

THE CELIAC SOCIETY OF INDIA PRESENTS

GRAIN MATTERS



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OCTOBER 2023 | ISSUE 02 / VOLUME 01



OVERCOOKING YOUR FOOD?

Indian cooking techniques
to get the most nutrients
out of your khaana

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DIY PANCAKE PIZZA

Recipes for gluten-free
living, curated by the
Celiac Society of India

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EDITOR'S NOTE



Dear Readers,

I am excited to announce that, starting with this issue, our newsletter will be known as “Grain Matters.” It reinforces the passion with which we assume responsibility to help those affected by celiac disease through the right information essential for a healthier, happier life.

This edition features a personal favourite – Eat the Rainbow! Shift your focus from

grains to a colourful plate of vegetables and fruit... the end result is a prettier plate that keeps your insides and outsides happy and nourished. Meanwhile, MasterChef Manish Mehrotra joins us to share some delicious, and easy-to-make recipes (the custard apple pudding in particular, is a toothsome delight).

Finally, block your calendars! As part of the Celiac Society mission to create awareness about gut health, we are organising the second edition of our flagship event (The International Symposium on Gut Health & Lifestyle Disorders or ISGH) on January 20th, 2024. The focus is on Grain Matters, where we'll be addressing excellent grain alternatives amidst other essential topics to set the tone for better health today.

We seek your participation and valuable support for ISGH. Your participation & support will go a long way in making this event a success. I encourage you to share this issue with friends and family. Together, we can build a better understanding of celiac disease and its impact on individuals and society as a whole. Let's continue to spread knowledge and awareness.

Sincerely,

Ishi

Ishi Khosla
President, Celiac Society of India



International Symposium on
**Gut Health &
Lifestyle Disorders**

20th January, 2024, New Delhi

Grain Matters

Purpose: To highlight gut related disorders as a mainstream health issue underlying several health disorders suffered by Indians at large.

- ❖ International Symposium with global experts addressing under-diagnosed food sensitivities, gut health, and their impacts.
- ❖ The target audience includes medical professionals, nutritionists, scientists, students, patients, caregivers, chefs, industry experts, regulatory agencies, etc.
- ❖ Participation of influential regulatory bodies like FSSAI, and Niti Aayog for advocacy.
- ❖ Focus on presenting the latest research findings and reviewing indigenous grains like millet for environmental and personal health.
- ❖ Showcasing the “Mera Millet Magic” campaign promoting at least one millet meal a day.
- ❖ Aim to present a white paper with recommendations to the government through this global meeting.



EATING HEALTHY FROM AN INDIAN PERSPECTIVE

“Global Healing Approaches to Enhance Your Immune System” was a 6-part series of the webinar organised by Celiac Society of India in partnership with KnoWeWell. Part 4 of this series talks about Nutrition with an Indian Accent. This series explores a regenerative, whole-health realistic approaches to handle diseases and protecting ourselves, featuring top experts like Dr. Tom O’Bryan, Chief Health Officer of KnoWeWell, Ishi Khosla, Founder of Celiac Society of India and multi-award-winning Chef Manish Mehrotra. To catch the video, [click here](#).

Just like the grass being greener, similarly food is always tastier on the other side. However, with the fabulous experts, the food is always tastier on this side as they explore and explain healthier alternatives, when-how-what to cook.

To get the maximum out of our food and minimize toxicity, we should avoid overcooking, regardless of the cooking method. Moist cooking methods,

such as boiling and steaming, preserve more nutrients. Dry heat methods such as grilling, roasting, and baking can enhance the taste of food, but can also turn it toxic if overcooked. Slow cooking preserves nutrients and minimizes AGEs (Advanced Glycation End Products), which can cause inflammation and oxidative stress in the body. Microwaving completely destroys polyphenols and enzymes in food, even though it technically preserves all the nutrients. To get the most nutrients from our food, we should eat it fresh and avoid overcooking.

Panel experts recommend steaming vegetables, broiling meats, stewing, slow-cooking and air frying. Air frying can be a good alternative for deep frying as it drains out all the excess oil and makes the food way crispier and tastier.

Chef Manish Mehrotra believes that the most desirable food is one that looks good and has good texture. He emphasizes that every ingredient

requires different time, temperature, and type of cooking. In India, we tend to overcook vegetables, which destroys their texture, flavour, and nutrients. For example, when cauliflower is cooked with potato, the cauliflower becomes so tender that it becomes difficult to differentiate it from the potato.

Restaurant food is different from home-cooked food, but we should take inspiration from home cooking when setting up any food service. Extra oil is not required to make food tasty. Fat should be added in moderation, and each ingredient in a dish should speak for itself.

Vegetables are a vital part of a healthy diet, and eating a variety of vegetables is essential for optimal nutrition. Raw vegetables contain enzymes and certain vitamins that are heat-sensitive, so eating some vegetables raw helps to ensure that you are getting the full range of nutrients that they have to offer. While they are most nutritious in their raw form, cooking them can make them more digestible and increase the bioavailability of certain nutrients. For best results, consume 50% of your vegetables raw and 50% cooked. Some people may

“In India we tend to overcook our vegetables. Preserving the texture and flavour of food preserves its nutrients.”

have difficulty digesting raw vegetables, especially if they have a weakened digestive system. In such cases, raw fruits can be a good alternative, as they are also loaded with enzymes and certain vitamins. Vegetable juices are an even easier option for people who experience bloating after eating salads.

It is important to be extra hygienic when eating raw foods outside. When choosing vegetable juices, prioritize organic harvests to avoid the higher concentration of toxic chemicals. Salads

Eat the Rainbow

Food lose only a minimal amount of their nutrients when they are harvested. It is the preparation technique that plays a more deciding factor. For instance, cooking fruits and vegetables in water makes it to lose its water-soluble vitamins. So, it is better to steam the vegetables in order to reduce its nutrient loss. The fresher the food, the more of its components can be derived from it. In general, more cooking leads the food to lose its colour, vitamins and minerals.

Why do we want to retain colour? It's not so secret that we experience food with our eyes before we taste it. A more colourful plate makes for a more inviting meal. But we benefit from the colours beyond just appeal – plant pigments are the stress hormones which protect them from danger. In the human body, these stress hormones and polyphenols strengthen our immune system, protecting us from danger. So, a diet varied in colours is a just a vibrant route to better nutrition! ■



Relish your deep-fried foods the right way



- Home-made
- Use oil having high smoking point
- Do not re-use the oil
- Have them as treats, and not every-day foods
- Get rid of the excess oil by the use of paper napkins
- Pair it with vegetables and salads in the same meal and be guilt-free!

used to be a concern in buffet menus due to the risk of microbial growth and dirt accumulation in lettuce. However, today's salads are more varied and innovative, and often incorporate freshly grown microgreens, which are more nutritious than machine-developed lettuces.

Spices are commonly used in tropical cuisines for their anti-bacterial and anti-parasitic properties. Even a small amount of spices can be beneficial, as their effects accumulate over time. Pickle that has gone under fermentation increases the number of good bacteria in the gut by ten thousand-fold.

Heating oil to its smoking point oxidizes the fatty acids, creating toxic compounds in food. Deep-fried foods, such as French fries and onion rings, are particularly unhealthy, even if cooked at home.

It is best to avoid deep-fried foods altogether, or to bake them instead. Stevia is less toxic and affects gut health less than other artificial sweeteners, but natural sugars, like in fruits, dates and maple syrup, are better overall.

Some great alternatives to wheat include jackfruit flour, beetroot flour, and grains like rice, quinoa, and millets. These alternatives are gluten-free, and nutrient-rich – ideal for people with gluten intolerance, or other dietary restrictions.

The *Chakra Samhita*, a traditional Indian medical text, states that “Man who wants a long life must not eat after sunset.” Chrononutrition is the study of how our eating patterns and circadian rhythms affect our metabolic health. And it also concludes that it is important to eat and sleep in sync with our body's circadian rhythms. Circadian rhythms are our internal body clocks that regulate many bodily functions, including digestion and sleep. When we eat late at night, it disrupts our circadian rhythms.

In urban areas, Westernized lifestyles and our work culture have led to later meals and drinking habits. The peak hunger time for most people is between 12-2 pm in the afternoon and 5-7 pm in the evening. This suggests that we should eat the most during these times. There may be individual differences and inevitable issues, however.

The goal is not to be perfect, but to make healthier choices on majority of times and enjoy foods we have grown up with as treats! ■



Honey can be used in moderation

Not only is it a great sweet substitute but also loaded with goodness of immunity boosting compounds & gut friendly prebiotics.



CAPITAL GRAIN

Choosing the right grain can offer a much-needed solution to the micronutrient malnutrition problem in South Asian countries

Hunger is a global crisis. The COVID-19 pandemic has only exacerbated the problem, disrupting supply chains and plunging millions of people into poverty. Today, more than 800 million people worldwide go hungry every day, and the problem is only getting worse. But what if there was a simple solution? India has to solve the problem for itself, and it is telling the world that the answer is the right grain.

Despite having made significant progress in recent decades in reducing poverty and hunger, India ranks 107 out of 116 countries in terms of food security in the Global Hunger Index. It seems to be self-sufficient in the production of major food commodities. Then

why is India hungry? Reports bring forward two paradoxes.

Food security is the ability of all people to have access to sufficient, safe, and nutritious food at all times for an active and healthy life. It is not just about having enough food to eat. It is also about having the right kind of food and being able to afford it. Poverty and wealth inequality are often identified as major causes of food insecurity.

In South Asia, however, they seem to play a lesser role. Economic growth has not significantly improved the situation, and it remains the most malnourished region, faring worse than Sub-Saharan Africa (45%

vs. 28%, respectively). It has the largest number of undernourished children in the world, and poverty remains the main cause. This puzzle is known as the “South Asian Enigma”. Secondly, even among the higher socio-economic population, there is severe micronutrient malnutrition. This is as the “double burden of malnutrition.”

The indicators of food insecurity, especially child undernourishment rates, are now worse in India than in Ethiopia, which has only a quarter of India’s per capita income and has suffered many famines in the 20th century. In fact, food security policies in India are very generous and ensure that the poorest members of society receive enough food to survive. Those policies, however, are focussed on calorie availability and fail to promote the level of dietary diversity necessary to avoid high rates of malnutrition. Clearly, there are gaps in addressing malnutrition.



Grains already are a staple food for billions of people around the world. They are a good source of carbohydrates, protein, and fibre, and they are relatively inexpensive to produce. But not all grains are created equal. Recently, the Honourable Prime Minister of India, Shri Narendra Modi, has rightly emphasised the importance of millets to raise the nutrition quotient of Indian diets, address malnutrition and the burden of chronic health issues among Indians, and also protect the environment and promote diversity. At India’s insistence, United Nations has declared 2023 as the year of millets.

Millets are highly nutritious, hypoallergenic traditional grains. One key feature of millets is that they enhance nutrient absorption. This is an important aspect of millets. Re-introduction of these grains in Indian diets can be a path-breaking step to eradicate

hidden hunger and the colossal burden of malnutrition in India. Malabsorption of iron, vitamin B12 and other nutrients is one of the root causes of nutrient deficiencies in our population. A major reason for the failure of several programmes to eradicate anaemia and Protein Energy Malnutrition (PEM) is that wheat-related disorders and gut health have been overlooked. Changing staples can be a game changer for the health of our population.

For instance, teff, also called finger millet, is the staple food in Ethiopia. It has a lower iron content compared to wheat, which is the Indian staple. Yet Ethiopians have a lower prevalence of anaemia compared with the Indian population.

The spotlight on millets also comes in the wake of an increase in food allergies and increased diagnoses of wheat and gluten sensitivity among the public. Their use as alternatives to grains is also growing rapidly in the food industry. Replacing wheat and corn with millets in government programmes and mid-day meals can surely alleviate not only malnutrition and stunting but also anaemia and diarrhoea among children in India.

The traditions of eating these forgotten grains should be revived, and millets must re-occupy their rightful place in our diets. It will require consumers, food manufacturers, and other stakeholders to come together to bring millets back to our kitchens. For this to come into practice, there is a need to spark conversations, change attitudes about nutrition, and revisit current guidelines. Addressing the root cause of malnutrition is critical. ■

ON INDIA'S PLATE

Children under 5 years die
predominantly from malnutrition.

Approximately 25% of children
are still stunted under the age of 5.

More than 50% of women
of reproductive age India
are anaemic.



A GUT REACTION

An inwards look at our innards can change how we deal with Celiac disease

Celiac disease is a T-cell-mediated autoimmune disorder that affects the small intestine. It is characterised by an intolerance to gluten, a protein found in wheat, barley, and rye. When people with celiac disease eat gluten, their immune system overreacts and attacks the lining of the small intestine. This can damage the villi, the tiny finger-like projections that line the small intestine and are responsible for absorbing nutrients from food

The genetic disorder affects people with the HLA-DQ8 or HLA-DQ2 positive haplotypes (sets of DNA variants along a single chromosome that tend to be inherited together). More than 30% of the world's population is genetically predisposed to Celiac disease and further has gluten exposure, but only 2-3% develop it. Only about 1% of the world's population has celiac disease, but its prevalence is rising. This suggests other factors, such as wheat gluten and alterations in the gut microbiome, are at play, as well as other factors that contribute to its increase.

The only known treatment for Celiac disease is the total elimination of gluten from the diet. However, maintaining a gluten-free diet (GFD) is a challenge for patients for many reasons, including the availability of good-quality GFDs, their cost, and palatability. So, a new therapeutic approach is emerging, which involves oral supplementation of bacteria or enzymes capable of breaking down gluten. Researchers believe that changes in the gut microbiota, known as dysbiosis, may contribute to Celiac disease by triggering abnormal immune responses. Dysbiosis in Celiac disease is characterized by an over-abundance of certain bacteria like *Bacteriosides*, *Prevotella*, and *Escherichia*, while protective bacteria like *Bifidobacterium* and *Lactobacillus* are reduced.

Additionally, *Neisseria* bacteria, particularly *Neisseria flavescens*, are found in higher numbers in active Celiac disease patients compared to those following a gluten-free diet and healthy individuals. Some bacterial genera in the small intestine, such

How to have more Probiotics

- Yoghurt
- Pickles (without vinegar)
- Buttermilk
- Keffir
- Cheeses like cheddar and mozzarella
- Miso
- Kimchi
- Sauerkraut
- Sourdough Bread
- Tempeh
- Kombucha

as *Lactobacillus*, *Streptococcus*, *Staphylococcus*, *Clostridium*, and *Bifidobacterium*, have the potential to metabolize gluten. The human body lacks the necessary enzymes to fully digest dietary gluten, but probiotic gut bacteria can help with this process. Moreover, the oral cavity contains a significant bacterial community that can degrade gluten. The initial breakdown of gliadin in the oral cavity is associated with *Rothia*, *Actinomyces*, *Neisseria*, and *Streptococcus* genera found there. Studies show that saliva contains microbial enzymes which are capable of breaking down gluten, including T-cell epitopes.

Some researches indicate that individuals with Celiac disease have an imbalanced gut microbiome, with fewer gluten-degrading bacteria and genes compared to their non-celiac relatives, suggesting that having more of these bacteria may protect against Celiac disease development. With the increasing incidence of Celiac disease in genetically predisposed individuals, the interest in developing technology-driven methods to remove toxic gluten peptides from diets is growing.

Proline-specific proteases (enzymes that break down protein) have been explored as they can break down gluten before it reaches the lamina propria (thin layer of connective tissue that forms part of the moist linings known as mucous membranes which line various tubes in the body of respiratory tract, gastrointestinal tract and urogenital tract), potentially making diets safer for Celiac disease patients.

Proteases from various sources, including plants, fungi and bacteria, have been tested to convert gluten into non-immunogenic forms in laboratory and animal studies. Some of these proteases have shown promise in eliminating the harmful effects of key immunogenic gluten peptides when tested in T-cell assays from intestinal biopsy samples or peripheral blood cells of Celiac disease patients.

Flavobacterium meningosepticum, *Sphingomonas* capsulate and *Myxococcus xanthus* breakdown gluten and immunogenic peptides into harmless fragments. The glutenase activity of *Bacillus pumilus*, *Clostridium subterminale*, *Chryseobacterium taeanense* 2RA3, and *Clostridium sporogenes* (found in vegetable roots such as carrot, beetroot, and potato) efficiently neutralised harmful immunogenic epitope. A serine endopeptidase from *Burkholderia gladioli*, is found to degrade gluten efficiently. By generating glutenase enzymes, the *Bacillus cereus* strains CH 21155 and AFA01 may effectively neutralise immune-toxic 33- and 13-mer gliadin peptides.

The only known treatment for Celiac disease is the total elimination of gluten from the diet.

Previously, researchers had isolated gluten-degrading bacteria from human faecal and oral samples, but sampling from the small intestine, where gluten breakdown begins and disease development occurs, has been challenging. The partial breakdown of gluten produces proline glutamine-rich peptides, which may support the growth and colonization of gluten-degrading bacteria (GDB) in the small intestine. In a promising development, researchers have identified strains *B. casei* NAB46 and *S. arlettae* R2AA77 to meet the criteria for surviving in the small intestine and could be combined with PEP and GEP enzymes to efficiently hydrolyse gliadin, a major component of gluten. These enzymes could be applied in the duodenum to carry out local proteolytic activities, either individually or in combination with mammalian brush border enzymes. These enzymes are particularly intriguing from a therapeutic perspective because they are sourced from the human small intestine.■

WHAT'S COOKIN'?

This month: Pancake Pizza and Healthy Mumbai-style Sitaphal Cream

PANCAKE PIZZA

INGREDIENTS

Moong bean flour	250g
Spices	as desired
Chilli flakes, Ajwain, Garam masala, Turmeric	
Salt	to taste
Mustard oil/ghee	1 tsp
Choice of vegetables	1/4th cup
Green chutney	2 tsp
Imli chutney	2 tsp

METHOD

- Mix the flour with spices evenly.
- Add water and whisk to make a smooth batter of watery consistency.
- Heat a pan and add a ladle-full batter.
- Add little bit of mustard oil from the sides of the pancake.
- Flip and let it cook from the other side.
- Spread your chutney of choice on the pancake, like the pizza sauce
- Top with choice of veggies sliced in shaped of pepperoni

Image from: funfoodfrolic.com

SUPERFOOD - AMLA

4 reasons why you should add amla to your daily diet

- The best natural source of vitamin C boosts white blood cell production and immunity, and improves skin and hair health.
- Some enzymes in amla help us break down food. The rich fibre content also help prevent constipation.
- This cocktail of powerful antioxidant and anti-inflammatory compounds tackles free radicals, oxidative stress and cell damage, helping fight cancer, heart diseases and arthritis.
- The vitamin A maintains our vision and promotes collagen production, making the skin firm and youthful.



HEALTHY MUMBAI- STYLE SITAFAL CREAM

INGREDIENTS

Custard apple (ripe) 5-6
 Coconut cream 3 Tbsp
 Berries of choice ½ cup

METHOD

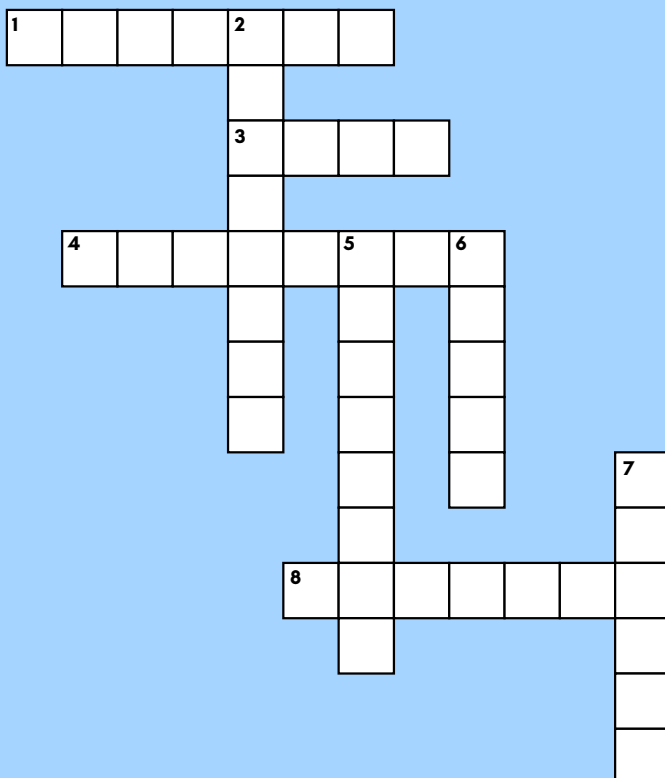
- Deseed your custard apples.
- Then extract the pulp and add coconute cream.
- Mix well, till you achieve a creamy texture.
- Pour into a bowl.
- Finally, add some berries and serve! Yum!



FUN FACT

Sitaphal (*Annona squamosa*) relies on beetles instead of bees to pollinate its flowers

GM CROSSWORD



ACROSS

- 2023 is the International Year of _____
- Body uses _____ to make haemoglobin
- Statement given by Hippocrates: All _____ begin in the gut
- _____ may be a symptom of inflammation from an infection or autoimmune condition

DOWN

- Brain disorder characterized by repeated seizures
- Low height-for-age of a child
- Most common way of having raw vegetables
- _____ coloured food; rich in beta-carotene -> healthy skin, hair, vision

From 7 Pills To Just One

Anti-inflammatory-grain and dairy-free diet gives back control of her life

Twenty-three-year-old Nisha Jha (name changed), had been battling with epilepsy since the age of 12 along with a host of problems: breathlessness, low vitamin D and B12, low haemoglobin, poor eyesight, frequent stomach aches and a bad case of acne. At 22, she was diagnosed with clinical depression and prescribed anti-depressants. For the last three years, she didn't have the confidence to step out of her room making it impossible for her to lead the social life that most tweens take for granted. Without the support of friends and family, her future looked bleak and she was recommended coerced rehab.

She reached out to Ishi Khosla, in a desperate attempt to salvage her health. Investigations revealed that Nisha's health problems were likely rooted in her

early childhood – she was never breastfed due to her mother's jaundice during pregnancy, and given cow's milk instead, leading her to develop a leaky gut worsened by her medication.

In just one week of changing her diet to eliminate inflammatory grains and dairy, her health improved significantly. She felt better, was able to sleep normally and her mood improved. In the following days, she was able to complete her studies and start working. Most importantly, she was able to reduce her reliance on medication, going from a cocktail of seven drugs to just one, and regain control of her life on her terms. ■



Newsletter curation: Celiac Society of India
 Publication layout design: The Partum Collective
 Web optimisation: Himalayan IT Solutions Pvt. Ltd.
 Content research: Anindita Das
 Logo design: Nabadeep Kakati
 Tech support & mailing: Neha Jain

The Celiac Society of India presents its new website, found at celiacsocietyofindia.com. More information about ISWD 2019 can be found at iswd2019.com.