



# CHENNAI MENOPAUSE SOCIETY

"Changes not challenges"



## UPDATE ON MIDLIFE OBESITY



## THE METABOLIC SYNDROME



Heart Disease



Lipid Problems



Hypertension



Type 2 Diabetes



# HEALTHY AGING



# **CHENNAI MENOPAUSE SOCIETY**

**"Changes not challenges"**

## **HEALTHY AGING**

# PRESIDENT MESSAGE



Let me first wish you all a happy, healthy, prosperous New Year 2023 and happy Pongal. I am pleased to present the first newsletter of 2023

I wish to congratulate our entire team for the successful conduct of the Annual congress of Chennai Menopause Society on October 16<sup>th</sup>. Two Precongress Workshops were organized.

Live Office Hysteroscopy & workshop on Menopause & its Impact for PHC Tamil Nadu Doctors which was attended by more than 1000 Doctors. Annual conference of CMS was inaugurated by Honorable Minister for Social welfare and Women Empowerment. During inauguration of 2 senior citizens aged 90 years and 80 years were felicitated. (all of them mother of doctors). Souvenir and book let on Menopause in Tamil were released. Under the KNOW YOUR HEALTH NUMBER -Project BMI, fat distribution, risk assessment were done for all delegates today. Since all the above parameters were expressed in number it was named like this) There was TV coverage of the programme.

I thank each one of them for their commitment and for their support. On 17<sup>th</sup> Oct CME on Menopause was conducted at A.C.S Medical College. 150 UGs & PGs attended the programme Oct On World Menopause Day On 18<sup>th</sup> Menopause Clinic was inaugurated at SIMS Hospital followed by CME. On 18<sup>th</sup> evening of World Menopause day CMS organised Webinar on Menopause Awareness along with South Zone societies namely Madurai Menopause Society, Calicut Menopause Society, Bangalore menopause Society, Vijayawada menopause Society.

On 20<sup>th</sup> October CMS and Madras Orthopaedic Society & Dept of Orthopaedics of Saveetha Medical College celebrated World Osteoporosis day

On 21<sup>st</sup> October CME on Menopause by CMS along with Govt Omandurar Medical College which was attended by 150 UG students. Final year students did role play, one of the students A.Vaishnavi had written poem on Menopause which was read by her during the Inauguration of the programme.

On 6<sup>th</sup> Nov CMS conducted Public Awareness programme for rural women and On 17<sup>th</sup> CMS conducted yoga demo and exhibition regarding diet for Middle aged rural women.

On 22<sup>nd</sup> Nov IMS President webinar on Endometrial Carcinoma organized by Chennai Menopause Society was well appreciated

On 3<sup>rd</sup> Dec, CMS conducted comprehensive health camp for midlife women free Calcium, vit D were distributed



On 6<sup>th</sup> Dec Melmaruvathur Institute of Medical Sciences & CMS conducted webinar on Menopause - Basics & Beyond.150 UGs &15PGs students attended

On 24<sup>th</sup> Dec Chennai menopause society conducted CME on Cardio vascular disease prevention, osteoporosis prevention and treatment and panel moderated by Dr.Vijayalakshmi.S on "Living with Menopause" was very good interactive session CMS celebrated New year with senior citizen in Old age home. free health checks up, CBG, TFT. We made them sing, distributed Free calcium, BCT, skin ointment for scabies were distributed

On 13<sup>th</sup> Jan Chennai Menopause Society conducted CME programme on Menopause - Basics and beyond along with Dept of ObGyn of Sathiya Sai Medical College. 150 Medical students and 15 postgraduates attended the meeting CME is proposed on Midlife Obesity. On 28<sup>th</sup> Jan I thank all the members for their support and encouragement. Together we will continue to do our mission for midlife and menopause women's health.

**Dr. N. Hephzibah Kirubamani**  
President  
Chennai Menopause Society

# IS MENOPAUSE A PAUSE



## A. VAISHNAVI

Final MBBS

Govt Medical College, Omandurar Govt Estate, Chennai

\* Running tired...

Having encompassed halfway there...

These women, in their midlife stare

At the many pain & cries transpired,

Now all we ought to do for them is care.

\*Is menopause really a Pause -?

It is nature's way to give them a rest,

Embellished with Accolades, perks and zest

After all the sheer stress and emotional distress

They have endured through the years.

But Is menopause really a Pause-?

Plagued with hot flashes,

Pain in the joints as the hormone level dashes,

Onset of Anxiety, wakefulness & Mood swings;

That are as unpredictable as the colors of a butterflies' wings

Yet to ease these troubles,

We bring the pain down in doubles,

Diet, relaxants and Estrogen supplements,

Whole grains, dairy and Anti-oxidants.

Adequate and timely nutrition, yoga and exercise,

We cut down their worries to a precise.

Yet there are still milestones to achieve,

In empowering these women who grieve.

# MENOPAUSE - A POSITIVE PAUSE

A Triumph over Physical, Mental &  
Emotional Wellbeing through Menopause



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**DR. SUKANYA, MS (OG) Post graduate,**  
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## INTRODUCTION

The life cycle of a woman can be broadly divided into 5 stages such as Paediatric, adolescent, reproductive, pre-menopausal and post-menopausal. With increasing life expectancy due to advancement of medical science, women spend nearly a third of their life span in the post-menopausal period. Menopause is perceived in different ways by different women based on their awareness levels -

- a) Normal biological process that goes unnoticed
- b) Freedom from monthly distress
- c) Distress in silence

Menopause is the point in time of permanent cessation of menstruation due to loss of ovarian activity. (WHO). The Average age of onset of menopause is 51 years across the world and Indian Average is 46. 2 yrs. However the effects of arriving menopause occur over a span of

4 to 7 years prior permanent cessation of ovarian activity. Appearance of symptoms occurs with endocrinal and biochemical changes due to diminishing ovarian function. The symptoms that occur in women during the menopause are hot flushes, mood swings, sleep disturbances, urinary incontinence, cognitive changes, somatic complaints and sexual dysfunction. Perception of menopausal symptoms and the acceptance of these symptoms vary with each individual according to their level of tolerance to these effects. In India, especially in rural places most women usually accept these effects of menopause as part and parcel of their daily routine and rarely seek medical advice.

Various attempts and awareness programs are envisaged to improve the psychological well-being of middle-aged women who have to live almost half of their remaining life in the absence of ovarian hormones. It is not only important to increase their self-efficacy to minimize stress but also administer measures to combat the physical effects of absent ovarian hormones. Moreover, managing menopausal symptoms with drugs and hormones to compensate the loss of ovarian hormones and increasing self-compassion through effective coping may maximize psychological as well as physical well-being.

## **PHYSIOLOGY OF MENOPAUSE**

Normally, there is a monthly release of follicle from a fixed reserve present in the ovary from birth and ultimately once when all follicles are depleted there is cessation of production of oestrogen and progesterone. Lack of production of ovarian hormones lead to physical and psychological changes. Absence of negative feedback results in increased production gonadotropins from the hypothalamus and anterior pituitary. The rate of decline of hormones is quite variable and often relates to symptoms experienced

## **SIGNS AND SYMPTOMS OF MENOPAUSE**

1. Urogenital changes occurring due to menopause:-
  - i) Vulval - Atrophy of vulval skin causes pruritus

- ii) Vaginal - Dryness due to absence of lubrication from lack of secretions can cause dyspareunia
  - iii) Uterine - Decrease in size of uterus occurs with thinning of myometrium and atrophy of endometrium
  - iv) Ovarian - Shrinkage of ovarian volume occurs as there is no monthly development of follicles and no release of ovum
  - v) Urethral - Atrophy can cause stress incontinence and dysuria
  - vi) Pelvic cellular tissue and ligaments atrophy and do not offer adequate support to the uterus
2. Vasomotor symptoms - Hot flushes and sweating are most common and disturbing of the postmenopausal symptoms
  3. Dermatological - Absence of estrogenic effect on the skin can cause dryness and scaling and can predispose to infection and patient suffers from itching.
  4. Psychological - Mood swings are common in post-menopausal women, feeling of insecurity with loss of self-esteem, irritability, anger and loss of libido can affect marital harmony.
  5. Bone - Osteoporosis occurs and can cause fractures even due to minor trauma.
  6. Cardiac - Absence of oestrogen leads to decrease in cardio protective effect of ovarian hormones
  7. Breast - Atrophy of breast tissue and shrinkage of breast size

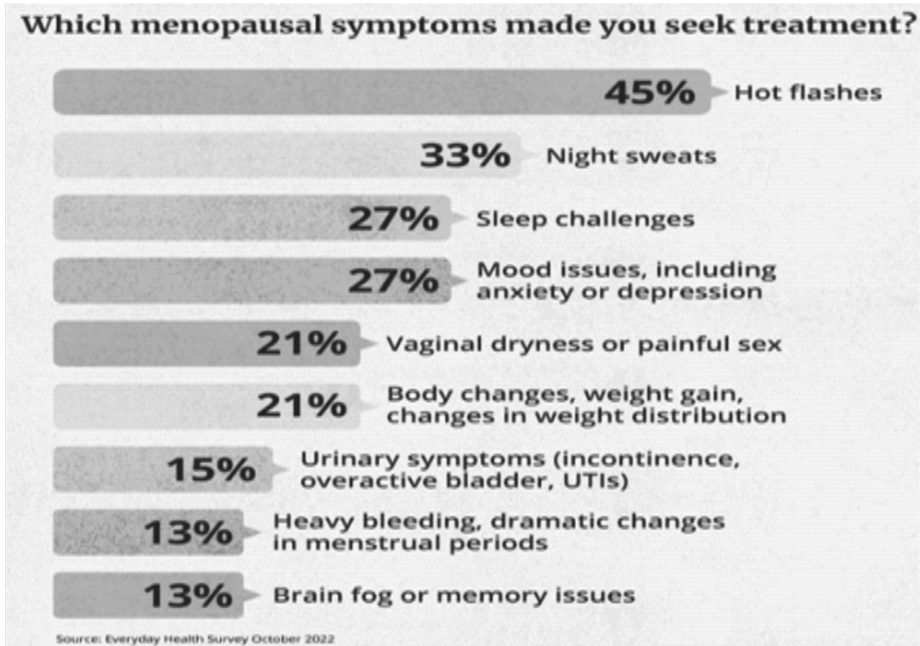
## **STAGING OF MENOPAUSE**

Dr. Berham Ankalesaria staged menopause into 3 stages depending the transition from perimenopause and menopause based on events such as menstrual regularity, vasomotor instability and psychosomatic symptoms

STRAW +10 Classification includes principle criteria of menstrual cycle regularity . supportive criteria of endocrine values of FSH, AMH, Inhibin B

and Antral follicle. Descriptive criteria of urogenital and vasomotor symptoms Blatt Kuppermann climacteric index assesses the severity of menopausal symptoms based on the symptoms experienced.

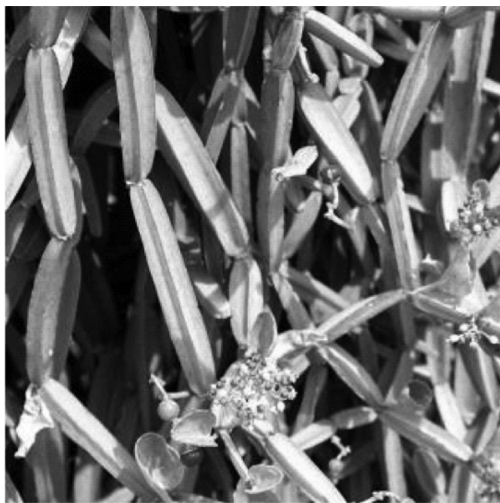
## MANAGEMENT OF POSTMENOPAUSAL SYMPTOMS



Hot flashes and night sweats are the most disturbing symptoms that drive most women to seek medical advice so as to get rid of them. Management of the symptoms of menopause includes pharmacological and non-pharmacological methods. The drugs used can be classified into hormonal and non-hormonal .

Non pharmacologic measures such as good nutrition, regular physical activity, are appropriate for all postmenopausal women whether or not they suffer from symptoms of menopause. A popular dietary intervention consist of phytoestrogenic plant-based diet, minimizing saturated fatty oils, and daily intake of soybeans that can effectively reduce the severity of post-menopausal hot flushes.

For women with osteoporosis and/or other risk factors for fracture, including advanced age and previous fractures, the primary goal of therapy is to prevent new fractures. This can be achieved by combining non pharmacologic measures and drugs to increase bone density and to improve bone strength, and strategies to reduce fall risk. It has been proved that calcium content of bones improve well with plant product supplementation of *cissus quadriangularis* (Pirandai in tamil). Regular walking for at least 45 minutes a day helps in preventing onset of osteoporosis and reduces the risk of fracture in postmenopausal women. Aerobic exercises also have a beneficial effect in reducing the risk of fractures and improve bone density. Osteoporosis treatment may be started in patients with a fragility fracture or a T score  $\leq -2.5$  or a T score of  $> -1$  and  $< 2.5$  with additional risk factors



**Pirandai  
(*Cissus  
Quadriangularis*)**

Pharmacological therapy includes supplementation of Calcium and Vitamin D, bisphosphonates, RANK ligand inhibitors, parathyroid hormone-receptor agonists, and inhibitors of sclerostin.

SSRIs and SNRIs such as venlafaxine, desvenlafaxine, paroxetine, escitalopram and citalopram are effective in reducing VMS in postmenopausal women

# HORMONAL THERAPY

Benefits	Risks
<p><b>Relieves symptoms like:</b></p> <ul style="list-style-type: none"><li>● Hot flashes</li><li>● Mood swings</li><li>● Vaginal dryness</li><li>● Difficulty concentrating</li></ul> 	<p><b>Can increase the risk of:</b></p> <ul style="list-style-type: none"><li>● Strokes and blood clots</li><li>● Breast cancer</li><li>● Endometrial cancer</li><li>● Gallstones</li></ul> 

It is not only the hot flashes that are amenable to hormone therapy but also vaginal atrophy proves highly responsive to oestrogen supplementation. This helps to improve her sexual life and also helps improve her self-esteem and confidence. Lipoprotein profile maintenance and bone density maintenance and improvement are also amenable to oestrogen supplementation therapy in menopause.

Oestrogen is available in different modalities (i.e., continuous versus cyclic), and as systemic oestrogen, transdermal patches, intrauterine hormone releasing system and the latest modality being Metered dose transdermal spray (EDTS). oestrogen-progestin, estrogen-bazedoxifene, progestin alone, or combined oral contraceptives. The dose of estrogen patches during initiation of therapy starts with 0.025mg per day and oral estrogen is started with a dose of 0.625mg per day of conjugated estrogen. The use of unopposed oestrogen can cause uterine hyperplasia and uterine cancer. The cyclical administration of combination oestrogen-progestin therapy is recommended for women with an intact uterus. For atrophic vaginitis, systemic or vaginal oestrogen can be used. The use of localized oestrogen therapy (via vaginal rings, creams) enhances blood flow and reverses vaginal atrophy. In order to balance the ill effects of continuous hormone therapy in menopausal women the recommendation is to use the minimum effective dose for the minimum period of time as necessary. The best recommendation is to administer the lowest dose for a minimum period as possible.



## **CONCLUSION**

Cessation of menstruation and the effects of oestrogen and progesterone depletion are to be anticipated by every woman once they reach their early fifties. Measures like proper education of the impending menopause and counselling regarding available measures to prevent the ill effects need to be spread among women. The goal of the education should be to impart the knowledge that this unpreventable stage in a women's life can be easily tackled by simple measures like walking, calcium and vitamin D supplementation and also a healthy mental preparation to meet it and readiness to handle it. The availability of drugs to manage the effects of menopause has to be imparted along with a caution note on its over use and over dosage too has to be told.

Aging can be done with grace and dignity, menopause is not a signal of impending decline, but rather a wonderful phenomenon that can signal the start of something positive, such as a good health program, hence let it be regarded as Positive pause. It is a triumph needed to be achieved by every woman over all the physical and psychological changes that occur in her once menopause sets in.

# MIDLIFE FAT REDISTRIBUTION AND ITS IMPLICATIONS



## **Dr. J.KARTHIGA PRABHU MD (OBG)**

Professor

Department of Obstetrics and Gynaecology

SRM Medical College Hospital and Research Centre, Kattankalathur

**Introduction :** Both globally and nationally, obesity is more common in women than in men. In women, the mid-life period is a critical window for increases in body weight and changes in body composition. Obesity is associated with a number of metabolic abnormalities including glucose intolerance, dyslipidemia, Type 2 DM which predispose them to CVD and cancers.

Adipose tissue as an endocrine organ Adipose tissue secretes a number of hormones. Among them adiponectin and leptin have been found to be associated with metabolic diseases such as insulin resistance, type 2 diabetes and cardiovascular complications. Adiponectin is lower among obese individuals, and possesses anti-inflammatory, anti-diabetic, and antiatherogenic properties. Leptin is higher among obese individuals, is associated with a pro-inflammatory, atherogenic milieu.

Though Adipose tissue does not synthesise steroid hormones on its own it is responsible for uptake, storage, conversion and secretion of sex hormones. It expresses enzymes that metabolise both sex steroids and glucocorticoids, as well as receptors for estrogens, androgens and glucocorticoids.

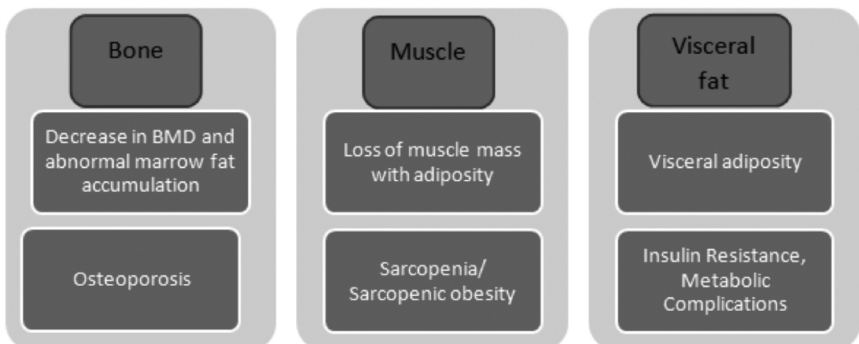
Though abdominal subcutaneous adipose tissue (SAT) is quantitatively the most important, visceral adipose tissue (VAT) is more closely linked to metabolic risk.

### **Menopausal Status and changes in body composition:**

The menopausal transition is associated with changes in body composition apart from increasing BMI. Weight gains common among mid-life women particularly during the menopausal transition. Women have relatively greater SAT prior to the final menstrual period (FMP) versus relatively greater VAT deposition after the FMP, reflecting increased central body fat distribution. During the menopausal transition, the visceral fat depot increases from being 5%-8% of total body fat during the premenopausal period to 15%-20% of total fat during the postmenopausal period. The menopausal transition is also associated with decreased lean muscle mass

Evidence suggests that weight gain during menopausal transition is due to chronological aging and changes in body composition and fat distribution are mainly due to ovarian aging and reproductive hormones. At menopause there is change in body composition in all the compartments. The decrease in bone mineral density causes osteoporosis, loss of muscle mass leads to sarcopenia and shift of adipose tissue to visceral compartment leads to insulin resistance, cardiovascular risk and sarcopaenic obesity.

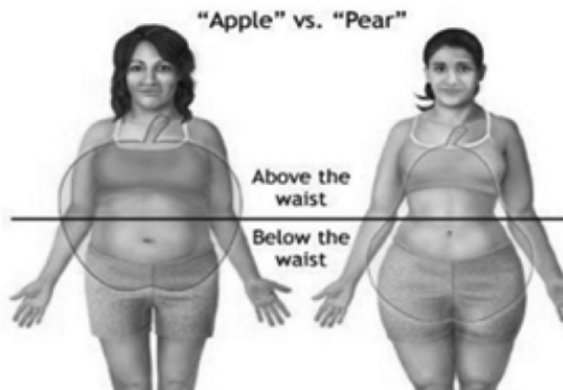
**Figure 1: Changes in body composition in different compartments**



Menopausal transition is associated with a preferential increase in fat centrally, as intra-abdominal fat (android or apple shape) and the accumulation of fat in the gluteofemoral region (gynoid or pear shape). Android fat deposition is associated with a higher risk of hypertriglyceridemia, diabetes, hypertension, and CVD.

The distribution of adipose tissue to the gluteofemoral region depends on the action of estrogens and progesterone in the premenopause. Conversely, androgens correlate positively with the amount of abdominal fat. Estrogens down-regulate the density of the androgen receptor in female adipose tissue, thereby protecting the adipose tissue from androgen effects. The dramatic fall in serum estrogen levels together with relative hyperandrogenism may be responsible for central obesity.

## Figure 2 : Gynaecoid and Android obesity



### Obesity of Muscle:

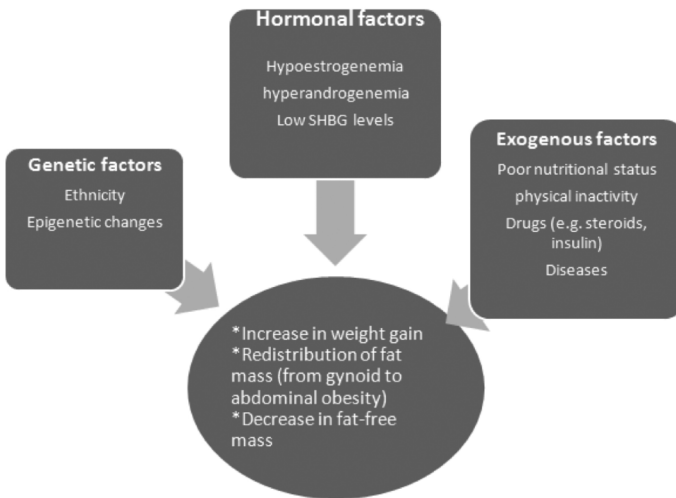
Decreased exercise capacity and activity may contribute to the reduced lean body mass (muscle) and increased central adiposity in menopause.

**Obesity of Bone:** With ageing independent of estrogen levels there is abnormal bone marrow fat accumulation at the expense of osteoblastogenesis. This creates a lipotoxic environment with decreased function of osteoblasts.

In a larger study from SWAN, demonstrated a 6% increase in waist circumference, a 10% increase in fat mass and a 1% decrease in skeletal muscle mass over a 6-year period around the FMP persisting after adjustment for chronologic age.

**Factors contributing to changes in body composition in midlife :**

**Figure 3 : Main factors contributing to body composition changes in midlife**



Basal metabolic rate is also reduced due to aging, muscle mass loss, and the reduction in brown tissue activity. Impairments of the circadian system, Inflammaging, gut dysbiosis and physical inactivity further promote weight gain and the loss of lean skeletal muscle, leading to sarcopenic obesity.

Waist circumference predicted future levels of SHBG, testosterone, E2 and FSH levels but changes in these hormones did not affect future waist circumference. This suggests that changes in adiposity precede changes in sex steroids during the menopausal transition. **Adipose tissue affects reproductive hormone levels even as reproductive hormone levels may affect adipose tissue deposition.**

FSH receptors originally thought to be restricted to the gonads is also present in visceral fat in both men and women. Thus, FSH might stimulate fat distribution and contribute to a pro-inflammatory milieu in menopausal women .

### **Implications of midline fat redistribution :**

The role of central obesity reflects increased visceral fat and /or ectopic fat stores in the liver, muscle, pancreas and epicardium leading to the development of insulin resistance and metabolic disorders. Shifts in fat distribution is associated with increased cardiometabolic risk factors, including elevated blood pressure, elevated low-density lipoprotein (LDL), and obesity.

Increased endogenous estrogen production and Estrogen metabolites can exert genotoxic effects. In addition, visceral fat can cause increased IGF-1, and leptin signalling in obese women promoting proinflammatory state, mitogenesis, angiogenesis and anti-apoptosis. Together all these factors can lead on to development of tumour and aggressive tumour behaviour.

### **Evaluation of obesity**

Classifications of overweight and obesity status are usually based upon BMI. But, BMI does not completely measures fat distribution which predict metabolic complications. Fat distribution usually can be evaluated using waist circumference, hip circumference and the ratio of waist-to-hip circumference, although the accuracy and precision of anthropometry is low. More sophisticated methods for precise measurement of fat distribution include DEXA (dual energy X-ray absorptiometry), computed tomography (CT) and magnetic resonance imaging (MRI) which provide precise measures for subcutaneous adipose tissue (SAT) and visceral adipose tissue (VAT) .

Fat and lean mass can be quantified by bioelectric impedance analysis (BIA), DEXA or CT. High waist circumference, indicating accumulation of excessive central abdominal fat, and a low SHBG level are independent predictors of IR and metabolic disease risk in postmenopausal women.

## Prevention and Treatment

The backbone of obesity prevention include lifestyle modification with balanced diet and physical activity. Continuous physical activity during the mid-life is an effective strategy to increase resting energy expenditure and prevent weight gain and abdominal adiposity deposition. Quantity rather than the intensity of physical activity may lower adiposity and maintain body composition including preservation of lean mass and decreasing body fat during menopause transition. Routine monitoring of body weight (especially the index for central obesity), blood glucose, lipoproteins and blood pressure should be done. Though, Exogenous estrogen therapy has been suggested as a potential therapy to blunt weight gain and unfavorable body composition changes, increased risk of stroke and breast cancer in postmenopausal women has limited the use of oral estrogen for chronic disease prevention.

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# MIDLIFEOBESITY AND CARDIOVASCULAR RISK



## **DR S SADHANANDHAM**

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Midlife obesity is a major factor which plays an important role in determining the cardio vascular risk. Elevated BMI increases cardiovascular and other health complications. However not every overweight /obese person develop health complications (Fit Fat). Individuals with low accumulation of abdominal visceral adipose tissue have lower CV risk and hence strong associations exist between adiposity indices and CVD risk factors. Many metabolic abnormalities exist concerned with obesity like insulin resistance, glucose intolerance - Type 2 diabetes mellitus, atherogenic Dyslipidaemia, elevated Blood pressure-Metabolic syndrome . Factors associated with Obesity are Age and Sex (the relative decline of sex steroid are majorly responsible for increased CV risk post menopause in women). Various indices to identify Obesity are Body Mass Index , Anthropometry , Waist Hip ratio and Lipid profile. Prevention and management of obesity include behavioural therapy in the fore front with healthy lifestyle and food habits and adequate exercise and pharmacotherapy being the last resort



# MID LIFE OBESITY AND METABOLIC SYNDROME



**Dr. R. KANNAN**  
Prof. Medicine  
Saveetha Medical College

## **Obesity**

Obesity is the accumulation of excess fat that interferes with the maintenance of an optimal state of health. The excess of macronutrients in the adipose tissues stimulates them to release inflammatory mediators such as tumor necrosis factor and interleukin 6, and reduces production of adiponectin, predisposing to a pro-inflammatory state and oxidative stress.

The increased level of interleukin 6 stimulates the liver to synthesize and secrete C-reactive protein. Inflammation is an important risk factor for cardiovascular diseases as well coagulation, atherosclerosis, metabolic syndrome, insulin resistance, and diabetes mellitus. It is also associated with development of non-cardiovascular diseases such as psoriasis, depression, cancer, and renal diseases.

On the other hand, a reduced level of adiponectin, a significant predictor of cardiovascular mortality, is associated with impaired fasting glucose, leading to type-2 diabetes development, metabolic abnormalities, coronary artery calcification, and stroke.

## **What is the link between Metabolic syndrome and obesity ?**

Obesity coexists with metabolic syndrome, which is associated with dysregulated metabolic pathways .Metabolic syndrome (MetS) forms a cluster of metabolic dysregulations including insulin resistance, atherogenicdyslipidemia, central obesity, and hypertension.

The pathogenesis of MetS encompasses multiple genetic and acquired entities that fall under the umbrella of insulin resistance and chronic low-grade inflammation. If left untreated, MetS is significantly associated with an increased risk of developing diabetes and cardiovascular diseases (CVDs).

MetS relatively constitutes a novel clinical entity, the extent of research about the disease has been exponentially growing in the past few decades. However, many aspects of this clinical entity are still not completely understood, and many questions remain unanswered to date.

The higher prevalence of metabolic syndrome among those aged 55-64years may indicate that middle aged women become unhealthy earlier in the life course and that many of them may die prematurely.

## **EAT- Epicardial Adipose Tissue**

Different visceral fat compartments have several systemic effects and may play a role in the development of both insulin resistance and cardiovascular diseases. In the last couple of years special attention has been paid to the epicardial adipose tissue (EAT), which can be quantified by non-invasive cardiac imaging techniques.

The epicardial fat is a unique fat compartment between the myocardium and the visceral pericardium sharing a common embryologic origin with the visceral fat depot. EAT may produce several adipocytokines and chemokines that may influence through paracrine and vasocrine effects and the development and progression

of coronary atherosclerosis. Epicardial adipose tissue volume has a relatively strong genetic dependence, similarly to other visceral fat depots.

## **Menopause and Metabolic Syndrome**

Menopause occurring in woman in the fifth decade of their life is a normal, physiological process associated with the reduction and finally loss of fertility caused by progressive loss of generative ovarian function. Metabolic syndrome, which comprises abdominal obesity, low high-density lipoproteins (HDL) values, hypertriglyceridemia, hyperglycemia and arterial hypertension, more frequently develops in postmenopausal women.

Elevated body weight and an unfavorable redistribution of fatty tissue characterized by an increased amount of visceral fat and reduction of so-called fat-free mass are also frequently observed in postmenopausal women, in whom the prevalence of abdominal obesity can reach 60%.

Although this weight gain in the peri- or postmenopausal period may be explained by a slower rate of basal metabolism, incorrect or irregular eating habits including a high caloric diet and, above all, the lack of physical activity, other essential factors are also considered in the pathogenesis of overweight and obesity: estrogen and progesterone deficiency, as well as age-related reduction in the levels of several hormones, leptin, ghrelin, galanin, growth hormone and neuropeptide Y.

Recent studies have indicated that myostatin may play a crucial role in the remodeling of body composition (mainly muscle and fat tissue). Myostatin (or growth and differentiation factor 8, GDF-8) coded by the MSTN gene is a myokine and a member of the transforming growth factor- $\beta$  (TGF- $\beta$ ) superfamily. It is a potent bioactive factor, expressed mainly in muscles, with the ability to modulate differentiation and

growth of skeletal muscles. Moreover, it can penetrate to the extracellular space as well as the circulating blood and thus exert endocrine and paracrine effects .

Any patient diagnosed with metabolic syndrome should at least be seen as a high cardiovascular risk patient. A comprehensive assessment of the main and additional conditions of the metabolic syndrome is advised, as well as implementing lifestyle modifications alongside appropriate medical treatment. Early intervention can prevent the development or slow the progression of individual components of the metabolic syndrome.

**\*\*\*\*\***



# CHENNAI MENOPAUSE SOCIETY

"Changes not challenges"



On Nov 6<sup>th</sup> CMS conducted Public Awareness for rural women



On 22<sup>nd</sup> Nov IMS President 22<sup>nd</sup> webinar on Endometrial Carcinomawas conducted by CMS On 3<sup>rd</sup> Dec,CMS conducted comprehensive health camp .free Calcium, vit D were distributed



CMS conducts Awareness Programme among Medical Students On 6<sup>th</sup> Dec at Melmarvathur Medical College & Jan 13<sup>th</sup> at Sathya Sai Medical College



On New year day Jan 1<sup>st</sup> Visit To Old Age & CMS conducted health camp & distributed free Calcium & vit D





## CHENNAI MENOPAUSE SOCIETY

"Changes not challenges"



**Don't Regret Growing Older  
It's A Privilege Denied to Many**