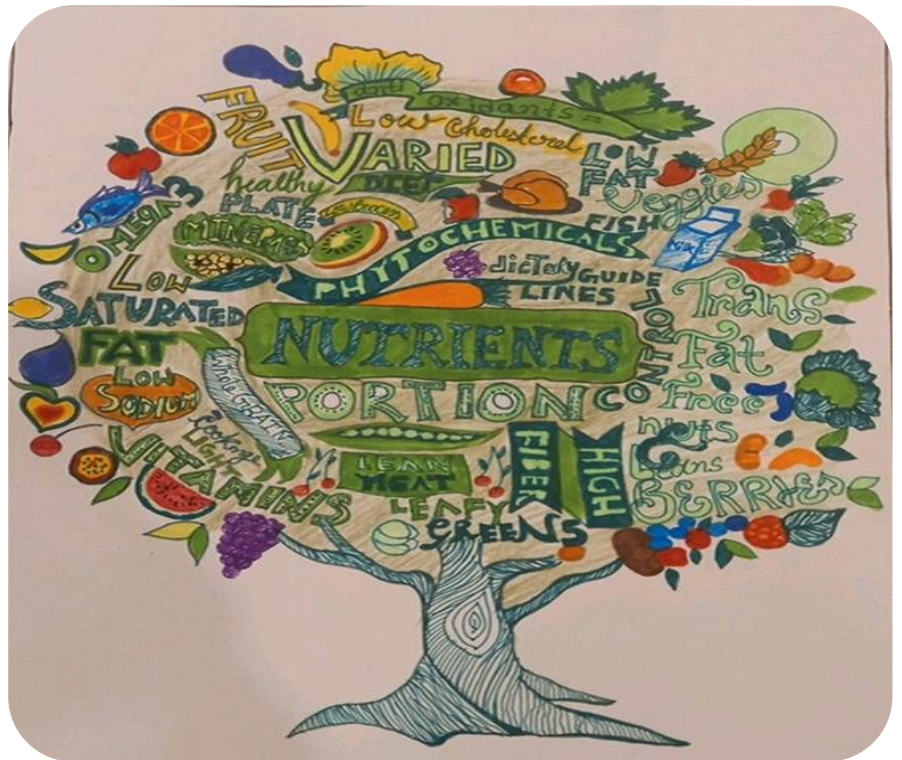
শিশু আমার রুগ্ন বড়ো,  
হয়না সে যে মোটা।  
দেখলে পরে বাড়ির খাবার,  
সিটকোয় নাক অমনি আবার।  
রেস্তোরাঁর খাবার-দাবার,  
চেটে পুটে করে সাবাড়।  
সঠিক স্বাস্থ্য বজায় রাখতে,  
বন্ধ যাওয়া রেস্তোরাঁতে।  
খাওয়াই তাকে কেমন করে,  
বাড়ির খাওয়ার ভরে ভরে???  
ভাবতে ভাবতে বুদ্ধি এলো,  
বাইরের খাবার বেশ দেখতে ভালো।  
সাজবে এবার বাড়ির খাবার,  
যেমন চায় শিশু আমার।  
পাল্টে পাল্টে করব রান্না,  
বন্ধ হবে শিশুর বায়না।  
খাওয়ানো তাকে অল্প অল্প,  
রাজা-রানীর চলবে গল্প।  
এখন সব চলছে ঠিক,  
শিশুর স্বাস্থ্য আছে সঠিক।



Anamika Paul  
BSc. 2<sup>nd</sup> Semester

*There is nothing as powerful as a mother's  
Love and nothing as healing as child's soul*

Anamika Paul  
BSc. 2<sup>nd</sup> Semester



*All About Nutrition*

# *Taste of India*



*Amrita Halder*  
*MSc. 4<sup>th</sup> Semester*

## *Rangeen Hariyali Idli*

### **Ingredients:**

Mooghdal, curd, baking soda, hing, salt, mustard oil, black mustardseed, dry red chilli, curry leaf, coriander leaf, ginger, garlic, green chilli, cashew, channa dal, tomato, onion, coconut and sambar masala.



### **Method of preparation:**

- Idli:** 1) Moogh dal should be soaked in water for 2 hours.
- 2) Then make a paste with moogh dal, salt, baking soda and yogurt.
- 3) Heat the oil in a pan and stir with the black mustard seed, curry leaf and mix it with the moogh dal paste.
- 4) Now take a idli maker, take the paste by a spoon and steam for 30-45 minutes.

**Idli with sambar:** 1) Heat oil in a pan and stir with the black mustardseed, tomato, onion, sambar masala and ginger, for a while.

- 2) Make a smooth paste with these ingredients.
- 3) Then heat the oil in a pan and stir with the black mustard seed, curry leaf and mix it with the sambar paste.

Now, the "RANGEENHARIYALI "IDLI" is ready to serve

### **Nutritional significance:**

Idli is a very popular south Indian cereal based nutritious dish, which contains huge amounts of beneficial bacteria, which is very good for our health and helps in the digestion. It is mainly used as a breakfast and snacks. Idli is a steamed cake. They are less in calorie and contain no fat. They are rich in protein, dietary fibre and also rich in vitamins and minerals like calcium, folate, potassium and vitamin A.

*-Sayantika Mondal*

*Bsc. 6<sup>th</sup> Semester*

## *Soya Mixed Chiwada*

### **Ingredients:**

1. Processed soyabean = 25g.
2. Rajmah = 25 g .
3. Whole Green gram = 25g.
4. Whole Bengal gram = 25 g.
5. Oil= 25 g.
6. Salt and chat masala As per taste.



### **Method of preparation:**

1. Soak whole green gram, rajmah, whole bengal gram& processedsoyabean in sufficient water for 8 to 10 hoursindividually.
2. Remove whole green gram, rajmah,whole bengal gram and soyabeanfrom water and dry for a few minutes.
3. Deep fry processed soyabean, whole green gram, wholebengal gram and rajmah separately.
4. Mixed all fried pulses. Add salt & chat masala.

### **Nutritional significance :**

Soya mixed chiwada is an easily digestible, tasty snacks & tiffin item. This healthy dish contain high amount of protein. As we all know, proteins are the building blocks of our cells; they are also essential for maintaining growth, repairing tissue, keeping our immunity in top shape, maintaining our blood volume and are an essential part of almost every hormone, and enzyme. The dish also contain minerals like iron , magnesium , copper , phosphorus & B-vitamins like thiamine , niacin , folic acid etc. As a good source of vitamins, minerals & fibre this dish may offer a variety of health benefits , such as improving digestion , aiding weight management , reducing the risk of diabetes , cancer , boosting mental health , help to strengthen bones. This protein enrich dish can be given to pre-schooler , school going children , adolescents , pregnant women & specially those who are suffering from protein energy malnutrition & anaemia.

- Meghma Banerjee

BSc. 4<sup>th</sup> Semester

## *Til (Sesame Seed) Halwa*

### **Ingredients:**

Til (sesame seed)-1/2 cup, semolina- 3 Table spoons,Milk-1 cup, Ghee - 1 table spoon, sugar or jaggery- 2 table spoons, Cardamom- 3 pieces, Nuts and raisin-2 table spoons(Optional)and water-1 cup.

### **Method:**

- 1) Dry roast the semolina and nuts . Soak the sesame seed (for 10 minutes) .Then grind the sesame seeds into a smooth paste.
- 2) Heat a pan ,add ghee.
- 3) Add the dry roasted semolina stir it for 2 minutes .Then add sesame seed paste , sugar and cardamoms. Stir it for 5 minutes .
- 4) After that, add milk and water .Stir it properly.
- 5) Once the halwa turns into the desired consistency add the nuts (optional).
- 6 ) Serve it.



### **Nutritional significance:**

Sesame seed halwa is very much healthy. It mainly provides a good amount of protein, vitamin and minerals (vitamin-A, vitamin -B6, calcium, magnesium etc). Along with that sesame seed halwa provides complex carbohydrates and healthy fats which is necessary for maintaining a healthy balanced diet. Til halwa also provides a good amount of energy therefore it can be taken as a breakfast and evening snacks also. Til halwa specially recommended for the school children, oldage person, pregnant and lactating mothers.

*-Dipannita Guha*

*Bsc. 4<sup>th</sup> Semester*

## Water Lilies Stalk Fry Curry

### **Ingradiant:**

- 1) Water Lilies stalks chopped - 2 cup.
- 2) Chopped onions - 2 tablespoons.
- 3) Mustard Oil - 2 tablespoons.
- 4) Salt - As required.
- 5) Green chillies - 2 pieces.
- 6) Mustard paste - 1 teaspoon.
- 7) Turmeric powder - 1 teaspoon.
- 8) Garam masala powder - 1/2 teaspoon.



### **Steps:**

- 1) Take out the fibrous skin of the flower stems or stalk. Then cut in 1.5"/2" long pieces. Try to cut all in same sizes.
- 2) Wash them and drain. Keep it aside. Now take a frypan, put some oil and heat it on stove.
- 3) Put chopped onions, green chillies with salt as required into oil and fry for 1 minute.
- 4) Add turmeric powder, garam masala powder, mustard paste, water lilies stalks into it and mix them well. Cover the frypan untill stalks are 100% cooked and done.

### **Nutritional significance:**

Water lilies stalk fry curry is a traditional, easily digestible, low cost dish. It can be given as a lunch item. Antioxidant polyphenol present in it, research shows polyphenols can help to manage blood pressure levels and keep our blood vessels healthy and flexible. This dish also has a good source of water (moisture content 94.30%). This healthy dish contains many essential minerals like iron, potassium, sodium. It's also a good source of Vitamin E which is called anti- sterility vitamin. As a good source of vitamins, minerals and fiber this dish may offer a variety of health benefits, such as improving digestion, reducing cholesterol levels, preventing anemia, skin, prostate & breast cancer. This low cost iron rich dish can be given to adolescents, pregnant women & specially those who are suffering from malnutrition & anaemia.

-  
*Disha Sarkar*  
*Bsc. 4<sup>th</sup> Semester*

# *Finders Keepers*



# Word Search

K	Y	I	H	O	V	G	O	D	P	B	P	N	I	A	C	I	N
W	S	C	F	O	V	L	C	S	N	I	E	T	O	R	P	D	O
A	A	K	F	L	S	A	C	M	E	V	V	V	R	X	C	M	I
S	D	A	R	T	H	R	I	T	I	S	W	A	Q	H	L	B	T
H	O	C	N	P	L	Q	P	R	A	P	L	S	D	C	M	E	S
I	D	Q	Y	O	S	M	O	S	I	S	K	U	L	J	I	W	E
O	P	B	V	U	R	N	E	T	U	L	G	C	P	F	N	E	G
R	T	S	G	C	L	E	I	K	M	B	E	R	I	B	E	R	I
K	E	P	Y	G	N	V	X	W	C	P	X	S	Y	Q	R	F	D
O	W	M	J	Z	N	G	N	I	N	N	A	C	H	N	A	L	P
R	F	V	Y	O	B	O	K	T	A	N	A	V	F	R	L	J	I
P	T	M	U	A	N	T	I	O	X	I	D	E	N	T	S	W	D
W	E	D	H	L	H	D	A	U	T	X	U	P	R	E	U	V	P
Q	S	G	I	F	J	X	T	B	K	H	L	H	C	M	B	P	G
O	S	I	S	E	H	T	N	Y	S	O	T	O	H	P	P	G	R
L	T	P	N	S	P	O	I	L	A	G	E	W	B	H	P	L	F
J	A	K	P	I	P	T	B	L	O	Q	R	B	D	L	U	X	E
U	R	Y	U	L	J	T	Y	V	O	H	A	T	R	U	G	O	Y
J	C	O	L	O	S	T	R	U	M	Q	N	O	C	K	P	W	L
P	H	L	B	P	K	L	E	E	N	E	T	O	R	A	C	V	Y
G	T	G	Y	K	B	E	G	B	V	T	M	U	R	E	B	I	F
H	J	P	I	R	R	A	D	I	A	T	I	O	N	X	C	K	F
H	V	I	H	R	B	D	G	N	Z	P	I	O	S	Q	L	B	U

- Presented by

Aishwarya Manna Tanisha Dhar

Jayeeta Banerjee, Srayasree Ghosh, Sukriti Bera

BSc. 6<sup>th</sup> Semester

# *The Wall*



# HEALTHY HABITS DURING PREGNANCY



## Goals

To maintain and improve maternal/ infant health and well-being through patient education including nutrition education. Periodic surveillance, laboratory testing, and risk assessment including risks of genetic disease and birth defects.





## 10 TIPS FOR A HEALTHY PREGNANCY

### PREGNANT DIET



**Get early prenatal care**  
**Maintain a healthy diet**  
**Take prenatal vitamins**  
**Exercise regularly**  
**Eliminate alcohol and limit caffeine**  
**Limit your exposure**  
**Drink more water**  
**Sleep Well avoid stress**  
**Stay clean & take care yourself**  
**Connect with your doctor**











## RESULTS

**If the above mentioned advises are followed properly, Newborns come in a range of healthy sizes and weight Or it will help you to have healthy baby.**

REFERENCE

https://www.pregnancy.com/healthy-pregnancy/10-tips-for-a-healthy-pregnancy/

Souryasree Bhattacharya

BSc. 6th Semester



## EAT RIGHT FUTURE BRIGHT

PRESENTED BY-  
SAYANTI KUMAR

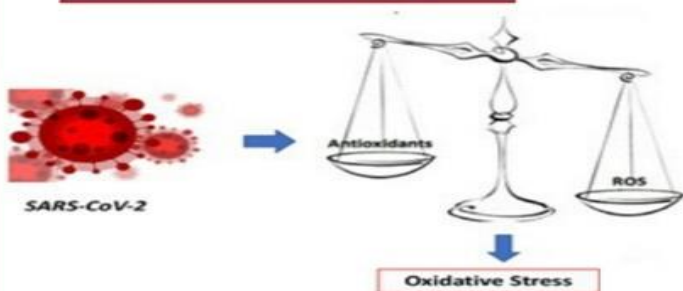
Definition:- Antioxidant is a substance that reduces the damage due to oxygen, such as that caused by free radicals.



### EXAMPLES



### IN COVID SCENARIO



### BENEFITS

- Fights signs of ageing
- Brain Health
- Immune System Modulation
- Male Fertility
- Joint, Tendon and Muscle Support
- Eye Health
- Cardiovascular Support
- Athletic Performance & Energy Levels

Sayanti Kumar  
MSc. 3rd Semester

# Amazing Health Benefits of DRAGON Fruit (Pitaya)

In case of a cup of dragon fruit serving can provide human body with :-

Calories-136 kcal, protein- 3 gm, Fat-0 gm, Carbohydrates- 29 gm, Vitamins C & E- 9% & 4%, Fibre- 7 gm, Iron- 8%, Magnesium- 18%

## Benefits

- Improves Eyesight
- Improves Digestive System
- Storehouse of Vitamins
- Prevent Diabetes
- Boost Immune System
- Improves Cardiovascular Health
- Prevent Cancer
- Strengthens Bones & Teeth
- Improves Skin Health
- Reduce Anxiety & Stress

## Disadvantages

The daily recommendation for adults is at least 1cup of this fruit serving. If it intake with excess then develop symptoms of an allergic reactions like :-

- .Abdominal Pain
- .Rash
- .Nausea
- .Swelling of tongue, lips
- .Shortness of breath

But this type of reactions seems to be very rare.

*Anindita Chakraborty*

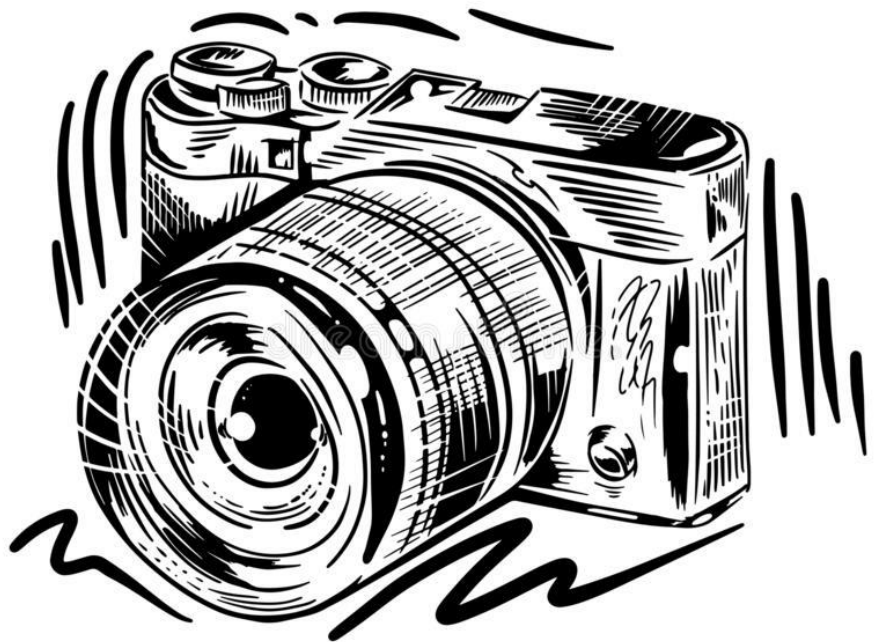
*BSc. 2<sup>nd</sup> semester*



Manideepa Mukherjee

BSc. 4<sup>th</sup> Semester

# *Through the Lens*





**Bread bird**

*Arpita Nandi & Ritika Show*  
*BSc. 4<sup>th</sup> semester*

*Pritha Ghosh*  
*BSc. 4<sup>th</sup> Semester*



**Curry Leaves**



**Fruit Salad**

Ahana Majumdar  
BSc. 6<sup>th</sup> Semester



পথের ধারের জীবিকা



Ahana Majumdar  
BSc. 6<sup>th</sup> Semester

পেটের টানে রাস্তায় নামে, আগুন দিয়ে খাবার বানায়, যা পায় তাই খায়, বোঝে না গো পুষ্টির খাদ্যের মানে।



*Anushka Bhattacharyya*  
*BSc. 2<sup>nd</sup> Semsester*

**If you can't feed them, then please don't beat them**



*Anushka Bhattacharyya*  
*BSc. 2<sup>nd</sup> Semsester*

**A busy bee collecting honey.**

*Anushka Bhattacharyya*  
*BSc. 2<sup>nd</sup> Semester*



**That is the reason why Bengalis have a proverb “Machhe bhate bangali”.**



**The dried up juice**

*Oikantika Singha*  
*BSc. 4<sup>th</sup> Semester*



*Anushka Bhattacharyya*  
*BSc. 2<sup>nd</sup> Semsester*

**Distribution of food and water for the amphan victims (2020) by the local club members.**

*Anushka Bhattacharyya*  
*BSc. 2<sup>nd</sup> Semsester*



**A cup of tea is an excuse to share great thoughts with great minds.**

# *Special Mentions*



## *Achievement*



Jayeeta Banerjee  
BSc.6<sup>th</sup> Semester

- Awarded as a Dietitian from Red Volunteers Health Checkup Camp



Souryasree Bhattacharya  
BSc. 6<sup>th</sup> Semester

- Achieve 1<sup>st</sup> position in Certified Diabetes Educator course from Horizon Lifeline Hospital & started Working as Diabetes Educator at Diabetologist Dr. Utsa Basu's Clinic
- Get a job as PR Manager and PR Journalist at LaughaLaughi Private Limited.



Bithi Adak  
BSc. 6<sup>th</sup> Semester

- Awarded as a Dietitian from Red Volunteers Health Checkup Camp



**Madhurima Saha**  
MSc. 4<sup>th</sup> Semester

- **Kolkata Police Safe Drive, Safe Life Marathon (5K) finisher 2019**
- **Got 3<sup>rd</sup> position in Elocution Competition , 2020 organized by Union Bank of India about the topic: Role of Women in Building The Society**



**Dipannita Guha**  
BSc. 4<sup>th</sup> Semester

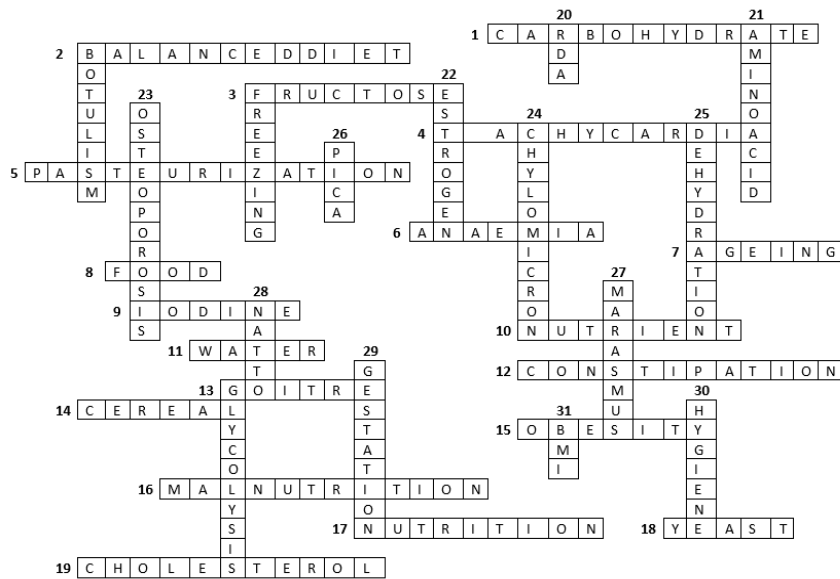
- **Certified Course for Diabetes Educator under the guidance of Diabetologist Dr. Utsa Basu**



**Sangeeta Sur**  
MSc 4<sup>th</sup> Semester

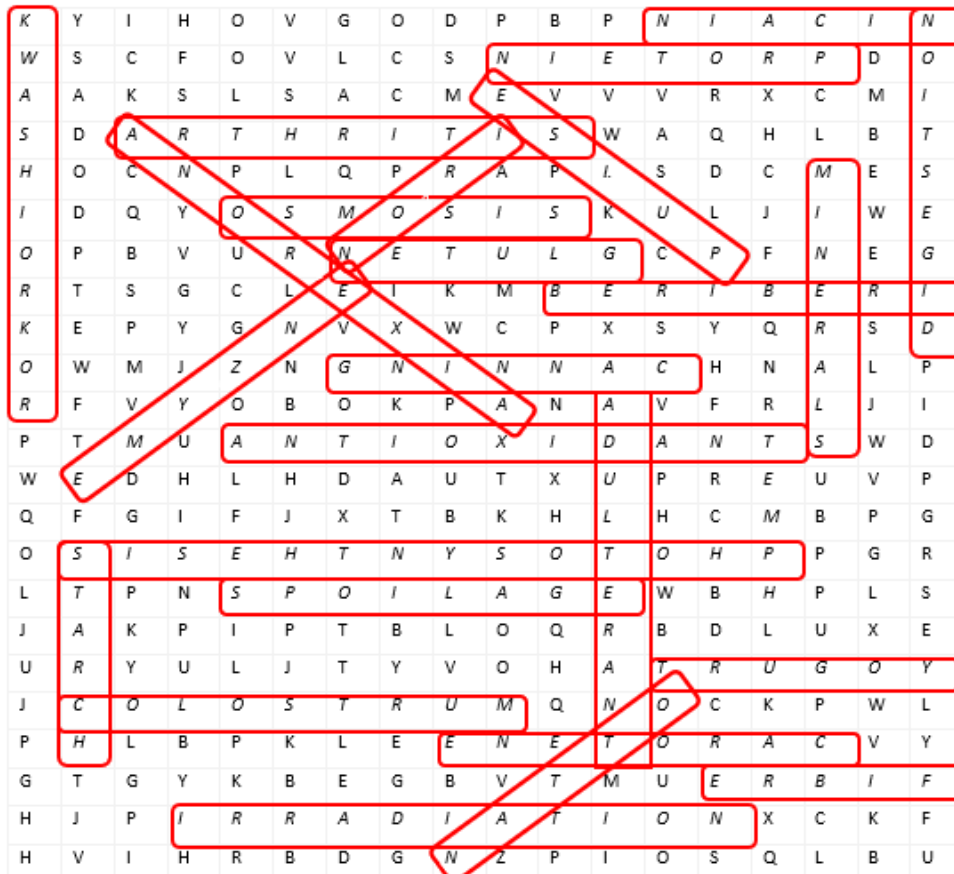
- **Bharatiya Charukala Mandir Fine Arts 9<sup>th</sup> Year Examination (Rank-1) 2019**

## Nutriword Puzzle Solution-



## Word search:-

**ANSWERS:-** KWASHIORKOR ANOREXIA BERIBERI STARCH NATTO NIACIN OSMOSIS  
 CANNING SPOILAGE IRRADIATION PROTEIN GLUTEN ANTIOXIDANT YOGURT  
 DIGESTION IRON ADULTERANT COLOSTRUM PULSE ENZYME CAROTENE ARTHRITIS  
 MINERALS PHOTOSYNTHESIS FIBRE





Issue: September, 2021



P-29, Kshirode Vidyavinode  
Ave, Baghbazar, Kolkata,  
West Bengal 700003

Department of  
Food & Nutrition

# ANIMAE CIBUS

The Prime Minister's Overarching Scheme for Holistic Nutrition or POSHAN Abhiyaan or National Nutrition Mission, is Government of India's flagship programme to improve nutritional outcomes for children, pregnant women and lactating mothers.

