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NUTRITION, LIFESTYLE & IMMUNITY

by

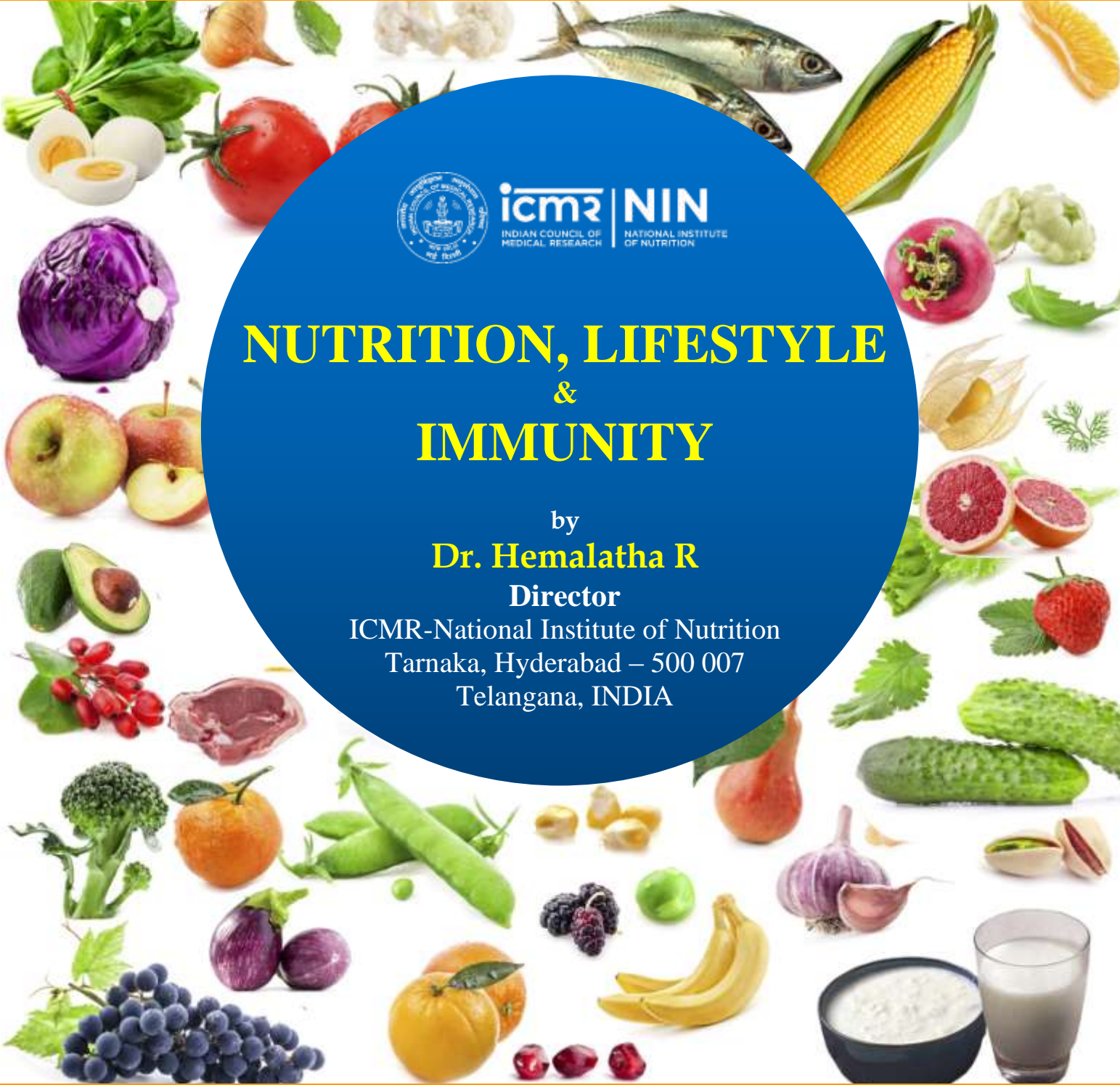
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INTRODUCTION

In the wake of the COVID19 pandemic, people are increasingly becoming aware of the importance of good hygiene, healthy food for ensuring optimal immune function to keep viral/ other infections (communicable diseases) at bay. As for diet, diversity / variety is the magic bullet. "MY-PLATE-FOR-THE-DAY" (available online at: http://nin.res.in/downloads/My_plate_for_the_day.pdf) depicts eight different kinds of foods to be consumed in a day by an individual. If you were to place all the foods that are to be consumed in a day in a plate, half the plate should be occupied with essentially four groups of foods: vegetables, green leafy vegetables, fruits and roots, followed by cereals and millets, then pulses/ flesh foods and nuts & oils.

ROLE OF SPECIFIC NUTRIENTS AND FOODS IN MAINTAINING OPTIMAL IMMUNE FUNCTION

Vitamins A, E and D - the three fat soluble vitamins; C & B vitamins, and minerals such as zinc, selenium, iron, copper etc. and phytonutrients, amino acids, fatty acids are necessary for optimal immune function (to prevent establishment of viral infection) and immune regulation (to check uncontrolled proliferation of immune cells that may cause more harm than good to the body). These nutrients are critical for the function of T cells, B cells, killer cells, macrophages, neutrophils/granulocytes that are involved in the killing and elimination of infectious microbes. In addition, there are many other immune related functions that are carried out by these nutrients and phytonutrients. For instance, vitamin A maintains structure and function of the mucosal epithelial cells of the respiratory tract and enhances mucosal immunity (critical for prevention of respiratory infection), vitamin E, beta-carotene (precursor of vitamin A), vitamins C & B, Zinc, Selenium act as potent antioxidants and reduce oxidative stress in the body.






It is prudent to obtain these nutrients through a good balanced diet. But two important points are to be noted – firstly, though deficiency of one or more of these nutrients can increase the frequency and severity of infections, supplementation of nutrients among healthy (not deficient) population does not confer any additional benefit; secondly, some of these nutrients in excess can increase susceptibility to infections. Therefore, a balanced diet is the key!

SOME USEFUL DIETARY AND LIFESTYLE GUIDELINES TO FOLLOW

Micronutrients (vitamins and minerals) and phytonutrients that are primarily available in fruits, vegetables, greens, nuts, and whole grains play crucial role in several metabolic pathways that aid in optimal immune function.



These nutrients

-  enhance both native and adaptive immune function and prevent infection
-  regulate immune function, keep inflammation under control and prevent tissue damage
-  aid immune memory formation that helps prevent reinfection with the same pathogen
-  help clear/scavenge oxidant species (toxins) that are produced in large quantities in the body during infection and immune response, and
-  increase beneficial probiotic bacteria in the intestine, regulate gut microbiota, maintain intestinal integrity and thereby reduce transmission of toxins from the intestine to the blood circulation.

Therefore, ensure substantial servings of fresh fruits and vegetables (as much as 450 to 500gm per day per person) and prefer whole grains. These can be easily drawn from what is locally produced, seasonal, available and accessible

Limit consumption of highly processed foods, avoid fruit juices & carbonated drinks - these are high in fat, salt and sugar, and poor in nutrients (vitamins, minerals, phytonutrients)



Consuming meat, poultry and eggs is not risky, but hand wash hygiene must be followed after handling raw meat, eggs or even vegetables. Thoroughly cooked meat/ poultry may be included in moderation.



Avoid too much fat (no more than 30 gm/person/day-preferably more than 2 varieties of oils), salt (no more than 5gm/person/day), and sugar is just calories with no nutrients, hence, keep it to bare minimum



Maintain ideal body weight (less than 18.5 BMI is undernourished, and more than 25 is overweight) being underweight or overweight/obese – impairs immunity and increases inflammation



Moderate physical activity/yoga will reduce stress and build immunity



Keep your body hydrated with adequate water intake for good immune response to any infection



Smoking & alcohol adversely affect immunity and increase the risk and severity of infections, hence must be avoided



FOR THOSE SUFFERING FROM DIABETES AND OTHER CHRONIC ILLNESSES

Most infections can be prevented by practicing good personal hygiene such as washing hands before preparing or eating food; Washing hands after cleaning vegetables or meat; stroking pet/animals; covering mouth with a tissue or cloth while coughing or sneezing. People with diabetes or other chronic illnesses should continue their regular medication and prescribed healthy dietary patterns along with adequate physical activity and keep themselves stress free. Diabetics and patients with chronic kidney disease and hypertension are more vulnerable and should strictly follow social distancing and hand hygiene.

SOME LOCALLY AVAILABLE FOODS THAT ARE RICH SOURCES OF ABOVE-MENTIONED NUTRIENTS

Papaya, guava, apple, grapes, mango and many other fruits are rich in beta carotene (precursor of Vitamin A), Vitamin C, Potassium, B vitamins and folate which help in overall maintenance of health and immunity



Citrus fruits like oranges, tangerines, lemons, sweet lime, goose berries, and red bell pepper are good source of Vitamin C



Green leafy vegetables are rich sources of beta carotene (precursor of Vitamin A), vitamins C and E, anti-oxidants and fibre



All seasonal vegetables and spices are rich sources of multiple micronutrients and antioxidants that aid in immune function, regulate gut microbiota and reduce inflammation



Curd is a source of many nutrients, improves gut health by regulating gut bacteria; aids immune function and reduces inflammation



Legumes (chickpea, green gram, black gram, lentils, and beans) provide many nutrients including iron and Zinc



Millets are good sources of multiple micronutrients and fibre



Flesh foods provide many nutrients including iron, zinc and essential amino acids



Fish are rich sources of protein, vitamin A, Vitamin E and essential fatty acids

