



SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES  
Osudu, Agaram Village, Kudapakkam Post, Pondicherry – 605 502.

DEPARTMENT OF PHYSIOLOGY

Date: 12.9.2018

From  
Dr.V.Senthil kumar  
Professor and Head,  
Physiology  
Sri Lakshmi Narayana Institute of Medical sciences  
Puducherry

To  
The Dean,  
Sri Lakshmi Narayana institute of Medical sciences  
Puducherry

**Sub: Permission to conduct value-added course:** Certificate course in lifestyle modification for metabolic syndrome & Code: PHY C09

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: Certificate course in lifestyle modification for metabolic syndrome & Code: PHY C09 from November 2018- January 2019. We solicit your kind permission for the same.

Kind Regards

Dr.V.Senthil kumar

FOR THE USE OF DEANS OFFICE

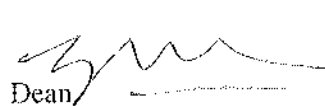
Names of Committee members for evaluating the course:

The Dean:Dr.G.Jayalakshmi

The HOD: Dr.V.Senthil kumar

The Expert:Dr.R.Vijayakumar

The committee has discussed about the course and is approved.

  
Dean

(Sign & Seal)  
DEAN

  
R. Vijayakumar  
Subject Expert

(Sign & Seal)  
DR. R. VIJAYAKUMAR

  
VSK  
HOD

(Sign & Seal)

PROFESSOR IN PHYSIOLOGY  
DEPARTMENT OF PHYSIOLOGY  
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES  
OSUDU, AGARAM VILLAGE, KUDAPAKKAM POST, PONDICHERRY - 605 502



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P-II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

Ref. No. SLIMS/Dean Off/VAC / 320

**Circular**

Date: 20.9.2018

**Sub: Organising Value-added Course:** Certificate course in lifestyle modification for metabolic syndrome & Code: PHY C09-Reg

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical sciences, is organizing "Certificate course in lifestyle modification for metabolic syndrome & Code: PHY C09". The course content is enclosed below.

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/speed post only so as to reach on or before October 2018. Applications received after the mentioned date shall not be entertained under any circumstances.

Encl: Copy of Course content.

  
Dean  
DEAN

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES  
OSUDU, AGARAM VILLAGE,  
KODAPAKKAM POST,  
PUDUCHERRY - 605 502

## Course Proposal

Course Title: **Certificate course in lifestyle modification for metabolic syndrome**

Code: PHY C09

**Course Objective: At the end of the course, the participants should know**

- ❖ Definition of metabolic syndrome
- ❖ The role of lifestyle modification in the management of Metabolic Syndrome
- ❖ Principles and main strategies of Lifestyle modifications based
- ❖ Strategies to engage patients in lifestyle modification
- ❖ Cognitive restructuring in lifestyle modification programs
- ❖ Alternative behaviors
- ❖ New frontiers of lifestyle modification programs
- ❖ Practical recommendations for diet and physical exercise in lifestyle modification programs

**Course Outcome:** On successful completion of the course the students will have the knowledge on various lifestyle modifications in treatment and prevention of metabolic syndrome.

**Course Audience:** 1<sup>st</sup> year M.B.B.S students (2018- 2019)

**Course Coordinator:** DR.V.Senthilkumar

### **Course Faculties with Qualification and Designation**

Dr.R.Vijayakumar, Msc, PhD, Professor, Physiology

Dr.V.Anebaracy, M.B.B.S, M.D, Assistant Professor, Physiology

**Course Curriculum/Topics with schedule (Min of 30 hours)**

SINo	Date	Topic	Time	Faculty	Hours
1	3/11/2018	❖ Definition of metabolic syndrome ❖ The role of lifestyle modification in the management of Metabolic Syndrome	1.30 pm to 6.30 pm	Dr.R.Vijayakumar	2
2	10/11/2018	❖ Principles and main strategies of lifestyle modifications based	2 pm to 6 pm	Dr.V.Anebaracy	5
3	17/11/2018	❖ Strategies to engage patients in lifestyle modification	2 pm to 5 pm	Dr.R.Vijayakumar	4
4	24/11/2018	❖ Cognitive restructuring in lifestyle modification programs	2 pm to 5 pm	Dr.V.Anebaracy	3
5	1/12/2018	❖ Alternative behaviors	1.30 pm to 6.30 pm	Dr.R.Vijayakumar	5
6	8/12/2018	❖ New frontiers of lifestyle modification programs	2 pm to 6 pm	Dr.V.Anebaracy	4

7	5/1/2019	❖ Practical recommendations for diet and physical exercise in lifestyle modification programs	1.30 pm to 6.30 pm	Dr.R.Vijayakumar	5
			Total Hours		30

**REFERENCE BOOKS:**

1. The 5 AM Club: Own Your Morning, Elevate Your Life by Robin Sharma (Author)
2. World's Best Inspirational Books to Change Your Life (Box Set of 3 Books) by Joseph Murphy  
Dale Carnegie, Napoleon Hill (Author)

## VALUE ADDED COURSE

### 1. Name of the programme & Code

Certificate course in lifestyle modification for metabolic syndrome & Code: PHY C09

### 2. Duration & Period

30 hrs & November 2018– January 2019

### 3. Information Brochure and Course Content of Value Added Courses

*Enclosed as Annexure- I*

### 4. List of students enrolled

*Enclosed as Annexure- II*

### 5. Assessment procedures:

Multiple choice questions- *Enclosed as Annexure- III*

### 6. Certificate model

*Enclosed as Annexure- IV*

### 7. No. of times offered during the same year:

One time from November 2018– January 2019

### 8. Year of discontinuation: 2020

### 9. Summary report of each program year-wise

Value Added Course- November 2018– January 2019					
Sl. No	Course Code	Course Name	Resource Persons	Target Students	Strength & Year
1	PHYC09	Certificate course in lifestyle modification for metabolic syndrome	Dr.R.Vijayakumar Dr.V.Anebaracy	1 <sup>st</sup> MBBS	20 ( November 2018– January 2019 )

### 10. Course Feed Back

*Enclosed as Annexure- V*

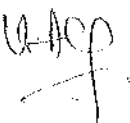
RESOURCE PERSON:

Dr.R.Vijayakumar



RESOURCE PERSON:

Dr.V.Anebaracy

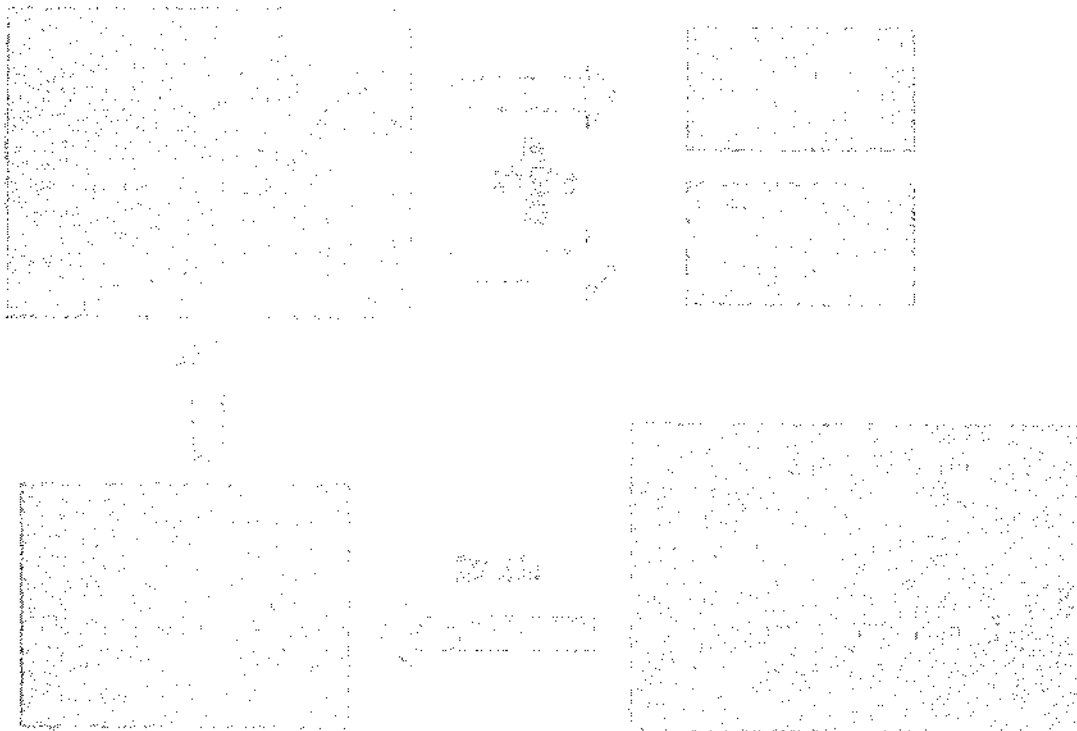


VSK  
COORDINATOR:

Dr.V.Senthil kumar

**CERTIFICATE COURSE IN LIFESTYLE MODIFICATION  
FOR METABOLIC SYNDROME  
CODE: PHY C09**

# Metabolic Syndrome



**PARTICIPANT HAND BOOK**

**COURSE DETAILS**

Particulars	Description
Course Title	Certificate course in lifestyle modification for metabolic syndrome
Course Code	Code: PHY C09
Objective	<ul style="list-style-type: none"><li>❖ Definition of metabolic syndrome</li><li>❖ The role of lifestyle modification in the management of Metabolic Syndrome</li><li>❖ Principles and main strategies of lifestyle modifications</li><li>❖ Strategies to engage patients in lifestyle modification</li><li>❖ Cognitive restructuring in lifestyle modification programs</li><li>❖ Alternative behaviors</li><li>❖ New frontiers of lifestyle modification programs</li><li>❖ Practical recommendations for diet and physical exercise in lifestyle modification programs</li></ul>
Further learning opportunities	Advance course in lifestyle modification.
Key Competencies	<ul style="list-style-type: none"><li>• On successful completion of the course the students will have the knowledge on various lifestyle modification in treatment and prevention of metabolic syndrome.</li></ul>
Target Student	1st MBBS Students
Duration	30 hrs & November 2018-January 2019
Theory Session	20hrs
Practical Session	10hrs
Assessment Procedure	Long answer question and short answer questions.



## CERTIFICATE COURSE IN LIFESTYLE MODIFICATION FOR METABOLIC SYNDROME

Lifestyle modification based on behavior therapy is the most important and effective strategy to manage the metabolic syndrome. Modern lifestyle modification therapy combines specific recommendations on diet and exercise with behavioral and cognitive strategies. The intervention may be delivered face-to-face or in groups, or in groups combined with individual sessions. The main challenge of treatment is helping patients maintain healthy behavior changes in the long term. In the last few years, several strategies have been evaluated to improve the long-term effect of lifestyle modification. Promising results have been achieved by combining lifestyle modification with pharmacotherapy, using meals replacement, setting higher physical activity goals, and long-term care. The key role of cognitive processes in the success/failure of weight loss and maintenance suggests that new cognitive procedures and strategies should be included in the traditional lifestyle modification interventions, in order to help patients build a mind-set favoring long-term lifestyle changes. These new strategies raise optimistic expectations for an effective treatment of metabolic syndrome with lifestyle modifications, provided public health programs to change the environment where patients live support them.

### **Introduction**

The metabolic syndrome (MS) is a clinical condition characterized by a cluster of abnormalities, including visceral obesity, hyperinsulinemia and insulin resistance, type 2 diabetes, dyslipidemia, hypertension, fatty liver, and elevated uric acid, a procoagulant state, whose borders are only provisionally set by different international agencies . The focus is given to visceral obesity, which is

considered the pivotal alteration according to the International Diabetes Federation, and to atherogenic dyslipidemia, which covers two of the five diagnostic criteria. The prevalence of MS is increasing worldwide in parallel with the alarming rise of obesity; according to the National Health and Nutrition Examination Survey, MS is estimated to affect up to 36% of the US adult population, with a lower prevalence in Europe. Although the accepted cutoffs of individual variables do not constitute per se evidence of risk factors, the clustering of abnormalities carries a high risk of the diabetes and cardiovascular diseases. In particular, the presence of MS is associated with a two- to four-fold increase of cardiovascular disease-related morbidity and mortality even in the absence of clinically evident cardiovascular disease or diabetes mellitus.

The role of lifestyle modification in the management of Metabolic Syndrome:

Weight reduction represents the principal goal of most intervention studies on MS. There is complete agreement that weight loss is associated with significant improvements in the clinical abnormalities of MS, including blood glucose, lipid profile, and blood pressure, and even a moderate weight loss (7% reduction) in 4 weeks can improve the metabolic profile, despite the persistence of a high body mass index (BMI). However, the greater the BMI loss, the larger are the metabolic improvements.

**Principles and main strategies of lifestyle modifications based on behavior therapy:**

Behavior therapy has been designed to provide patients with a set of principles and techniques to modify their eating and activity habits. Originally, the treatment was exclusively based on the learning theory (ie, behaviorism). The theory postulates that the behaviors causing obesity (excess eating and low exercising) are largely learnt and therefore could be modified or relearned. The theory also postulated that positive changes in eating and exercising can be achieved by modifying the environmental cues (antecedents) and

the reinforcements of these behaviors (consequences). The intervention was later integrated with cognitive strategies (eg, problem solving and cognitive restructuring) and with specific recommendations on diet and exercise. The treatment is different from typical psychotherapy. The aim is not to treat a psychiatric disorder, but rather to change eating and exercise behaviors. In addition, lifestyle intervention does not address the potential causes of the problematic behaviors, but it is focused to teach skills to change them.

### **Strategies to engage patients in lifestyle modification:**

Some of the key principles and strategies to engage patients in lifestyle modification, derived from motivational interviewing, are listed below: Conceptualization of motivation. Motivation is a dynamic entity waxing and waning as a function of shifting personal, cognitive, behavioral, and environmental determinants. This means that patients' motivation may require continuous attention, not only during the engaging process, but also in the course of treatment. Collaborative therapeutic style. Clinicians should adopt a collaborative therapeutic style as opposed to a confrontational approach. The collaborative style of cognitive behavior therapy has been considered as one of the main reasons for its higher success compared to other interventions to engage patients with resistance.

- Acceptance and change. Clinicians should validate patients' experience within the framework of a balance between acceptance and change, firmness, and empathy.
- Functional analysis. Clinicians should make a functional analysis of the pros and cons of changing lifestyle because change is facilitated by communicating in a way that elicits the person's own reasons for and the advantages of change.
- Roll with resistance. Clinicians should not address resistance with confrontation, but with a collaborative evaluation of the variables involved in maintaining the unhealthy lifestyle.

- Support self-efficacy. Self-efficacy refers to a person's belief that he/she is capable of keeping a specific behavior; it plays an important role in achieving health behavior change. In the evaluation interview, clinicians should promote self-efficacy by raising the hope that lifestyle changes can be attained. Later, during the program, self-efficacy should be promoted by designing an individualized eating and physical activity program that patients are confident to stick to.
- Be sensitive to stigma against individuals with obesity. Stigma influences the decision of patients with obesity to start treatment. To prevent stigma, clinicians should recognize that obesity and MS are medical conditions and not the product of lack of willpower and treat patients with respect and support.
- Educate patients. Clinicians should inform patients of the negative aspects of unhealthy lifestyles and the benefits of engaging in healthy behavior on the management of MS. Table 2 shows the main topics to cover when educating patients on MS and lifestyle modification. A strategy to promote patients' engagement in treatment is also giving detailed information about aims, duration, organization procedures, and the results of lifestyle modification, using written material.<sup>16</sup> In reluctant patients, it might be helpful to propose treatment as a sort of experiment, with a possible return to the old habits in the absence of benefits.

#### **Main topics to cover when educating patients on MS and on lifestyle modification**

##### **1. Definition and diagnosis**

The MS is a cluster of conditions that increase the risk of developing vascular disease (heart disease, strokes, and peripheral vascular disease)

##### **2. Prevalence**

MS affects up to 25% of the population in the United States and 15% of the population in Europe, it increases with age (<10% in individuals aged 20–29, 20% in individuals aged 40–49, and 45% in individuals aged 60–69). The 'obesity epidemic' is considered the main factor responsible for the increasing prevalence of MS.

### 3. Causes

It is linked to insulin resistance. The causes of insulin resistance have not yet been completely clarified. It probably involves a variety of genetic and environmental factors. Both being overweight and inactive contribute to the disease state.

### 4. Consequences

MS increases the risk of developing type 2 diabetes and CVD and the risk for CVD mortality. Other conditions that are associated with MS are, notably, polycystic ovary syndrome, fatty liver, cholesterol, gallstones, asthma, sleep disturbances, and some forms of cancer.

### 5. Management

Weight loss with lifestyle modification (hypocaloric diet, increased physical activity, and cognitive behavior therapy to help patients modify eating and activity habits) is the key procedure to manage MS. Research data indicate that a lifestyle intervention produce a marked reduction in the prevalence of MS and a decline of body weight, waist circumference, fasting glucose, triglycerides, and blood pressure. The treatment may be delivered in groups and/or individually by a multidisciplinary team trained in lifestyle modification, which includes a registered dietitian, a behavioral psychologist, and an exercise specialist, coordinated by a physician. It includes weekly sessions for the first 6 months, followed by two sessions a month in the following 6 months. Specific treatment of lipid (eg, hypertriglyceridemia) and nonlipid risk factors (eg, hypertension and hyperlycemia) may be added to the lifestyle modification.

## **Practical recommendations for diet and physical exercise**

### **in lifestyle modification programs**

#### **Dietary recommendations**

1000–1200 kcal/day for overweight women, and 1200–1600 kcal/day for overweight men and heavier for more active women. The diet should provide 55% calories from carbohydrates, 30% from lipids (7%–10% from saturated fats), and 15% from proteins. Total calories should be moderately increased according to the daily amount of physical activity. Diets are designed to create a calorie deficit of 500–1000 kcal/day,

producing a weight loss of 0.5–1.0 kg/week

#### **Physical exercise recommendations:**

Engage in moderate-to-vigorous exercise for at least 60 min on most days (at least 5 days/week). Walking may be the favorite exercise, as unstructured exercise may be included in routine daily activities. Check the baseline number of steps by a pedometer, then add 500 steps at 3-day intervals to a target value of 10,000–12,000 steps/day. Jogging (20–40 min/day), biking, or swimming (45–60 min/day) may replace walking. Physical exercise is intended to produce a calorie deficit of at least 400 kcal/day, favoring weight loss, maintaining muscle mass, and preventing weight cycling.

#### **Goal setting**

Patients entering lifestyle modification programs are encouraged to set specific and quantifiable weekly goals (ie, increasing physical activity by 1000 steps/week or eating only at meals), which should be realistic and

moderately challenging. Goal achievement is associated with a sense of accomplishment, which is reinforcing and enhances self-efficacy, a construct associated with long-term weight loss.

Particular attention should be paid to patients' weight loss expectation, since higher weight loss expectations are associated with attrition. A few data indicate that encouraging participants to seek only a modest initial weight loss does not facilitate weight maintenance and produces a lower weight loss than standard treatment. In the initial phase of treatment, it is more useful to have patients focus on weekly weight loss (eg, losing from ½ to 1 kg per week) and to detect and promptly address any warning sign of weight loss dissatisfaction, thus minimizing the risk of attrition. In our clinical experience, unrealistic weight loss expectations may be easily changed later when patients have reached some intermediate goals and the rate of weight loss is declining.

Specific strategies to change weight goals have been recently described in the modern cognitive behavioral treatments of obesity. A crucial aspect favoring the modification of unrealistic weight goals is the development of a trusting and collaborative clinician-to-patient relationship. This is also a key factor to avoid the sense of abandonment that patients report as one of the main reasons of attrition.

### **Stimulus control**

These procedures are based on the principles of classical and operant conditioning. Stimulus control is aimed at modifying the environment (ie, external eating cues) to make it more conducive to choices supporting changes in eating and exercising. Patients should be instructed both to remove triggers of excessive eating (eg, keeping tempting food out of sight or avoiding buying it) and to increase positive cues for exercising (eg, lay out exercise clothes before going to bed) and for desirable behavior (eg, putting the food sheet on the table to facilitate its real-time compilation during eating). Stimulus control may also be used to reinforce the adherence to eating control and exercising by establishing a reward system (eg, encouraging patients to set weekly behavioral goals and to

reward themselves in case of achievement, but not through food or inactivity). Encouraging patients to use cognitive rewards (eg, 'I've been OK,' 'I'm doing great,' and 'I have the ability to lose weight and to have an active lifestyle') once they reach their lifestyle goals it may also help patients reduce their frustration associated with limited weight loss and strengthen their confidence in controlling body weight and maintaining a healthy lifestyle.

Positive reinforcements may also be used by clinicians, who should congratulate the patients on every success they achieve and should never criticize failures. Criticism may produce guilt and loss of self-confidence, leading to attrition. An unconditional acceptance of patients' behavior and a problem-solving approach to cope with barriers will preserve the clinician-patient relationship. This approach will also help patients understand that the long-term success in weight management is related to a set of skills rather than to willpower. Stimulus control may also be facilitated by the involvement of significant others. With the consent of patients, clinicians should involve significant others in the treatment program to create the 'optimum' environment for patients' change. The needs vary from patient to patient, but generally include planning together a written shopping list, eating the same foods, exercising together, creating a relaxed environment, and reinforcing patients' positive behaviors.

### **Alternative behaviors**

This procedure is used to manage internal eating cues (eg, emotional stimuli). Patients are trained to identify these cues and to replace eating cues with alternative behaviors. Any alternative behavior works better if it is incompatible with eating (eg, writing, knitting, housekeeping, exercising, and taking a bath). Other behaviors (eg, listening to music)

### **Cognitive procedures**

#### **Proactive problem solving**

Proactive problem solving is used to address events that hinder lifestyle weight control adherence. The typical problem-solving approach includes five steps. Step 1 encourages patients to detail the problem



and the chain of events (ie, situations) that preceded the problem. Step 2 helps patients brainstorm any possible solution. Step 3 suggests patients list the pros and cons for each potential solution. In step 4, patients should choose the best option on the basis of the previous analyses to be implemented for a fixed amount of time. Finally, during step 5, the patients evaluate the results achieved. If the solution fails, the process should be repeated.

Initially, it is recommended to practice problem solving in the session with the clinician, encouraging the patient to take the lead whenever possible. As homework, patients should be asked to practice their own problem-solving skills, looking out for events that would be liable to trigger changes in their eating or exercising and addressing them using the problem-solving procedure. Specifically, once patients identify a problem, they should write 'Problem' in the right-hand column of the monitoring record sheet and then turn the sheet over and write out the problem-solving steps. Patients should be advised against solving the problem mentally, as this is much less effective. The emphasis should be on helping patients acquire the ability to address or forestall events that would otherwise trigger changes in eating or exercising. As it is important that problems are spotted early, patients should be encouraged to screen in advance for problems they will meet during the week. In this way, their problem solving becomes 'proactive.'

### **Cognitive restructuring**

Cognitive restructuring is a technique used to help patients identify dysfunctional thoughts and cognitive distortions that interfere with their ability to maintain a lifestyle aimed at weight control and to replace them with more functional ones. All-or-nothing thinking, in particular with regard to success or failure, is a common cognitive bias observed in patients during weight loss. In addition,

for this activity, patients are recommended to practice cognitive restructuring during a session with therapists. Later, clinicians should give patients homework to practice cognitive restructuring every time they notice a tendency to decrease their efforts in lifestyle modification as a consequence of an event. Specifically, when patients identify a dysfunctional thought, they should write 'Dysfunctional thoughts' in the right-hand column of their monitoring sheet and then turn the sheet over and address it by writing out the cognitive restructuring steps.

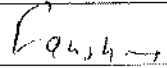
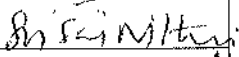
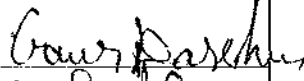
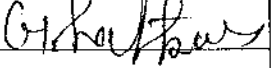
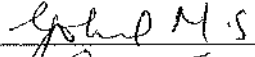
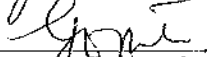

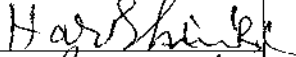
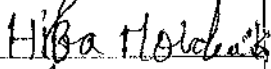
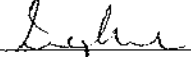

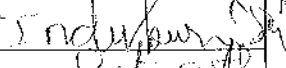
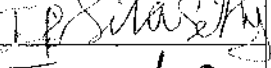
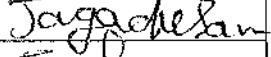
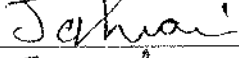

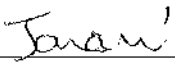
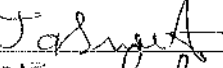
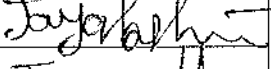
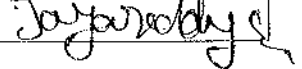
#### **New frontiers of lifestyle modification programs:**

At 3- to 5-year follow-up, 70%–80% of patients treated with lifestyle modification regained all the weight they had lost. These data underline the fact that the major problem of lifestyle modification treatment is weight loss maintenance in the long term. Unfortunately, the mechanisms accounting for weight regain have not been completely understood yet, but they seem extremely complex, including biological, social, behavioral, and cognitive factors. Nevertheless, the observation that at least 20% of patients maintain all the amount of weight loss at 4-year follow-up indicates that weight loss maintenance is possible. In this section, we discuss three potential areas of intervention (biological, cognitive, and environmental) that might improve the long-term maintenance of weight loss.

## VALUE ADDED COURSE

Certificate Course in Lifestyle Modification for Metabolic Syndrome & CODE: PHY C09

List of Students Enrolled: November 2018-January 2019

1 <sup>st</sup> Year MBBS Student			
Sl. No	Name of the Student	Registration Number	Signature
1	FAUSTINA BAJWIN .S	U18MB291	
2	G SRI SAI NITISH	U18MB292	
3	GAUR DARSHANA PURUSHOTTAM GAUR	U18MB293	
4	GHATKAR SAYALL KRISHNA	U18MB294	
5	GOKUL M S	U18MB295	
6	GOPIKA .P	U18MB296	
7	HARI BALA SIDDHARTH T.R	U18MB297	
8	HARSHINI R C	U18MB298	
9	HIBA MOIDEEN .K	U18MB299	
10	INDHU S	U18MB300	
11	INDU V	U18MB301	
12	INDUKURI SAI AKANKSHA	U18MB302	
13	IPSITA SETHY	U18MB303	
14	JAGADEESAN S.R	U18MB304	
15	JAHNAVI REDDY .M	U18MB305	
16	JAISHREE .S	U18MB306	
17	JANANI V	U18MB307	
18	JASMEET NIRANJAN	U18MB308	
19	JAYALAKSHMI S	U18MB309	
20	JAYAREDDYGARI SAI RUCHITHA	U18MB310	

**Certificate Course in Lifestyle Modification for Metabolic Syndrome**

**CODE: PHY C09**

**ANSWER ALL THE QUESTIONS(Total marks=50 marks)**

**I. Long answer question 1x20=20 marks**

1. Explain the role of lifestyle modification in the prevention and management of Metabolic Syndrome.

**II. Short answer questions :( 5x6=30 marks)**

a. Strategies to engage patients in lifestyle modification

b. Cognitive restructuring in lifestyle modification programs

c. Alternative behaviours

D. New frontiers of lifestyle modification programs

E. Practical recommendations for diet and physical exercise in lifestyle modification programs

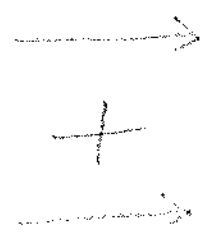
# Lifestyle Modification For Metabolic Syndrome.

① Explain the role of lifestyle modification in the prevention and management of Metabolic Syndrome.

## Metabolic Syndrome

### Clustering of Metabolic Risk Factors

- x Increased waist circumference
- x Elevated TG
- x Low HDL-C
- x Elevated BP
- x Insulin Resistance



- Diabetes Mellitus
- Increased CVD risk



### Lifestyle Factors

- x weight gain
- x Sedentary lifestyle
- x Unhealthy Nutrition
- x Elevated stress

### Behavioral Change

- A: Attitude
- B: Barriers
- C: Commitment
- D: Demonstrate
- Self-monitoring
- E: Efficacy
- F: Follow up



As a common cognitive bias observed in patients during weight loss.

C:-

### Alternative Behaviors

This procedure is used to manage internal eating cues [eg. emotional stimuli]. Patients are trained to identify these cues and to replace eating cues with alternative behaviors. Any alternative behaviors work better if it is incompatible with eating [eg. walking, knitting, house keeping, exercising and taking a bath]. Other behaviors [eg. listening to music

to be  
monitored

(24/20)

Name of the Assessor :  
Signature of the Assessor :

Dr. K. VISHVAKUMAR  
R. Vidyakumar

Certificate Course in  
Lifestyle modification for  
Metabolic syndrome

Aomika P  
V18MS296

Long answer question:

Metabolic syndrome is characterized by obesity, hypertriglyceridemia, type 2 DM, dyslipidemia, hypertension. Weight loss with lifestyle modification is the key procedure to manage metabolic syndrome.

Patients enter lifestyle modification programs are encouraged to set specific and quantifiable weekly goals. Particular attention should be paid to patients weight loss expectations, rather weight loss expectations.

Alternate behaviors is used to manage internal cues. Patients are trained to identify those cues and to replace eating cues with alternate behaviours.

2. d.

New frontiers of lifestyle modification programs :-

This include social, behavioral and cognitive factors -

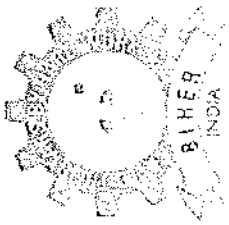
Cognitive restructuring is a technique used to help patients identify dysfunctional thoughts and cognitive distortions. In addition, patients are encouraged to practice cognitive restructuring during a session with therapists.

2. a Strategies to engage patients in lifestyle modification :-

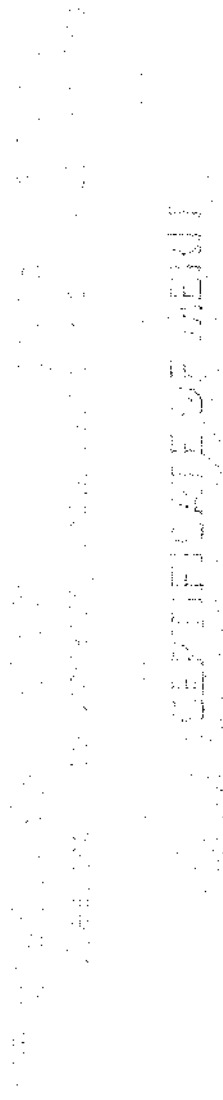
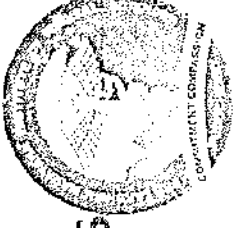
Cognitive procedures :-

Proactive problem solving is used to address events that hinder lifestyle weight control adherence. The typical





# Sri Lakshmi Narayana Institute of Medical Sciences



This is to certify that Faushma Sagwim S has actively participated in the

Value Added Course on Lifestyle modification for metabolic syndrome held during

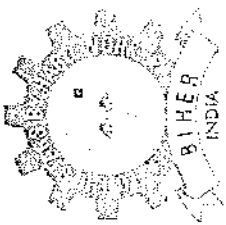
November 2018 - January 2019 Organized by Sri Lakshmi Narayana Institute of

Medical Sciences, Pondicherry- 605 502, India.

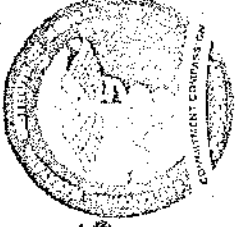
*Dr. Vijayaakumar*  
Dr.R. Vijayaakumar

RESOURCE PERSON

<sup>VSK</sup>  
Dr.V.Senthil kumar  
COORDINATOR



# Sri Lakshmi Narayana Institute of Medical Sciences



## CERTIFICATE OF MERIT

This is to certify that Han Bala Siddhorth T.R has actively participated in the Value Added Course on Lifestyle modification for metabolic syndrome held during November 2018 - January 2019 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

*R. Vijayar Kumar*  
Dr.R.Vijayakumar

RESOURCE PERSON

<sup>VSK</sup>  
Dr.V.Senthil kumar  
COORDINATOR

**Student Feedback Form**

Course Name: **Certificate Course in Lifestyle Modification for Metabolic Syndrome**

Subject Code: PHY C09

Name of Student: Harshini R. C Registration Number: U18 MB 298

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

Sl. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear			✓		
2	Course contents met with your expectations				✓	
3	Lecturer sequence was well planned			✓		
4	Lectures were clear and easy to understand				✓	
5	Teaching aids were effective			✓		
6	Instructors encourage interaction and were helpful				✓	
7	The level of the course			✓		
8	Overall rating of the course	1	2	3	4	5

\* Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory

Suggestions if any:

Excellent course, Conducted very well.

Harshini R. C  
Signature

Date: 5/1/2019

### Student Feedback Form

Course Name: **Certificate Course in Lifestyle Modification for Metabolic Syndrome**

Subject Code: PHY C09

Name of Student: Bhatkal Sayali Kishna Registration Number: U18MB294

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance


Sl. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear			✓		
2	Course contents met with your expectations				✓	
3	Lecturer sequence was well planned			✓		
4	Lectures were clear and easy to understand				✓	
5	Teaching aids were effective			✓		
6	Instructors encourage interaction and were helpful				✓	
7	The level of the course			✓		
8	Overall rating of the course	1	2	3	4	5

\* Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2 – Satisfactory; 1 - Not-Satisfactory

Suggestions if any:

Very good sessions  
We want more courses like  
this

Date: 5/1/2019

  
Signature

Date: 25.01.2019

From  
Dr.V.Senthil kumar  
Professor and Head,  
Physiology  
Sri Lakshmi Narayana Institute of Medical sciences  
Puducherry

To  
The Dean,  
Sri Lakshmi Narayana Institute of Medical sciences  
Puducherry

Through Proper Channel

**Sub: Completion of value-added course:** Certificate course in lifestyle modification for metabolic syndrome & Code: PHY C09

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: Certificate course in lifestyle modification for metabolic syndrome & Code: PHY C09 from November 2018– January 2019 .We solicit your kind action to send certificates for the participants that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards

VSK  
Dr.V.Senthil kumar  
HOD Physiology  
PROFESSOR & HOD  
DEPARTMENT OF PHYSIOLOGY  
Sri Lakshmi Narayana Institute of Medical Sciences  
PUDUCHERRY - 605 002.

**Encl: Certificates**

**Photographs**



