NEWS LINE

KARNATAKA ENDOCRINE SOCIETY

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Obesity

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PRESIDENT'S MESSAGE

Dear Colleagues,

It's a great honor for me to serve as the President, Karnataka Endocrine Society. Our KES has done significant academic activities and most physicians, pediatricians, gynecologists and obstetricians are aware of our work. We need to further spread endocrine awareness to other medical specialties in Karnataka. We have been conducting monthly case discussions on virtual platform, quarterly physical meeting inviting doctors across specialties from India who have done original work in endocrinology and most importantly the Annual conference, Hormone Rhythm which is hosted by endocrinologists from tier two cities in Karnataka. We have also started monthly online endocrine awareness programs for public. This Newsletter is our Seventh edition and the theme is Obesity. This is in follow up with our previous newsletters published, which received a huge positive response from doctor colleagues across Karnataka of different specialities. I congratulate the editorial team for their efforts and wish the very best to all their present and future endeavor.

FROM THE EDITORS' DESK

Hello again, we are here to present you 7th edition of our newsletter with blessing of God almighty. Let us start thanking all the contributors and others who wanted to contribute but we could not give space. Our theme this time is Obesity. This is classic condition which demands multiple specialities. We will start with nomenclature, then diagnosis, nutrition, exercise, counselling and treatment.

The story of Obesity is fascinating, just a few years back obese child used to mean healthy child forget about adults. Now we know the health implications of Obesity. With the availability of newer medicines it is correct time we produce a newsletter on this topic.

We sincerely hope our efforts will be of help for practicing doctors in Karnataka and beyond across several specialities. We will appreciate your comments, opinion, constructive criticism to make our efforts better.

Dr. Shaila Shamanur Bhattacharyya
President

Dr. Belinda George
Honorary Secretary

Karnataka Endocrine Society

Dr. Arpandev Bhattacharyya

Dr. Vageesh Ayyar

Editorial Board

OBESITY: WHAT'S IN A NAME? DEBUNKING MYTHS IN OBESITY

Dr. Medha N Rao Dr. Arpandev Bhattacharyya

Obesity, one of the most widely discussed and misunderstood conditions in modern medicine, is a complex and chronic disease with significant implications for overall health. The term itself originates from the Latin obesus, meaning 'having eaten oneself fat' (ob – over, edere – to eat), reflecting an outdated view that excessive weight is merely a result of overeating. This misconception has contributed to significant stigma, with obesity often being perceived as a personal failing, which can in turn affect their mental well-being and deter them from seeking medical assistance. The experience of obesity varies widely based on genetic, metabolic, and socioeconomic factors, making it a condition that demands a nuanced and patient-centered approach.

Evolving definitions beyond the BMI

Traditionally, obesity has been diagnosed primarily using the Body Mass Index (BMI), calculated as weight in kilograms divided by height in meters squared. A BMI of > 30 (25 for Indian population) is classified as obese. While a useful tool for large population studies and risk stratification, it does not directly measure fat or account for fat and muscle mass distribution. Thus, it can misclassify muscular individuals as obese. Further, a recently diagnosed entity characterised by obesity with the absence of metabolic abnormalities, termed metabolically healthy obese is not identified by BMI alone.

The definition of obesity is evolving to reflect a more nuanced understanding of the disease. The Lancet Diabetes & Endocrinology Commission has proposed a new diagnostic approach that goes beyond BMI. This new approach emphasizes the assessment of excess body fat and the presence of signs and symptoms of ill health. The commission also introduces two new categories: preclinical obesity and clinical obesity :

- Preclinical obesity - characterized by excess body fat and an increased risk of developing diseases, but without current signs or symptoms of organ dysfunction.
- Clinical obesity - chronic disease due to obesity alone, characterized by signs and symptoms of ongoing organ dysfunction and/or reduced ability to conduct daily activities.

This new classification aims to differentiate individuals at higher risk from those already experiencing health complications due to obesity.

Debunking Myths About Obesity

'Obesity is Just a Western Problem' - Only developed countries -struggle with obesity.

Reality: Obesity affects both high- and low-income countries due to changes in diet, urbanization, and sedentary lifestyles. In India, obesity rates have been rising steadily, especially in urban populations.

'Lazy Label' - Obesity is simply a result of poor lifestyle choices.
Reality: While lifestyle factors play a significant role, obesity is a complex disease influenced by genetic, hormonal, metabolic, and environmental factors.

'Obesity is a Lifelong Sentence' - Once a person has obesity, they can never achieve a healthy weight.
Reality: While obesity is a chronic condition, individuals can achieve significant health improvements with sustained interventions, including medical treatments, lifestyle changes, and, in some cases, surgery.

'Calories In, Calories Out' - Weight loss is solely about willpower.
Reality: While diet and exercise are essential, long-term weight regulation involves neurohormonal pathways, making weight loss challenging without medical or surgical intervention.

'Universal Fix' - There is a one-size-fits-all solution for obesity.
Reality: Treatment strategies should be individualized based on the patient's specific needs and health status.

'Skinny Privilege' - Thin means healthy
Reality: Many individuals with normal BMI have visceral fat accumulation, leading to metabolic disorders.

Obesity demands empathy and innovation from medical professionals to support those navigating its challenges. By redefining our understanding, busting myths, and embracing individualized approaches, we can improve care and outcomes while combating the stigma that shadows this condition. Let's work toward a future where the weight of the word "obesity" reflects the support it receives rather than the misconceptions it carries.

HOW DO I BREAK THE NEWS: III IMPACTS OF BEING OVER WEIGHT

Dr. Varun Suryadevara Dr. Anantraman

Obese individuals have higher rates of diabetes mellitus, hypertension, cardiovascular disease, obstructive sleep apnea, osteoarthritis, and malignancies. The risk of these comorbidities and the mortality risk increases in a curvilinear fashion as the weight increases. It is important to convey necessary information about the medical consequences. Effective communication about the negative consequences of obesity may motivate a person to adopt a healthier lifestyle. However, if not communicated properly, the same information may exacerbate their anxiety.

While it is true that obesity is strongly associated with many ill effects mentioned above, many of these are also due to non-adiposity casual factors- e.g., excessive salt intake in hypertension, alcohol consumption or medication use in OSA. It is important to identify pre-existing comorbidities and discuss the possible improvement in their symptoms following weight loss. This is essential for two reasons. The first reason is that this communication signals to patients that the healthcare provider is genuinely concerned about the health consequences rather than just the weight. Second, it helps address the societal stigma surrounding obesity, which leads to delays in seeking healthcare and self-blame among the patients. The patients are likely to appreciate the comprehensive approach, and more likely to follow our advice.

During the discussion, we can utilize an approach similar to the SPIKES protocol, used commonly in terminal illness patients or the 5 A's approach used in smoking cessation. The first step is always to ask the patient about their perspective. These questions should be open-ended like "How do you think your weight may affect your health in the long term?" Reaffirming and paraphrasing their words as a response builds the rapport.

Always ask for permission before sharing additional information. We can frame the question like "Would you like me to explain how weight loss can reduce your health risks?" We can then convey the additional information and address any misconceptions they may have about the ill impacts of obesity. Ensure the information is relevant to their specific symptoms and concerns, for example "You said you are having diabetes. Weight loss can improve glycemic control and can cause remission too. Let me explain in detail..." We should focus more on the potential improvement in their clinical condition, rather than the ideal weight target or BMI target. For example, instead of saying "You should reduce your weight to 60 kg", you can say "Even a 5 percent weight loss can improve your symptoms of PCOS or hypertension".

A good understanding of the adverse impacts of obesity will make the patients understand that obesity is a modifiable risk factor among many others. Our approach should balance between fact based information and psychological support. This would help us break the stigma around obesity and motivate the patients for weight loss.

ASSESSING OBESITY IN DAY-TODAY CLINICAL PRACTICE

Dr. Naveen Shivappa Kannur Dr. Subramanian Kannan

1. **What brings the patient to your clinic?**

• The first step in assessment of obesity starts from the understanding what brought the patient to the clinic. In most cases, it is quite obvious, patient himself/herself have been battling obesity for many months/years and would like to seek medical attention for the same. Sometimes it is a family member who have sought attention for their child or their loved ones as they feel the weight has affecting their activities and/or activities of daily living. Rarely patients without obesity but perceive that their body has gained weight (body dysmorphic disorder) seek attention for weight loss.

2. **What are the Vital Anthropometric measures that have to be recorded as part of the Clinic visit?**

• Body Mass Index (BMI Quetelet index): Weight/Height^2 (kg/m^2);

A high BMI is a key risk factor for NCDs such as cardiovascular disease, diabetes, musculoskeletal problems, and malignancies. A high value, in general, implies excessive body fat and is consistently associated with greater health risks and mortality.

• WHO classification for Obesity for Asians is given in the table below:

Underweight	<18.5 kg/m2
Normal Weight	18.5–22.9 kg/m2
Overweight	>23 kg/m2
Obese	>25kg/m2

• For children from 5 18 years of age, BMI can be plotted on the IAP/WHO growth charts and an adult equivalent of 23kg/m2 and 27kg/m2 cut off lines defines overweight and obesity respectively

- Waist circumference (WC): Waist circumference is a measure of central or abdominal obesity. Asian cut off for obesity is males >90 cm and females >80 cm. For measuring WC use a non-stretchable tape at halfway between the lower ribs and the iliac crest.
- Waist Hip ratio (WHR): After calculating the WC as above, the hip circumference (HC) is measured at the level of the widest circumference over the greater trochanters using a narrow non stretchable tape in standing position at the end of a gentle expiration. The WHR is obtained by dividing the WC by the HC using the same units of measurements for both. WHR > 0.90 is defined as obesity in men and > 0.85 in women. The WHR is an indicator of central obesity and a strong correlate of cardio-metabolic outcomes.
- Neck Circumference (NC): With the head held erect (in the resting position) with the eyes facing forward and the NC is measured around the neck in a horizontal plane at the level of the most prominent portion of the thyroid cartilage. A neck circumference of > 35.5 cm in men and > 32 cm in women defines obesity. NC indicates upper-body subcutaneous adipose tissue distribution and associated with cardio-metabolic risks beyond that of BMI and WC including obstructive sleep apnea
- Waist-to-height ratio: WC divided by height. A value > 0.5 in both genders indicates obesity.

3. **What are the relevant historical details that have to be asked and clarified with the patient?**

- Onset of obesity: An onset <5years with significant hyperphagia with poor response to diet and lifestyle changes indicates monogenic/syndromic obesity. Associated growth and neuro development delay along with dysmorphic features on examination and other endocrine manifestations strongly suggests syndromic obesity. Monogenic obesity frequently have accelerated growth.
- Weight trajectories since childhood (weights at important life milestones, school, college, marriage, pregnancies, job, covid etc.)
- Their lowest and highest weight and since when weight seemed a problem to them?
- Life events that significantly affected their weight (stress, job change, marriage, pregnancy, divorce, medication use/abuse, injury, illness, addictions, night shift work, insomnia)
- Who among the family members have weight related issues? (Monogenic and Polygenic obesity)
- Medications which can cause weight gain : Steroids (topical / systemic) , Anticonvulsants (Valproate, Carbamazepine), Psychotropic medications (Olanzapine, Clozapine, Lithium), Anti retroviral, Oral Contraceptives, Medroxyprogesterone (parenteral), Beta blockers, Insulin, Sulphonylureas, Pioglitazone
- Weight loss medications used which worked and which didn't work: (Orlistat, Phenteramine, Topiramate, Bupropion, Liraglutide, Semaglutide (oral/injectable), Tirzepatide - why were they not able to continue, any safety concerns (cholecystitis, pancreatitis, medullary thyroid cancer).
- Past Medical History: Gall stones, pancreatitis, Infertility, Abdominal surgeries, Weight loss surgeries, Coronary heart disease, Hip and knee osteoarthritis, Sleep apnea, Reflux esophagitis, Low back pain.

4. **What are adjunctive history that can help with both assessment and management? (Use the help of a seasoned dietician and/or nurse-educator)**

- Dietary history (what drives food intake: hunger, boredom, depression, stress, night work etc.), accurate weekly food diaries to document calorie and carbohydrates consumption per day.
- Diet programs that have worked in the past (meal replacement, paleodiet, time restricted eating etc.)
- Exercises (days/week, types, intensity), challenges continuing, injuries, motivation, trainers etc.
- Sleep (duration of sleep/night, Jet-lag, screen time); Sleep apnea check: STOP-BANG questionnaire
- Anxiety-Depression screening (How often have you been bothered by having little interest or pleasure in doing things; How often have you been bothered by feeling down, depressed or hopeless; How often have you been bothered by feeling nervous, anxious or on edge)
- Social connection (Support network, community, spiritual, nature, yoga, meditation)
- Substance use (Alcohol, smoking, drugs)
- Bariatric surgery (Post Bariatric weight gain requires referral to a multi-disciplinary obesity team)

5. **What are important investigations that are relevant in cases of overweight/obesity?**

In all cases:

- Complete blood counts (leukocytosis is related to inflammation in obesity, platelets required to calculate FIB4 score), Comprehensive metabolic panel to assess renal function and electrolytes, Liver functions to assess transaminitis related to MASLD. Urine routine may show overt proteinuria which might indicate obesity related focal segmental glomerulosclerosis. Lipid profile may help assess CAD risk score and hypertriglyceridemia >500 mg/dl may warrant treatment to reduce the risk of pancreatitis. HbA1c will be a guide glycemic status of the individual.
- Thyroid functions is frequently checked but not routinely useful (Leptin related TSH elevation is seen in obesity and is usually between 5 10 mIU/L may not require treatment). Total T4 is elevated due to increased TBG in obesity and free T4 remains normal.
- FIB 4 score: Calculated using age, AST, ALT, Platelet count; A value >1.5 prompts referral for liver elastography.
- ECG/ECHO: To assess occult cardiovascular disorders and advanced testing can be done with the help of the cardiologist in those who are high risk before starting structured exercise programs.
- Body impedance analysis (BIA): Tanita BC-545N is a body composition scale used to measure body fat percentage. This method measures the conductance of a small alternating current through the body by the amount of water (indicates fat-free mass and hence body fat %). Body fat > 25% (men) and > 30% (women) are considered obese (ESI)

In select cases:

- 8 am cortisol to assess any exogenous steroid exposure and if required 4 pm Cortisol to assess diurnal variation. Clinical pointers including moon facies, broad red striae, bruisability and proximal muscle weakness should invoke referral to endocrinologist.
- Gonadotropins (FSH/LH) in select perimenopausal woman or past hysterectomy menopause related weight gain
- Insulin and glucose levels at fasting and post a glucose challenge: To calculate HOMA-IR, QUICKI and Matsuda indices
- DXA scan to accurately assess Body composition and lean body mass.

Conclusion: Understanding the patient's reasons, recording key measurements, exploring their history and lifestyle, and conducting investigations are vital for a comprehensive obesity assessment

EOSS: EDMONTON OBESITY STAGING SYSTEM - Staging Tool



NUTRITION – FOUNDATION OF SUCCESSFUL MANAGEMENT OF OBESITY

Dr Soumya S Inamadar Dr Lohit Kumar Dr Suraj Kubihal

Obesity, now termed "Adiposity Based Chronic Disease (ABCD)", is a complex condition that increases the risk of type 2 diabetes, hypertension, cardiovascular diseases and certain cancers. Nutrition is an important lifestyle modification that is critical in management of obesity. Food as medicine plays a pivotal role in the management of obesity. Although calorie restriction is the crux of the weight management but it's also important to maintain balanced nutrient proportion while restricting calories and more importantly, we need to adapt more sustainable approaches to achieve long term results. Thus, these aspects are discussed under following headings:

a) **Energy Balance and Calorie Control:** Weight management relies on maintaining a negative energy balance—burning more calories than consumed. Obesity results from prolonged positive energy balance, leading to fat accumulation. A sustainable caloric deficit (reducing calorie consumption by 500-700Kcal/day or limiting the total intake to 1200-1500Kcal/day in women and 1500-1800Kcal/day in men), by reducing portion size and increasing the intake of nutrient-dense foods, along with increased physical activity promotes weight loss.

b) **Balanced Diet:** A balanced diet, ideally consists of 45-65% carbohydrates, 10-35% proteins, and 20-35% fats, along with essential micronutrients. A balanced diet with calorie deficit ensures weight loss while maintaining overall health. In the past decades, various diet patterns have been explored by adjusting macronutrient proportions or food timing. The Mediterranean diet focuses on whole, nutrient-rich foods like fruits, vegetables, whole grains, legumes, nuts, olive oil, and lean protein while limiting processed foods. The **LOW CARB** diets, such as the **KETO** and **ATKINS** diets, restricts carbohydrate intake to less than 50g/day, increasing fat and protein intake. This leads to ketosis, which helps mobilize stored fat for weight loss and also ketogenic diet supresses appetite. **KETO** diet maintains ketosis throughout, while **ATKINS** diet increases carbohydrate intake in phases. **HIGH PROTEIN** diet promotes satiety, gluconeogenesis, and thermogenesis, aiding weight loss. **LOW FAT** diet reduces overall calorie intake. **INTERMITTENT** fasting, a timed eating approach, has also shown effectiveness in weight reduction. There is no single superior dietary pattern as long as you are maintaining calorie deficit. Adherence to a diet, influenced by personal preferences, motivation and metabolic effects, calorie deficit, and food restriction are crucial for success.

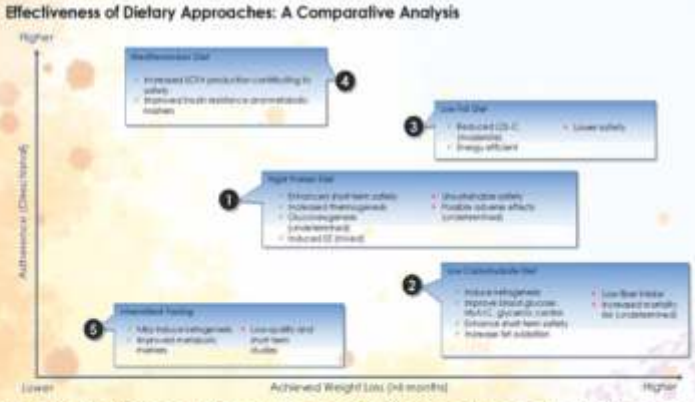

Figure 1: Comparative analysis of different dietary approaches in terms of weight loss, adherence and metabolic effects. (Diagnostics 2021,11,24. Hwalla, N et al)

c) **Behavioral Strategies**: Mindful eating improves weight management by encouraging individuals to recognize hunger cues, eat slowly, and avoid distractions. Meal planning, in terms of timing and portion control help prevent overeating and support long-term adherence to a healthy diet.

d) **Sustainability and Long-Term Approach:**

- **Avoiding Extreme Diets**: Crash diets or extreme calorie restriction may lead to quick weight loss but are often unsustainable and can result in the "yo-yo" effect, where individuals regain weight once the diet ends. The key to managing obesity successfully is adopting a balanced, sustainable approach to nutrition that can be maintained over the long term (Mediterranean diet/ DASH diet).

- **Personalization**: Precision nutrition, which takes into account the complex nature of obesity, has the potential to revolutionize the management of obesity by customizing nutritional therapies based on a person's genetic heritage, gut flora, metabolic profile, behavioral habits, cultural factors, availability affordability and medical conditions. A personalized approach increases the likelihood of adherence and success in the long run.

e) **Support and Education**

- **Educational Programs:** Teaching individuals about nutrition and weight management empowers them to make informed dietary choices.

- **Professional Support:** Working with endocrinologists, dietitians, nutritionists, and psychologists provides the necessary guidance and accountability for overcoming obesity challenges.

Figure 2: Role of Nutrition as a foundation for Obesity Management

Proper nutrition is fundamental to obesity management. A balanced diet, controlled caloric intake, and healthy eating habits support sustainable weight loss. When combined with behavioral strategies and professional support, a well-structured nutrition plan leads to long-term success in managing obesity and improving overall health.

PRACTICAL EXERCISE GUIDE FOR PEOPLE WITH OBESITY:

Dr. Hema Venkataraman

1. **What do the international societies recommend?**

Table 1 shows the summary of physical activity (PA) recommendations of various national and international societies, for people with obesity.

Major Cardiovascular, pulmonary and musculoskeletal contraindications to activity should be screened for, prior to starting an exercise regimen.

Table 1.

Organization	Aerobic Activity / week	Additional Aerobic Activity / week	Resistance Training	Reference
ESI (Endocrine society of India)	150-300 min/ of MI	300 min of MI or 150 min of VI for sustained weight loss	Recommended, specifics not detailed	ESI guidelines
ACSM (American College of Sports Medicine)	≥150 min of MI	≥250-300 min of MI for sustained weight loss	2–3 days/week (major muscle groups)	ACSM Position Stand
HHS (USA)	150–300 min of MI	≥300 min for significant weight loss	2+ days/week	Physical Activity Guidelines for Americans
EASO (Europe)	150–200 min of MI	200-300/week for sustained weight loss	Recommended, specifics not detailed	EASO Guidelines
AHA/ACC/TOS (USA)	≥150min/week of MI	200-300 min for sustained weight loss	Recommended, specifics not detailed	2013 AHA/ACC/TOS Guidelines
WHO	≥150-300 min of MI or ≥75-150 min of VA	>300 min for additional health benefits ,weight loss)	2+ days/week	WHO Guidelines
NICE (UK)	≥150 min MI	≥300-450 min of MI for sustained weight loss	At least 2 days/week	NICE Guidelines

MI - moderate Intensity VI - Vigorous intensity

How to measure Exercise Intensity: The Talk Test:

Category	Moderate Intensity	Vigorous Intensity
Breathing	Breathing becomes faster but remains comfortable	Deep, rapid breathing; hard to carry a conversation
Talking Ability	Can talk, but cannot sing lines to a song	Can only **say a few words** without pausing to breathe
Examples	● Brisk walking (about 5 Km/hr) ● Cycling on flat (about 16 Km/hr) ● light yoga ● doubles badminton (leisure)	● Jogging, or running ● Swimming laps ● Singles Badminton ● Aerobic dancing ● Bicycling > 16 km/ hour that may include hills ● Heavy gardening (continuous digging or hoeing) ● Hiking uphill or with a heavy backpack

Adapted from: –CDC Measuring Physical Activity

2. **What is the recommended frequency of exercise?**

The ACSM recommends that the above activity is spread over 5 or more days a week. The daily activity can be undertaken in one session or several lasting 10 mins or more.

3. **Building realistic expectations:**

- The weight loss impact of PA as a sole intervention is modest and less effective than diet alone. Hence a PA recommendation should be in conjunction with a calorie restricted diet.
- Adults who are overweight or obese should be encouraged to increase their PA levels even if they do not lose weight as a result, because PA has other health benefits e.g. reduced risk of type 2 diabetes and cardiovascular disease.

1. **Sample Exercise prescription using the FITT framework: I.e. Frequency, Intensity, Time and Type of exercise**

Frequency	> 5 days a week	2-3 non-consecutive days /week
Intensity	MI or VI	Difficulty of 6-8 (scale of 1-10 where 10 is maximum effort) 2-3 sets of 8-12 reps each
Time	45 to 60 mins of MI / day 60 to 90 mins to avoid weight regain Sedentary individuals to build targets from 10-20 min to prevent soreness and injury	20 - 30 min per day
Type	Aerobic: eg Brisk walking If joint problems preclude walking - cycling or swimming can be considered	Resistance training: Should target all groups of muscles - legs, arms, back, core, shoulder and chest Eg Body weight, free weights, bands

KIDS ARE GAINING WEIGHT – A WORRYING FUTURE!

Dr Kumar Abhisheka Dr. Dr Rakhi Malhotra

Childhood obesity is emerging as one of the most serious public health challenges of the 21st century. Once considered a problem of high-income nations, it now threatens children globally, including India. With increasing screen time, sedentary lifestyles, dietary excesses, and sleep deprivation, kids today are gaining weight at an alarming pace—and the future implications are deeply worrying.

What is Childhood Obesity?

Obesity refers to excess body fat, and in children over 2 years, it is assessed using **Body Mass Index (BMI)**: weight (kg) divided by height squared (m^2). Based on age and sex-specific percentiles:

Overweight: 85th to <95th percentile or BMI ≥25

Obesity Class I: ≥95th percentile or BMI ≥30

Class II: ≥120% of 95th percentile or BMI ≥35

Class III: ≥140% of 95th percentile or BMI ≥40

These categories help clinicians gauge severity and risk for comorbid conditions.

The Numbers Speak Aloud

In the US, Class I obesity affects up to 12% of school age children, with Class II/III obesity seen in over 13% of adolescent boys. While Indian data varies, the trend is worryingly similar. Importantly, COVID 19 lockdowns significantly worsened this trend, as physical activity plummeted and unhealthy eating habits intensified.

Why It Maters: Obesity Tracks Into Adulthood

Childhood obesity isn't just a phase. It often continues into adulthood, especially when onset is early and severity is high. For instance, a 5-year-old with severe obesity has a 90% chance of remaining obese as an adult. This persistent trajectory sets the stage for early-onset type 2 diabetes, cardiovascular disease, and even premature mortality.

What's Causing the Surge?

The roots of this epidemic are multifactorial:

1. **Environmental Triggers**

– High-calorie foods, sugar-sweetened drinks, oversized portions
– Prolonged screen time and physical inactivity
– Sleep deprivation, which disrupts metabolic regulation
– Poor urban planning—limited access to parks/playgrounds
– Aggressive marketing of junk food, especially to younger kids

2. **Genetic & Medical Factors**

While rare (<1% cases), monogenic, syndromic, or endocrine causes (e.g., Cushing's, hypothyroidism) must be considered—especially when obesity is severe, early in onset, or associated with short stature or dysmorphic features.

3. **Early-Life Programming**

Maternal obesity, gestational diabetes, rapid infant weight gain, and low birth weight followed by catch up growth all increase obesity risk.

Beyond the Weight: Multisystem Impact

Obesity is not just about body size—it affects almost every organ system:

Heart & Metabolism: Hypertension, dyslipidemia, insulin resistance, and early atherosclerosis
Liver: MASLD—now the leading liver disease in children
Endocrine: Early puberty, polycystic ovary syndrome, and T2DM
Musculoskeletal: Joint pain, Blount disease, slipped capital femoral epiphysis
Pulmonary: OSA and obesity hypoventilation syndrome
Mental Health: Low self-esteem, bullying, anxiety, and depression
Renal & Cancer Risk: Emerging links to early chronic kidney disease and long term cancer risk

What Can We Do?

Prevention and early intervention are key. Paediatricians and family physicians should screen for BMI annually in children ≥2 years, monitor comorbidities, and counsel families.

Strategies include:
Encouraging **60+ minutes of physical activity daily**
Limiting **screen time to ≤1 hour per day**
Ensuring **age-appropriate sleep**
Promoting **home-cooked meals and family mealtimes**
Avoiding **stigmatizing language**; focus on "healthy behaviors" not weight
In moderate to severe cases, **multicomponent programs** combining dietary changes, physical activity, behavioural support, and family involvement have shown promise. In adolescents with refractory or severe obesity, pharmacologic therapies or **bariatric surgery** may be considered within multidisciplinary frameworks.

Conclusion

Childhood obesity is a complex, chronic disease—not a matter of laziness or parenting failure. It requires compassion, vigilance, and evidence-based action. As endocrinologists, we must work with families, schools, and policy makers to reshape environments, empower healthier choices, and safeguard the well-being of the next generation. The weight of our children's future—literally and figuratively—is in our hands.

MEDICAL MANAGEMENT OF OBESITY - PAST, PRESENT AND FUTURE

Dr Sidharth Raghu Dr Vageesh Ayyar

The evolution of obesity drugs First they made your heart race, then they made your bowels race, and now they just politely tell your brain you're full.

Introduction

The medical management of obesity has undergone a remarkable transformation over the past century. Lifestyle modifications, including dietary changes and behavioural therapy, constitute first-line therapy. While lifestyle interventions often yield limited, unsustainable results, modern obesity pharmacotherapy has advanced from unsafe stimulants to targeted metabolic therapies. These evidence-based agents provide durable weight loss, bridging the gap between behavioral approaches and surgical interventions through specific neurohormonal mechanisms.

Past (Pre 1990s to 2000s): Early Drugs and Safety Concerns

The history of obesity pharmacotherapy before the 1990s was marked by crude appetite suppressants with significant risks. In the mid-20th century, amphetamines were widely prescribed for weight loss due to their potent appetite-suppressing effects. However, their high potential for abuse, addiction, and cardiovascular side effects led to stricter regulations by the 1970s.

The 1990s saw the rise of fenfluramine-phentermine (Fen-Phen), a combination therapy that enhanced serotonin release to suppress appetite. However, it was withdrawn in 1997 after reports of cardiac valve damage and pulmonary hypertension.

Other drugs of this era included:

- Dexfenfluramine – Withdrawn in 1997
- Orlistat – The first non-stimulant obesity drug, which worked by blocking fat absorption but caused unpleasant gastrointestinal effects

By the 2000s, Sibutramine [serotonin-norepinephrine reuptake inhibitor (SNRI)] was another option but was withdrawn in 2010 due to increased cardiovascular risks.

Rimonabant [cannabinoid receptor blocker] showed promise but was banned due to psychiatric side effects.

This era was defined by limited, risky options, leading to skepticism about pharmacotherapy for obesity.

Present (2010s–2020s): Safer and More Effective Therapies

The 2010s marked a revolution in obesity treatment, with the introduction of GLP-1 receptor agonists and combination therapies that improved efficacy and safety.

Key FDA approved Drugs of this Era:

1. **Phentermine-Topiramate (Qsymia, 2012)** – A combination that enhanced weight loss (~10%) but carried risks of mood disorders and cognitive side effects.
2. **Bupropion-Naltrexone (Contrave, 2014)** – Targeted brain reward pathways, aiding ~5% weight loss but with concerns about hypertension.
3. **Liraglutide (Saxenda, 2014)** – First GLP -1 agonist approved for obesity in adults and children 12 years and older, producing ~8% weight loss by reducing appetite and slowing digestion.
4. Semaglutide (Wegovy, 2021) – A breakthrough GLP-1 agonist with 15 20% weight loss, rivaling bariatric surgery.
5. Tirzepatide (Zepbound, 2023) – GIP/GLP1-dual receptor agonist - with ~25% weight loss at 88 weeks - the most effective drug yet - now available in India marketed as Mounjaro.

Why This Era Succeeded:

- **Beter safety profiles**
- **Dual-action mechanisms (appetite suppression + metabolic benefits)**
- **Long-term use potential**

Future (Beyond 2020s): Next-Generation Therapies

The future of obesity pharmacotherapy lies in multi-hormonal agonists, personalized medicine, and longer-lasting formulations.

Emerging Trends:

1. **Triple-Hormone Agonists** – Drugs targeting GLP-1, GIP, and glucagon (e.g., retatrutide) caused ~17.5% weight loss after 48 weeks in a phase 2 clinical trial. Few other promising agents in development include Mazdutide (Dual GLP1-receptor and glucagon receptor agonist), Cagrilintide(Amylin analogue) and Bimagrumab(Activin type II receptor mAb)
2. **Gene and Microbiome Therapies** – Research into gut bacteria and genetics may lead to tailored treatments.
3. **Combination with Bariatric Procedures** – Drugs may be used alongside endoscopic sleeve gastroplasty for enhanced effects.

Challenges Ahead:

- Cost and accessibility
- Long-term safety data (especially for newer drugs).
- Preventing weight regain after stopping medication.

Conclusion

Obesity pharmacotherapy has evolved from dangerous stimulants (pre-1990s) to safer, more effective GLP-1-based treatments (2010s–2020s). The future promises even greater efficacy with multi-target drugs and personalized approaches. While challenges remain, the shift from short-term fixes to sustainable metabolic treatments represents a major leap forward in tackling obesity.

SURGICAL MANAGEMENT OF OBESITY (BARIATRIC SURGERY)

Dr Manjunath Dr Chitra Selven

Bariatric surgery is the most effective treatment currently for available for weight loss and it dramatically improves weight related comorbidities especially type 2 diabetes mellitus. Latest evidences have shown that bariatric surgery reduces mortality from cancer and cardiovascular disease as well. Mortality and morbidity associated with the procedure have fallen steadily and are lower than those seen with the most commonly performed surgical procedures such as cholecystectomy.

Preoperative evaluation includes screening for preexisting vitamin deficiencies, optimizing medical conditions such as type 2 diabetes mellitus and sleep apnea. Patients need to be informed about the necessity of ongoing monitoring of nutritional/vitamin status and avoiding medications such as nonsteroidal anti-inflammatory agents and to stop cigarette smoking as these can predispose to surgical complications.

Indications

- BMI ≥40 kg/m²
- BMI ≥ 35 kg/m² with obesity-related comorbidities (e.g., type 2 diabetes, hypertension, sleep apnea)
- Failure of conservative weight loss methods
- Motivation and ability to comply with post-operative care and lifestyle changes

Types of Bariatric Surgery

1. **Restrictive Procedures**
   - **Vertical Sleeve Gastrectomy (VSG):**
     - Removes ~80% of the stomach, leaving a small sleeve- shaped stomach
     - Reduces food intake and appetite (due to decreased ghrelin)
   - **Adjustable Gastric Banding (AGB):**
     - An inflatable band is placed around the upper stomach
     - Restricts food intake; reversible but less effective than other options
2. **Malabsorptive Procedures**
   - Rarely done alone now due to high risk of nutritional deficiencies
3. **Combination Procedures**
   - **Roux-en-Y Gastric Bypass (RYGB):**
     - Creates a small gastric pouch and bypasses part of the small intestine
     - Restrictive + malabsorptive
     - Excellent weight loss and resolution of comorbidities
   - **Biliopancreatic Diversion with Duodenal Switch (BPD/DS):**
     - Sleeve gastrectomy followed by rerouting of intestines
     - More complex with significant malabsorption

Vertical sleeve gastrectomy is the most common bariatric procedure accounting for around 61% of all surgeries. RYGB surgeries have declined over the last few years. AGB procedures are rarely performed anymore in view of lower efficacy and higher complications. BPD/DS procedures are associated with greatest weight loss but also the greatest long term risk of nutritional deficiencies and are rarely performed. Above procedures demonstrate inter individual variability in weight loss with some individuals losing more than the mean predicted and some losing nothing.

Benefits:

- Significant and sustained weight loss
- Improvement or resolution of obesity-related comorbidities
- Improved quality of life and lifespan

Risks and Complications:

- Surgical risks: bleeding, infection, DVT/PE
- Nutritional deficiencies (especially in malabsorptive procedures)
- Dumping syndrome (in RYGB)
- Need for lifelong supplementation and follow-up
- Post bariatric surgery hypoglycemia – most commonly following RYGB and typically 1 to 4 years after surgery.

Postoperative monitoring of vitamins B12, D, A, K ,iron ,copper, zinc, PTH and other measures of bone health including bone densitometry can help prevent long term complications. Mechanical complications such as anastomotic leaks, strictures and marginal ulcers. Weight regain following initial weight loss may be sign of a mechanical problem with the surgery, changes in lifestyle habits or simply a failure of the surgery to maintain weight loss. New or worsening gastroesophageal reflux disease along with weight regain may be an indication for endoscopic or surgical revision of the original surgery. Pregnancy should be avoided for 12 to 18 months following the procedure.

Indications for reoperation:

1. AGB – mechanical problems – band slippage, band erosion into stomach, port or tubing problems or migration of the band over time.
2. VSG to RYGB – gastroesophageal reflux disease, staple line leaks, and weight regain in the presence of pouch or anastomosis dilation or gastric stenosis leading to persistent nausea and vomiting.

Data on weight loss following revision surgery done for weight regain are mixed. Complications are increased with second operations and these procedures should be done by experienced, high volumes surgeons.

Society Activities

HEALTHY LIFESTYLE, THE NEED OF THE DAY!

Karnataka Endocrine Society Initiative
For
First year Pre-University Students

Speakers

Introduction to a healthy lifestyle

Dr Shaila Bhattacharya
Senior Consultant
Manipal Hospital
Airport Road
Bangalore

Styling life towards health

Dr Chitra Selvan
Associate Professor
Endocrinology
Ramiah Medical College
Bangalore

Dr. Shaila S Bhattacharyya
President

Dr. Belinda George
Secretary

Dr. Priya Chinnappa
Co-ordinator

Dr. Jyothi Idiculla
Co-ordinator

When and Where?

Date: 31 July 2024, Wednesday
Time: 2-4 pm
Venue: Christ Auditorium

CHANKUM KARALUM

KARNATAKA ENDOCRINE SOCIETY AND ST JOHN'S MEDICAL COLLEGE JOINT INITIATIVE

Healthy lifestyle - Dos and Don'ts
Dr Vageesh Ayyar
Professor, Endocrinology

Fatty Liver - A danger zone
Dr Jyothi Idiculla
Professor, Internal Medicine

4:30 P.M. | July 20, 2024, Saturday
Venue: Mary Matha Auditorium

Dr Vageesh Ayyar

Dr Jyothi Idiculla

Dr. Shaila S Bhattacharyya
President, KES

The first twenty people who attend the programme will be offered a free liver scan to diagnose fatty liver

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KARNATAKA ENDOCRINE SOCIETY

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OBESITY

PANEL DISCUSSION

Moderator

Dr Shruthi R

Our Experts

Dr Vijaya Sarathi

Dr Vishwanath S

Date: Friday, 21st March, 2025
Time: 07:30 PM - 08:30 PM

Click here for Zoom Link

Click here for YouTube live

Team Karnataka Endocrine Society

Dr Shaila Bhattacharya
President

Dr Belinda George
Hon.Secretary

Dr Priya Chinnappa
Co-ordinator

7th Annual Conference of
Karnataka Endocrine Society

HORMONE RHYTHM 2025 KALABURGI

ORGANIZED BY KARNATAKA ENDOCRINE SOCIETY
DEPT. OF MEDICINE M. R. MEDICAL COLLEGE, KALABURGI
IN ASSOCIATION WITH ASSOCIATION OF PHYSICIANS OF INDIA

BLOCK THE DATES 19 20 JULY, 2025

Venue
Mahadevappa Rampure Medical College, Auditorium,
Student Activity Center (SAC Building), CPM Boy's Hostel
Kalaburagi,Karnataka

Join us on zoom - https://us06web.zoom.us/j/89731507452?pwd=Cjt3UZSGmThMpmtHgkULbeo2f4tKNg.1
Youtube - https://www.youtube.com/live/hZlPwRZ0DPc

7th Annual Conference

ORGANISING COMMITTEE

CONFERENCE REGISTRATION FEE : DELEGATES ₹500

For Online Registration

https://rozitaevents.com/hormone-rhythm-2025/

Secretariat
Prof. Belinda George, Hon. Secretary, Department of Endocrinology, St. John's Medical College Hospital, Kormangala, Bengaluru 560034.