UNIT 2 : YOGA PRACTICE FOR NON-COMMUNICABLE DISEASES

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2.1 LEARNING OBJECTIVES

After going through this unit you will be able to –

- state the concept of Non- communicable Diseases
- explain the Non- communicable Diseases
- state the common causes and Symptoms of Non- communicable Diseases
- discuss the Yogic practice for Non-communicable Diseases.

2.2 INTRODUCTION

This is the second unit of the theory course Yoga Therapy in Practice. In this unit, we are going to discuss the concept of Non-communicable diseases and Yoga Practices for selected Non-communicable diseases.

We can group various diseases into communicable and non-communicable. Communicable diseases are the diseases which can be transferred from one person to another or from one organism to another. Non-communicable diseases (NCDs) are also known as chronic diseases. They tend to be of long duration and are the result of a combination of

genetic, physiological, environmental and behaviours factors. A non-communicable disease is a medical condition or disease that is by definition non-infectious and non-transmissible among people. It is a non-infectious health condition that cannot be spread from person to person. NCDs represent one of the world's major health challenges.

2.3 KEY FACTS ABOUT NON-COMMUNICABLE DISEASE

Now, we will discuss some key facts about Non-communicable diseases. According to a study of World Health Organization (WHO), Non-communicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally. Each year, 15 million people die from a NCD between the ages of 30 and 69 years.

Cardiovascular diseases account for most NCD deaths or 17.9 million people annually. It is followed by cancers (9.0 million), respiratory diseases (3.9 million) and diabetes (1.6 million).

These four groups of diseases account for over 80% of all premature NCD deaths.

Four risk factors responsible are tobacco, unhealthy diet, physical inactivity and harmful use of alcohol. Apart from the modifiable behavioural risk factors, mentioned above, metabolic risk factors contribute to four key metabolic changes that increase the risk of NCDs:

- Raised blood pressure
- Overweight/ Obesity
- Hyperglycemia (high blood glucose levels)
- Hyperlipidemia (high levels of fat in the blood).

2.4 NON-COMMUNICABLE DISEASES

The main types of Non-communicable diseases are cardiovascular diseases (like heart heart attacks and stroke), cancer, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.

CARDIOVASCULAR DISEASE:

We have discussed earlier that, cardiovascular disease is the leading cause of non-communicable disease deaths. Cardiovascular disease is a general term for conditions affecting the heart or blood vessels. Some common non-communicable cardiovascular conditions and diseases include:

- Heart attack
- Stroke
- Coronary artery disease
- Congenital heart disease
- Peripheral artery disease

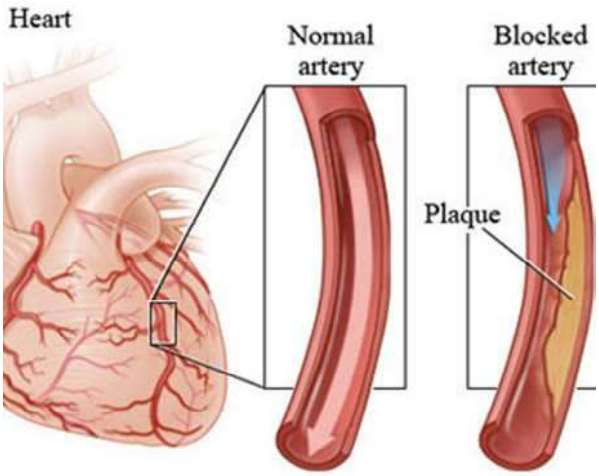


Image: Cardiovascular Disease

Symptoms -

Symptoms may include-

- Pain or pressure in the chest
- Chest tightness
- Chest discomfort
- Shortness of breath
- Extreme fatigue and Nausea
- Light headed or faint
- Coldness in your legs or arms
- Pain or discomfort in the arms, the left shoulder, elbows, jaw or back
- Racing heartbeat

- Pale gray or blue skin colour

Causes -

Cardiovascular diseases may occur due to-

- Atherosclerosis
- High Blood Pressure
- Smoking
- Excessive use of alcohol or caffeine
- Stress
- Unhealthy diet
- Physical inactivity

CANCER:

Day by day the term 'Cancer' is becoming very familiar with all of us. Cancer is second most common cause of non-communicable disease death globally. It affects people of all ages, socio-economic statuses, and genders. Cancer is characterized by the development of abnormal cells that divide uncontrollably and have the ability to infiltrate and destroy normal body tissue. Cancer often has the ability to spread throughout your body. When body cells lose their programmed functions and multiply in a bizarre manner, cancer develops in an organ. Some cancers cannot be avoided due to genetic risks. However, the World Health Organization (WHO) estimates that 30 to 50 percent of cancers are preventable with adoption of healthy lifestyle choices

The most common cancer deaths in men include:

- Lung
- Liver
- Stomach
- Colorectal
- Prostate

The most common cancer deaths in women include:

- Breast
- Lung
- Colorectal
- Cervical

- Stomach

Symptoms-

Depending on the body part affected, symptoms of cancer vary.

Some general symptoms associated with, but not specific to cancer, include:

- Feeling weak or very tired
- Lump or area of thickening that can be felt on or under the skin
- Weight changes, including unintended loss or gain with no known reason
- Skin changes, such as-
  - yellowing, darkening or redness of the skin,
  - sores that does not heal, or
  - a new mole or a change in an existing mole
- Changes in bowel or bladder habits
- Breast changes, such as:
  - Change in size or shape of the breast or nipple
  - Change in texture of breast skin
- Persistent cough or trouble breathing
- Hoarseness
- Problems with eating, such as:
  - Discomfort after eating
  - Difficulty swallowing
  - Changes in appetite
- Persistent, unexplained muscle or joint pain
- Difficult or painful urination
- Persistent, unexplained fevers or night sweats
- Unusual bleeding or discharge, including:
  - Blood in the urine
  - Vaginal bleeding
  - Blood in the stool

Causes-

Cancer is caused by changes (mutations) to the DNA within cells. The DNA inside a cell is packaged into a large number of individual genes, each of which contains a set of instructions telling the cell what functions

to perform, as well as how to grow and divide. Errors in the instructions can cause the cell to stop its normal function and may allow a cell to become cancerous.

CHRONIC RESPIRATORY DISEASE:

Now, we will learn about Chronic Respiratory Disease. Chronic respiratory diseases (CRDs) are diseases of the airways and other structures of the lung. The most common chronic respiratory diseases include:

- Chronic Obstructive Pulmonary Disease (COPD)
- Asthma
- Pulmonary hypertension
- Occupational lung diseases

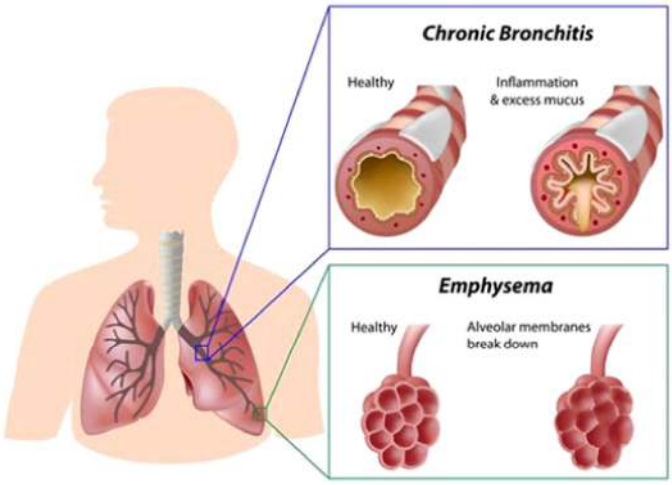


Image: Chronic Obstructive Pulmonary Disease

Symptoms-

Generally, symptoms don't appear until significant lung damage has occurred and they worsen over time.

The common symptoms may be-

- Shortness of breath (especially during physical exercise)
- Persistent whizzing
- Frequent respiratory infections
- A chronic cough that may produce mucus (sputum)
- Chest tightness
- Unintended weight loss

- Swelling in ankles
- Lack of energy (tiredness)
- Nails and lips become blue

Causes:

The common causes for Chronic Respiratory Disease are-

- Long term exposure to harmful substances such as cigarette smoke
- Air pollution
- Workplace exposure to dust, smoke or fumes

DIABETES:

Diabetes is well known disease in our society. Diabetes occurs when the body cannot produce enough insulin. Insulin is a hormone secreted by pancreas that regulates blood sugar (glucose). It can also occur when the body cannot use the insulin effectively.

The two main types of Diabetes are:

- **Type 1 Diabetes** (Insulin dependent Diabetes Mellitus)
  This type of diabetes is generally diagnosed during childhood or young adulthood. This is the result of an immune system dysfunction.
- **Type 2 Diabetes** (Non Insulin dependent Diabetes Mellitus)
  This type of diabetes is often acquired during later adulthood. This is the result of poor diet, inactivity, obesity, and other lifestyle and environmental factors.

When diabetes occurs in childhood, it is known as **Juvenile diabetes**. While, diabetes found in middle-aged people is known as **Maturity onset diabetes**.

The normal fasting blood sugar range in our body is 80 to 120 mg per 100 ml of blood.

The normal post prandial blood sugar after two hours of meals should be upto 140 mg/100 ml of blood.

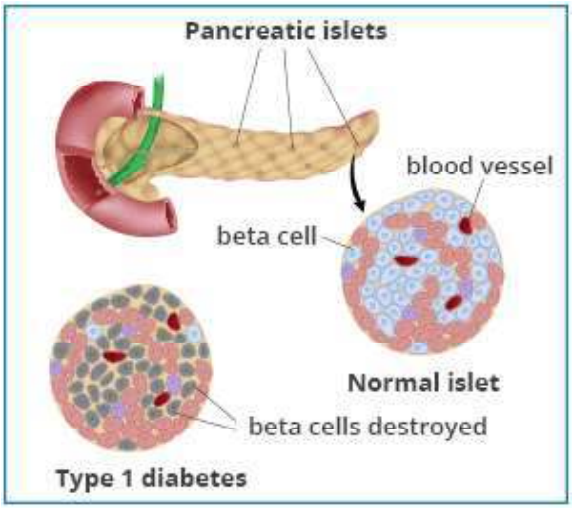


Image: Type I diabetes

Symptoms:

Common symptoms of diabetes are-

- Sweetish taste in the mouth
- Dryness of the throat
- Polyurea (Excessive urine production)
- Excessive hunger and thirst
- Itching in the genitals
- Eye disorders
- Dizziness
- Weakness and debility

Causes:

Diabetes is a chronic condition associated with abnormally high levels of sugar (glucose) in the blood. Insulin produced by the pancreas lowers blood glucose. Absence or insufficient production of insulin, or an inability of the body to properly use insulin causes diabetes.

Other associated conditions are-

- Heredity
- Obesity
- Mental and emotional stress and strain
- Prolonged anxiety and conflict
- Sedentary lifestyle
- Lack of exercise

- Wrong food habits

Some other non-communicable diseases are:

- Arthritis
- Bell's Palsy
- Chronic kidney disease
- Depression
- Eczema
- Epilepsy
- Insomnia
- Obesity
- Sickle cell anaemia
- Sleep disorders
- Stress
- Vision impairment

2.5 YOGA PRACTICE FOR NON-COMMUNICABLE DISEASES

YOGA PRACTICE FOR CARDIOVASCULAR DISEASE:

The following Yogic practices are suggested for cardiovascular disease-

Shatkarma-

Jala Neti

Asana-

Important Asanas for Cardio- vascular disease are-

Pawan- muktasana parts 1 and 2, Tadasana, Ardhakati chakrasana, Vrikshasana, Garudasana, Vajrasana, Shashankasana, Ushtrasana, Vakrasana, Ardha matsyendrasana, Gomukhasana, Makarasana, Bhujangasana and Shavasana. Select according to the flexibility of the spine and physical capacity of an individual.

Asanas are vitally important in Cardio- vascular disease, but should never be practised beyond capacity. The heart must never be strained, and at the slightest sign of heart strain or pain the practice of relaxation should supervene.

Pranayama-

Pranayama is very important both in the initial recovery of a heart patient and in the subsequent rehabilitation and rejuvenation period. Pranayama should not impose a strain on the heart or lungs.

Important Pranayamas for Cardio- vascular disease are-

Nadi- shodhan, Shitali, Sitkari, Bhramari and Ujjayi.

Meditation-

Meditation should be learned not as a discipline but as an enjoyable pastime for the Cardio- vascular disease.

Most suitable practices are-

Ajapa Japa using So- Ham, Om Meditation.

Special Practice-

Yoga Nidra, Swadhyaya, Bhakti Yoga

Diet-

Diet should be light, avoiding meat, excessive protein, milk and dairy products, oil and excessive spices. Also, avoid alcohol and smoking. These should be replaced by whole grains, fruits and fresh vegetables.

YOGA PRACTICE FOR CANCER:

In order to achieve the changes needed to tackle cancer, Yoga should be summarized as raising the pranic levels in the body. This will enable the body's natural defence systems to overcome the cancer in the body. It will also help in neutralizing the ravaging effect it has on the body. The following Yogic practices are suggested for cancer-

Shatkarma-

Jala Neti, Kunjal, Kapalbhati and Trataka

(The practices of Kunjal and Kapalbhati are contra- indicated in oropharyngeal, lung cancers)

Asana-

Important asanas for Cancer are-

Pawan Muktasana Part 1, 2 and 3, Tadasana, Tiryaka tadasana, Kati chkrasana, Surya Namaskara, Vajrasana, Shashankasana, Marjari-asana, Vakrasna, Gomukhasana, Paschimottanasana, Bhujangasana, Vipareeta Karani asana, Ushtrasana, Ardha Matsyendrasana, Shavasna.

Select according to the flexibility of the spine and physical capacity of an individual.

Asanas affect the musculoskeletal system, the internal organs and particularly the neuro- endocrinal system. They stimulate the specific energy pathways and activate the corresponding chakras.

Pranayama-

Helpful Pranayamas are- Nadi shpdhana, Bhramari, Ujjayi, Sheetali and Sheetkari Pranayama.

Pranayama practices induce changes on the pranic level, helping to clear pranic blockages in the nadis (the network of pranic channels) throughout the body.

Mudra- Bandha-

Moola Bandha, Uddiyana Bandha, Jalandhara Bandha, Maha Bandha, Shambhavi Mudra, Nasikagra drishti, Khechari Mudra, Shanmukhi Mudra and Vipareeta karani Mudra.

Special Practice-

Yoga Nidra-

Cancer inflicts an enormous pressure on the mind, emotions and psyche. People with Cancer can feel the pressure of facing death. This pressure saps the willpower of the person, who may sink into terrible gloom, experiencing deep insecurities and negative thoughts. Yoga Nidra is helpful for relaxation. The visualization component of Yoga Nidra can be useful in enhancing the healing and regenerative capacities of the body-mind.

Apart from Yoga Nidra, practice of Ajapa Japa, Nada Yoga are also suggested for the management of Cancer.

YOGA PRACTICE FOR CHRONIC RESPIRATORY DISEASES:

The following Yogic practices are suggested for chronic respiratory diseases-

Shatkarma-

The important Shatkarmas for the management of Chronic Respiratory Diseases are-

Jala Neti, Sutra Neti, Vamana Dhouti, Vastra Dhouti, Shankha Prakshalana and Kapalbhati.

Asana-

Important asanas for the management of Chronic Respiratory Diseases are-

Pawan Muktasana Part 1 and 2, Tadasana, Hasta Utthanasana, Dwi- konasana, Kati- chakrasana, Pada hastasana, Marjari Asana, Vajrasana, Vakrasana, Ardha Matsyendrasana, Gomukhasana, Ushtrasana, Paschimottanasana, Shashankasana, Makarasana, Bhujangasana, Shalabhasana, Sarvangasana, Matsyasana, Halasana and Shavasana. Select according to the flexibility of the spine and physical capacity of an individual.

Practice of Surya Namaskar is also helpful.

Pranayama-

The following Pranayama are helpful for Chronic Respiratory Diseases-

Nadi shodhana, Suryabhedi, Bhramari, Ujjayi and Bhastrika Pranayama.

Mudra- Bandha-

Tadagi Mudra, Moola Bandha, Uddiyana Bandha.

Special Practice-

Ajapa Japa (with So-Ham), Yoga Nidra, Om Meditation.

Diet-

- Have light and easily digestible diet.
- Avoid mucus forming foods such as milk and milk products, rice.
- Curd, banana, sour fruits, cold drinks, all chemically treated, processed, flavoured foods and fried items should also be avoided.
- Also prevent constipation.
- Drink warm water instead of frequent tea or coffee.

YOGA PRACTICE FOR DIABETES:

The Yogic treatment of diabetes is directed to the underlying causes of the disease as well as to its symptoms. It is based on the internal readjustment of the whole organism through stimulation of the body's own regenerative process. Along with the well- balanced diet, medicine and a few exercises, necessary corrections in lifestyle and the Yogic practices

will help the patient to manage the disorder successfully.

The following Yogic practices are suggested for diabetes-

Shatkarma-

Jala Neti, Sutra Neti, Vaman Dhouti, Shanka Prakshalana, Kapalbhati, Nauli and Agnisara.

Asana-

The following asanas are helpful for Diabetes-

Pawan- muktasana parts 1, 2 and 3, Hasta Utthanasana, Kati Chakrasana, Pada- Hastasana, Trikonasana, Vajrasana, Ushtrasana, Shashankasana, Mandukasana, Ardha Matsyendrasana, Gomukhasana, Vakrasana, Paschimottanasana, Matsyasana, Bhujangasana, Shalabhasana, Dhanurasana, Halasana, Sarvangasana and Shavasana. Select according to the flexibility of the spine and physical capacity of an individual.

Practice of Surya Namaskara is also helpful.

Pranayama-

Nadi shodhana, Ujjayi, Bhramari, Sheetali, Sheetkari and Bhastrika Pranayama.

Pranayamas play important role in diabetes, as Pranayama affect nervous system and Hypothalamus (a part of Nervous system) regulates the release of hormones (through pituitary gland) in the body.

Mudra-Bandha-

Uddiyana Bandha, Vipareet karani Mudra

Special Practice-

Ajapa Japa, Yoga Nidra and Om Meditation.

Diet-

- A low carbohydrate, sugar free, natural vegetarian diet should be adopted.
- Avoid oily foods, rice, potatoes, and high calorie carbohydrates.



CHECK YOUR PROGRESS

Q 1: Fill in the blanks:

1) ..... Diseases account for most NCD deaths.
2) Insulin is a hormone secreted by ..... that regulates blood sugar level in the body.
3) When diabetes occurs in childhood, it is known as ..... diabetes.
4) Cancer is caused by changes (mutations) to the ..... within cells.
5) The normal post prandial blood sugar after two hours of meals should be up to ..... / 100 ml of blood.



2.6 LET US SUM UP

In this Unit, we have discussed Non Communicable diseases and their management with Yogic practices. Most common non communicable diseases are- Cardiovascular disease, Diabetes, Chronic respiratory diseases and Cancer. Cardiovascular diseases account for most NCD deaths followed by Cancer, Respiratory Diseases and Diabetes. Common cardiovascular disease include - Heart attack, Stroke, Coronary artery disease, congenital heart disease, Peripheral artery disease. Yogic Asanas, Pranayamas and Relaxation practices are much useful for cardiovascular diseases. Lung, Breast, Stomach, colorectal, cervical cancer are most common cancer. Yogic practices helps in the condition of cancer by raising the pranic level in the body. Chronic Obstructive Pulmonary Disease and Asthma are common respiratory disease. Yogic purification techniques (Shatkarma), some asanas and Pranayamas are much helpful for respiratory diseases. Diabetes is of two types- type I and type II. Yogic Purification techniques (Shatkarma), Asanas and Pranayamas are very

important for Diabetes. Along with the Yogic Practices, lifestyle change and proper diet is also recommended for the management of these diseases.



2.7 FURTHER READING

1) *Asan Pranayama Mudra Bandha* - Swami Satyanana Saraswati, Yoga Publication Trust, Bunger: Bihar
2) *Yogic Management of Common Diseases* - Dr. Swami Karmananda, Yoga Publication Trust, Munger: Bihar
3) *Yoga Therapy for Selected Diseases* - Dr. M.M. Gore, Dr. D.R. Vaze, Dr. S.A. Kulkarni, Dr. J.P. Oak, Kaivalyadhama, Lonavla: Pune
4) *Exploring Yoga and Cancer* - Dr. Swami Yogapratap, Yoga Publication Trust, Bunger: Bihar
5) *Yogic Management of Asthma and Diabetes* - Dr. Swami Shankardevananda, Yoga Publication Trust, Bunger: Bihar
6) *Yoga for Bronchial Asthma* - Dr. R Nagarathna, Dr. H R Nagendra, Swami Vivekananda Yoga Prakashana: Bangalore



2.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: 1) Cardiovascular

2) Pancreas

3) Juvenile

4) DNA

5) 140 mg



2.9 MODEL QUESTIONS

Q 1: What do you understand by Non Communicable diseases? List some commonly known non communicable diseases.

Q 2: Write the causes, symptoms of cardiovascular diseases. Also suggest a Yoga Module for the management of cardiovascular diseases.

Q 3: Write the causes, symptoms of Chronic Respiratory Diseases. Also give a list of Yogic practices helpful in respiratory disease.

Q 4: List the different types of Cancer. Also write common causes, symptoms of Cancer. Suggest some Yogic Practices helpful in Cancer.

Q 5: Write the types, causes and symptoms of Diabetes. Also suggest a Yoga Module for its management.

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