

Child India

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of Indian Academy of Pediatrics

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Editor's Note

Dear friends,

March 4th, we observe World Obesity Day with the theme 'Everybody Needs to Act'. The campaign aims to improve the world's understanding, prevention and treatment of obesity. The roots of obesity run deep, and the only way to make progress is by working together at all levels - local, national, and global.



Obesity is an emerging public health problem as according to WHO

1. 800 million people around the world are living with obesity,
2. The medical consequences of obesity will cost over \$1 trillion by 2025
3. People living with obesity are twice as likely to be hospitalized if tested positive for COVID-19, and
4. Childhood obesity is expected to increase by 60% over the next decade, reaching 250 million by 2030.



We are thankful to the contributors for their valuable inputs.

Let us all work towards a healthy tomorrow.

Jai IAP!

Dr Jeesson C Unni
Editor-in-Chief

President's Address

Dear friends,

It has been estimated that on current trends, by 2050, 60% of males and 50% of females will be obese. The current trend shows that around 8% of 1–2-year-old obese children will become obese adults, and 80% of 10–14-year-olds will become obese adults



India is undergoing a rapid epidemiological transition, from underweight to overweight/obese population. Obesity is a major risk factor in type 2 diabetes and cardiovascular diseases, and is also implicated as a factor in neurological diseases such as Alzheimer's disease. A robust, pan-Indian estimate of obesity is not yet available. Worryingly, the increase is more in children than in adults. Some estimates tag the prevalence of obesity among 5- to 19-year-old Indian children, ranged between 3.6 and 11.7%. It is predicted that by 2025 there will be 17 million obese children in India. Urbanisation is the single most important factor linked to obesity in India. Epigenetic, dietary, familial, psychosocial, parental education and parental occupation are other important factors. The prevalence of hypertension, type 2 diabetes dyslipidaemia and non-alcoholic fatty liver disease in children is also increasing parallelly.

World Obesity Day was established in 2015 as an annual campaign with the goal of stimulating and supporting practical actions that will help people achieve and maintain a healthy weight and reverse the global obesity crisis.

Prevention of childhood obesity is vital because it is near impossible to get children to lose weight and maintain it.

I urge all IAPians to conduct awareness programs for prevention of obesity.

Yours in the academy,

Jai IAP!

Dr Remesh Kumar

National President, IAP 2022

Secretary's Message

Dear Friends,

Last one month belonged to our Mega Flagship event, the Annual Conference of IAP, the 59th Pedicon which was held at Noida at India Expo Mart from 19th -23rd March. It was the first purely physical mode event of this great magnitude after more than a 2 year time gap when it was last held at Indore in Jan 2020. The Annual Conference at Mumbai last year was a truncated event, at a mini scale and also on a hybrid mode. More than 5000 delegates enjoyed the elaborate, comprehensive Scientific program of more than 300 hours spanned in more than 10 Halls for 5 days, including Workshops, CMEs and Conference.



The Asia's biggest venue, India Expo Mart at Greater Noida was decked up to the international standards and ambiance was a treat to the eyes and senses. If the Entertainment shows by Celebrities were a wild success, the most significant was the address of Chief Guest, Women & Child Development Minister, Smt Smriti Irani at jam packed Inauguration Function at the Grand Plenary Hall. Every IAP member felt proud that Govt of India representative acknowledging the contribution and potential of IAP to the Child Health' cause. It was heartening the WCD Minister recognizing the contribution of our outgoing President Dr Piyush Gupta for 105 Parental Guidelines. The Hon'ble Minister was particularly thankful for IAPs contribution to the CCI's during the Covid times. Her invitation and subsequent meeting of top IAP Brass in her ministry for long deliberations on how IAP & GOI can work together for Child Development by signing some MOU's was truly historic. This was a landmark shift as GOI recognizing IAP as custodian of Child Health.

We are very hopeful that the outcome would have a far reaching impact and IAP's credibility and recognition will grow in coming years. I appeal our members on this occasion to please devote some time for the Social cause, like you did in NRP. We will soon be inviting the willing members to work for IAP and our society. Surely, there contribution will be duly acknowledged.

Congratulations to our President 2022 Dr Remesh Kumar who was officially crowned at the glittering inaugural function and the whole Team of CIAP for 2022.

Congratulations to all the worthy award winners, whom IAP thanked and acknowledged at the inaugural function. Congratulations to the Post Graduates, our future who presented their research work and won medals for themselves and their institutions. Thanks to all the Faculty Members who travelled from all parts of the country to share their knowledge with all the members.

Last but not the least, THANKS to the Organizing Committee, the Team Noida and Team AOP UP for giving us a memorable, grand conference against all odds, battling several postponements due to covid and uncertainties, particularly to name the Chief Organizing Secretary Dr Ruchira Gupta and my co Organizing Chairperson Dr Arvind Garg and much more than Treasurer Dr Vineet Tyagi.

Lets all work together for the glory of IAP.

Long Live IAP! Jai IAP! Jai Hind !!

Dr Vineet Saxena

Hon. Secretary General 2022 & 23

Pedicone 2022 Noida



Pedicone 2022 Noida



Pedicone 2022 Noida



Pedicone 2022 Noida

← Tweet



Smriti Z Irani

@smritiirani

At 59th Annual Conference of the Indian Academy of Pediatrics ‘Pedicone 2022’ in Noida, launched ‘105 Guidelines for Parents for Common Pediatric Illness’. This booklet will provide a better understanding to parents on dealing with diseases & help address their queries.



Pedicone 2022 Noida



Pedicone 2022 Noida



Childhood obesity: Facts and figures

DR SIRISHA KUSUMA B

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Even as undernutrition continues to be a major contributor to childhood morbidity and mortality throughout the developing world, the rates of childhood overweight and obesity are steeply rising in the last 2-3 decades. Obesity no longer remains the problem of high-income countries but has been rapidly making inroads among low and low-middle-income countries, especially in urban areas.

Overweight and obesity adversely affect cardiovascular health in the long run, increase the risk of obstructive sleep apnea, metabolic complications like non-alcoholic fatty liver disease, hyperlipidemia, diabetes mellitus, and decrease the quality of life on the whole.

Definitions:

Obesity is defined as an abnormal and/or excessive accumulation of fat that can impair health. Body mass index (BMI), defined as a person's weight in kilograms divided by the square of his/her height in meters (kg/m^2), is the most commonly used measure of overweight and obesity in adults and children over 5 years of age.

For adults, WHO suggests BMI cut-offs of $25 \text{ kg}/\text{m}^2$ and $30 \text{ kg}/\text{m}^2$ for overweight and obesity respectively. For children between 5-19 years, a BMI-for-age more than 1 SD above the

median is considered overweight, while a BMI-for-age more than 2 SD above the median is obese when using WHO growth references¹. For children aged under 5 years, a weight-for-height more than 2 standard deviations (SD) above the median is considered as overweight and a weight-for-height more than 3 SDs above the median is considered as obese when World Health Organization (WHO) weight-for-height references are used¹.

Although BMI is a reliable and easy-to-use tool at the population level, it may not correspond to the same degree of fatness in different individuals. For example, Asian adults are known to be more prone to abdominal obesity and a much higher rate of metabolic complications at lower BMIs. Hence, lower BMI cut-offs of $23 \text{ kg}/\text{m}^2$ for overweight and $28 \text{ kg}/\text{m}^2$ for obesity have been suggested for Asian adults. Similar findings of higher body fat for the same BMI were replicated in Indian children and adolescents when body fat percentage was measured by alternate methods like bio-electrical impedance and dual emission x-ray absorptiometry.^{2,3}

In 2012, Khadilkar, et al. presented age and sex-specific BMI cut-offs for Indian children from 5-17 years, linked to the accepted adult Asian cut-offs of 23 and 28.4.

Global burden: facts and figures

Globally, except in parts of sub-Saharan Africa and Asia, overweight and obesity are linked to more deaths than underweight. According to 2016 WHO global estimates, about 13% of the world's adult population (11% of men and 15% of women) were obese, with the numbers nearly tripling between 1976 and 2016⁵. (Figure 1.)

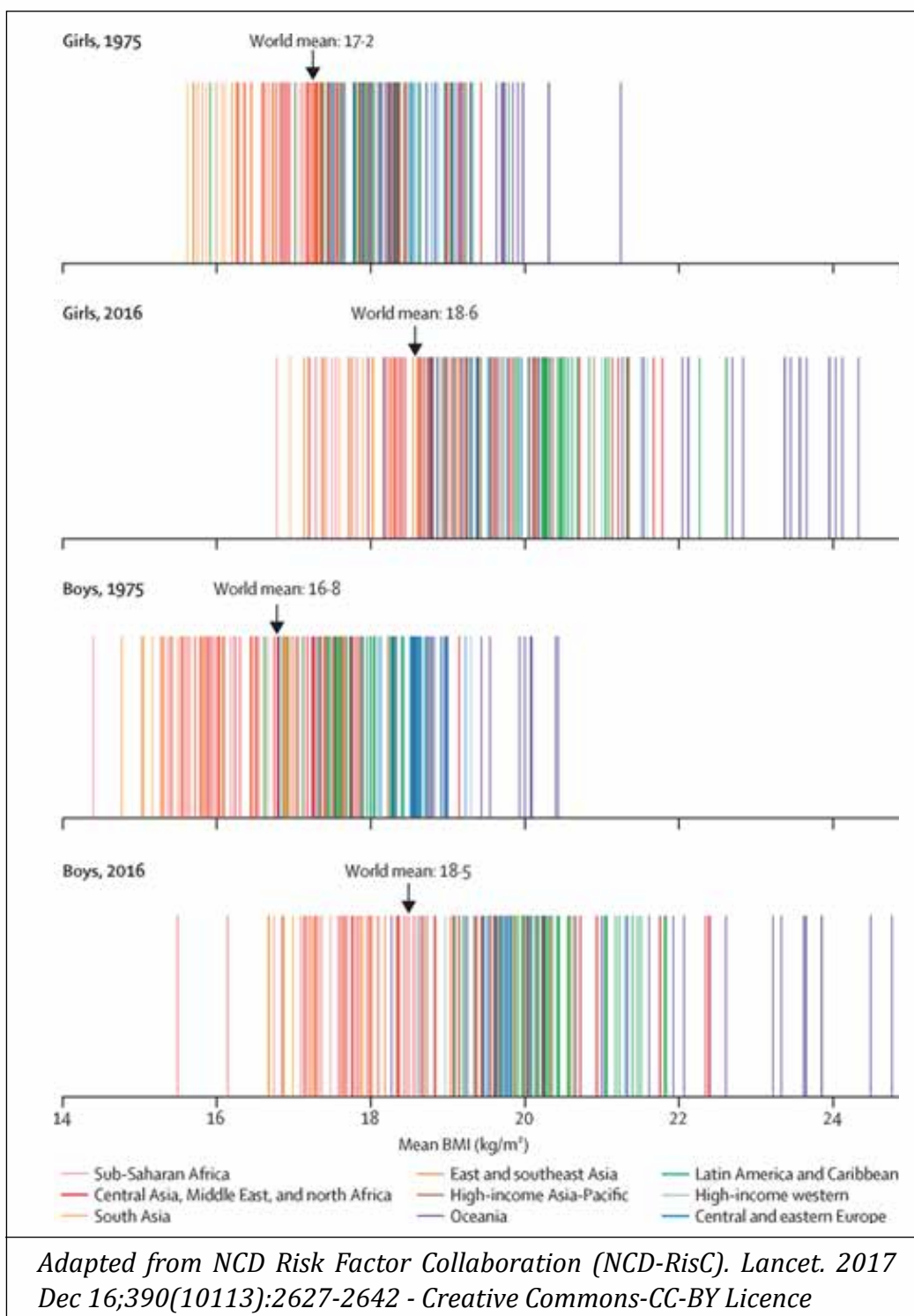


Figure 1. Age-standardized mean BMI in children and adolescents in 1975 and 2016⁶

Among children between 5-19 years, the prevalence of overweight and obesity rose from just 4% in 1975 to over 18% in 2016. These increased rates were similar in both boys and girls. In 2019, an estimated 38.2 million children under the age of 5 years were overweight or obese, and almost half of them lived in Asia. (Figure 2.)

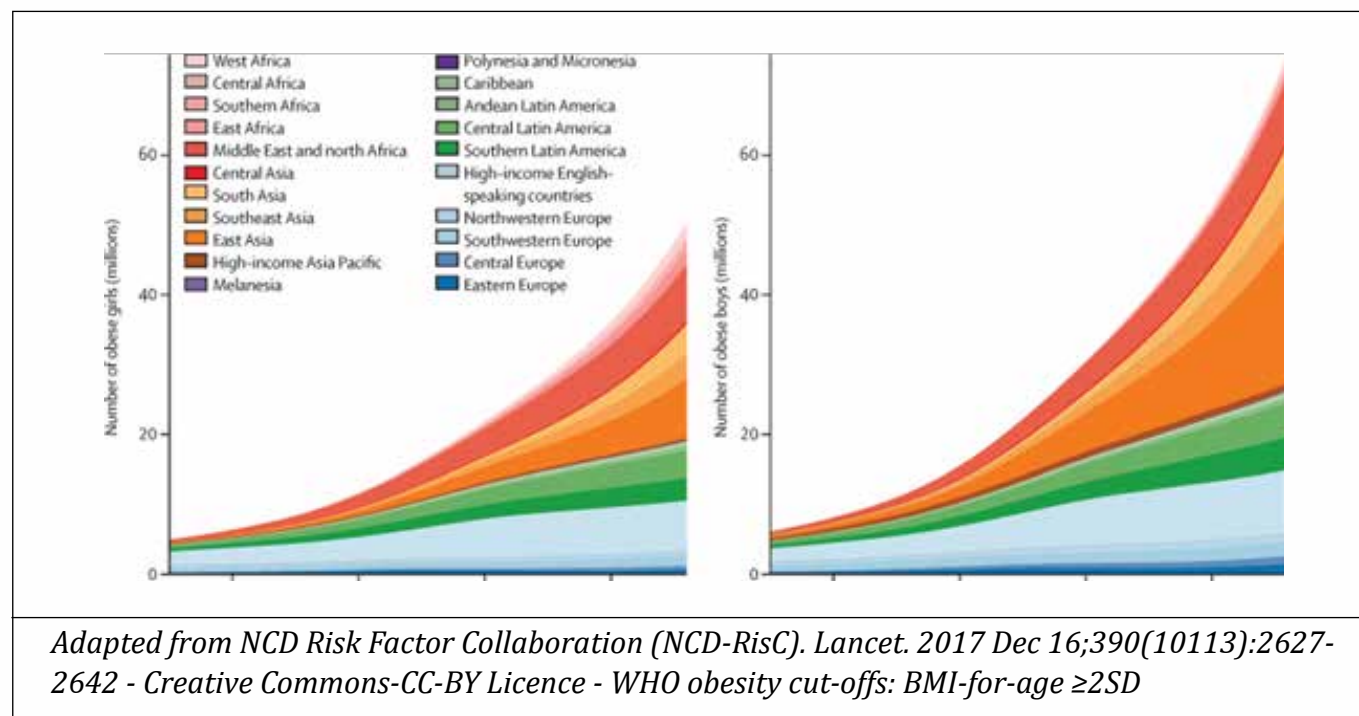


Figure 2. Trends in the number of children and adolescents with obesity by region⁶

Based on the WHO, UNICEF, and Non-Communicable Diseases Risk Factor Collaboration (NCD-RisC) data, World Obesity Federation (WOF) published the first global atlas on childhood obesity in 2019, providing the latest estimates of infant, childhood, and adolescent obesity in 191 countries. It also provided estimates of the prevalence of obesity in children by 2030 and the probability of achieving the WHO target of “no increase in obesity prevalence by 2025”. Based on the current number of 158 million children (5-19yrs) living with obesity worldwide, this report estimates that by 2030 this number could rise to 254 million.^{5,6} (Table 1.)

Latest: % Infants overweight	2.4	
	Boys	Girls
2016: % children age 5-9 with obesity	3.7	2.6
2016: % children age 10-19 with obesity	1.8	1.1
2010: % adolescents with insufficient physical activity	69.6	71.6
Projections for 2030		
	Percentage	Number
Predicted 2030: children aged 5-9 with obesity	10.8	12,692,004
Predicted 2030: children aged 10-19 with obesity	6.2	14,789,136
Predicted 2030: number of children aged 5-19 with obesity	27,481,141	

Table 1. Indian data from the childhood obesity atlas⁵

The Indian and South Asian scenario

While the rates of overweight and obesity in children and adolescents seemed to have plateaued in developed countries, the rising trend continues in South Asia. This has been more clearly visible in urban areas and those belonging to higher socioeconomic strata. (Figures 3 & 4.)

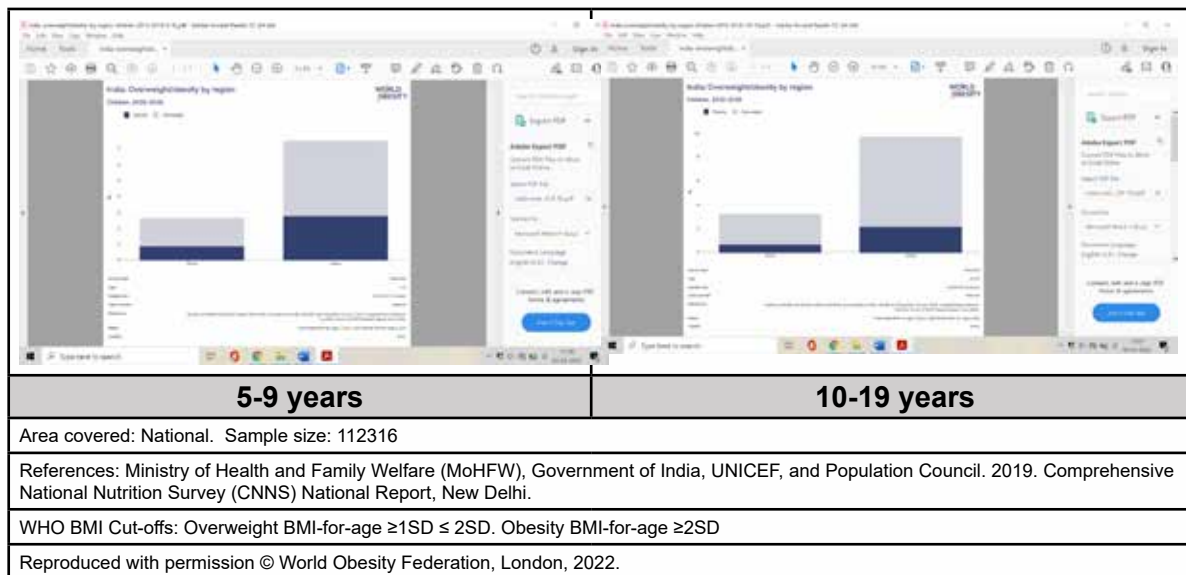


Figure 3. Rates of overweight and obesity in rural and urban Indian children between age 5-19 years: data from 2019 CNNS report⁵

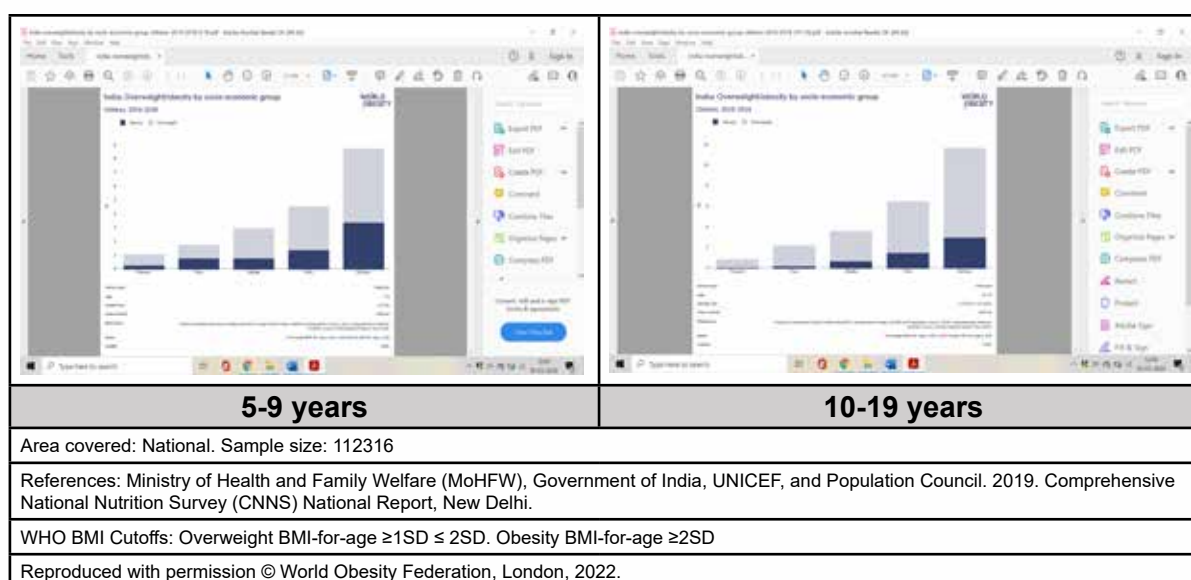


Figure 4. Rates of overweight and obesity in Indian children between age 5-19 years belonging to different socio-economic groups: data from 2019 CNNS report⁵

In a systematic review conducted in 2016, Ranjani et al. analyzed the prevalence data from 52 studies conducted in 16 States in India. The combined prevalence of childhood and adolescent obesity was higher in the north, compared to south India. The pooled data after 2010 estimated the combined prevalence of childhood overweight and obesity to be 19.3 percent, which was a significant increase from the earlier prevalence of 16.3 percent reported in 2001-20057.

According to the National family health survey-5 conducted between 2019-2021, the rates of under-five overweight (Weight for age) increased from 2.1% in 2015-2016 to 3.4 % (urban- 4.2%, rural 3.2%). No data were available on the 5–19-year age group. However, it has to be noted that underweight (32.1%) and stunting (35.5%) remained the predominant public health issues, though with some improvement from the previous years8.

In the WOF predictions for future prevalence of childhood obesity, where a risk score was calculated from combined factors, India scored 4 (out of a maximum score of 11), which seemingly indicated a lower risk of having or acquiring significant childhood obesity problem in the coming decade. However, if one looks at the actual numbers, by 2030, India might be home to a whopping 27.48 million children between 5-19 years who are obese, only second to China5. (Table 1.)

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Causes of simple/ exogenous obesity - Who to blame

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Obesity can be classified into nutritional/ exogenous obesity or pathological obesity which occurs with underlying monogenic disorders or hormonal disorders. Exogenous obesity is far more common and chiefly results due to an imbalance between energy intake and energy consumption. Secondary causes of obesity include drugs, neuroendocrine diseases (hypothalamic, pituitary, thyroid and adrenal disorders) and monogenic disorders.

The aetiology of obesity is understood as multifactorial, with complex interplay of genetics, hormones and the environment [1]. The environmental influences are noted in the form of an 'Obesogenic' environment where lifestyle practices have become tailored to suit an urbanized style contrasting to our earlier traditional Indian lifestyle. The practice of early rising, exercise or 'Pranayam', followed by healthy meals with locally produced and freshly cooked meals, physical labour for self-work, and disciplined lifestyle was a key to physical and mental fitness [1].

However, the last few decades have seen drastic changes in daily routine to suit a more relaxed and lazy lifestyle which is now considered

as 'new normal'. The evolution of technology is instead being seen as a 'bane' with overuse of motorized vehicles and increasing screen-time, easy access to ultra-processed food and sugar-sweetened beverages, high-rise buildings with limited time and open space for outdoor games and activity. Likewise, host factors which contribute to an obesogenic lifestyle include media-addiction, lack of physical exercise, binge eating habits, frequent snacking and substance abuse. This helps us understand the energy imbalance which occurs due to these risk factors. However, a major drawback of this energy homeostasis model was that the other feedback signals to regulate weight like hunger, satiety, neurohormonal control was not accounted for. Therefore, a more dynamic energy model which took into consideration the settling point (target level of satiety regulation) and cognitive feedback mechanisms was proposed to be more logical to understand the pathogenesis of obesity [2].

Among host factors, the insights into neurohormonal control elucidate the regulation that happens at the blood-brain barrier (BBB) to regulate the passage of macromolecules and the bidirectional transport of hormones and

nutrients between the blood and brain [3,4]. Intake and metabolism of food are regulated by different hormones, such as leptin, whose circulating levels are often altered in obesity [5]. Leptin normally acts to inhibit neuropeptide Y, a neurohormone present in the gut and hypothalamus, to suppress the appetite. Obesity can affect the cellular integrity of the BBB (independent of the transporters), which can further affect the satiety control at the level of the central nervous system [4]. Adiponectin is an adipokine derived from plasma protein and levels of adiponectin messenger RNA (mRNA) levels are reduced in adipose tissue in obesity [6,7]. A further extension of this gut-brain axis reveals the role of ghrelin, a hormone produced locally in the stomach which has receptors in hypothalamus and pituitary. It acts to stimulate the appetite by stimulating the release of neuropeptide Y in the brain [3].

The epigenetic factors further affect the host susceptibility to obesity. Our recent understanding of genes has revealed up to 3% variability in obesity phenotype through genome wide association studies (GWAS) [8]. The epidemiological data show the association between ethnicity and gender with obesity. Environmental factors during prenatal and early infancy cause a developmental programming of these genes to alter their expression and result in an obesogenic phenotype [9,10]. Newer pathological agents like air pollution, endocrine disruptors and food allergens are also implicated in childhood obesity [2].

Among other biological factors, gut microbiome has also been associated with

childhood obesity. The maternal microbiota is affected by special diets or drugs that further influence the risk of obesity in the offspring. High fat content in maternal diets was associated with reduced Bifidobacterium and Lactobacillus levels in microbiota of infants [11]. Similarly, an abundance of gastrointestinal commensals like Bifidobacterium is seen in lean children while Firmicutes, Actinobacteria, Bacteroidetes and Proteobacteria are commonly found in obese children. The exogenous dietary influences like amount of dietary fibre intake, quality of carbohydrate consumption, bile acids and short-chain fatty acids like butyrate further determine the host-diet-microbiome relationship. Even breastfeeding per se has shown a direct beneficial effect on infant's microbiome, similar to exposure to maternal vaginal microbes during a vaginal delivery [12]. The microbiome in a baby usually evolves and matures into their adult microbiome by the end of first year, reiterating the importance of early infant feeding practices.

To summarize, the obesogenic environment remains the main culprit responsible for the pandemic of obesity with multi-hit effects of silent environmental triggers and epigenetic changes. We may blame urbanization, genetic predisposition, lack of political will and sociodemographic factors for this growing epidemic. It is however; more important to acknowledge our own personal behaviors and lifestyle which are equally accountable for these adverse consequences and are the best sustainable solutions for prevention and treatment of this pandemic.

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Short term and long-term effects of childhood obesity

DR. J. DHIVYALAKSHMI

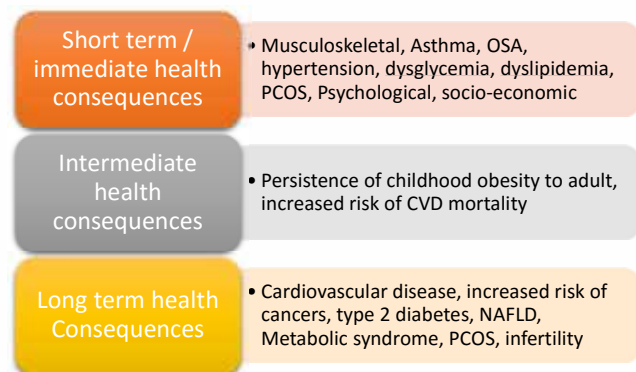
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Childhood obesity has become the major global health problem. Severity and prevalence of childhood obesity has significantly increased over the past three decades [1, 2]. Complexity of obesity lies in the “multi-systemic nature” of the condition. Health effects in an obese child have significant impact on their own health as an adult. Being an obese child increases the likelihood of being an obese adult and there by leading to obesity related complications like increased risk of developing the metabolic syndrome, cardiovascular disease, type 2 diabetes, nonalcoholic fatty liver disease, obstructive sleep apnea, polycystic ovarian syndrome, asthma, orthopedic complications, psychiatric disease, etc., Many of these complications are usually seen in adults, however these complications are becoming increasingly prevalent in children with obesity [3]. Several longitudinal cohort studies have suggested that childhood obesity poses increased risk for morbidity and mortality in adults [4-6]. Childhood obesity adversely affects physical as well as social and emotional health and self-esteem of the child. In this section, we will discuss about the short term and long-term effects of childhood obesity (Figure 1).



Abbreviations: OSA - Obstructive sleep apnoea, PCOS - Polycystic ovarian syndrome, CVD - Cardiovascular disease, NAFLD - Non alcoholic fatty liver disease

Figure 1: Health consequences of childhood obesity

Acute complications in childhood obesity are usually due to psychological, Physical health and socio-economic consequences

- **Psychological consequences:**

Study by Britz et al, [7] found that disorders of mood (anxiety), somatoform and eating disorders were detected more among children with obesity. The study also observed that these psychological illnesses were observed only after the onset of obesity. A significant proportion of these children (female > male) reported binge eating and a lack of control over

their diet. Disordered eating behaviors can be emotional eating, uncontrolled eating, and loss-of-control eating. Goldfield et al, [8] in their study among 1400 adolescents observed that body dissatisfaction, social isolation, depression symptoms, anhedonia, and negative self-esteem were significantly higher in adolescents with obesity. There is a widespread stigmatization of children with obesity, which causes behavior abnormalities like eating disorders, social isolation, declining academic performance, avoidance of health care services, and decreased physical activity in these children. These behavior abnormalities can create a barrier in the management of childhood obesity.

- **Physical health consequences:**

- o Physical complications of childhood obesity may not be evident for decades. However, an increasing prevalence of gallstones, hepatitis, sleep apnea and increased intracranial pressure has been observed in obese children in several studies.

- o **Birth to 2 years of age**

- Delayed motor milestones were 1.80 times more likely in overweight infants and 2.32 times more likely in infants with high subcutaneous fat [9].

- o **Childhood and adolescence**

- Musculoskeletal complications - slipped capital femoral epiphysis and Blount's disease (Tibia Vara)

- Pulmonary complications - increased frequency of asthma, decrease in exercise tolerance, abnormal sleep patterns, obstructive sleep apnea.

- Cardiovascular - about one third of children with obesity can develop Hypertension. Overweight adolescents are 8.5 times at higher risk for hypertension during adulthood [10].

- GI complications - obesity accounts for 8 - 33% of the gallstones observed in children.

20 - 25% of obese children demonstrate evidence of steatohepatitis (by USG or elevated transaminases) [11].

- Endocrine complications - insulin resistance, higher levels of total cholesterol, low-density lipoprotein (LDL) cholesterol, and triglycerides have been noted in obese children. In the Bogalusa Heart Study 2.4% of the overweight adolescents developed type 2 diabetes by the age of 30 years compared to none of the lean adolescents [10]. Hyperandrogenemia and menstrual abnormalities are more common in obese female children. Although early menarche is common in obese girls, delayed menarche, oligomenorrhoea, amenorrhoea are also been observed. Hormonal patterns of polycystic ovary syndrome have been increasingly observed in obese adolescents.

- It has also been observed that acute phase reactants like C-reactive protein are elevated in obese children causing a chronic inflammatory response. Studies have observed that inflammatory markers are elevated in as early as the third year of life. This has been linked to increased incidence of cancers, autoimmune disorders and heart disease later in life [11].

- **Socio-economic Consequences:**

Obese children often have significant concern towards their body image, self-esteem and are facing rejection from peers, which can lead to progressive withdrawal. Gortmaker et al, [12] in a seven year follow-up of 10039 adolescents and young adults (16 to 24 years of age) from the National Longitudinal Survey of Youth analyzed that obese adolescents and young adults had less duration of schooling and suffered poor academic performance, low household income and poverty compared to normal weight subjects. The findings were more among female subjects compared to male.

Long term effects of childhood obesity

The effects of childhood obesity can

track into adulthood, especially towards Cardiovascular disease risk factors. There are other obesity related morbidities that can persist into adulthood. Persistence of obesity present in childhood or adolescence into adulthood is an established independent risk factor for CVD, NIDDM, hyperlipidaemia, gall bladder disease, osteoarthritis and certain cancers. Nearly half of obese adolescents remain as obese adults. This persistence of childhood obesity was more observed in females. [11, 13]

Morbidity due to childhood obesity in adults

- Cardiovascular disease - Significant morbidity has been observed due to early onset hypertension and renovascular disease. Studies have shown that there is increased prevalence of heart disease and atherosclerosis among obese adults who had obesity during adolescence.
- The third Harvard growth study observed a higher risk of colon cancer and gout (observed more frequently in males). Increased risk of arthritis, hip fracture and for difficulty with daily activities have been observed in females [11].
- Exponential risk of type 2 diabetes mellitus has been documented well in many studies. However, the association is not found to be significant when adjusted for adult BMI [14].
- Adolescents with obesity have an increased predisposition to asthma and obstructive sleep apnea. Chronic inflammation and increased risk of cancers (renal, cervical and ovarian cancers) are found to be associated with higher BMI in adolescence in some

studies.

- Non Alcoholic fatty liver disease (NAFLD) along with metabolic syndrome in childhood increases the risk of cardiovascular diseases in adulthood
- Reproductive health - higher risk of menstrual irregularities, PCOS, infertility, gestational diabetes and pregnancy induced hypertension.

Mortality due to childhood obesity in adults

Persistence of childhood obesity and continuing as an obese adult significantly increases the mortality in adult. Most common causes observed in several studies are coronary heart disease, stroke and cancers. Relative risk estimates of about 1.5 for all-cause mortality and 2.0 for CHD mortality in relation to overweight during childhood [14]. Longitudinal studies show these health consequences can be present even if normal weight is attained after childhood, which suggests a possible permanent imprint due to childhood obesity [2].

To conclude, health and social consequences of childhood obesity are substantial. Short-term risks like orthopedic, endocrinal, gastroenterological, pulmonary and neurological complications will become more prevalent with increase in prevalence of childhood obesity and have significant impact in the health and growth of these children. Long-term consequences like type 2 diabetes, cardiovascular disease and mortality are also of significant public health importance and are of a great concern for a nation. Hence, strategies for the prevention of childhood obesity are a very crucial and essential tool for the prevention of these health consequences.

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Interventions for the prevention and treatment of obesity in children

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The most famous last words are “It is better said than done”. Similarly, prevention and treatment of obesity are better advised than executed. We all know the amount of caloric burnout is directly proportional to how much calorie restriction one does and how many calories one burns.

Prevention of obesity

As we know that obesity is multifaceted and multifactorial, our preventive interventions should begin right from the prenatal age involving the “Birth Pathway” and moving along the spectrum of childhood and adolescence with interventions at the level of the individual, family and community.¹ The emphasis for the prevention should include modification of the environmental and social factors.²

a. Prenatal age

Women should conceive with an start appropriate weight and manage their weight gain following an healthy lifestyle. An excessive weight gain during pregnancy is associated with a large fetus independent of maternal hyperglycemia. Recommended gestational weight gain is between 11.5 and 16 Kg in normal weight women, 7 to 11.5 Kg, in overweight and 5 to 9 kg in those who are obese prior to pregnancy.

Tobacco smoke in pregnancy and postnatally (dose dependent manner) is prohibited as it increases the risk of the child being overweight at age 7 regardless of birth weight.^{3,4}

b. First two years of life

Excessive weight gain and/or increased weight-to-length ratio is to be avoided very early in life as it increases the risk of being overweight and obese in childhood. The best way to avoid excessive weight gain is by practicing exclusive breastfeeding up to 6 months, avoid introduction of solid food/formula before the age of 4 months at least. Sweetened drinks should be avoided. Complementary responsive feeding practices, such as baby-led weaning (which is associated with early satiety-responsiveness acquisition), are protective against obesity respect to usual complementary feeding mode.^{5,6}

c. From preschool age to adolescence

A nutrient dense diet which is 5 servings of fruit, vegetables and plant-based proteins is recommended. The dietary intake in a day should be distributed in no more than 5 daily meals (3 large meals & 2 small meals). All family members should consume the same type of food and sit across the table without gadgets. The use of fast food, bakery items, packed savoury items

and frequenting fast food-based venues should be limited. Sweetened drinks, sports drinks, juices, alcoholic and energy drinks should be avoided.⁷

d. Physical activity:

An hour of moderate to vigorous physical activity is recommended in children/adolescents⁸. Even moderate physical activity (especially if already overweight) is sufficient to improve aerobic fitness (important for metabolic health). The increase of physical activity levels can be achieved starting from the age of 2–3 years by active play, walking, using the tricycle, after 5–6 years, promoting also sports participation 2/3 times a week. The list of physical activities targeting muscle strengthening, bone strengthening and aerobic exercises are given in table 1.

e. Sedentary behaviours

The use of television and electronic games is discouraged in children <2 years of age. Sedentary behaviour, especially the time spent in front of a screen (TV, video games, computers, mobile phones, etc.) should be reduced to less than 2 h a day in children >2 years of age⁹. There is evidence to say that overfeeding happens during these hours of screen time and that affects metabolic health. Avoid installing a TV in the bedroom and reduce number of screens (inclusive of iPad and tablets) at home.

f. Sleep duration and quality

Shorter the sleep duration the higher chances of obesity through neuroendocrine and metabolic derangements¹⁰. Inculcating healthy sleep hygiene habits in the children by parents e.g. turning off all “screens”/lights 30 min before bedtime is also suggested to ensure adequate sleep.

Treatment of obesity

This includes a patient and family structured approach wherein factors like age, ethnicity and culture are considered and there

is adequate behavioural modification to bring about a significant decrease in body mass index (BMI). A multidisciplinary approach with the main objectives being a permanent change in the child’s eating habits and lifestyle, maintaining mental health, treating/preventing the complications and preventing relapses is the key to success rather than attaining rapid weight loss affecting nutritional status.

1. Diet¹¹

A balanced and varied diet (<https://www.mfine.co/guides/indian-obesity-diet-chart/>) is recommended after assessing the child’s and family eating patterns. Food diary is an excellent tool for assessing eating behaviour; it should be compiled by the child together with the parents. The salient points in the diet management include:

- Eat 5 meals a day (three meals and two snacks)
- Do not skip the breakfast
- Increase intake of fruit, vegetables and fibre content (complex carbohydrates)
- Limit portions
- Avoid eating/grazing/snacking between meals
- Avoid high-energy and low nutrient density foods (eg. sweetened drinks, fruit juices, fast food, high-energy snacks)
- Reduce saturated dietary fat intake for children and adolescents >2 years of age
- Recognize eating cues in the child’s or adolescent’s environment by the parent, such as boredom, stress, loneliness and screen time

It is better to follow the traffic light diet, rather than eating replacement meals, hypocaloric diets with low glycaemic index/ low glycaemic load and very low caloric diet. One should make sure to fulfil the National Recommended Energy and Nutrient Intake Levels, based on sex, age and ideal weight for stature (proteins 1 g/kg/day;

carbohydrates 45–60% of total calories; simple sugars <15% of total calories, lipids 20–35% of total calories starting from 4 years of age, saturated fatty acids <10% of total calories)

2. Exercise

Physical exercise reduces cardio-metabolic risk factors. Change in body composition (especially fat reduction) rather than BMI reduction is way more sensitive to evaluate the effectiveness of exercise.¹² Obese children usually can't perform vigorous strenuous exercises, hence mild to moderate aerobic exercises can be started with and gradually the intensity can be increased. In severe obesity exercises that put constant weight or repeated impact on the child's legs, feet and hips should be avoided. Children and adolescents should perform aerobic exercises for 60 min or more every day and muscle/bone strengthening exercise at least thrice a week as per the physical abilities of the obese child. Sedentary activity and screen exposure has to be avoided.

3. Cognitive and family-based behavioural therapy

Cognitive behavioural treatment/family-based behavioural treatment are recommended as additives to result in better adherence to diet and physical activity^{13,14}. The most effective techniques are goal driven approach, self-monitoring (through food and physical activity diaries), contingency training, controlling-stimuli, positive reinforcement, cognitive restructuring and problem solving. They aim at solving the problems and reaching goal as a team (entire family-child and parent).

4. Pharmacological intervention

Pharmacological therapy can only be applied after the failure of the multidisciplinary lifestyle intervention only in children above 16 years¹⁵. Orlistat was the only drug available for the treatment of children and adolescents with severe obesity until in 2020 US-FDA (United States-food and drug administration) approved Liraglutide for the pharmacological management of obesity as adjunctive to diet and exercise for children above 12 years. Clinicians should discontinue medication and re-evaluate the patient if the patient does not have a >4% BMI/BMI z score reduction after taking the medication for 12 weeks at the medication's full dosage.

5. Bariatric surgery

Bariatric surgery is the last resort solution in adolescents with severe obesity and resistant to all other treatments, especially when serious complications are present.¹⁶

The indications for surgery in the adolescent are: a) BMI ≥ 35 kg/m² with at least one severe comorbidity (Type 2 Diabetes Mellitus, moderate-severe obstructive sleep apnoea, idiopathic endocranial hypertension, non-alcoholic steatohepatitis with significant fibrosis b) BMI ≥ 40 kg/m² with less serious comorbidities.

To conclude, the effort to avoid obesity is the way forward beginning from the womb, tiding through the childhood and reaching the adulthood. This journey strikes a delicate balance between the caloric intake and expenditure intertwined with family, cognitive and environmental modifications.

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Table 1: Type of Physical Activity

	Preschool-Aged Children	School-Aged Children	Adolescents
Moderate intensity Aerobics	Follow the leader Playing on a playground Tricycle or bicycle Walking, running, skipping, jumping, dancing, swimming catching, throwing, kicking	Brisk walking Bicycle riding Swimming Baseball and Softball	Brisk walking Bicycle riding Swimming Baseball and softball House work, such as sweeping
Vigorous intensity aerobics	Moderate and vigorous intensity are almost the same only the effort matters Martial arts Vigorous dancing		
Muscle strengthening	Tug of war Rope or tree climbing Yoga		
Bone strengthening	Hopping, skipping, jumping, running		

Role of Pediatricians in Childhood Obesity



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Introduction And Prevalence:

The worldwide prevalence of pediatric obesity has increased alarmingly over the past few decades. Once considered a problem of the affluent nations, overweight and obesity are now steadily on the rise in low- and middle-income countries [1]. Between 1975 and 2016, the global prevalence of obesity in children and adolescents has nearly tripled from 4% to around 18%. The World Health Organization (WHO) identifies pediatric obesity as “one of the most serious public health challenges of the 21st century” [2]. As per WHO estimates, 39 million children under the age of 5 years and an additional 340 million between 5 and 19 years of age are obese or overweight [2].

Indian statistics concerning childhood obesity mirror the global trend, with a dramatic rise noted in both urban and urban areas. A multicentric study conducted in eleven affluent urban Indian schools in children aged 2-17 years reported the prevalence of overweight and obesity as 18.2% by the International Obesity Task Force (IOTF) classification and 23.9% by

World Health Organization (WHO) standards [3]. The number of Indian overweight and obese children is projected to reach an overwhelming 17.3 million by 2025 [4]. Obesity prevention should be recognised as a public health priority and urgent steps initiated to halt this epidemic.

Rationale For Prevention:

Obese children are at higher risk of developing co-morbidities like pre-diabetes and diabetes, dyslipidemias, hypertension, non-alcoholic fatty liver disease (NAFLD), polycystic ovarian syndrome (PCOS) and obstructive sleep apnea (OSA). In addition, it poses a significant psychosocial burden and predisposes affected children to impaired quality of life and increased risk of mortality. Childhood obesity often tracks into adulthood. Age of onset, severity of obesity, and parental obesity are factors that influence this tracking phenomenon. Different studies have shown that 50-90% of obese children become obese adults in later life. Furthermore, obesity in childhood has substantial economic and social costs, with increased burdens on health systems

and reduced economic productivity. Obesity-related annual hospital costs (based on 2001 constant US dollar value) increased by more than three times, from 0.43% of total hospital costs during 1979–1981 to 1.7% during 1997–1999, amounting to \$127 million. The Brookings Institution predicted that if all 12.7 million US children and adolescents with obesity become obese adults, the individual average price spent would be \$92,000, and the societal costs during their lifetimes might be \$1.1 trillion.

Treatment of childhood obesity is challenging and mainly focuses on dietary and lifestyle modification. Pharmacotherapy is reserved for children with co-morbidities and those failing the above. Only a small subset of obese children and adolescents are candidates for bariatric surgery. Moreover, data regarding the long-term efficacy of weight-loss medications and bariatric surgery in children remains limited. Despite multi-faceted efforts and developments in strategies for the treatment of childhood obesity, treatment results remain only modest. Therefore, primary prevention is crucial, and there is an urgent unmet need to promote interventions to prevent obesity and its subsequent long-term consequences.

Role Of Pediatricians:

Paediatricians follow children longitudinally, over periods spanning infancy through late adolescence. They can play a pivotal role in obesity recognition and prevention. They are uniquely positioned to work on various aspects, including early identification of growth faltering and undesirable weight

gain, health education, counselling on dietary and behavioural modification, and advocacy of obesity prevention strategies at different levels (individual, family, school and community). Obesity prevention should be the combined responsibility of all elements of the society, including government, private sectors and non-governmental organisations. The paediatrician can play a central role concerning advocacy of age- and developmentally-appropriate prevention approaches.

Identification Of At-Risk Children:

Paediatricians must ensure that anthropometry is recorded at every visit. Growth monitoring is a good screening tool that can aid in the early diagnosis of overweight and obesity in children. The IAP recommends monitoring weight and recumbent length/height at birth, 1½, 2½, 3½, 9 and 15-18 months to be conveniently clubbed with immunisation visits. An additional monitoring visit at six months with opportunistic assessment at other contacts is recommended. Subsequent growth assessment must be done at least biannually up to 8 years of age and annually after that (Table 1). Annual evaluation of Body-Mass Index (BMI) should be done after the child has celebrated his fifth birthday [5]. Risk factors for childhood obesity include parental obesity, maternal gestational diabetes, maternal smoking during pregnancy, not being breastfed, small for gestational age, children with intellectual impairment, syndromic children (e.g., Prader-Willi syndrome, ROHHAD syndrome, hypogonadism), children with CNS pathologies, and those treated with cranial irradiation and chemotherapy [6,7].

Table 1: Frequency of growth monitoring for various anthropometric parameters

Age	Length/Height	Weight	BMI/SMR
1½, 2½, 3½, 6, 9, 15 months	Yes	Yes	No
18 months-6 years	Yes(6 monthly)	Yes(6 monthly)	No
6-8 years	Yes(6 monthly)	Yes(6 monthly)	BMI(yearly)
9-18 years	Yearly	Yearly	BMI & SMR(Yearly)

Recording Of Anthropometry:

Appropriate growth charts should be used for plotting serial growth trends (Table 2). For children up to 5 years of age, weight for age and weight for length/height must be recorded and plotted on WHO multicentric growth reference standards (WHO MGRS) growth charts. A weight-for-length/height $> +2SD$ is defined as overweight while exceeding $+3 SD$ is the cut-off for obesity.

BMI should be calculated and plotted on the IAP 2015 growth charts for older children and adolescents. These charts employ BMI percentile curves and use cut-off centiles equivalent to adult BMI of 23 and 27 kg/m² to define overweight and obesity, respectively. An upward crossing of BMI percentiles should alert the physician to consider prevention strategies.

At times, reliance on physical appearance may be deceiving, so anthropometry and growth charting should be done for every child. Parents should be guided for age-appropriate monitoring of growth parameters on growth charts by their paediatricians. If needed, the identified obese children should be worked up appropriately and referred to an endocrinologist.

Measurement of BMI has some limitations. Firstly, it does not distinguish between lean and fat mass. Secondly, there may be region and

ethnicity-based differences in body fat percentage for similar BMI. For instance, for comparable BMI, Indians have a more significant percentage of body fat and a more truncal distribution of fat than Caucasians, thereby predisposing them to a higher risk of cardio-metabolic disorders at lower BMI [8].

A variety of mobile applications (AnthroCal, Ped (Z), IAP growth charts) are currently available and gaining popularity among physicians and parents for allowing a more convenient assessment of growth [9]. Primary physicians and parents should be encouraged to use these applications to track children's growth and know when to seek a referral.

Health Education:

Health education is a crucial part of primary prevention. Paediatricians should be actively involved in the health education of parents during contacts for immunisation or illnesses. They should motivate parents and educate them regarding healthy food choices for their children, meal planning, the importance of physical activity, and ways to promote a healthy environment. They must advocate a family-centred approach and stimulate parents and other caregivers to adopt a healthy lifestyle and be a role model for their children. It is vital that counselling be tailored to

Table 2:

Recommended growth charts and cut-offs for diagnosis of overweight and obesity

Age Group	Growth Chart Recommended	Interpretation
Neonates Preterm/term	Intergrowth 21	1. Birth weight or length $< 10^{\text{th}}$ centile for gestation and sex: Small for gestational age (SGA) 2. Birth weight $> 90^{\text{th}}$ centile for gestation and sex: Large for gestational age (LGA)
0-5 years	WHO/MGRS	1. Weight for length/height $> +2SD$: overweight 2. Weight for length/height $> +3SD$: obese
5-18 years	IAP 2015 charts	1. BMI between 23-27 adult equivalent- Overweight 2. BMI more than 27 adults equivalent- obese

the child's age and development, keeping in mind the family's cultural, financial, and psychological characteristics [10]. This interaction should be bidirectional and sensitive, and care should be taken not to be judgemental about their child's weight. Motivational interviewing techniques are instrumental in effective physician-caregiver communication and promote positive behaviour changes [11].

Diet And Eating Habits:

Often parents turn to paediatricians for dietary advice for their infants and children. Paediatricians must utilise these opportunities for nutritional education and try to assist parents and families in establishing a healthy diet. The first 1000 days of life, i.e., the period from conception to the age of two is the best time for nutritional interventions for obesity prevention [12]. Exclusive breastfeeding for children up to six months of age and continuation of breastfeeding for one year or more along with introduction of complementary feeding should be promoted and re-emphasised at every contact [6]. For older children, paediatricians can guide parents in diet planning. The following points should be kept in mind for dietary counselling [6,13]:

1. Age-appropriate daily calorie intake should be advised.
2. Traffic light diet plan [14]: Diet should be rich in green foods or foods with low caloric density (fruits, vegetables, salads, low-fat dairy products, legumes, lean meats) and limited in foods with high caloric density or red foods (fat-rich meats, fried foods, 'fast-foods', sugary beverages, sweets, fruit juices and canned food products). Yellow foods (cereals, pulses, root vegetables, milk products) should be consumed in moderation.
3. All sugary beverages should be eliminated from children's diets.
4. Consumption of whole fruit instead of fruit juices should be encouraged. One-hundred percent of fruit juice should be avoided in children less than one year of age and should be limited after that.
5. Consumption of health drinks or protein drinks should be restricted as these contain a large amount of sugar and calories.
6. Low-fat or fat-free, unflavored milk should be used. Cow milk should not be initiated before one year of age.
7. Consumption of added sugar, high-fat, high-sodium and processed foods should be avoided.
8. Parents must be educated about 'portion-control' and 'serving size'. For high caloric foods, parents can decrease serving sizes and increase them for healthier foods. Age-appropriate portion size should be emphasised.
9. The importance of reading food labels and their interpretation should be advised.
10. Healthy eating habits should be encouraged, e.g., not skipping breakfast, avoiding distractions while eating, such as television, eating meals together as family, timely and regular meals, avoiding constant 'grazing' or unmindful snacking, etc.
11. Identification of 'eating cues' in the child's environment (e.g., boredom, television, video games) is important, and efforts should be made to minimise them. Parents' frequent use of food to soothe child distress can contribute to emotional overeating, and alternative techniques for the same should be advised [15].

Promotion Of Healthy Lifestyle:

Parental education should also focus on the promotion of an active lifestyle. Moderate-to-vigorous physical activity for at least 20 minutes and ideally 60 minutes daily is recommended five days per week [13]. Paediatricians should

advocate healthy lifestyle choices, e.g., using stairs instead of elevators, walking or cycling rather than using cars, etc. Healthy sleep habits should be encouraged, and basic sleep hygiene principles should be explained to parents. Disordered sleep can lead to alterations in caloric intake and metabolism and is associated with an increased risk of obesity. Television viewing before two years of age should be discouraged. For children more than two years old, daily screen time should be limited to 2 hours [16]. Besides increasing sedentary behaviour, they also promote constant snacking and unnecessary exposure to food advertisements involving junk, calorie-dense and nutrient-poor foods. The presence of a TV set or any other form of passive entertainment in a child's bedroom should be discouraged. Family-based interventions are more likely to be more effective in the long term than focusing on the child alone [17,18]. Parents should be motivated to cultivate positive behaviour practices and identify themselves as suitable role models for their children.

Parenting Strategies:

Paediatricians are in an excellent position to guide parents about effective parenting strategies to influence their children's reasonable and positive behaviour choices. While authoritative parenting promotes healthier eating, authoritarian and permissive parenting styles are linked with an increased risk of childhood obesity [18]. Parents should set small goals for children step-wise and continually re-evaluate them. Restrictive feeding practices are associated with an increased risk of eating in the absence of hunger and adiposity and should be discouraged [19].

Parents should be prompted to try strategies such as the repeated offering of foods, offering a well-accepted food alongside refused foods, use of healthy accompaniments (e.g., salads, fruit slices), enacting food consumption with enjoyment etc., to foster receptiveness and

enable children to develop a liking for more nutritious foods. Providing positive feedback is imperative, e.g., verbal praise or rewards when goals are met. At the same time, food items should not be used as rewards, and negative behaviours should be dealt with sensitively [20].

School-Based Interventions:

The school environment plays a substantial role in influencing children's food choices and behaviours. As children spend much of their active hours in schools, schools must have adequate provision of healthy food and water, availability of healthy and wholesome snacks, and the environment should be conducive for sufficient physical activity. Despite government directives and regulations, students in Indian schools (private and public) are constantly exposed to foods high in fat, salt and sugar [21]. Paediatricians can encourage parents for active involvement (e.g., awareness about foods available in school canteens) and guide them regarding healthier choices if they are lacking in schools while not being too intrusive. They can also ally with school teachers and policymakers and promote healthy school habits and structured play education. They can contribute newsletters and educational material for adolescents, parents and school teachers. There is increasing recognition of the need to "go beyond the clinician's office" [22]. Face-to-face contact between primary care physicians and students can help reinforce school health programmes and assist teenagers and adolescents in decision-making regarding their nutrition and lifestyle [23].

Community-Based Interventions:

Community-level factors are crucial in shaping the environment surrounding children and adolescents. Therefore, community-based interventions should be encouraged, and paediatricians should be strong advocates of prevention programs. The 'Fit India Movement'

was recently launched by the Indian government with an aim to drive behavioural changes and promote physical fitness, create a common platform for citizens to share information and spread awareness through focussed campaigns [24]. As a part of this nationwide movement, many campaigns have been initiated, e.g., fitness certification of schools, Fit India mobile application, quizzes, fitness protocols and guidelines for people of different age groups, Fit India dashboard and platform for people to share their positive fitness stories. Paediatricians must support and promote public policy interventions, e.g., providing parks and open areas for physical activity, incentives for healthy food items and taxation of unhealthy packaged foods and snacks. They should be familiar with regional and national

food-assistance programmes, e.g., Integrated Child Development Service Programme (ICDS), Special Nutrition Programme (SNP), Mid-day meal schemes etc.

Conclusion:

Concerning rising childhood overweight and obesity makes obesity prevention a public health priority. Urgent strategies are required for the prevention of obesity and its potential consequences. A multi-level approach involving family, school and community is the need of the hour. Paediatricians are in an advantageous position to act as a bridge between these levels and can play a crucial role in preventing childhood obesity (Figure 1)

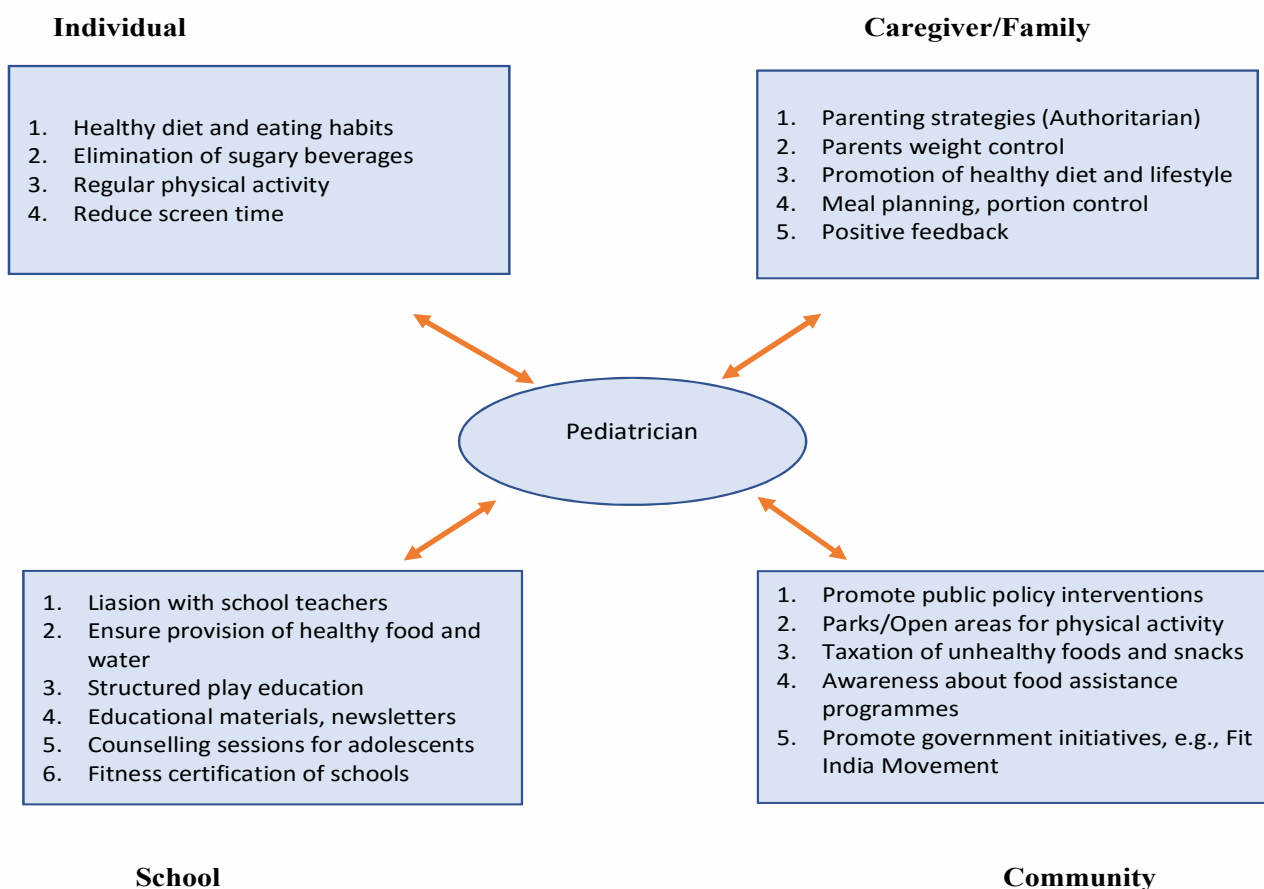


Figure 1: Central role of the paediatrician in advocacy of obesity prevention in different settings

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IAP Maharashtra



Academic Activities Of MAHAIAP in February Month

Activity No. 1 – Journal Journey

MAHAIAP & IAP Raigad together organized the Journal Journey

Date: 01/02/2022 at 9.00 PM - On MAHAIAP Zoom as well as Live streaming on MAHAIAP YouTube Channel: <https://youtu.be/RdVMs-FdZ1U>

Experts: 1. Dr. Vijay Kamale (HOD Pediatrics, MGM Medical College, Navi Mumbai)
2. Dr. Pramod Kulkarni (Const. Ped. Inf. Diseases, CIAP EB Maharashtra, 2022)

Topics & Speakers:

1. Cardio-metabolic risk stratification & lifestyle interventions for risk reduction among overweight & obese school children

- Dr. Avinash Bhosale (MAHAIAP EB Member (North Maharashtra) 2022)

2. Reduced neutralisation of SARS-CoV-2 omicron B.1.1.529

- Dr. Jayshree Deshpande (Consultant Ped. from Jalgaon)

Activity No. 2 – MAHA MENTOR MENTEES

Maharashtra State Branch of Indian Academy of Pediatrics (MAHAIAP) came up with an enlightening session MAHA MENTOR MENTEES

Date: 04/02/2022 at 9.00 PM - Topic: Primary Immunodeficiency: Why & What, One should know...

On MAHAIAP Zoom as well as Live streaming on MAHAIAP YouTube Channel: <https://youtu.be/3u7W09Ygqh8>

Mentor: Dr. Sagar Bhattad (Immunologist & Rheumatologist, CMI Hospital, Bangalore)

Mentees: 1. Dr. Avinash Sharma (Asst. Prof. Rajendra Prasad GMC, Himachal Pradesh)

2. Dr. Rachana Shanbhag (Fellow in Pediatric Immunology & BMT)

IAP Maharashtra



Activity No. 3 – Parental Awareness Programme : Covid 19 Vaccination in Children

Maharashtra State Branch of Indian Academy of Pediatrics (MAHAIAP) arranged an exclusive show of Parental Awareness Programme:

Date: 06.02.2022 at 11.00 AM

Topic: “COVID-19 VACCINATION IN CHILDREN - I SHOULD KNOW THIS”

Chief Guests: 1. Dr. Vijay Yewale (Ex. Orez, CIAP)

2. Dr. Jeetendra Gavhane (Member, Maharashtra State Covid Task Force)

Live streaming on MAHAIAP YouTube Channel:

<https://youtu.be/snKuNMGCn1U>

Activity No.4 - “MAHA SUB-SPECIALITY CONNECT: PEDIATRIC CARDIOLOGY”

Maharashtra State Branch of Indian Academy of Pediatrics (MAHAIAP) came up with an exclusive academic session on

Date: 11/02/2022 at 9 PM

Topic: “MAHA SUB-SPECIALITY CONNECT: PEDIATRIC CARDIOLOGY”

On MAHAIAP Facebook Live and later uploaded on MAHAIAP Youtube Channel <https://youtu.be/PlntdoeXXwM>

Topics & Speakers:

1. Basic Pediatric Cardiac Clinical Examination
- DR. RONAK SHETH (Pediatric Cardiologist, Mumbai)
2. Common Cardiac Surgical Update
- DR. SWATI GAREKAR (Pediatric Cardiologist, Mumbai)

Moderators: 1. Dr. Sameer Sadawarte (MAHAIAP EB Member)

2. Dr. Jaykumar Bhandarkar (MAHAIAP State Convener)

IAP Maharashtra



Activity No.5 – Cough Module (IAP National Respiratory Chapter)

Venue: dIAP

Date: 13/02/2022 at 10 AM

Experts:

1. Dr. NK Subramanya (Chairperson, IAPNRC)
2. Dr. Sanjiv Singh Rawat (Secretary, IAPNRC)
3. Dr. Sanjay Deshmukh (West zone, EBM, IAPNRC)

Activity no. 6 – Parental Awareness Programme - Mental Issues of Children during Covid 19 Pandemic – Education.... Online or Offline?

Maharashtra State Branch of Indian Academy of Pediatrics (MAHAIAP) arranged an exclusive show of Parental Awareness Programme:

Date: 13.02.2022 at 11.00 AM

Topic: “Mental Issues of Children during Covid 19 Pandemic – Education.... Online or Offline?”

Chief Guests:

1. Dr. Harish Shetty (Renowned Psychiatrist & Counsellor)
2. Dr. Samir Dalwai (Developmental Pediatrician, Mumbai)
3. Dr. Suchit Tamboli (Developmental & Behavioral Pediatrician, Ahmednagar)

Live streaming on MAHAIAP YouTube Channel:

<https://youtu.be/Pq794M4qBkY>

IAP Maharashtra



Activity No. 7 - 14- 20 Feb 2022- Aarogyam Dhanasampada (Learn Pranayama & Meditation – Expert guidance from Eminent doctors of Maharashtra) together with The Art of Living
From 14-20 February 2022: Each Day - 14 batches of half an hour session throughout the day

Activity No. 8 – “TUESDAY TAKES” by Women Committee of MAHAIAP

On 15/02/2022 MAHA Academy of Pediatrics (MAHAIAP) ... cheerful and enthusiastic ladies of Women Committee zoomed a Bullet of Rapid fire round in “TUESDAY TAKES” - <https://youtu.be/Q4OdKpyQwLE>

(Click to watch for those who missed it & do subscribe our MAHAIAP YouTube Channel)

Judges: 1. Dr. Arti Kinikar (Professor & Head Ped., B.J. Govt. Medical College, Pune)

2. Dr. Narendra Nanivadekar (EBM CIAP, Kolhapur)

Topic & Speakers:

1. Leg Pains - Dr. Sanjay Joshi, Dhule
2. AEFI - Dr. Prachi Patel, Aurangabad
3. Headache - Dr. Kaustubh Deshmukh, Amravati
4. Pale Child - Dr. Priti Naik, Kolhapur
5. Fever & Rash - Dr. Girish Jog, Satara
6. Constipation - Dr. Amruta Shirodkar, Mumbai

Moderators: 1. Dr. Renu Boralkar (Chairperson WC, EBM MAHAIAP, Aurangabad)

2. Dr. Deepa Phirke (Ex.EBM MAHAIAP, WC Zonal Member, Kolhapur)

Activity No.9 – Wednesday Weekly Webinar – Epilepsy Awareness & Management for School Teachers

(Training Pediatricians, for Training Teachers) by IAP Palghar in association with MAHAIAP

Date – 16/02/2022 at 3.30 PM

Speaker - Dr. Pradnya Gadgil (Neuroogist, Kokilaben Dhirubhai Ambani Hospital)

IAP Maharashtra



Activity No 10. – MAHA CASE CHALLENGE

MAHA Academy of Pediatrics (MAHAIAP) ... turned back the wheel of time and brought us an exclusive academic session of “MAHA CASE CHALLENGE ”

<https://youtu.be/btrXoKjJEtE>

2 Branch Teams with - 2 Interesting & Twisting Cases.

11. Activity No. 11 - Virtual Asthma Training Course (ATM)

Maharashtra State Respiratory Chapter along with Maharashtra state IAP (MAHAIAP) organized a Virtual Asthma Training Course (ATM) according to GINA Guidelines 2021.

Date: 20/02/2022 at 10AM; Through IAP Zoom Platform.

Experts & Moderators:

1. Dr JAYANT JOSHI (Chairperson, IAPNRC MAHA branch)
2. Dr SANJAY DESHMUKH (Secretary, IAPNRC MAH branch, EBM CIAP)
3. Prof. Dr SUBRAMANYA NK (President, IAPNRC)
4. Dr. SANJIV SINGH RAWAT (Secretary, IAPNRC)

12. Activity no. 12 – Parental Awareness Programme – Excess Screen time in Children – What’s the Solution?

Maharashtra State Branch of Indian Academy of Pediatrics (MAHAIAP) arranged an exclusive show of Parental Awareness Programme:

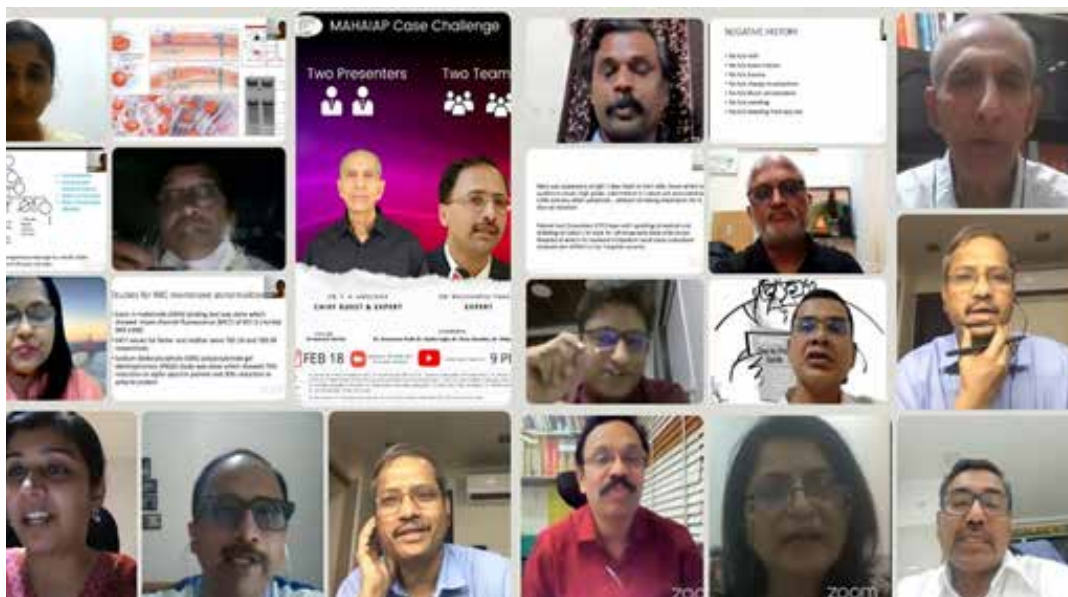
Date: 20.02.2022 at 11.00 AM

Topic: “Excess Screen time in Children – What’s the Solution?”

Chief Guests:

1. Dr. Swati Ghate (Pediatrician & Well known Counsellor, Jaipur)
2. Dr. Leena Shrivastava (Pediatrician & Well Known Counsellor, Pune)

IAP Maharashtra



Activity No. 13 – Fall Prevention In Elderly, Exercises & Yoga to Keep fit

Organized by AACCI, Grandparents Wing (Navi Mumbai) in association with MAHAIAP Women Committee

Date: 22/02/2022 at – 5 PM

Activity No. 14 – HEARING 2 – Medicolegal Matters

MAHAIAP & Thane Academy of Pediatrics Organized “HEARING 2”

Date: 24/02/2022 at 9 PM on Zoom Platform

Experts: 1. Dr. Neeraj Nagpal (Chairman & Managing Trustee MLAG)

3. Dr. Hemant Gangolia (President, MAHAIAP)(Medico-legal Consultant)

Topics: 1. OPD Issues 2. Investigation Issues 3. Transfer of the patient

Activity No. 15- MAHA KATTA

MAHAIAP organizes a hatke programme “Chat Show with dignitaries coming from different fields”

Date: 25/02/2022 at 9 PM

Chief Guest: Shri Anant Karve (Man with extraordinary skills – he makes Best from Waste.

Moderators: Dr. Neelima Bhandarkar & Dr. Abhinay Darwade

<https://youtu.be/DJWj6cyVFYk>

Activity No.16 - Module on Hepatitis- A (IAP National Respiratory Chapter)

CIAP Module of Hepatitis -A was organized by Beed branch of Pediatrics with association of MAHAIAP.

Date: 26/02/2022 at 2 PM on ZOOM

Eminent speakers from all over national faculties presented the module.

<https://youtu.be/aAASFdW34Ek>

IAP Maharashtra



Activity No. 17 - Parental Awareness Program- How to Improve the concentration & Memory in Children

Maharashtra State Branch of Indian Academy of Pediatrics (MAHAIAP) arranged an exclusive show of Parental Awareness Program

Date: 27.02.2022 at 11.00 AM

Topic: "How to Improve the concentration & Memory in Children"

Chief Guests:

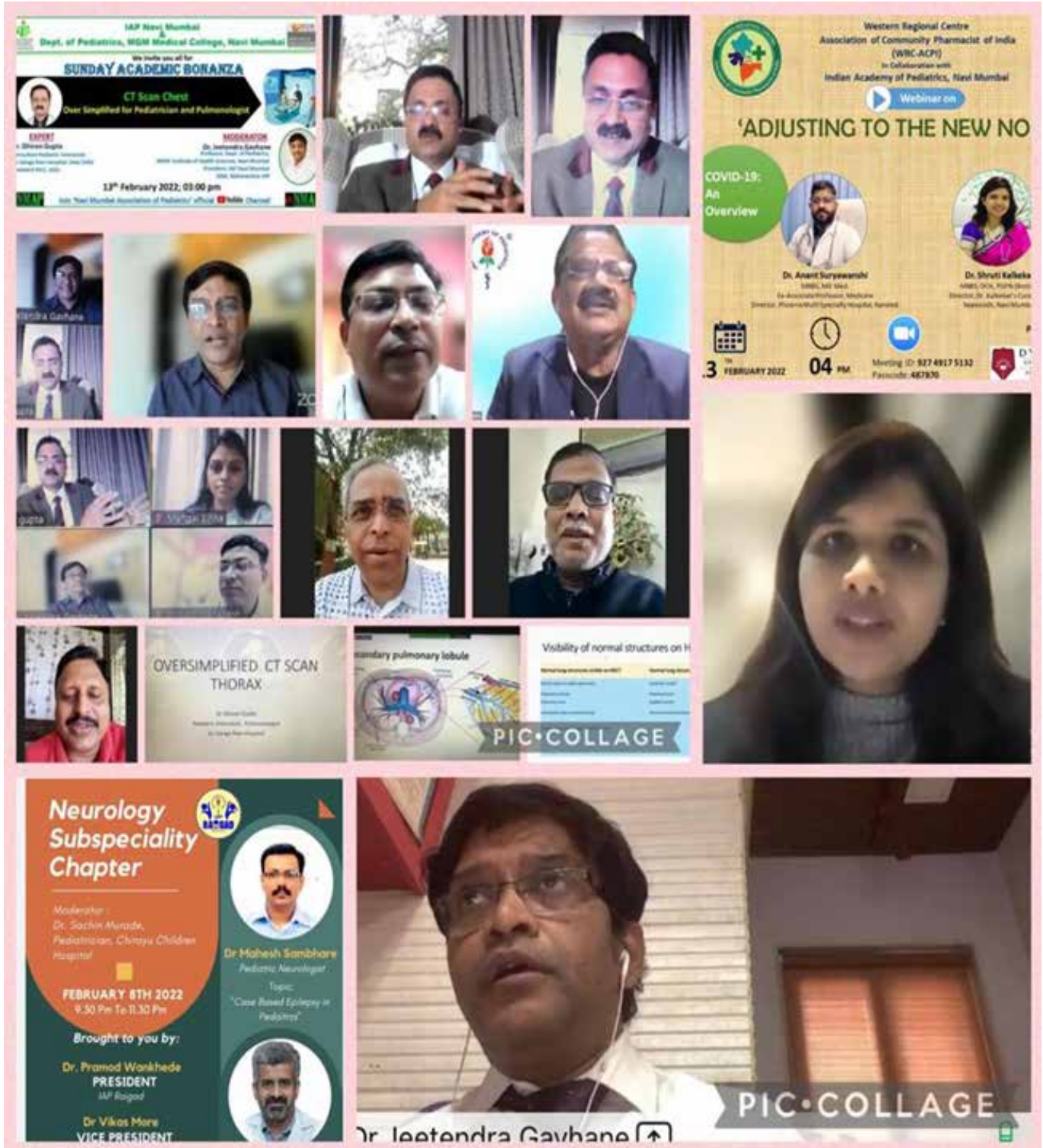
1. Dr. Leena Deshpande (Developmental Pediatrician, Navi Mumbai)
2. Dr. Sunil Godbole (Developmental Pediatrician, Pune)

Activity No.18 - Implementation of Pulse Polio Program

Successful implementation of Pulse Polio Program on 27/02/2022 by different branches under Maharashtra Academy of Pediatrics

- We sensitized OPD pts. in both govt and private clinics
- Educated people about importance of OPV and efforts taken for eradication of Polio Virus.

IAP Navi Mumbai



SUNDAY ACADEMIC BONANZA
CT Scan Chest
Over Simplified for Pediatrician and Pulmonologist
13th February 2022; 03:00 pm

**Western Regional Centre
Association of Community Pharmacist of India (WRC-ACPI)**
In Collaboration with
Indian Academy of Pediatrics, Navi Mumbai
Webinar on
'ADJUSTING TO THE NEW NO'
COVID-19: An Overview
3rd FEBRUARY 2022 04 PM
Meeting ID: 827 4917 5132
Passcode: 487970

Neurology Subspecialty Chapter
Moderator:
Dr. Sachin Murade,
Pediatrician, Chhatra Children Hospital
FEBRUARY 8TH 2022
9:30 Pm To 11:30 Pm
Brought to you by:
Dr. Pramod Wankhede
PRESIDENT
IAP Raigad
Dr. Vikas More
VICE PRESIDENT
Topic:
"Case Based Epilepsy in Pediatrics"
Dr. Mahesh Sambhare
Pediatric Neurologist

Dr. Jeetendra Gavhane

PIC-COLLAGE

IAP Navi Mumbai



IAP Navi Mumbai



Dr. Satish Shahane
Secretary Navi Mumbai
Indian academy of pediatrics

The case for vaccinating children against

Protecting all children, especially those who have risk factors, should be a humanitarian pr



DR. SHWETA BHARAMPALAN &
DR. JAYASHREE JOSHI

There is a general misconception that vaccination might be reserved against diseases that cause death in large numbers. COVID-19 is generally a mild disease in the large majority of healthy young children infected with SARS-CoV-2.

However, children living with diabetes, chronic heart/kidney/neurological diseases, obesity, and with an immunocompromised state due to immunodeficiency syndromes or immunosuppressant therapies are at high risk of severe disease, need for hospitalization and respiratory interventions, even if mortality. Older children and adolescents have a higher risk of severe COVID-19, approximating adult risk levels. All

of 100, we do not know its real burden. The U.S. Centers for Disease Control and Prevention (CDC) reported 95% protective effectiveness of two doses of Pfizer's mRNA vaccine against MIS in children 12 to 18 years. COVID-19 vaccination prevents MIS.

Another post-COVID-19 disease in adults and children is diabetes, starting within weeks. In a report from the CDC on 80,802 children (below 18 years), the incidence of post-COVID-19 diabetes was 11 per 10,000 versus control, 0.5/10,000 after other respiratory infections. India already has a heavy burden of diabetes in children. COVID-19 vaccination will prevent post-COVID-19 diabetes.

The Bruhasmahal Municipal Corporation's COVID dashboard (January 15, 2022), showed 36,046 total deaths, of which 29 were in children below 10, and 41 in children between 10 and 18 years (total of 42 or 0.38%). January data from UNICEF show that 0.4% of a total 2.5 million COVID-19 deaths were in children and adolescents. India's reported deaths were 4.86



number of children have neurological disorders. As in a United Nations estimate, about 40 million in India are disabled due to various diseases, among whom over 7% are children. India has the second highest number of obese children in the world (48.4 million). The burden of childhood nephrotic syndrome annually is about 1,40,000. Sickle cell disease is highly prevalent in the tribal populations in India. The Indian Society for Primary Immune Deficiency estimates that over a million children have primary immune deficiency disease. There are all conditions that are known as risk factors for severe COVID-19. Protecting them with COVID-19

for protection against the life future endemic COVID-19 pandemic caring for child, the above listed conditions associated with high risk of COVID-19 complications, need to protect them with this.

SARS-CoV-2 (except a close variant) involves mutations and variants. These mutations is the reason for severe disease. COVID-19 is a new and the extent of the health of children known only in due course considered, rolling out vaccination with vaccines of safety in the right way for


Vaccine safety
Since the risks of severe COVID-19 related complications are much higher in risk benefit comparison favoured vaccination, or vaccines with some known adverse reactions. mRNA vaccines and Ad-vectored vaccines are not to cause some specific an



IAP Kerala

ACUTE LEUKEMIAS – ARE WE DOING IT RIGHT ?

Dr K G Gopakumar
Assistant Professor
Malabar Cancer Centre



K G Gopakumar

Mediastinal mass + SVC syndrome


Why worry ?

- Progression of disease
- Resp. distress
- Obstruction and stridor
- Resp. failure
- Cardiac failure
- Sudden death



Close Participants (38)

- Shyam K
- K G Gopakumar
- DR SAKKARHA PP
- Madhava Vijayaku
- @SKK





shyam K





Ajos Empowering the Parents

Dept of Women and Child Development, Kozhikode
National Health Mission, Kozhikode

TOPIC - കുട്ടികളുടെ അസ്തമിന്റെ ചികിത്സയ്ക്കുള്ള നല്ല മാർഗ്ഗങ്ങൾ എന്തൊന്നെ!

24/02/2022, Thursday, 3:00 pm



Speaker
Dr Mohandas Nair
Prof & HOD,
Dept of Pediatrics,
IAPC, Malabar
& Perambur,
Malappuram

Zoom Meeting

Meeting ID:
333 678 2020

Password:
IAPCALICUT

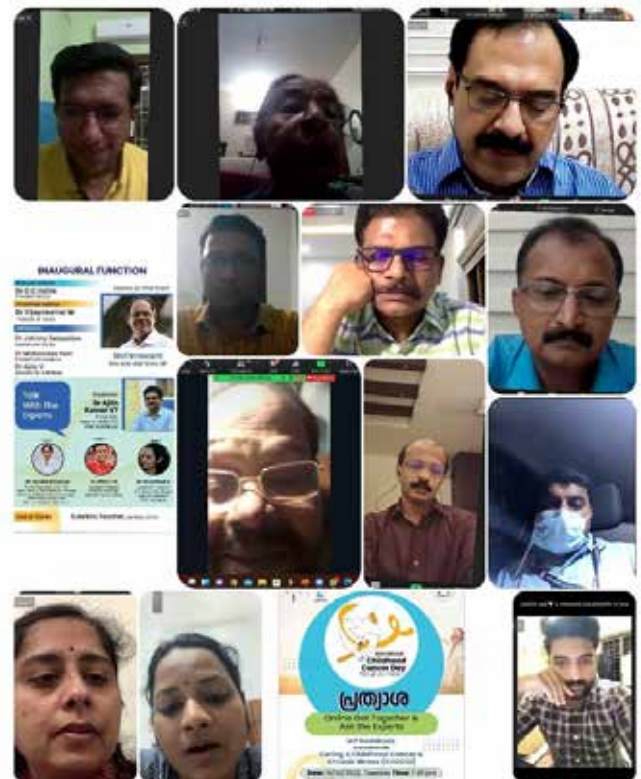
Dr Mohandas Nair V Dr Ajay V Dr Jayashil Sathya Dr Parvathi K M



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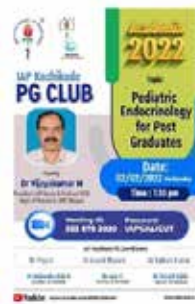
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Government of Kerala
Directorate of General Education
Higher Secondary Wing
Career Guidance and Adolescent Counselling Cell

SOUHRIDA STUDENT CONVENOR'S TRAINING

Thiruvananthapuram, Kollam, Alapuzha, Wayanad

DATE: 01.02.2022
Time. 6.30 to 8.00 pm



LIFE STYLE DISEASES

DR. VIDHU ASHOK

Assistant Professor Department Of Paediatrics
Malabar Medical College ,Kozhikode

