1. Details of Module and its structure

Module Detail	
Subject Name	Food, Nutrition for Healthy Living
Course Name	Food, Nutrition for Healthy Living
Module Name/Title	Healthy Lifestyle: Physical Activity, Sleep and Stress Management
Module Id	FNHL_101014
Pre-requisites	General knowledge about food, nutrition and hygiene
Objectives	After going through this lesson, the learners will be able to understand the following : 1. Benefits of Physical Activity 2. Types of Physical Activity 3. How much sleep do we need 4. Kinds of sleep problems 5. Tips for getting a good night sleep 6. How stress affects the body 7. Managing stress
Keywords	Physical Activity, Health Benefits, Social Benefit, Types of physical activities, Sleep, Managing Stress

2. Development Team

Role	Name	Affiliation
National MOOC Coordinator (NMC)	Prof. Amarendra P. Behera	CIET, NCERT, New Delhi
Program Coordinator	Dr. Mohd. Mamur Ali	CIET, NCERT, New Delhi
Course Coordinator (CC) / PI	Prof. Poonam Aggarwal Dr. Suniti Sanwal	DGS, NCERT New Delhi DEE, NIE, NCERT New Delhi
Course Co-Coordinator / Co-PI	Dr. Yash Paul Sharma	CIET, NCERT, New Delhi
Subject Matter Expert (SME)	Dr. Upasna Seth	Aditi Mahavidyalaya, University of Delhi
Review Team	Dr. Anita Malhotra	Lakshmibai College, University of Delhi

Table of Content:

1. Introduction
2. Physical Activity
3. Sleep
4. Stress Management
5. Conclusion

1. Introduction

The road to better health starts with good eating and physical activity habits. Exercise is a healthy habit to start and keep. Whether you are overweight or underweight or with right weight you need to be active and physically fit. Fitness can be described as a condition that helps us look, feel and do our best.

2. Physical Activity

Today research has confirmed the link, with overwhelming evidence that people who lead active lifestyles are less likely to die early or to experience major lifestyle related illness such as heart disease, diabetes and cancer. Physical activity is key determinant of energy expenditure, and thus fundamental to energy balance and weight control. The beneficial effect of physical activity on the metabolic syndrome is mediated by mechanism beyond controlling excess body weight. Physical inactivity is already a major global health risk and is prevalent in both industrialized and developing countries. Measures and policies required to promote healthier food consumption patterns and to facilitate a physically active life share common grounds and are mutually interactive in determining healthier behaviours. The WHO (2002) has also reported that a sedentary lifestyle is among the top ten leading causes of death and disability in the world, and has urged all governments, the mass media, nongovernmental organisations, schools, hospital and communities to motivate the public to engage in more physical activity. Research show that regular exercise can increase level of HDL or ‘good’ cholesterol, lower high blood pressure, improve body composition by burning fat, promote healthy blood sugar levels, bone density, immune system and improve mood and reduce the chance of depression.

Nowadays, we find that children and young adolescents have a sedentary lifestyle than an active lifestyle. It is now less common to see children indulge in active play. Instead they are spending more time in sedentary activities. Television and movie watching, video games, internet gazing and telephone gossip sessions are now important activities among children. Children who spend more

time using screen have a higher BMI than active children. Increased screen time is also associated with significant increase in calorie intake and decrease in calorie expenditure.

Physical Activity: Physical activity is defined as bodily movement produced by skeleton muscles those results in energy expenditure. The amount of energy required to accomplish an activity can be measured in kilojoules (kJ) or kilocalories (Kcal).

Physical Fitness: Physical fitness is the ability to carry out daily tasks with vigor and alertness without undue fatigue. Physical fitness is a set of attributes that people have or achieve.

Exercise: Exercise is a physical activity that is planned, structured, repetitive and purposive in the sense that improvement or maintenance of one or more components of physical fitness as an objective.

Benefits of physical activity

All human being should do some physical activity to remain fit and lead a normal, healthy and productive life. Benefits of physical activity can be categorized as health, sense of well-being and social benefits.

Health benefits: Health related fitness involves body weight and body composition within normal range, cardio-respiratory fitness, adequate flexibility and strength and core balance. Thus health related benefits of physical activity are:

- Increased efficiency of heart and lungs, thus reduced chances for heart disease and stroke.
- Reduced low- density lipoprotein (LDL) levels (bad cholesterol) and raised high- density lipoprotein (HDL) levels (good cholesterol).
- Increased muscle strength.
- Reduced blood pressure levels in those with high levels of blood pressure.
- Reduced risk of lifestyle related diseases such as obesity, diabetes and heart disease.
- Better weight management and preventing obesity

Well-being benefits: Physical activity improves the sense of well being in following ways:.

- The individual feels more energetic.

- The stress is reduced.
- The quality of sleep improves.
- The ability to cope with stress is enhanced.
- General alertness and mental acuity (memory, focus concentration and understanding) increases. Appearance improves due to weight loss, toned muscles and better posture.

Social benefits: Outdoor physical activities help to meeting many people, and also increase social contacts. Thus engaging in physical activity has following social benefits:

- Improved self-image.
- Increased opportunities to make new friends and socialise
- Better prospect to share an activity with friends or family members

Get moving in your daily routine

Reduce "non-active" sedentary time spent on TV, video and computer starting with 30 minutes less per day, increase the time currently spent on physical activity starting with 30 minutes more per day. We can incorporate some physical activity in our daily routine in following ways

- Walk—to school, to work, to market, to your friend's house if possible
- For short journeys, walk instead of driving
- Walk your dog
- Get off the bus one stop early
- Climb up stairs instead of using lifts or escalators
- Ride your bike
- Join a school sports team or club and enjoy playing it
- Indulge in house-hold chores
- Exercises or pedal a stationary bike while watching television.
- Check out for different types of activities (aerobics, dancing, yoga, cycling, cricket, football etc…) and get involved

Following points should be remembered while engaging in physical activity:

- Choose something you enjoy
- Do some simple stretches before and after any activity
- Build up activity levels gradually
- Be realistic about what you can achieve
- To progress even further, be a bit more vigorous, or continue for longer
- Have plenty of drinks (non-alcoholic!) to prevent dehydration
- Remember your target: 5 x 30 minutes per week

Types of Physical Activity

There are mainly three types of physical activities namely

Endurance activities (Moderate-intensity-aerobic activities): These are activities that make you breath deeper, your heart beat faster and make you sweat. They help cardiovascular fitness. Doing aerobic exercise for 30 minutes a day, most days of the week, provides many benefits. Walking is also a type of aerobic exercise.

Activities for strength: Developing strength may help build and maintain your bones. Carrying groceries and lifting weights are examples of strength-building activities.

Activities for flexibility: Flexibility is the ability to move joints and use muscles through their full range of motion**.** Gentle stretching, dancing, or yoga can increase flexibility.

A total of 60 minutes of physical activity is recommended every day for healthy Asian Indians in view of the high predisposition to develop diabetes and heart disease. This should include at least 30 min of moderate-intensity aerobic activity, 15 min of work-related activity, and 15 minutes of muscle-strengthening exercises. For children, moderate-intensity physical activity for 60 min daily should be in the form of sport and physical activity.

Source: Misra et al. 2012 Consensus physical activity guidelines for Asian Indians

3. SLEEP

Sleep is a naturally recurring state of mind and body, characterized by altered consciousness relatively inhibited sensory activity, inhibition of nearly all voluntary muscles and reduced interactions with surroundings. Sleep is often seen as time when the body is inactive. Sleep is an active, essential and involuntary process, without which we cannot function effectively. Sleep is not

a lifestyle choice; just like breathing, eating or drinking, it is a necessity. It is a complex process during which our body undertakes a number of essential activities. It involves low awareness of the outside world, relaxed muscles, and a raised anabolic state which helps us to build and repair our bodies.

Primarily, sleep is for the brain, allowing it to recover and regenerate. During our sleep, the brain can process information, consolidate memory, and enable us to learn and function effectively during daytime. This is why we are encouraged to get a good night's sleep in the run up to a job interview or exam rather than staying awake all night to prepare. Each person is different and some people need more sleep than others. Kids and teenagers need more sleep than adults. Older adults tend to take longer to fall asleep and wake more often during the night than younger adults. Most adults and kids would sleep 10 to 12 hours a night without clocks or routines.

How much sleep do we need

The amount of sleep each person needs depends on many factors, including age. Infants generally require about 16 hours a day, while teenagers need about 9 hours on average. For most adults, 7 to 8 hours a night appears to be the best amount of sleep, although some people may need as few as 5 hours or as many as 10 hours of sleep each day. Women in the first 3 months of pregnancy often need several more hours of sleep than usual. The amount of sleep a person needs also increases if he or she has been deprived of sleep in previous days. Getting too little sleep creates a "sleep debt," which is much like being overdrawn at a bank. People tend to sleep more lightly and for shorter time spans as they get older, although they generally need about the same amount of sleep as they needed in early adulthood. About half of all people over 65 have frequent sleeping problems, such as insomnia, and deep sleep stages in many elderly people often become very short or stop completely. This change may be a normal part of aging, or it may result from medical problems that are common in elderly people and from the medications and other treatments for those problems.

Common sleep problems

- Trouble falling asleep: lying in bed for more than 30 minutes without being able to fall asleep
- Trouble staying asleep: waking up frequently during the night
- Early morning waking: waking in the early hours of the morning before you need to get up but not being able to fall back asleep

- Behaviours that interfere with sleep: such as snoring, teeth-grinding, restless legs, sleepwalking and breathing problems
- Sleeping too much or for too long
- Excessive sleepiness or urge to nap during the day
- Excessive fatigue or lack of energy

Sleep health is a multidimensional pattern of sleep-wakefulness, adapted to individual, social, and environmental demands, that promotes physical and mental well-being. Good sleep health is characterized by subjective satisfaction, appropriate timing, adequate duration, high efficiency, and sustained alertness during waking hours. Sleep disorders resulting in sleep deprivation interfere with work, driving, and social activities. Doctors have described more than 70 sleep disorders, most of which can be managed effectively once they are correctly diagnosed.

Common sleep disorders

The most common sleep disorders include insomnia, sleep apnea, restless legs syndrome, and narcolepsy.

Insomnia: Almost everyone occasionally suffers from short-term insomnia. This problem can result from stress, jet lag, diet, or many other factors. Insomnia almost always affects job performance and well-being the next day. Insomnia tends to increase with age and affects about 40 percent of women and 30 percent of men. It is often the major disabling symptom of an underlying medical disorder. For short-term insomnia, doctors may prescribe sleeping pills. Most sleeping pills stop working after several weeks of nightly use, however, and long-term use can actually interfere with good sleep. Sleep problem can have a negative effect on your mental health by influencing your emotions, thoughts, behaviours and body sensations. Mild insomnia often can be prevented or cured by practicing good sleep habits.

Sleep apnea: Sleep apnea is a disorder of interrupted breathing during sleep. It usually occurs in association with fat build up or loss of muscle tone with aging. These changes allow the windpipe to collapse during breathing when muscles relax during sleep. This problem, called *obstructive sleep apnea*, is usually associated with loud snoring.

Restless legs syndrome: This is a familial disorder causing unpleasant crawling, prickling, or tingling sensations in the legs and feet and an urge to move them for relief. This sleep disorder is commonly found among older people. These movements occur every 20 to 40 seconds and cause repeated awakening and severely fragmented sleep.

Narcolepsy: People with narcolepsy have frequent “sleep attacks” at various times of the day, even if they have had a normal amount of night-time sleep. These attacks last from several seconds to more than 30 minutes.

Tips for getting a good night sleep

One of the most powerful ways to improve sleep is to make small changes in everyday behaviors that impact how fast you fall asleep and whether you stay asleep. The goal is to increase the behaviors that improve sleep while you reduce the behaviors that interfere with sleep.

Source: Wellness module 6, Canadian mental health association

4. Stress Management

Stress management is all about taking charge: of your lifestyle, thoughts, emotions, and the way you deal with problems. If you’re living with high levels of stress, you’re putting your entire well-being at risk. Stress wreaks havoc on your emotional equilibrium, as well as your physical health. It narrows your ability to think clearly, function effectively, and enjoy life.

Effective stress management, on the other hand, helps you break the hold stress has on your life, so you can be happier, healthier, and more productive. The ultimate goal is a balanced life, with time for work, relationships, relaxation, and fun - and the resilience to hold up under pressure and meet

challenges head on. But stress management is not one-size-fits-all. That's why it's important to experiment and find out what works best for you.

Chronic stress can lead to, or worsen, serious health problems, including high blood pressure, autoimmune illnesses, digestive issues, depression and anxiety. So it's important to manage stress, prevent negative stress levels and speak up if you are feeling overwhelmed.

A lot of things can cause stress. You may feel stress when you go on a job interview, take a test, or run a race. These kinds of short-term stress are normal. Long-term (chronic) stress is caused by stressful situations or events that last over a long period of time, like problems at work or conflicts in your family. Over time, chronic stress can lead to severe health problems. Personal problems like your health issues, emotional problems, major life changes, stress in the family and conflicts in your values and belief systems can cause stress.

Common symptoms of stress

- Fast heartbeat
- Headache
- Stiff neck and/or tight shoulders
- Back pain
- Fast breathing
- Sweating, and sweaty palms
- Stomach upset, nausea, or diarrhoea

Adverse health effects of prolonged stress

- Immune system: Constant stress can make you more likely to get sick more often. And if you have a chronic illness such as AIDS, stress can make your symptoms worse.
- Heart: Stress is linked to high blood pressure, abnormal heartbeat (arrhythmia), blood clots, and hardening of the arteries.
- Muscles: Constant tension from stress can lead to neck, shoulder, and lower back pain. Stress may make rheumatoid arthritis worse.
- Stomach: If you have stomach problems, such as gastro-esophageal reflux disease, peptic ulcer disease, or irritable bowel syndrome, stress can make your symptoms worse.

- Reproductive organs: Stress is linked to low fertility, erection problems, problems during pregnancy, and painful menstrual periods.
- Lungs: Stress can make symptoms of asthma and chronic obstructive pulmonary disease (COPD) worse.
- Skin: Skin problems such as acne and psoriasis are made worse by stress.

Managing Stress

The following stress management tips can help you manage it:

- Begin with identifying the stressors in your life
- Replace unhealthy coping strategies with healthy ones
- Practice the 4 A's of stress management- Avoid, Alter, Adapt, Accept
- Connect to others
- Get moving in any form of exercise
- Practice meditation and deep breathing to combat stress
- Make time for fun and relaxation
- Manage your time better
- Maintain balance with a healthy life style
- Seek help from a counsellor if the symptoms get worse.

A lot of people suffer from the consequences of smoking, drinking alcohol and use of drugs which often leads to addiction. The word 'addiction' is a very powerful word in this sense, as it means the physical and psychological craving for a substance that develops into a dependency, despite physical, psychological and social harm. The disease of addiction is chronic and progressive; it can lead to extremely dangerous outcomes. This applies to both smoking and alcohol addiction. Smoking increases the risk of heart disease, stroke, lung disease and respiratory illnesses. Whilst breaking the physical addiction to nicotine is hard, for many smokers breaking the habit - the psychological addiction - is much harder. Thus all these are extremely bad habits should never be initiated under any circumstance, especially peer pressure.

5. Conclusion

Leading a healthy lifestyle is a conscious decision, which if ignored can lead to many health hazards it is wasted and causes suffering. Hence, it is important to recognize that a healthy lifestyle

ensures a longer life span as well as a happy life free of disease and complications. The road to happiness is healthy lifestyle, which starts with good eating and physical activity habits.