

## CKM Syndrome

### Why in News?

World Diabetes Day is observed on November 14.

### What is CKM syndrome?

- **CKM Syndrome** - It is a complex disorder made up of cardiovascular disease, kidney disease, obesity and Type 2 diabetes.
- Obesity and Type 2 diabetes are metabolic conditions and each of the four conditions in CKM syndrome can lead to or worsen one another.
- **Symptoms** - CKM syndrome symptoms may include any of the issues you get with the four conditions that make up cardiovascular-kidney-metabolic syndrome.
  - Chest pain.
  - Shortness of breath.
  - Syncope (passing out).
  - Swelling in your legs, feet, hands or ankles.
  - Pain in your legs while walking.
  - Tiredness.
  - Loss of appetite or an increase in appetite.
  - The need to pee more often.
  - Dry skin.
  - Sleep apnea.
  - Gout.
- **Insidious Growth** - It is often marked by a gradual rise in body weight and waist circumference that soon escalates into obesity, setting off a chain reaction in the body.
- **Premature Death Vulnerability** - Major organs such as the heart, the kidneys, liver and blood vessels bear the brunt, leaving those affected vulnerable to premature death.
- **NCD Burden** - As per Global Burden of Disease (GBD), the burden of non-communicable diseases (NCDs) account for 69% of premature deaths and 68% of years lost to disability.
- **India NCD Burden** - As per National Family Health Survey (2019-21)
  - Diabetes prevalence - 16.1%
  - Obesity - 40.3%
  - Hypertension — 24% of men and 21% of women
- **Tamilnadu NCD Burden** - As per 2020 Tamil Nadu STEPS survey,
  - Overweight - 28.5%
  - Obesity - 11.4%
  - Hypertension - 33.9%
  - Diabetes - 17.6%

The WHO STEPwise approach to NCD risk factor surveillance (STEPS) is a simple, standardized method for collecting, analysing and disseminating data on key NCD risk factors in countries.

	1-4 yrs	5-9 yrs	10-19 yrs
<b>DISEASES OF OVERNUTRITION (%)</b>			
Overweight		3.7	4.9
Obesity		1.3	1.1
Pre-diabetes		10.3	10.4
Diabetes		1.2	0.6
Hypertension			4.9
High total cholesterol		3.2	3.7
<b>DISEASES OF UNDERNUTRITION (%)</b>			
Anaemia	40.6	23.5	28.4
<b>MICRONUTRIENT DEFICIENCIES (%)</b>			
Iron	32.1	17.0	21.5
Vitamin D	13.7	18.2	23.9
Vitamin A	17.5	21.5	15.6
Vitamin B12	13.8	17.2	30.9
Zinc	19.0	16.8	31.7

Source: ICMR-National Institute of Nutrition Report on Dietary Guidelines for Indians

### What are the reasons for high prevalence of CKM ?

- **Influence of Globalisation** - Long work hours, night shifts, ignoring our need for rest, idolising workaholism.
- **Unhealthy Lifestyle** - Long working hours and frequent night shifts lead to brain fatigue and reduced secretion of happy hormones, often counterbalanced by eating super-palatable foods which are rich in salt, sugar and butter.
- **Extended Work Hours** - It disrupts hormone levels, with cortisol (the “stress hormone”) driving unhealthy carbohydrate and lipid metabolism.
- **Poor Glycemic Control** - Distribution of rice, a high glycemic food, through the Public Distribution System (PDS), has contributed to obesity.
- **Poverty** - Low socioeconomic status is associated with use of tobacco and alcohol, physical inactivity, and poor diet.

## What are the challenges?

- **Lack of Holistic Risk Assessment** - Current health management models miss key opportunities for optimal, holistic risk assessment.
- **Fragmented Care** - Patients with multiple affected organs see separate specialists for each issue, leading to, drug interactions, repeated visits, and, ultimately, a loss in wages and productivity.
- **Inadequate Management** - Less than one-fourth of the affected individuals receives any measure of controlling their blood pressure.
- **Low Awareness** - Lack of awareness among people about the causes, impacts of NCDs and unhealthy lifestyle practices.

## What are the impacts?

- Current trends of rising obesity, diabetes, and hypertension rates threatens SDG Targets, health budget and the economy as a whole.

*SDG Target 3.4 - By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.*

- **Premature Death** - In India, noncommunicable diseases (NCDs) account for approximately 64% of all deaths, adversely affecting not only people's health.
- **Economic Impact** - The economic loss attributed to NCDs (excluding mental health) in India is projected to reach US \$3.55 trillion between 2012 and 2030.
- **Health Budget** - Coronary angioplasty and dialysis tops the list of claims under the Chief Minister's Comprehensive Health Insurance Scheme (CMCHIS) of Tamilnadu and Ayushman Bharat Health Insurance.
- **Household Financial Instability** - NCD associated mortality and morbidity affects leads to loss of income and increased out-of-pocket expenses for treatment and care.

## What are the government measures in tackling NCD?

- **NPCDCS** - National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) is being implemented in all States across the country with the focus on
  - Strengthening of infrastructure
  - Development of human resource
  - Emphasis on health promotion
  - Early diagnosis, management and referral.

*Under NP-NCD, 724 District NCD Clinics, 210 Cardiac Care Centre, 326 District Day Care Centres and 6110 Community Health Centres NCD Clinics have been set up.*

- **PBS** - Population based prevention and control, screening and management initiative for common NCDs is being implemented under Health Wellness Centre in National Health Mission (NHM).
- **National NCD Portal** - It provides for implementation of PBS for prevention, control, Screening and management of the population-based screening of common NCDs.
- **National Multi-Sectoral Action Plan for Prevention And Control of Common NCDs** - It offers a road map and menu of policy options to guide multi-sectoral efforts involving other Ministries/Departments towards attaining the NCD targets.
- **Whole of Society Approach** - India is proceeding towards the illness to wellness concept with the “Whole of Government and Whole of Society” approach.
- **Digital Health Technologies** - Telemedicine, mobile health applications, and data analytics can enhance patient engagement, improve access to care, and facilitate monitoring and evaluation.
- **Ayushman Bharat Health Account Number (ABHA-ID)** - It is being maintained and tracking of every single individual with NCDs is done through National NCD Portal.
- **National Health Policy 2017** - It stipulates the target of relative reduction of 15% in tobacco use by 2020 and of 30 % by 2025, from the baseline levels of 2010.
- **Fit India Movement** - It is a nation-wide movement in India to encourage people to remain healthy and fit by including physical activities and sports in their daily lives.
- **Eat Right Movement** - It was launched by FSSAI , to improve public health in India and combat negative nutritional trends to fight lifestyle diseases.
- **ICMR Dietary Guidelines** - It provides 17 dietary guidelines to meet the requirements of essential nutrients and prevent non-communicable diseases (NCDs) such as obesity and diabetes.



## ICMR DIETARY GUIDELINES



**GUIDELINE 1** Eat a variety of foods to ensure a balanced diet



**GUIDELINE 2** Ensure provision of extra food and healthcare during pregnancy and lactation



**GUIDELINE 3** Ensure exclusive breastfeeding for the first six months and continue breastfeeding till two years and beyond



**GUIDELINE 4** Start feeding homemade semi-solid complementary foods to the infant soon after six months of age



**GUIDELINE 5** Ensure adequate and appropriate diets for children and adolescents both in health and sickness



**GUIDELINE 6** Eat plenty of vegetables and legumes



**GUIDELINE 7** Use oils/fats in moderation; choose a variety of oil seeds, nuts, nutriceals and legumes to meet daily needs of fats and essential fatty acids (EFA)



**GUIDELINE 8** Obtain good quality proteins and essential amino acids (EAA) through appropriate combination of foods and avoid protein supplements to build muscle mass



**GUIDELINE 9** Adopt a healthy lifestyle to prevent abdominal obesity, overweight and overall obesity



**GUIDELINE 10** Be physically active and exercise regularly to maintain good health



**GUIDELINE 11** Restrict salt intake



**GUIDELINE 12** Consume safe and clean foods



**GUIDELINE 13** Adopt appropriate pre-cooking and cooking methods



**GUIDELINE 14** Drink adequate quantity of water



**GUIDELINE 15** Minimize the consumption of high fat, sugar, salt (HFSS) and ultra-processed foods (UPFs)



**GUIDELINE 16** Include nutrient-rich foods in the diets of the elderly for health and wellness



**GUIDELINE 17** Read information on food labels to make informed and healthy food choices

## What lies ahead?

- Integrated care for CKM , shifting from segmented care to unified, simultaneous management of risk factors.
- Rather than isolating diabetes, hypertension, heart disease, and kidney disease, they should be viewed as symptoms of a broader metabolic condition.
- An integrated clinic could address these issues, with a multidisciplinary team of a diabetologist, cardiologist, nephrologist, dietician and physiotherapist working together.
- Regular weight and obesity screenings ff preschool through secondary schoolchildren to identify high-risk individuals early.
- Partial replacement of rice in the PDS with millets to diversify the diet and reduce the high glycemic food.
- Regulation of work hours and shifts is as essential a public health measure as any medical intervention.
- Create awareness among people about the necessity of healthy diets.

## Reference

[The Hindu | CKM Syndrome](#)

