

# Indian Society of Lifestyle Medicine

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INDIAN SOCIETY OF  
LIFESTYLE MEDICINE

Issue 2

E-Newsletter

November 2022

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## Message from the President ISLM

Sheela Nambiar

It is with great pleasure that we roll out the second edition of the ISLM Newsletter. A newsletter is a useful tool that binds the community (society) and informs about the latest updates and activities in the organization. It's also a great way to uncover talents from various members posting on a variety of topics such as invited articles, case study, recipes, book reviews and so on as in this newsletter.

As the President of ISLM, and having certified through BSLM, I had the privilege of being invited to the Annual conference of the British Society of Lifestyle Medicine, (BSLM) held on the 23rd, 24th and 25th of September 2022. London is one of my all-time favorite cities so how could I forgo this opportunity to travel there?

The conference was held in the famous Tottenham Hotspur Stadium, (yes, the famous football stadium), to the north-east of central London. It was held in one of the halls within the stadium itself. Getting there was an exciting challenge using the famed (and sometimes baffling), London-tube and overground train. The conference itself was a buzz of energy and excitement. There were about 700 attendees, mostly GPs I understand and a slew of thought-provoking talks on very varied topics such as Community Engagement for Health Equality, Nursing and lifestyle medicine, Obesity and health inequalities, Sugar tax, a series of talks on women's health (menopause, vaginal microbiome in menopause), Art as therapy, Wellbeing at work, Personalized Nutrition, the Importance of 'Active play' and many more. Between sessions we were treated to snacks and meals that were beautifully prepared and one had the option of being either whole food plant based or not. I understand BSLM, unlike ISLM is not focused on solely a WFPB diet. There were yoga sessions, exercise demos, cooking and art workshops, coaching roleplay and of course a tour of the stadium itself.

BSLM is a society (which is an independent non-profit organization like ISLM), founded in 2016, just three years before ISLM was registered as a non-profit in India. It has had an exponential growth in membership over the last couple of years. What struck me at the conference was the prominent focus on health inequities and the fair amount of work in that regard. There was also a variety of topics that are of great importance to wellbeing (like art, nursing & LM, creating compassionate communities and so on), which we don't typically see in a medical conference and that made this event enjoyable.

I must also mention here that while in London, I met with two of my dearest friends from childhood. Our friendship spans 4 decades. The joy that this reunion brought us brings home the importance of authentic relationships for health and wellbeing (a critical pillar of Lifestyle Medicine). Good social connections are so important that all else could pale in comparison.

I believe, given the population of our country, the number of medical students passing out every year from various medical colleges and the number of practicing doctors, ISLM and Lifestyle Medicine as a field has a great potential for growth and the capacity for immense and truly meaningful impact on the world stage of Lifestyle Medicine

# Message from the President ISLM

I also believe the growth of Lifestyle Medicine will be enhanced with collaboration with other stakeholders like the companies involved with health, health food, gadgets, Apps, programs, sport, sporting activities, corporates interested in promoting health and wellbeing, individuals and charitable non-profit organizations from local communities who play active roles in health promotion and the spread of authentic health information. Restricting ourselves to a 'medical organization' alone may not suffice in the long haul as we know that psychosocial and environmental factors and the social determinants of disease are as important to health as diet, exercise and sleep. Involving the consumer therefore is, I believe, imperative.

Those of us who are a part of this society obviously share a common mindset and have chosen to join the organization with the intention of bringing change to the healthcare system and creating true health by empowering our patients to be the proponents of their own wellbeing. This is possible when we all connect together to form a tribe of health advocates using Lifestyle as Medicine. Our aim is to be supportive of each other and help the field of Lifestyle Medicine grow in India.

Events like our own conference on November 5th and 6th, 2022 will help forge this objective showcasing just how important Lifestyle Medicine is in every specialty of medicine. The importance of addressing every patient through the perspective of his/her lifestyle beyond just the symptoms of his/her disease. While every physician and specialist may not choose to or be able to certify as a Lifestyle Medicine Physician, collaborative work is what is required to serve our patients best. Although virtual this year, I hope our conference will influence far and wide.

Do spread the word of Lifestyle Medicine and its impact on health and happy reading.

## **Dr Sheela Nambiar MD, ObGyn**

Lifestyle Medicine Physician  
Fitness Consultant.  
President - ISLM  
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Global event: Physicians from all over the world passionate about LM



## From the Editor's desk...

Dr. Richa Lal

Dear friends,

We are delighted to present the 2<sup>nd</sup> Issue of the ISLM newsletter. The newsletter represents the voice of the enthusiastic & dedicated members of the organization. This Issue is of special significance because it is being released on the occasion of the 3<sup>rd</sup> International Conference of the ISLM. The conference marks yet another milestone in the ISLM's mission of carrying the LM movement ahead.

Do browse through the pages to learn about some infrequently discussed but, exciting revelations about "Plant proteins" & "Vitamin D beyond bone health" substantiated by current evidence & the foundational role of lifestyle interventions in alleviating PCOS. The healthful recipe can be a delicious in-between meals snack and the book review could be an inspiration for embarking on a personal journey of being a plant-based athlete.

Let us all march ahead together in expanding the LM movement with the mission of restoring "true health and well being " for ourselves and for those who entrust their health in our hands.



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# About "Indian Society of Lifestyle Medicine"



Contributed by:



Dr. Anjali Nakra  
Secretary, ISLM

The Indian Society of Lifestyle Medicine is a national non-profit organization of allopathic doctors, dieticians, clinical psychologists, exercise physiologists and physiotherapists, who believe in Lifestyle Medicine, an evidence-based Medicine.

*"Lifestyle medicine is a medical specialty that uses therapeutic lifestyle interventions as a primary modality to treat chronic conditions including, but not limited to, cardiovascular diseases, type 2 diabetes, and obesity".*

*Lifestyle medicine skills equip physicians to include health promotion, disease prevention and management and in some cases remission and reversal. It should be the first line of treatment for non-communicable diseases (NCD). One in 4 Indians has a risk of dying from NCD before the age of 70, moreover quality of life suffers after the onset of chronic disease. In Indian context, the onset of chronic diseases, like cardio-vascular diseases and T2 diabetes mellitus, occurs a decade earlier when compared to the overall global scenario.*

*The contextual & whole-person oriented treatment is imminent specially to reduce vulnerability to many chronic conditions amongst Indian population. The biopsychosocial aspect of diseases has added another dimension to disease management.*

## DID YOU KNOW?

Fibre is found only in whole plant foods. A high fibre diet helps in weight loss, improves digestion, relieves constipation & reduces the risk of diabetes, heart disease, stroke & certain types of cancer. Fibre also helps you feel full & satiated.



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The current approach to healthcare, even in developed countries has been unable to manage the tsunami of lifestyle related chronic diseases despite huge expenditure. This proves that there is an urgent need to redefine healthcare. As healthcare professionals it is imperative that we rethink and redefine our approach to preventing and managing diseases.

## About "Indian Society of Lifestyle Medicine"

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*In this context, Indian Society of Lifestyle Medicine is committed to building medical capacities in development, training and certification for knowledge, skills, structured clinical programs for physicians and allied professionals. ISLM has been connecting with various stakeholders working towards making lifestyle medicine a part of mainstream healthcare system.*



*With the same perspective, ISLM is organizing 3rd international Conference with the theme- "REDEFINING HEALTHCARE", a virtual Conference on 5th and 6th November 2022. There are three Workshops on Tobacco Cessation, Motivational Interviewing and Shared Medical Appointments respectively.*

*Team ISLM has put together this scientific bonanza, which include many topics especially related to NCD's and the role of Lifestyle in primordial, primary, and secondary prevention.*

Global experts in Lifestyle Medicine like Beth Frates (President of American College of Lifestyle Medicine) is the keynote Speaker, and Dr Rob Lawson (President of European Lifestyle Medicine Council) will give a special oration on Panorama of Lifestyle Medicine. Dr Neal Bernard's talk on Dietary Influence on Cancer will be beneficial for one and all.

The sessions include talks on psychological wellbeing, positive psychology, behaviour change, diabetes, gut health, metabolic health, cardiac Health, obesity and child Health and the science of yoga and exercise. Topics like food labelling, technology in healthcare, corporate programs, and discussions on implementing lifestyle medicine across all age groups in the community, and the future of lifestyle medicine will cover vital current perspectives.

We have a distinguished line up of National and International speakers. Some national speakers of eminence are : Dr Shiv Sarin (ILBS), Dr Shekhar Seshadri (Ex Prof NIMHANS), Dr Supten Sarbadhikari, Dr Suneela Garg (Advisor ICMR), Dr Shashank Joshi, Dr B M Makkar, Dr Naval Vikram (AIIMS, ND) Dr Raj Kumar Yadav (AIIMS, ND) , Dr Rekha Harish, Dr Pradeep Agarwal, Dr Sonu Goel (PGIMER, Chandigarh) , Dr Barun Sharma (BHU), Dr Ritu Arora ( Dean MAMC), Dr Atreya Ganguli (WHO).

Similarly, some of the International speakers of eminence are: Beth Frates (President ACLM, USA), Rob Lawson (UK), Dr Neal Bernard, Dr Ravinder Mamtani (Qatar), Dr Edward Kuonga, Dr Mahima Gulati (USA), Dr Shireen Kassam (UK), Erika Frank ( Canada), Dr Liana Lianov (USA) and many more....

**Contributed by: Dr. Anjali Nakra, Secretary, ISLM**

# Unravelling Plant Proteins

Sheela Krishnaswamy

*"Transformation to healthy diets by 2050 will require substantial dietary shifts. Global consumption of fruits, vegetables, nuts and legumes will have to double, and consumption of foods such as red meat and sugar will have to be reduced by more than 50%. A diet rich in plant-based foods and with fewer animal source foods confers both improved health and environmental benefits",* says Prof. Walter Willett, MD, Harvard T.H. Chan School of Public Health in the EAT-Lancet Commission [Report](#).

There's a long-standing myth that meats are absolutely essential to meet protein needs of every human being. Meat, fish or egg is suggested by some fitness trainers to their clients believing that vegetarian foods do not provide adequate protein. Fad diets like ketogenic diet, Atkins diet and some others have also given prime importance to animal proteins encouraging their intake. In recent times however, food choices are changing. Plant foods are being recognized as being good for human health as well as for planet health. A scientifically prescribed and appropriately planned vegetarian and even vegan diet can provide adequate proteins in terms of quality and quantity.

Protein from plant sources is obtained from grains, pulses, dals, nuts and seeds. NNMB (National Nutrition Monitoring Bureau) [report 2017](#) found that the average household consumption of protein in India stood at 89.8% of RDA, which is deficient in quantity. With the use of nationally representative household protein consumption data in India, the percentage of the population at risk of [quality protein](#) deficiency was found to vary between 4% and 26% among different age groups and between the urban or rural sector.

With many of the structures and functions of the human body being protein-dependent, intake of adequate protein through food becomes vital. Dietary proteins should supply 9 essential amino acids of the total 20 in adequate quantities for tissue protein synthesis. A [study](#) found that a significant number of subjects were taking less than half of the recommended daily allowance of protein and faced problems like hair fall, acne, pigmentation, vitiligo, etc.

***The next big question is: Can plant foods provide all the essential amino acids to meet the protein requirement in the body? The answer is YES!!***

***Cereal-pulse combination*** is the best example of plant foods that provide protein with all the essential amino acids. Recent [evidence](#) demonstrates that protein derived from pulse and whole grain sources is not only important for nourishment and sustenance, but also contains bioactive peptides that aid in the prevention of chronic diseases and risk factors such as obesity, cardiovascular diseases, hypercholesterolemia and diabetes.

## Unravelling Plant Proteins

Traditionally, Indians have always included a cereal-pulse combination in vegetarian meals. Classic examples are idli, dosa, khichdi, roti with dal and rice with sambar. Modern day foods like muesli and porridge mixes have incorporated the traditional knowledge by using whole grains, dals, soy, nuts and seeds to enhance the protein value of ready-to-eat foods.

*The cereal-pulse combination contributes to the essential amino acid requirement in vegetarians / vegans, by supplementing methionine and lysine present in cereals and pulses, respectively.*



Grains: Image courtesy Smart foods



Pulses-image courtesy Krishak Jagat

The latest [RDA](#) (Recommended Dietary Allowances) for protein intake is 0.83 g per kg body weight per day for Indian adults. The RDA for all age groups is as follows

Age group	Protein recommendation (g/d)
Men	54
Women	46
Pregnant women	+9.5 (2nd trimester); +22 (3rd trimester)
Lactating women	+17 (0-6 m); +13 (6-12 m)
Infants (6 -12 m)	10.5
Children	1-3 y - 12.5 4-6 y - 16 7-9 y - 23
Boys	10-12 y - 32 13-15 y - 45 16-18 y - 55
Girls	10-12 y - 33 13-15 y - 43 16-18 y - 46



## Unravelling Plant Proteins

*Using plant protein sources like dals, pulses, nuts and seeds in all 3 meals - breakfast, lunch and dinner - can ensure that one's protein requirements are met without compromising on one's food preference.*



Grains: Image courtesy Smart foods



Pulses-image courtesy Krishak Jagat



Nuts & seeds-image courtesy TOI

Benefits of using plant protein are several. To begin with, *none of the plant protein sources contain cholesterol. The foods with plant protein are likely to be higher in fibre content, thereby promoting gut health and weight management.*

A [study](#) suggests that lower plant protein intake may be a contributor to the ethnic susceptibility to diabetes in Asian Indians. *Increasing the intake of plant protein may be an effective approach to overcome the genetic risk of diabetes in urban Indians.*

In a large [prospective study](#) done in Japan, *higher plant protein intake was associated with lower risk of all-cause and CVD-related mortality.* Substitution of plant protein for animal protein was associated with lower risk of total, cancer-related and CVD-related mortality. The study also suggests that plant protein may provide beneficial health effects and may increase longevity.

Researchers from the [Physicians Committee for Responsible Medicine](#) compared a plant-based diet to a control diet in overweight participants. Those who followed a plant-based diet had greater reduction in body fat and improved insulin resistance. The authors attribute health improvements to increased consumption of plant-based proteins and decreased consumption of animal proteins.

A [systematic review and meta-analysis of RCTs](#) aimed to examine potential differences in the effect of animal versus plant protein on lean mass and muscle strength, and the possible influence of resistance exercise training and age, and found that the total protein intakes were generally above the recommended dietary allowance at the baseline and at the end of intervention.

*Results from the meta-analyses demonstrated that protein source did not affect changes in absolute lean mass or muscle strength. Although animal protein is promoted by most fitness trainers for muscle strength, plant protein can also be consumed by those who wished to avoid animal protein without neglecting the muscle strength.*

## Unravelling Plant Proteins

Vegetarian diets are not new in India. Dietitians in developed countries too understand the benefits of vegetarian diets. In 2003, dietitians in the US and Canada published a [position paper](#) which reads "*It is the position of the American Dietetic Association and Dietitians of Canada that appropriately planned vegetarian diets are healthful, nutritionally adequate, and provide health benefits in the prevention and treatment of certain diseases.* Dietetics professionals can play key roles in educating vegetarian clients about food sources of specific nutrients, food purchase and preparation, and any dietary modifications that may be necessary to meet individual needs".

Emerging research also indicates that plant protein supplements could be used for sports persons who need a higher intake of protein. More research is needed to establish that plant protein intake can substitute animal protein intake in sports persons. We also need more Indian studies on plant protein and its effects on human health.

One of the concerns related to plant sources of proteins is that the bioavailability of protein from plant sources is comparatively less than animal sources. [DIAAS](#) (Digestible Indispensable Amino Acid Score) which measures the ileal amino acid digestibility of protein defines a score of <75 to be low quality protein source and >75 to be high quality protein source. Antinutritional factors like phytates, trypsin inhibitors and lectins present in plants reduce the digestibility of protein. However, [processing](#) the raw plant foods through germination or cooking or autoclaving or spray-drying or fermentation, enhances the plant protein quality. Therefore, one need not be overly concerned about the antinutritional factors while consuming plant protein.

In conclusion, protein source in India is largely cereal-based but this doesn't fulfil the quality of protein that is needed to maintain health.

***Combining cereals and with a protein source in the same meal can elevate not only the quantity but also the quality of protein in Indian diets. Using plant sources for protein ensures the inclusion of a wide variety of foods in meals. Plant-based diets are also associated with improved gut microbiota symbiosis, increased insulin sensitivity, reduced calorie density and reduced cholesterol intake. If planned well, plant-based meals can provide adequate protein and other nutrients through dietary diversity not only for all age groups but also for various levels of physical activity.***

Although food choices are every individual's prerogative, going by current trends, plant protein intake is here to stay and will continue to be a part of healthy diets.

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# Vitamin D-its role beyond bone health!

Dr. Khalid Khader

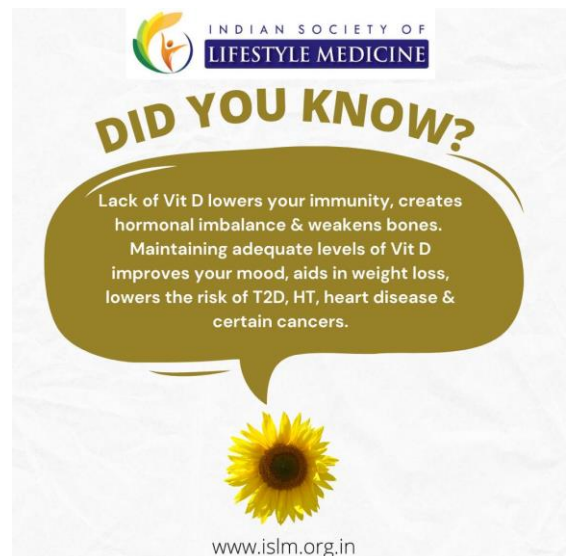
The molecule in focus, Vitamin D, is a lipid soluble vitamin and is vital for skeletal health, electrolyte reabsorption, immune system regulation and systemic health benefits. Vitamin D exists in two primary variants, Vitamin D2 and D3, with 1,25-dihydroxyvitamin D3 or cholecalciferol playing a significant role in [calcium homeostasis](#) and bone metabolism. The primary source of vitamin D3 is sunlight, specifically UVB radiation between the wavelengths of [290 and 315nm](#) which can provide with up to 90% of the daily requirements. The alternate sources are animal sources like fatty fish or ergocalciferol from plants and mushrooms.

Bone growth and metabolism is a well-recognized major physiological function of Vitamin D. The obvious [consequences of vitamin D deficiency](#) are secondary hyperparathyroidism, increased bone loss, an increase in low trauma fractures and proximal muscle weakness.

***However, Vitamin D has been misconceived as the vitamin solely involved in bone and calcium metabolism. It has far greater implications in health and homeostasis of normal body functions.***

In addition to bone metabolism, Vitamin D, has [great implications](#) in transcription, regulation of proteins, metabolic functions, immune modulation, and more recent research points towards its deficiency predisposing to [non-communicable diseases](#) and [carcinomas](#).

***Vitamin D [regulates a vast variety of physiological process](#) -namely, immune modulation, resistance to oxidative stress, modulation of other hormones, cell differentiation, enhancement of innate immunity, inhibition of development of autoimmunity and hormonal regulation of glucose metabolism and blood pressure homeostasis.***



*Hence there is a need for more research and enhanced awareness of evidence-based literature on the role of Vitamin D beyond bone health.*

## Vitamin D-its role beyond bone health!

The [classification of vitamin D status](#) of an individual is defined in table 1.

Table 1: Serum 25-Hydroxyvitamin D [25(OH)D] Concentrations and Health		
Serum Vitamin D (nmol/L)	Serum Vitamin D (ng/mL)	Health effects
< 30	<12	Vitamin D deficiency, Rickets in infants and children, Osteomalacia in adults
30 to <50	12 to <20	Insufficient
>=50	>=20	Adequate
>125	>50	Potential adverse effects, especially at >150 nmol/L (>60 ng/mL)
Serum concentrations of 25(OH)D are reported in both nanomoles per liter (nmol/L) and nanograms per milliliter (ng/mL). One nmol/L = 0.4 ng/mL, and 1 ng/mL = 2.5 nmol/L.		

*The deficiency of this vitamin has been reported to result in myriad of health consequences like type 1 Diabetes Mellitus, cardiovascular diseases, certain cancers, [cognitive decline](#), [depression](#), [pregnancy related complications](#), auto-immunity, allergy, and lately increased susceptibility to infections and complications in the COVID-19 pandemic. Low prenatal and neonatal vitamin D levels has been reported to increase the susceptibility to schizophrenia, type 1 diabetes mellitus, crohn's Disease and multiple sclerosis in later life through [epigenetic modifications](#). Further, evidence suggests that lower levels of vitamin D led to increased [risk of preeclampsia](#), [gestational diabetes mellitus](#), [preterm birth and small for gestational age babies](#).*

Low serum levels of 25(OH)D of less than 30ng/ml is associated [increased prevalence of diabetes, hypertension, hyperlipidemia, peripheral vascular diseases](#) coronary artery disease, myocardial infarction, heart failure and stroke. The association of vitamin D deficiency with an increased [risk of several cancers](#) and cancer mortality and an association of adequate levels of vitamin D with lower prevalence of solid tumors namely prostate, breast, ovarian and colon cancer underline the importance of vitamin D in immune modulation, resistance to oxidative stress and the mediation of various hormones.

Surprisingly there is evidence of association of vitamin D deficiency with an increased total mortality especially due to MI as there was an [increased incidence of coronary artery calcification](#) in these patients.

Having understood the importance of vitamin D in health and wellness, we will take a brief look into the cohorts of people who are at risk of vitamin D deficiency, biological factors which can cause vitamin D deficiency and the groups who would benefit from exogenous supplementation.

The environmental risks factors which predispose to vitamin D deficiency are: i) Geographic locations with poor UVB penetration; ii) Use of sunscreen and sun protection with the aim of preventing certain cancers ; iii) Certain cultural [practice of concealed clothing in the public places](#), sedentary lifestyle habits and workplace environment which keep an individual away from sunlight exposure.; iv) [Exclusive breast feeding in infants](#)

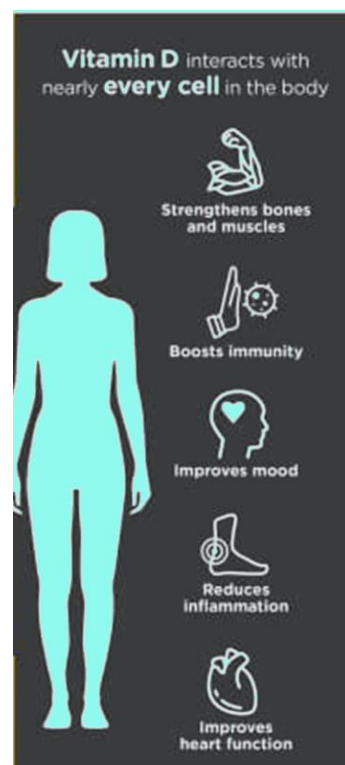
Each of the above risk factors merit exogenous age-appropriate Vitamin D supplementation

The biological factors which predispose to vitamin D deficiency are: i) [Skin pigmentation](#) and dark skinned individuals; ii) [Genetic variations](#) influencing hydroxylation of vitamin D in the body; iii) [Older age group](#) and bed ridden patients with minimal exposure to natural sunlight; iv) [Chronic kidney disease](#); v) [Fat malabsorption syndromes](#) ; vi) [Inflammatory bowel diseases](#); vii) [Obesity and excess fat](#) reduce the bioavailability of vitamin D; viii) [Magnesium deficiency](#) can also predispose to vitamin D deficiency

### So, what are the indications for Vitamin D Supplementation?

There has been significant controversy on the indications for supplementation as most current guidelines recommend that vitamin D supplementation be done only for bone health.

The following are other conditions wherein there is evidence that Vitamin D supplementation is indicated to achieve optimum levels though more research needs to be done to prove causation through robust studies: i) Vitamin D deficiency, [osteoporosis and risk of fracture](#); ii) To improve [postural balance, muscle strength](#) and decrease risk of fall; iii) Certain [Cancers](#) namely colorectal, breast and prostate cancers; iv) [Autoimmune diseases](#) namely IDDM, RA, SLE, MS; v) [Cardiovascular diseases](#) namely hypertension, endothelial dysfunction, CCF; vi) [Type 2 diabetes](#); vii) [Cognitive impairment](#), Alzheimers disease, and Parkinson's disease; viii) [Complications related to pregnancy](#) namely gestational diabetes mellitus, pre-eclampsia, small for gestational age babies; viii) [Respiratory infections](#), COVID-19 and its complications; viii) [Medications](#): Anti-obesity medications namely cholestyramine, orlistat, anticonvulsants namely phenytoin, carbamazepine, phenobarbital, drugs used for gastro-esophageal reflux disease namely H2 receptor blockers and proton pump inhibitors and antifungals namely ketaconazole



*Why have we reached a state of such a high prevalence of Vitamin D deficiency and its numerous consequences, despite all the advancements in science and technology?*

The answer is a simple!! It is the changing lifestyle resulting in poor or zero exposure to sunlight while Vitamin D is a "the sunshine vitamin".

Just like plants need sunshine for photosynthesis, human beings need adequate exposure to sunlight, which is a source of UVB radiation necessary for the synthesis and proper metabolism of Vitamin D. The improvement in science and technology has indeed increased the lifespan of humans, decreased starvation, improved housing, increased protection through better clothing but has effectively taken us away from nature. We need to reconnect with nature and lead an active life with outdoor activities and hence, get enough exposure to sunlight.

The deficiency of vitamin D has indeed been reported to be associated with several diseases described above but, a simple fact that adequate exposure to sunlight is a sure shot way of preventing deficiency related diseases and promoting health & well-being needs to be emphasized.

*The epidemic of vitamin D deficiency strongly emphasizes on the need for human beings to be physically active, avoid being sedentary & ensure exposure to a minimum essential amount of sunlight every day. We need to burn calories in a natural way rather than sweat it out in a gymnasium or other artificial environments.*

The cognitive dissonance about the importance of getting connected with nature is marked amongst the current generation-unfortunately, even physicians fall prey to a sedentary lifestyle & fail to invest time amidst nature. We are trying to alleviate deficiency by fortifying cereals and milk and supplements rather than getting out in the sun and addressing the root cause of the disease. The debate between causation and association will go on till there is a clear winner but that should not deprive our patients from the benefits of vitamin D in health and wellness.

Conclusion:

History of evidence-based science has shown that associations are followed by causations when robust methodologies are used in the research paradigm, and the same maybe the case with vitamin D. Vitamin D, luckily happens to be a vitamin and not a drug with side effects and hence its use should be justified in accordance with the guidelines and clinical judgement, given its implications in disease prevention, health, and wellbeing. Finding natural ways of getting the vitamin by exposure to sunlight and leading an active life which is connected to nature needs to be the emphasis of future management along with food fortification and supplements as required.

**Author: Dr. Khalid Khader.**

MBBS, D-Ortho, Dip IBLM

# Improvement in mental and metabolic health with lifestyle interventions in a young woman with Polycystic Ovarian Syndrome

Dr. Anni Tripathi

**Abstract** - This is a case study of a 23-year-old girl who was diagnosed with Polycystic Ovarian Syndrome (PCOS) at the age of 16. She had reached out for support after struggling with obesity, secondary amenorrhea, hirsutism, acne and hair loss for many years. She had a poor western diet rich in processed food, refined carbohydrates, fizzy drinks and animal protein. This patient was keen to make lifestyle changes and was very motivated to improve her overall well-being.

**Case Details**- A 23-year-old Caucasian woman who had been overweight for over a decade and had been diagnosed with PCOS at the age of 16. At the time of diagnosis, she was told she would never be able to have children and there was not much treatment for the condition. This had left her very low in mood and scared for her future. Few months after the diagnosis she fell pregnant which ended in an early miscarriage. This led to a vicious cycle of anxiety, which made it difficult for her to reach out for further help and resulted in lack of self-esteem. Her anxiety left her estranged from her family and close friends as she was very moody, irritable and not easy to be around. She was not on any medication. She was advised for oral contraceptive pills to support her amenorrhoea however as she was scared of infertility and hence declined the pill

**Physical examination**- Weight 111kg, height 1.65 m, BMI 40.1 (Obese, class 3), male pattern baldness, facial acne with hirsutism. Her waist circumference was 49 inches.

Blood pressure was 121/92. Other general and physical examination was normal.

**Laboratory results at diagnosis**- Her lipids were elevated, however rest of the hormone profile including the testosterone, sex hormone binding globulin, free androgen index, prolactin, FSH and LH were normal. Her HBA1C was normal as was her pelvic ultrasound too.

*It is important to understand that her diagnosis of PCOS was made according to the Rotterdam criteria where two out of the three criteria were seen to be positive (1). These two criteria included infrequent ovulation manifested as secondary amenorrhea and clinical signs of hyperandrogenism (acne, hirsutism and male pattern baldness).*

## Diagnosis Criteria of PCOS

Rotterdam Criteria  
2 out of 3

1. Menstrual Irregularities
2. Hyperandrogenism
3. Polycystic Ovaries on Ultrasound

 Dr. Anni Tripathi

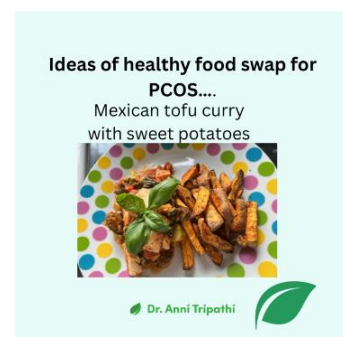
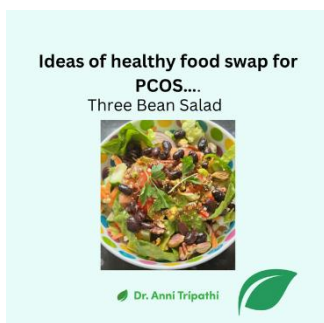
## Improvement in mental and metabolic health in a young woman with Polycystic Ovarian Syndrome

**Lifestyle Vital Sign Assessment** on presentation revealed a nutrient poor diet, mostly processed and high in refined carbohydrates, fizzy drinks and red meat. She lacked a routine and did not do much in terms of physical activity. Her stress levels were very high and she admitted to often ending up eating lots of junk food following anxiety episodes or arguments with friends and family. She did not smoke. However, she consumed alcohol most weekends, which led to very erratic sleep times. Patient herself felt that she was not able to maintain healthy relationships due to her low self-esteem and anxiety.

In spite of overall poor Lifestyle choices, she was now in the '*Preparation phase*' of the Stages of change and very keen to make changes for better health.

**Lifestyle Interventions:** At the initial consultation it became very evident that her low self-esteem and anxiety had a major role in the overall situation. Hence she was referred for *Cognitive Behavioural Therapy* (CBT) for psychological support. Women with PCOS are known to have psychological and behavioral issues which reduce overall quality of life (2).

She was given weekly appointments for the first month to support the changes she chose for her diet, exercise and stress management. I shared an evidence based leaflet which I had developed for PCOS (3). She was given healthy options to swap for processed food that she was eating. *Her red meat was cut down to once a week and she was advised to incorporate more fruits, vegetables and legumes as part of her diet. She had changed her fizzy drinks and alcohol to water and was now making healthy smoothies as a swap. She agreed to walk to work five days a week, which was roughly three miles away from home. For stress management the patient opted to start journaling.* I used techniques of *motivational interviewing* as well as supportive written material about stress management and journaling which she found extremely useful (4, 5).



By the end of the first month, she was feeling more confident in making the changes. She had found the weekly appointments a good way to stay accountable. *The small wins of being able to do the exercise and healthy eating as planned led her to be more motivated. She had started managing her stress levels and learnt how to deal with her anxiety with tools like gratitude list or talking to a friend.* This slowly improved her self-esteem and relationships with her relatives as well as friends. CBT was proving to be extremely beneficial as she started reflecting more into her behavioural patterns. Her emotional eating started to improve too.



## Improvement in mental and metabolic health in a young woman with Polycystic Ovarian Syndrome

The best part was that *with improved exercise and movement she was finding that her sleep was getting better too. I discussed how early morning exposure to daylight would help support her circadian rhythm, which would then have a positive impact on her hunger and satiety hormones as well.*

To support her journey further I introduced her to Dr. Nitu Bajekal's book 'Living PCOS Free' (6). The patient felt a lot of her myths were busted while reading this book. She also found that PCOS was a common condition and felt eager to join a virtual group consultation. As her relationships were improving, the patient felt her partner became a pillar of strength. She now felt hopeful for improved health and felt more confident than she had ever been.

**Outcome :** After three months:

	weight	BMI	BP	Lipids (LDL)	Waist Circumference
Pre-LM intervention	111 kg	40.7	121/92	5.0	49 inch
Post-LM intervention	105	38.6	109/70	3.0	44 inch

The patient was later on followed once a month and she would bring her *food diary* which helped her keep track of her food, exercise and fluid intake. She lost six kilos in twelve weeks. She looked forward to her sessions as the positive results empowered her motivation further.

She had two regular periods by the end of 12 weeks and her blood pressure was 109/70 (normal). Her blood tests showed an improved lipid profile too. Her overall metabolic health had started to improve.

This was a very short period however it is evident that lifestyle changes had made a huge impact on the patient's overall health not forgetting the positive drive to her self-esteem.

**Reflection from this case:**

*Physician's view-* This case study is of a short duration and I have continued to review this patient. It gives me immense satisfaction when I see how she remains motivated with her small changes, as they have led to improvement in her overall health seen as reduced weight, improved mood as well as regular periods; which would mean improved chances of conception. It is important to highlight that Lifestyle interventions can play a vital role when managing PCOS (7).

## Improvement in mental and metabolic health in a young woman with Polycystic Ovarian Syndrome

I have been a lifestyle physician for over three years now and it has brought such a vibrant turn in my career. It is an amazing feeling to notice how impactful small lifestyle changes can be. *There is no better reward than seeing a patient improve their health with simple changes in diet, exercise, sleep and stress levels.* My main reason for choosing this case study was the impact stress and anxiety had on the patient's overall choices and how once she started feeling her emotional wellbeing improve the other things fell into place much more easily

*Patient's view-* (in her own words) I was 16 when I was diagnosed with PCOS. I had no idea what it was, only that it could potentially affect my fertility which put a massive strain on my mental health. I am now 23 and started working with a doctor, talking through everything that had sat on my shoulders for so long. The strategies I have learnt by attending these sessions such as journaling, looking at healthy alternatives and attending therapy has helped me open up and change my outlook on life and the condition I live with. I have benefitted mentally and physically from opening up and working on both my mental and physical health. Busting a lot of myths about PCOS also released some worries and doubts on what I believed was going on in my body. This helped me release any external feelings I had towards myself.

I am starting to feel like myself again, full of life and ready for the world

### References and Resources

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# Recipe Corner: Pumpkin Buns

Contributed by: Neelima Sriram

## Ingredients: Makes 20-25 mini slider buns

1. Steamed unpeeled pumpkin puree: 1cup
2. Whole wheat flour: 4 cups, plus ½ for dusting
3. Pink Himalayan salt: 1 tsp
4. Date powder or paste: 1 tbsp
5. Dry Instant Yeast: 1 tbsp (1.5 tbsp in winters)
6. Coconut butter\* : 1tbsp
7. 1 cup water + 2-3 tbsp (if needed)



## Method

*To prepare the Pumpkin Puree:* Wash the pumpkin with the skin and then cut into small cubes without peeling. Place all the pumpkin cubes in a steamer. Steam for around 20 minutes until it has softened well. Then blend till it is really smooth. Set aside to cool down to a lukewarm temperature.

*To prepare the Sponge/Dough Starter:* In a medium-sized bowl combine 1.5 cups (200 gms) of the flour, 1 cup (240 ml) of water and the yeast together. Stir with a wooden spoon until it is mixed well and free of lumps. Cover the bowl and keep it outside in a warm place for up to 90 minutes. This will add a lot of structure and flavor to the finished bread.

*To prepare the Dough:* The starter can be prepared ahead of time and refrigerated. Remove the sponge from the refrigerator and gently run a rubber spatula around the outer edge to release the sponge from the bowl. Add the remaining water to it as you do so. This water will make it easier to remove the sponge from the bowl. Transfer this sponge mixture to a bowl and add the rest of the ingredients namely pumpkin puree, himalayan salt, date paste, coconut butter to the sponge and mix them nicely. Knead the dough for 8-10 minutes or until fairly smooth. Allow the dough to rise by keeping it covered for 1-1.5 hours or until it is puffy and nearly doubled in size. This is the first proofing. Next gently deflate the dough, cut it into small portions and shape them into tennis size balls. Cover the shaped buns for another 10 minutes for the second proofing to take place.

Set up a steamer (or use Idli cooker) by adding enough cold water to a large pot. Place the buns on a parchment paper lined steamer and keep them to steam for 15 minutes after the water begins to boil. Wait for 3-5 minutes before you lift the cover. Serve warm.

*Variation:* If you wish to bake a sandwich loaf with this dough then bake in a preheated oven at 175 degrees C for 40 - 50 minutes.

\* *Coconut butter* (Makes 200 gms): Ingredients: 200 gms desiccated coconut powder (I use organic "Pure'n Sure" brand)

Method: Place the desiccated coconut powder in a small grinder jar till the jar is completely full. Grind until it turns to butter, scraping the sides at regular intervals to make sure all of it gets blended.

Storage/ Shelf Life: Can be stored in an airtight container for up to three months at room temperature.

Tips: Use organic desiccated coconut powder for best results. Always use a blender with a power of 900 W or more to make butters.

**Contributed by: Chef Neelima Sriram**

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# Book Review: The Plant-Based Athlete

Authors: Matt Frazier and Robert Cheeke

Published by Harper One

Publication Year: 2021, 352 pages

Contributed by: Dr. Nrutya Subramanyam

This book has been written by Matt Frazier, a vegan ultramarathoner and the founder of the No Meat Athlete Movement, and Robert Cheeke, a vegan bodybuilder who adopted a vegan lifestyle at age fifteen. He has authored books like *Vegan Bodybuilding* and *Fitness Shred It* and *Plant Based muscle*.

The authors start by naming a few great athletes who are following a plant-based lifestyle I was surprised by the quite a few names which starred in the list-apart from Novak Djokovic there were Venus Williams and Mike Tyson and I definitely did not expect Mike Tyson to follow a plant-based diet!

*Of course, our very own Virat Kohli is featured in the introduction!!*

*I thought the book was an autobiography of sorts but the authors have actually created a tool kit for athletes who are considering a plant-based lifestyle for their athletic needs whether they are recreational, amateurs or professionals.*



Pulses-image courtesy Krishak Jagat



Grains: Image courtesy Smart foods Nuts & seeds-image courtesy TOI



They take us very systematically through the 10 chapters, starting with a brief history of the various plant-based athletes right from the roman gladiators who apparently ate a mostly plant-based diet. There have been plant-based athletes from as early as the 1970s and here I thought it was a movement started in the 2000s!

In the next few chapters, the authors go through the entire gamut of a nutrition action plan needed for athletes covering *the 3 essential macronutrients and their functions, calorie density and nutrient density*. The authors elaborate on the importance of carbohydrates protein and fats and illustrate through the stories of many plant-based athletes that *it is possible to get enough protein on a plant-based diet*

There is a much-needed and necessary talk about supplements.

*And finally, they take us through creating a meal plan covering the different ratios of macronutrients and also give us examples of sample plates and menus.*

## Book Review: The Plant-Based Athlete

*The authors emphasize recovery and rest and stress the practice of mindfulness and positive psychology and the importance of warm-up and stretching during a workout*



The book also contains over 60+ plant-based recipes to help plan meals.

The book is essentially a series of interviews with various elite plant-based athletes whose stories are inspiring to say the least. *The collective experiences of all the amazing elite athletes make for very interesting reading.* A few snippets from the book that stood out to me are given below.

Dr Caldwell Esselstyn had won an Olympic Gold Medal as a member of the 1956 USA Olympic rowing team and his son Rip is a world-record-holding swimmer.

Christine Vardaros was studying to become a neurosurgeon and discovered that she loved cycling more and is a champion cyclo-racer.

Harriet Davis who is a pro from the International Federation of Bodybuilding and Fitness and also happens to be a Family Medicine Physician

There are many quotes that I have highlighted in my kindle as I was reading this book and it will not be possible to list all of them here but one that stood out is as follows:

*"I didn't reach my athletic peak until I was 44. I didn't start my podcast until I was 45. At 30 I thought my life was over. At 52 I know it's just beginning. Keep running. Never give up. And watch your kite soar."*

*Rich Roll, Ultraman Triathlon Champion, author of Finding Ultra*

The book does get a little tedious as there are very many personal stories and some are repetitive. The last chapter titled "A day in the life of a plant-based athlete" is especially difficult to trudge through.

*But if you are thinking about switching to a plant-based way of life or are just curious about what such a change could do, read this book. Even if you are not an athlete there are enough awe-inspiring stories and you will definitely benefit from having read this book.*

**Contributed by: Dr. Nrutya Subramanyam**