



## TRAINING MANUAL

# Integration of Unani Medicine in NPCDCS

(National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke)

(A joint pilot project at District Lakhimpur Kheri, Uttar Pradesh)

Conducted by



**CENTRAL COUNCIL FOR RESEARCH IN UNANI MEDICINE**  
Ministry of AYUSH, Govt. of India

in collaboration with

**DIRECTORATE GENERAL OF HEALTH SERVICES**  
Ministry of Health & Family Welfare, Govt. of India



सत्यमेव जयते



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**Director General**

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## Preface

Non-communicable diseases are defined as diseases or medical conditions that are known to affect individuals over an extensive period of time, for which there are no known causative agents and these are not transmitted from one effected individual to another. There are four main types of NCDs such as cardiovascular diseases (mainly heart attacks and stroke), cancers, chronic respiratory diseases (like chronic obstructed pulmonary disease and asthma) and type-2 diabetes.

It is estimated that NCDs cause the greatest global share of death and disability, accounting for around 38 million deaths each year worldwide. Of them, 28 millions deaths occur in low or middle income countries. WHO estimates that total deaths from non-communicable diseases will increase by a further 70% over the next 10 years.

In India, NCDs are a big health problem being responsible for sizeable mortality and morbidity. According to WHO estimation, NCDs accounted for 5.9 million deaths (60% of total deaths) in the country in 2012. The probability of dying prematurely (between the ages 30 and 70 years) due to the four main types of NCDs is 26%. The key risk factors for NCDs in India are tobacco use, physical inactivity, unhealthy diet and use of alcohol. Rapid urbanization, globalization, environmental factors and aging population are some other factors that fuel the occurrence of NCDs.

To supplement the efforts initiated by State governments for prevention and control of NCDs, the Government of India launched National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) by providing technical and financial support. The NPCDCS launched in 2010 aims to prevent and control common NCDs through behaviour and lifestyle changes; provide early diagnosis and management of common NCDs; build capacity at various levels of health care for prevention, diagnosis and treatment of common NCDs; train human resource within the public health setup viz doctors, paramedics and nursing staff to cope with the increasing burden of NCDs; and establish and develop capacity for palliative and rehabilitative care.

Recently the Government of India took initiative to exploit potentials of Indian traditional systems of medicine engaging Ministry of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) in the implementation of NPCDCS and integrating their unique and time-tested therapies and principles in achieving the objectives of the programme.

The Unani System of Medicine, being a holistic system to address all determinants of health and disease, can play a pivotal role in prevention and management of NCDs and promotion of healthy lifestyle among masses.

The Central Council for Research in Unani Medicine (CCRUM), an autonomous research organisation of Ministry of AYUSH, has been allocated Lakhimpur Kheri District of Uttar Pradesh to supplement NPCDCS conducted by Directorate General of Health Services, Ministry of Health & Family Welfare, Government of India. The CCRUM intends to extend its services and resources to the programme through its Central Research Institute of Unani Medicine, Lucknow at 17 Community Health Centres (CHCs), 54 Primary Health Centres (PHCs), District Hospital and NPCDCS Cell at district headquarters.

This training manual has been prepared to train the human resources engaged in the implementation of the programme, sensitize them with its objectives and make them aware about their roles and responsibilities.

New Delhi  
March 3, 2016

  
(Prof. Rais-ur-Rahman)  
Director General, CCRUM





## INTRODUCTION

The Directorate General of Health Services, Ministry of Health & Family Welfare, Government of India launched the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) to provide technical and financial support for the prevention of non-communicable diseases (NCDs). The activities at State, District, CHC and Sub Centre levels have been planned under the programme and will be closely monitored through NCD Cells at different levels. The NCD Cells will ensure implementation and supervision of the programme activities related to health promotion, early diagnosis, treatment and referral, and further facilitate partnership with laboratories for early diagnosis of NCDs. Recently, Rheumatic Heart Disease has also been added in the programme.

### What are NCDs?

Non-communicable diseases (NCD) are non-infectious diseases, which last for long periods of time and progress slowly. The four main groups of non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes. These diseases by and large can be prevented by making simple lifestyle changes.

### Burden of NCDs

- Non-communicable diseases (NCDs) kill 38 million people each year.
- Almost three quarters of NCD deaths - 28 million - occur in low- and middle-income countries.
- Sixteen million NCD deaths occur before the age of 70; 82% of these “premature” deaths occurs in low- and middle-income countries.
- Cardiovascular diseases account for most NCD deaths i.e. 17.5 million people annually, followed by cancers (8.2 million), respiratory diseases (4 million), and diabetes (1.5 million).
- These four groups of diseases account for 82% of all NCD deaths.
- Overall prevalence of diabetes, hypertension, Ischemic Heart Diseases (IHD) and Stroke is 62.47, 159.46, 37.00 and 1.54 respectively per 1000 population of India.

### Who is at Risk?

NCDs can affect all age groups, but usually associated with older age groups and all are vulnerable to the risk factors that contribute to non-communicable diseases, whether from unhealthy diets, physical inactivity, exposure to tobacco smoke or the effects of the use of alcohol.

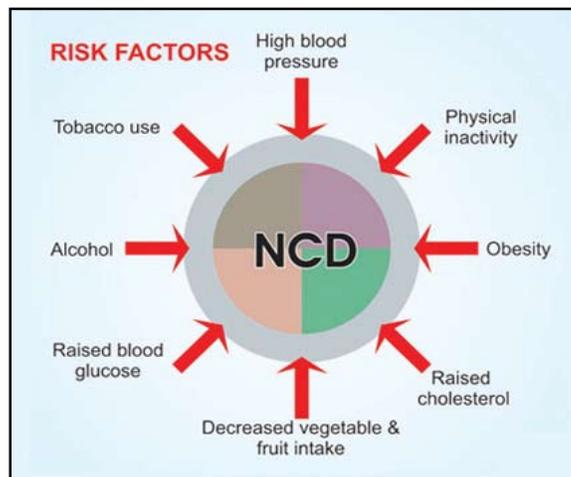
These diseases are driven by factors that include ageing, rapid unplanned urbanization, and the globalization of unhealthy lifestyles. For example, globalization of unhealthy lifestyles like unhealthy diets may show up in individuals as raised blood pressure, increased blood glucose, elevated blood lipids and obesity. These are called ‘intermediate risk factors’ which can lead to cardiovascular diseases.

### Risk Factors

1. Tobacco use - Tobacco accounts for around 6 million deaths every year (including from the effects of exposure to passive smoking) and is projected to increase to 8 million by 2030.

2. Physical inactivity/sedentary lifestyle- About 3.2 million deaths annually can be attributed to insufficient physical activity.
3. Unhealthy diet - 1.7 million annual deaths from cardiovascular causes have been attributed to excess salt/sodium intake in 2010.
4. Alcohol consumption - More than half of the 3.3 million annual deaths from drinking are from NCDs.

These factors lead to four key metabolic/physiological changes that increase the risk of NCDs: raised blood pressure, overweight/obesity, hyperglycemia and hyperlipidemia.



Conventional system of medicine offers solution for such problems, but long-term use of conventional drugs may produce adverse effects. Unani System of Medicine has established specified treatments for various chronic and lifestyle disorders. Use of plants and plant products in the form of crude drugs as well as in various compound formulations for combating NCDs has been a major strength of Unani System of Medicine.

## UNANI SYSTEM OF MEDICINE

The Unani System of Medicine is one of the oldest systems of medicine that aims at preservation of health, management of diseases and restoration of healthy lifestyle. It provides preventive, promotive, curative and rehabilitative healthcare with holistic approach. The fundamental framework of this system is based on scientific principles including Hippocratic theory of four *Akhlat* (Humours) – *Dam* (Blood), *Balgham* (Phlegm), *Safra* (Yellow Bile) and *Sawda* (Black Bile). Admixture of different elements and their qualities in specific ratio in a particular entity, whether living or non-living, denominates its *Mizaj* (Temperament). Human temperament is denoted by the dominant humour i.e. *Damawi* (Sanguine), *Balghami* (Phlegmatic), *Safrawi* (Choleric) and *Sawdawi* (Melancholic), which can be correlated with the temperament of diet, drugs, environmental factors. Unani Medicine also believes that *Tabiat Mudabbira-e Badan* (Medicatrix Naturae) is the supreme power, which controls all the physiological functions of the body, provides resistance against the diseases and helps in healing naturally.

Unani System of Medicine believes that every individual has its own unique temperament according to their humoral constitution, lifestyle and environment. Any deviation from its normal temperament results into disease. The management of the disease depends upon the correction of altered temperament by using various regimens, diet and drugs. It makes use of certain special modes and regimens of diet, physical movements, lifestyle and techniques such as Hijamat (Cupping), Taliq (Leeching), Fasd (Venesection) to eliminate the morbid humours from the body (*Tanqiya*).

The Unani System of Medicine is holistic in nature. It takes entire constitution of the individual and lifestyle into account for diagnosing and prescribing the treatment. Physicians select the drugs and regimens according to the temperament of the patient and nature of the disease. The thrust area of Unani System of Medicine is the management of chronic and lifestyle diseases. It provides radical and safe cure for various chronic disorders, such as psychoneurotic disorders, hepato-biliary disorders, gastro-intestinal disorders, metabolic disorders.



Apart from treating disease conditions, Unani System of Medicine lays great emphasis on the prevention of disease and promotion of existing health through principles of six pre-requisites or essential factors of life i.e. *Asbab-e-Sitta Zarooriya*.

All the factors affecting health and disease, of whom those affecting all human beings perpetually are called Zarooriya (Essential), while, the rest are called Ghayr Zarooriya (Non-Essential). It should be noted that the following 'Six Essential Factors' are used not only for maintaining health and preventing diseases, but also for treating diseases.

#### (1) Hawa (Air)

Air is the most crucial factor for life. It helps in the production and maintenance of *Rooh* (Pneuma), which is the source of vitality. Unani System of Medicine uses air in prevention and treatment chiefly by taking into account the seasonal variations in air. For instance, in summer, air becomes hotter, so cold food and moderate movement and exercise should be adopted to remain healthy and vice versa.

#### (2) Makool o Mashroob (Food and Drinks)

Food and drinks are second only to air in maintaining life and health by replacing the body's used-up and broken-down components (*Badal ma Yatahallal*). Keeping in view the importance of food, Unani System of Medicine makes extensive use of diet both for promotion of health and treatment of disease. A healthy man should use mainly the food of the temperament similar to his own temperament. However, if he is threatened with a pathological shift in his temperament, he should use food of the opposite temperament. Unani System of Medicine also provides extensive guidelines for the type of water and the appropriate time for drinking it. For instance, in order to ensure proper digestion, people of hot temperament should drink water during meals, but cold temperament persons should use water only after the digestion has fully set in.

#### (3) Harakat o Sukoon Badani (Bodily Movement and Repose)

The Unani System of Medicine gives great importance to both appropriate movement and rest for maintaining health and for curing disease. Movement is necessary for evacuating waste products and rest is needed for retaining nutrients till the completion of digestion. The system offers a wide concept of exercise of all organs. It classifies movement into two types: high frequency and intensity with short duration, which increases heat; and low frequency and intensity with long duration, which increases metabolism.

#### (4) Harakat o Sukoon Nafsani (Psychic Movement and Repose)

The Unani System of Medicine fully recognizes the role of psychic states in maintaining health and treating disease. Unani Medicine describes mental states basically in terms of the movement and repose of pneuma. Its movement increases heat while repose increases cold. So, excessive movement or repose of pneuma causes hot and cold pathologies. These pathologies can be managed both by altering the mental states and by administering cold or hot drugs.

#### (5) Nawm o Yaqza (Sleep and Wakefulness)

Sleep is necessary for preserving pneuma and vitality and providing replacement of wear and tear (*Badal ma Yatahallal*), while wakefulness is necessary for voluntary functions. Excess of sleep increases coldness



and wetness, while excess of wakefulness increases hotness and dryness. Therefore, moderation should be exercised with regard to them. Just as wakefulness helps voluntary functions, particularly intellectual functions, sleep helps digestion. So, the digestion of hot food is more dependent on sleep.

#### (6) Ihtibas o Istifragh (Retention and Evacuation)

Retention of nutrients is needed not only for full digestion and metabolism but also to maintain reserves of nutrients and essential substances. Evacuation is needed for removal of waste products which may cause obstructions or embolism and toxicity. Evacuation takes place by defecation, micturition, coitus, sweating etc.

### Unani System of Medicine and NCDs

The Unani System of Medicine has more realistic view of disease because it considers several factors that contribute to the origin of most diseases and puts great emphasis on lifestyle management for promotion of health, prevention and treatment of NCDs. It considers diet, lifestyle, emotions, interaction with the environment, and even spiritual factors. Therefore, it is of immense relevance to present times as lifestyle diseases like Hypertension, Diabetes, Obesity, Depression are imposing the greatest burden on healthcare. The Unani System of Medicine integrates both external environment like seasons, air purity, food and drinks, as well as internal environment i.e. movement and rest, sleep and wakefulness, evacuation and retention etc. It has correlated all these factors with each other and with human beings by discovering their Mizaj (temperament). Thus, it can individualize the appropriate quality and quantity of diet, bodily movements, mental activity, etc. for each individual and period of life i.e. childhood, old age, gender, season, etc. Unani System of Medicine provides multi-factorial guidelines to successfully maintain health by using same temperament factors in health and opposite temperament factors in disease.

In diseases like Tuberculosis, AIDS, Cancer, etc. where the long-term therapy is required, a number of Unani drugs e.g. Khamira Marwarid, Dawa al-Kurkum, Habb-i Jawahar can be used as an adjuvant. They play an important role in reducing the toxicity of the synthetic drugs and in modulating or enhancing the body immunity and improving the overall quality of life. Unani System of Medicine provides very comprehensive, specified and individualized guidance for this purpose.

Both promotion of health and treatment of disease can be done to a great extent by non-drug factors, which are safer, cheaper and more easily employed than drugs. On account of its ability to undertake health promotion and disease prevention by non-drug lifestyle factors, the Unani System of Medicine is of great relevance to present-day healthcare, as lifestyle related diseases like Hypertension, Diabetes, Depression make up great burden for healthcare in these days.

### INTEGRATION OF UNANI SYSTEM OF MEDICINE IN NPCDCS

With a view to supplement health preservation, promotion, prevention and management of lifestyle diseases, Unani System of Medicine aims to integrate with the NPCDCS. Services of Unani physicians in NPCDCS will be utilized for –

- Health & healthy lifestyle promotion through counseling
- Screening of patients for NCDs through relevant investigations
- Examination of patients and providing Unani treatment as individual or adjuvant therapy
- Co-ordination of the programme at PHC / CHC / District level
- Early detection and timely referral of complicated cases to higher level



## Strategy

The programme will be executed by Central Council for Research in Unani Medicine through its Central Research Institute of Unani Medicine, Lucknow at Lakhimpur Kheri District (Uttar Pradesh). The project will be implemented at 17 Community Health Centres (CHCs) and 54 Primary Health Centres (PHCs) of the district. The services of laboratory investigations and staff nurses etc. available in the NPCDCS Cell and District Hospital will be utilized for the purpose.

## Objectives

The objectives of the programme are as follows –

1. To promote health through creating awareness and education with the involvement of community, civil society, community-based organizations, media, etc. by the following ways –
  - a. IEC material in different languages
  - b. Audio-visuals
  - c. Health lectures
  - d. Mobile health programme
  - e. School health programme
2. To conduct opportunistic screening at all levels in the health care delivery system for early detection of Diabetes, Hypertension and Cancers. Outreach camps would also be envisaged.
3. To prevent NCDs, especially Cancer, Diabetes, CVDs and Stroke.
4. To build capacity at various levels of healthcare for prevention, early diagnosis and treatment.
5. To provide cost-effective Unani treatment at primary and secondary healthcare.
6. To support the development of database of NCDs through surveillance system and to monitor NCD morbidity and mortality and risk factors.

For the prevention and management of the NCDs, following guidelines will be followed:

- a. Each patient/person visiting the physician will be assessed for his/her temperament through the standard temperament evaluation procedure.
- b. The person having the higher risk for the development of certain NCDs will be identified as Vulnerable Group (VG).
- c. This VG will be assessed as per specific proforma for their daily activities, occupation, habitat, family history, etc.
- d. Following measures will be advised to VG for the prevention of the NCDs.
  - i. General preventive measures, e.g. cessation of tobacco and alcohol consumption, avoidance of junk food, regular exercise, morning walk, etc.
  - ii. Diet Therapy – Diet will be advised as per the Mizaj of the patient. The person with cold temperament will be advised to use the diets having hot temperament or vice-versa.
  - iii. Ilaj Bit Tadbeer – A unique mode of treatment described in Unani System of Medicine for the prevention and management of the diseases will be utilized as intervention in the NCDs.



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- iv. Munzij-Mushil Therapy will be used for the detoxification of the body from the morbid substances.
- e. Disease specific treatment will also be given to the patient having higher risk for the specific disease.

## Operational Guidelines

The Council intends the services of Unani System of Medicine through its resources in the selected operational district of NPCDCS. The services of the engaged staff and laboratory investigations shall also be taken from NPCDCS wherever available. The programme will be executed at following levels:

- Setting up of NPCDCS Cell at CCRUM Headquarters, New Delhi
- Setting up of NPCDCS Cell at Central Research Institute of Unani Medicine (CRIUM), Lucknow
- Setting up of Lifestyle Clinics at the Community Health Centers (CHCs) in the selected district
- Outreach activities for sustenance and maintenance of the programme

## Roles and Responsibilities

### 1. NPCDCS Cell at CCRUM Headquarters, New Delhi

The NPCDCS Cell at CCRUM Headquarters shall play a mentors role in the programme for integrating Unani System of Medicine in NPCDCS and would be responsible for the following –

- Act as Nodal Body to roll out the programme.
- Plan, coordinate and monitor all the activities of the NPCDCS cell in the district, Lifestyle Clinics at CHC and PHC levels.
- Preparation of operational guidelines, standard operating procedures (SOPs), training modules, monitoring and reporting systems.
- Preparation of IEC material on Unani Medicine for the prevention and control of NCDs for general public.
- Provide orientation as per the requirements of the NPCDCS to the nodal officers and consultants.
- The trained personnels will further train the Unani physicians and medical staff engaged at CHCs in the respective district.
- Monitoring and evaluation of the programme through spreadsheets, questionnaires, review meetings, field surveys.
- Provide administrative and logistics support to NPCDCS Cell in the Lifestyle clinic at CHCs.
- Compilation of report and analysis of data received from CRUIM, Lucknow.
- Release of funds and monitoring of expenditure.



S.No.	Manpower	Responsibilities
1	Research Associate	<ul style="list-style-type: none"> <li>• Preparing programme implementation plan</li> <li>• Preparing resource material and training manuals for the programme</li> <li>• Organizing review meetings and orientation workshops</li> <li>• Organizing training programme for physicians and technical staff</li> <li>• Visiting the district and CHCs to monitor the functioning of the programme</li> <li>• Supervision and coordination with the team at the NPCDCS cell in the Institute and Lifestyle clinics at CHCs and PHCs</li> <li>• Analyse the data obtained and compile report</li> </ul>
2	Data Entry Operator (DEO)	<ul style="list-style-type: none"> <li>• To work under the guidance and direction of Research Associates/Consultants</li> <li>• Ensure regular entry of all relevant data in the computer pertaining to various aspects of NPCDCS in a systematic manner to facilitate its analysis</li> <li>• Compile the reports</li> <li>• Maintenance of the computer and its accessories</li> <li>• Any other job assigned as per programme need</li> </ul>

## 2. NPCDCS Cell at CRIUM, Lucknow

- Up-gradation of established Lifestyle Clinic at the Institute for management of NCDs.
- Organize district level training programme for capacity building of Unani practitioners and health personal at Lifestyle Clinic at CHCs.
- Supply of IEC material to CHCs for display and distribution amongst the masses to create health awareness.
- Distribution of pamphlets and hand-outs on NCDs to generate health awareness among the people attending the Institute.
- Provide administrative and logistics support to all the units of Unani Medicine at CHCs under the district.
- Compile data from all the CHCs/PHCs under the district and coordinate with the NPCDCS Cell at Headquarters.
- Co-ordination with NPCDCS and other related departments in the district.

S.No.	Manpower	Responsibilities
1	Research Associate	<ul style="list-style-type: none"> <li>• Opportunistic screening</li> <li>• Behavioral change</li> <li>• Health promotion</li> <li>• Treatment of preclinical conditions</li> <li>• Treatment of complications related to NCDs with Unani medicine as adjuvant therapy</li> <li>• Training to Unani practitioners in NPCDCS mobile health teams working at PHCs</li> <li>• Monitor functioning and research activities of the Lifestyle clinic</li> <li>• Compilation of data from CHCs and PHCs</li> </ul>
2	Data Entry Operator (DEO)	<ul style="list-style-type: none"> <li>• To work under the guidance and direction of Research Associates/Consultants</li> <li>• Ensure regular entry of all relevant data in the computer pertaining to various aspects of NPCDCS in a systematic manner to facilitate its analysis</li> <li>• Compile the reports</li> <li>• Maintenance of the computer and its accessories</li> <li>• Any other job assigned as per programme need</li> </ul>

### 3. Lifestyle Clinic at Community Health Centre (CHC)

- Health promotion and prevention through behavior change & lifestyle counseling of patients.
- Opportunistic screening of common NCDs (Hypertension, Diabetes, Obesity & COPD).
- Management of NCDs in pre-clinical stage through Unani Medicine intervention alone wherever applicable in clinical stage amenable to treatment through Unani Medicine.
- Provide Unani treatment as adjuvant to conventional treatment & lifestyle modification in established condition for respective NCDs.
- Referral of complicated/difficult cases, wherever necessary, for further investigation and management.
- Monitoring and sustenance of outreach activities at PHCs.
- Regular yoga and meditation practices by yoga instructor for health promotion.
- The Yoga instructor shall impart training to Yoga volunteers, who will further hold classes at the PHC for behavioral change and health promotion under outreach activities.
- Data compilation and timely submission of report of all the camps conducted under Lifestyle Clinic at CHCs to the NPCDCS Cell at the CRIUM, Lucknow/Headquarters.



S.No.	Manpower	Responsibilities
1	Research Associate	<ul style="list-style-type: none"> <li>• Opportunistic screening</li> <li>• Behavioral change</li> <li>• Health promotion</li> <li>• Treatment of preclinical conditions</li> <li>• Treatment of complications related to NCDs with Unani Medicine as an adjuvant therapy</li> <li>• Monitor functioning and research activities of the Lifestyle Clinics</li> <li>• Conducting outreach camps in coordination with the available staff at the PHCs on rotational basis</li> <li>• Collection of data from CHCs, PHCs and camps.</li> </ul>
2	Data Entry Operator (DEO)	<ul style="list-style-type: none"> <li>• To work under the guidance and direction of Research Associates/Consultants</li> <li>• Ensure regular entry of all relevant data in the computer pertaining to various aspects of NPCDCS in a systematic manner to facilitate its analysis</li> <li>• Compile the reports</li> <li>• Maintenance of the computer and its accessories</li> <li>• Any other job assigned as per programme need</li> </ul>
3	Yoga Instructor	<ul style="list-style-type: none"> <li>• To work under the guidance and direction of Research Associates/Consultants</li> <li>• The Yoga instructor shall primarily emphasize upon gaining general well-being by way of integration of body, mind and soul through Yoga, and meditation</li> <li>• Monitor outreach activities(camps) and the work of the yoga volunteers at the PHCs</li> <li>• Health promotion through awareness about Yogic asanas to the patients attending CHC</li> <li>• Training of Yoga volunteers who will further help the population at PHC level for behavioral change and health promotion</li> </ul>



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S.No.	Manpower	Responsibilities
4	Pharmacist	<ul style="list-style-type: none"><li>To work under the guidance and direction of Research Associates/Consultants</li><li>To dispense medicines as prescribed by Research Associates/Consultants at respective Lifestyle Clinics and camps</li><li>To attend the outreach activities/health camps and dispense medicines in the health camps with the team as instructed by the Research Associates</li><li>To counsel patients and explain the procedure for taking medicines for better compliance to treatment</li><li>To ensure the proper storage, maintain proper labeling and keep a check on the expiry date of drugs to ensure timely utilization</li></ul>
5	Multi Tasking Staff (MTS)	<ul style="list-style-type: none"><li>To work under the guidance and direction of Research Associates/Consultants, Yoga Instructor</li><li>To open, close and maintain the cleanliness of the premises and furniture, etc.</li><li>To assist in outreach activities such as organization of camps, distribution of IEC materials, etc.</li><li>To maintain files, papers, medicines, equipments and assist in routine office work like diary, dispatch, photocopying, etc.</li><li>Any other work assigned by the superior authority</li></ul>

#### 4. Outreach Activities for Sustenance of the Programme

- Outreach programme through health awareness camps (2 camps/month) to be carried out by Research Associates along with other staff at PHCs for awareness generation, lifestyle modification, screening of susceptible population and referral of suspected cases from these camps to the CHCs for detailed screening and treatment.
- Weekend Yoga and meditation classes by Yoga volunteers (trained by Yoga Instructors at CHCs) on Fridays, Saturdays and Sundays.

S.No.	Manpower	Responsibilities
1	Yoga Volunteers	<ul style="list-style-type: none"><li>To work under the guidance and direction of Research Associates/Consultants, Yoga Instructors</li><li>Conduct weekend Yoga classes on Fridays, Saturdays and Sundays</li><li>Awareness generation among the masses for health promotion.</li></ul>



## MANAGEMENT OF NCDs

### SARATAN (Cancer)

Saratan (Cancer) is an abnormal, uncontrolled, autonomous growth of the cells with the potential to invade or spread to other parts of the body. It is usually characterized by a new lump, unexplained anorexia, weight loss, anaemia, abnormal bleeding, prolonged cough, fever, change in bowel habits, etc. depending upon the organ involved. In Unani System of Medicine it is described as a type of tumor which comes under the category of Awram Sawdaviya. It is caused by the production of Sawda Ghair Tabayee (Abnormal melancholic humour).

### Important Facts

According to World Health Organization (WHO), some important facts about cancer are as follows –

- There are more than 100 types of cancers which can affect any part of the body.
- Cancer is a leading cause of morbidity and mortality worldwide, with approximately 14 million new cases and 8.2 million deaths in 2012.
- It is expected that the number of new cases may rise by 70% over the next two decades.
- The five most common sites of cancer in males are lungs, stomach, liver, colorectal and esophagus.
- The five most common sites of cancer in females are breast, lung, stomach, colorectal and cervix. In many developing countries, cervical cancer is the most common.
- Tobacco use is the most important risk factor for cancer, causing around 20% of global cancer deaths and around 70% of global lung cancer deaths.
- Viral infections such as HBV/HCV and HPV are responsible for up to 20% of cancer deaths in low- and middle-income countries.
- In India, 900,000 people die due to tobacco related diseases per year.
- Tobacco contributes to 56.4% and 44.9% of cancers in men and women respectively and India has the largest number of oral cancer cases in the world.
- Breast, cervical and colorectal cancers can be cured if detected early and treated adequately.

### Predisposing Factors

- Genetic predisposition
- Tobacco use
- Obesity
- Lack of physical activity
- Consumption of alcohol
- Viral Infections
- Stress
- Environmental factors such as radiation, irritation, pollution, chemicals etc



- Sinn-e-Kahulat wa Shaikhukhat (Middle and old age)
- Humoral derangement
- Sawdawi temperamental personalities
- Deviation from Asbab Sitta Zarooriya (Six Prerequisites of Healthy Living)
- Excessive use of Sawda producing diets

### Clinical Features

- Asymptomatic in initial stage
- General features include anorexia, anaemia, aesthenia (general weakness), fever, weight loss, etc.
- Specific features related to the organs/system involved -

**Breast Cancer** – Lump, cracked, inverted and adherent nipple, haemorrhagic discharge, orange peel skin of breast, etc.

**Cervical Cancer** – Intermittent bleeding during the cycle, foul smelling vaginal discharge, painful coitus, ulceration, erosions of the cervix, etc.

**Lung Cancer** – Persistent cough, blood stained sputum, breathlessness, etc.

**Stomach Cancer** – Abdominal pain, vomiting, haematemesis (blood in vomitus) and melaena (black coloured stool), profound anorexia and severe weight loss, upper abdominal lump, etc.

**Colo-rectal Cancer** – Bleeding per rectum, altered bowel habit, lower abdominal pain, lump, etc.

**Liver Cancer** – Abdominal pain, hiccup, anorexia, retro-sternal discomfort, jaundice, etc.

### Prevention

To abide by the following principles of Asbab Sitta Zarooriya (Six Prerequisites of Healthy living):

1. Hawa (Air)
  - Fresh and pollution free air for breathing.
  - Avoid exposure to excessive heat or excessive cold.
2. Makool o Mashroob (Food & Drink)
  - Stop tobacco chewing and smoking.
  - Avoid junk and smoked foods, preserved foods, alcohol, carbonated drinks, etc.
  - Avoid excess of non-vegetarian diet.
  - Avoid Sawda producing diet, e.g. red meat, dried and salted meat and fish, etc.
  - Take soft and easily digestible diet.
  - Consume turmeric, tomatoes, garlic, flaxseed, spinach, broccoli, pomegranate, walnuts, etc.
  - Take diet rich in fibre (20-30 gm/day).
3. Harakat o Sukoon Badani (Bodily Movement & Repose)
  - Avoid sedentary lifestyle
  - Exercise for 30-45 minutes at least five days a week



4. Harakat o Sukoon Nafsani (Psychic Movement & Repose)
  - Avoid mental stress and anxiety
  - Avoid extreme emotions, e.g. anger, fear, sadness
  - Lead a spiritual peaceful life
5. Naum o Yaqza (Sleep and Wakefulness)
  - Six to eight hours sound sleep
6. Ihtibas o Istifragh (Retention and Evacuation)
  - Avoid constipation
  - Ensure proper evacuation, urination, perspiration and menstruation
  - Avoid dehydration, and ensure retention of electrolytes and minerals

### Key to Better Management

#### Early prevention

- Stop use of tobacco in any form
- Stop alcohol consumption
- Promote physical activity
- Eat plenty of fruits and vegetables
- Practice safe sexual behavior
- Avoid continuous physical irritation

#### Early detection of cancers

- Awareness in community regarding early warning signs of common cancers (Oral/Breast/Cervix):
  - Change in bowel or bladder habits
  - Thickening or lump in the breast or elsewhere
  - Chronic indigestion or difficulty in swallowing
  - Obvious change in the size, color, shape or thickness of a wart or mole
  - A wound that does not heal
  - Unexplained weight loss
  - Unusual bleeding or discharge
  - Nagging cough or hoarseness of voice or sore throat
- Opportunistic check up for oral, breast and cervical cancer
- Prompt referral and appropriate management

#### Diagnostic Methods

- Clinical history & examination – first and most important
- Radiological examination
- Pathological examination

## Management

Early detection leads to better prognosis. Unani treatment may be used as an adjuvant therapy for the following purposes in cancer patients:

- To restore the healthy lifestyle by observing Asbab Sitta Zarooriyya.
- To enhance the immunity of the patient, e.g. Khameera Marwareed, Jawarish Jalinoos, Jawahar Mohra, etc.
- To reduce the complications associated with cancer, e.g. Majoon Dabidul Ward, Dawaul Kurkum, Arq Hara Bhara, etc.
- To prevent the side effects of the conventional therapy, e.g. Jawarish Anarain, Jawarish Amla, Jawarish Tamar Hindi, Habb Tursh Mushtahi, etc.
- To improve the quality of life of the patients- Hammam (Turkish Bath), Dalk (Massage), Fasd (Venesection) and Ishal (Purgation).

## Dietary Recommendations

- Murattib wa Mubarrid Aghziya (moist and cold diets) like Maa al-Jubn (Whey), Maa us Shaer (Barley Water), Bajra (Millet), Daliya, Soyabean, Pulses (with skin), Khurfa (Parsley), Paalak (Spinach), Bathwa, Kaddu (Pumpkin), Kheera (Cucumber), Lauki (Bottle Gourd), Tori (Ridge Gourd), Tarbooz (Water Melon), Khajoor (Dates), Leemu (Lemon), Angoor (Grapes), etc.



## Dietary Restrictions

- Avoid Muwallid-i Sawda (melancholic humour producing) dietary items like red meat, Adas (Lentil), Baqla (Horsebean), Baigan (Brinjal), Matar (Pea), etc.

## Yogic Management

### Sukshmaryayama

Simple joint movements to improve range of motion and selected Sukshmaryayama to strengthen the joints

### Asanas

Tadasana, Katichakrasana, Trikonasana, Padahasthasana, Uttanapadasana, Pavanamuktasana, Paschimottanasana, Matsyasana, Vakrasana, Makarasana, Bhujangasana, Ardha shalabhasana, Shavasana.

Note: Asanas are to be selected based on patient condition and treatment regimen.

### Pranayama

Suryabhedana, Nadishodhana, Bhramari, Ujjayi, Sheetali and Seetkari.

### Relaxation Techniques & Meditation

Yoga Nidra



## ZAYABITUS SUKKARI (Diabetes Mellitus)

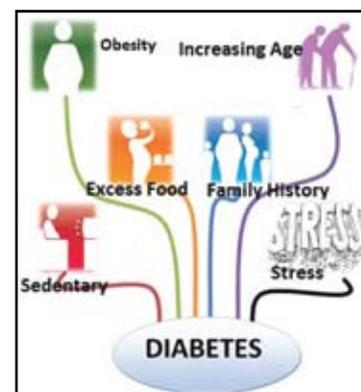
*Zayabitus Sukkari* (Diabetes Mellitus) is a heterogeneous metabolic disorder characterized by polydipsia (increased thirst), polyphagia (excessive hunger) and polyuria (increased frequency of urination), associated with persistent hyperglycemia leading to a number of complications. It is due to the deficient production of the Insulin or defect in the receptor cells of the body. Unani physicians have described Diabetes Mellitus as abnormal functioning of the kidney and liver. Sometimes, this condition may also arise during pregnancy and subsides after childbirth.

### Important Facts

- In 2014, the global prevalence of diabetes was estimated to be 9% among adults over 18 years of age.
- 347 million people worldwide have diabetes.
- An estimated 1.5 million deaths were directly caused by diabetes in 2012.
- More than 80% of diabetes deaths occur in low and middle income countries.
- WHO estimated that diabetes will be the 7th leading cause of death in 2030.
- The number of people with diabetes in India is currently around 40.9 million and is expected to rise to 69.9 million by 2025, unless urgent preventive steps are taken.

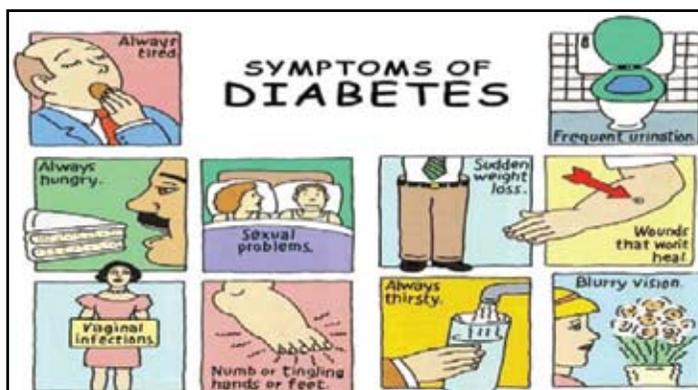
### Predisposing Factors

- Genetic predisposition
- Obesity
- Sedentary life style
- Mental stress
- Excessive intake of saturated fat/high calorie diet
- Junk food
- Low fiber diet



### Clinical Features

- Polyuria (Frequent urination)
- Polydipsia (Excessive thirst)
- Polyphagia (Excessive hunger)
- Tiredness and weakness
- Tingling or numbness in the hands or feet
- Unexplained weight loss in uncontrolled diabetes
- Sudden vision changes

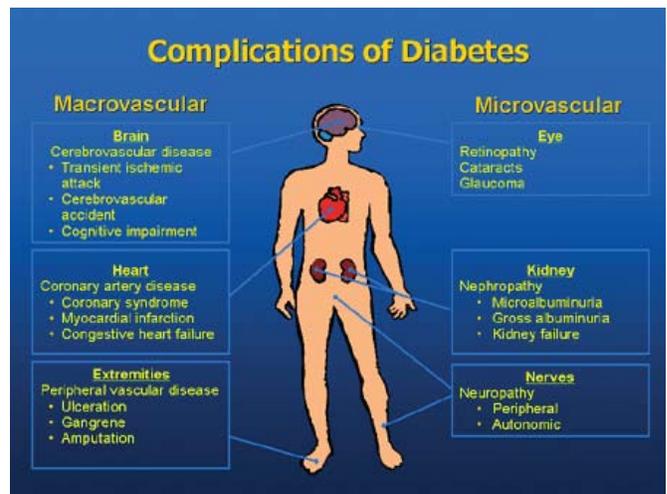


- Very dry skin
- Delayed healing
- Recurrent infections

INITIAL ASSESSMENT OF DIABETIC PATIENTS	
HISTORY	PHYSICAL EXAMINATION
Symptoms for hyperglycemia	Weight
Duration since onset of symptoms	Body Mass Index
Precipitating factors such as recent infections, stress, change in dietary habits or physical activity levels	Waist circumference, Waist-hip ratio
Symptoms of micro or macro-vascular complications like visual disturbances, edema, breathlessness, angina, intermittent claudication, numbness, paraesthesia	Acanthosis nigricans*
Hypertension, pre-existing cardiovascular diseases	Blood pressure
Drug history	Peripheral pulses
Diet	Foot: ulcers, calluses, prominent veins, edema, injuries
Physical activity: type and frequency	Fundus examination
Family history:	<ul style="list-style-type: none"> <li>• Cardiovascular system</li> </ul>
<ul style="list-style-type: none"> <li>• Diabetes and complications</li> <li>• Age at onset</li> <li>• Cardiovascular disease</li> </ul>	<ul style="list-style-type: none"> <li>• Peripheral nervous system</li> </ul>
	<ul style="list-style-type: none"> <li>• Thyroid</li> </ul>
<p>*Acanthosis nigricans is a brown to black, poorly defined, velvety hyperpigmentation of the skin, usually present in the posterior and lateral folds of the neck, the axilla, groin, umbilicus, and other areas. This occurs due to insulin spillover (from excessive production due to obesity or insulin resistance) into the skin which results in its abnormal growth, and the stimulation of color producing cells. The most common cause would be insulin resistance.</p>	

### Complications

- Angiopathy leading to cardiovascular problems e.g. Coronary Artery Diseases and atherosclerosis.
- Neuropathy
- Retinopathy, Cataract, Glaucoma
- Stroke
- Nephropathy, Renal failure
- Diabetic foot





## Prevention

To abide by the following principles of Asbab Sitta Zarooriya (Six Prerequisites of Healthy Living):

1. Hawa (Air)
  - Fresh and pollution free air for breathing.
  - Avoid exposure to excessive heat or excessive cold.
2. Makool o Mashroob (Food & Drink)
  - Take healthy diet in three to five servings of fruits and vegetables a day and reduce sugar and saturated fat intake.
  - Restrict consumption of common salt upto 5 gm/day. Restrict pickles, papad, chutney and salty processed foods.
  - Stop tobacco chewing and smoking.
  - Avoid sweets, junk and smoked foods, preserved foods, alcohol, carbonated drinks, etc.
  - Avoid excess of non-vegetarian diet.
3. Harkat o Sukoon Badani (Bodily Movement & Repose)
  - Avoid sedentary lifestyle.
  - 30-45 minutes regular exercise of moderate intensity, at least five days a week.
  - Encourage outdoor activities like cycling, gardening, etc.
  - Avoid spending long hours in front of electronic media like TV, computers, etc.
4. Harakat o Sukoon Nafsani (Psychic Movement & Repose)
  - Avoid mental stress and anxiety
  - Avoid extreme emotions, e.g. anger, fear, sadness
  - Lead a spiritual peaceful life
5. Nawm o Yaqza (Sleep and Wakefulness)
  - Six to eight hours sound sleep
6. Ihtibas o Istifragh (Retention and Evacuation)
  - Avoid constipation
  - Ensure proper evacuation, urination, perspiration
  - Avoid dehydration, and ensure retention of electrolytes and minerals

## Management

Following therapies can be used for the management of the disease -

- *Ilaj -bil- Ghiza* (Diet therapy)

The calorie requirement of diabetic person usually depends on physical activity and nutritional status, unless there is glycosuria.

Total calorie distribution:

- a. Carbohydrate (55-60% of total calorie requirement)
  - Avoid dietary items of high glycaemic index, e.g. sugar, honey, jaggery, sweets, sweet potato, carrot, banana, beetroot, turnip, etc.



## Integration of Unani Medicine in NPCDCS

(National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke)

- Restrict processed refined food like maida-based products.
- Main source should be cereals, mixed coarse grains, whole pulses, barley, oats, salads and soyabean.
- Vegetables like beans, bitter gourd, pumpkins, fenugreek, lettuce, cucumber and broccoli are advised.
- Fruits like papaya, orange, apple, guava, etc. are advised.
- b. Protein (10-15% of total calorie requirement)
  - Protein from vegetable sources, low fat milk and milk products, fish and lean meat is preferable.
  - Daily protein intake should be 1 gm/kg body weight/day.
- c. Fat (20-25% of total calorie requirement)
  - Saturated fat less than 7% of total calorie intake (including ghee and butter).
  - Oils such as ground nut, sesame, cotton seed, safflower, mustard, soyabean, etc. should be used.
  - Dry fruits like almond, pistachio and walnut can be used.
- *Ilaj –bil- dawa* (Pharmacotherapy):

### *Single drugs:*

- *Jamun seeds (Syzygium cumini)*
- *Karela (Momordica charantia)*
- *Binola seeds (Gossypium herbaceum)*
- *Falsa berry (Grewia asiatica)*
- *Kalonji (Nigella sativa)*
- *Methi (Trigonella foenum-graecum)*
- *Darchini (Cinnamomum zeylanicum)*
- *Neem (Azadirachta indica)*

### *Unani formulations:*

- Qurs Ziabetes
- Qurs Kafoor
- Qurs Tabasheer
- Safoof Sandal Ziabetes Wala
- Safoof Ziabetes

### *Home remedies:*

- 60 gm kernels of Jamun seeds dried and powdered.  
Dosage- 3 gm BD with water.
- Extract juice from Karela fruit.  
Dosage- 25 ml BD.
- Fenugreek seeds (Methi dana) powdered.  
Dosage- 3 gm BD.



- 10-15 Bel leaves grinded with 60 ml of water and strain.  
Dosage- Take as such in morning.
- 10-15 Mango leaves grinded with 60 ml of water and strain.  
Dosage- Take as such in morning.
- **Ilaj bi'l Tadbeer** (Regimenal therapy):  
Ilaj bi'l Tadbeer, i.e. Dalk (Massage), Riyazat (Exercise), Hijama (Cupping), etc. are helpful in the prevention and management of the disease.

### Yogic Management

Sukshnavyayama and Suryanamaskara

### Asanas

Tadasana, Katichakrasana, Pavanamuktasana, Sarvangasana, Matsyasana, Halasana, Ushtrasana, Gomukhasana, Ardhamatsyendrasana, Shavasana, Paschimottanasana, Mandukasana, Bhujangasana, Shalabhasana, Dhanurasana.

### Pranayama

Nadi Suddhi Pranayama, Bhastrika.

### Kriyas

Kapalabhati, Agnisar.

### Meditation

Breath awareness and Meditation

### Diabetes patient education and diet counseling

Patient education on diabetes management and life style modifications is the corner stone of effective diabetes control and management and prevention of complications. At PHC level, nurses/multipurpose health workers can be trained to undertake this activity. At sub-district and district level hospital, dietician/counselor and nurses can undertake diabetes patient education. Patient education topics that can be covered in the initial visit and follow-up visits are depicted in the table.

PATIENT EDUCATION TOPICS TO BE COVERED IN THE INITIAL AND FOLLOW-UP VISITS	
Initial Visits	Follow-up Visits
What is Diabetes? Why does it occur? Lifestyle measures: Diet, Exercise Detailed lifestyle advice Use of oral drugs Advice on identifying signs and symptoms of hypoglycemia and hyperglycemia and their management Patient should be informed about the importance of factors other than glucose control: cholesterol, blood pressure, stopping smoking/tobacco etc.	Importance of glycaemic control Prevention of complications Foot care Pre-conceptional counseling regarding the importance of good glucose control prior to pregnancy

## ZAGHT AL-DAM QAWI (Hypertension)

Zaght al-Dam Qawi (Hypertension) is defined clinically as a systolic blood pressure at or above 140 mmHg and/or a diastolic blood pressure at or above 90 mmHg. Unani physicians described the condition as *Imtila bi-hasb al-quwa* results in increased blood pressure.

### Important Facts

Hypertension is one of the most important non-communicable diseases (NCD) which is estimated to be attributable for nearly 10 per cent of all deaths in India. Prevalence of disease especially in adults has risen dramatically during last two decades from 5% to 20-40% in urban areas and 12-17% in rural areas. The number estimated to be doubled from 118 million in 2000 to 213 million by 2025. The role of the disease may be identified from the fact that 16% of Ischemic Heart Disease (IHD), 21% of peripheral vascular disease, 24% of Myocardial infarction (MI) and 29% of strokes are attributable to hypertension. On the other hand a decrease of 10mmHg systolic or 5mmHg diastolic blood pressure may result in an approximately 20–25% lower risk of coronary heart disease (CHD) and 40% lower risk of stroke.

### Causes

According to its etiology, the disease has been classified into:

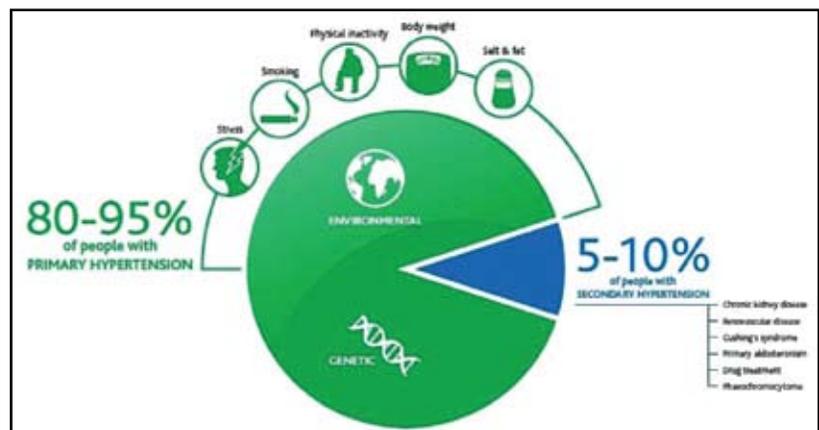
1. Primary Hypertension
2. Secondary Hypertension

For most adults, there is no identifiable cause of high blood pressure. This type of high blood pressure, called primary (essential) hypertension, tends to develop gradually over many years.

Some people have high blood pressure caused by an underlying condition. This type of high blood pressure, called secondary hypertension, tends to appear suddenly and cause higher blood pressure than does primary hypertension. Various conditions and medications can lead to secondary hypertension, e.g. endocrine diseases, kidney diseases, cardiovascular diseases, use of drugs and alcohol.

### Predisposing Factors

- Genetic predisposition
- Obesity
- Lack of physical activity
- Consumption of alcohol
- Tobacco use
- Stress and anxiety
- Sinn-e-Kahulat wa Shaikhukhat (Middle and old age)
- Deviation from Asbab Sitta Zarooriya (Six Prerequisites of Healthy Living).
- Excessive intake of salt.





## Clinical Features

- Asymptomatic in initial stage
- General features may include headache, vomiting, redness of eyes, irritability of mood, lack of concentration, insomnia, flushing of face, etc.

## Prevention

To abide by the following principles of Asbab Sitta Zarooriya (Six Prerequisites of Healthy Living):

1. Hawa (Air)
  - Fresh and pollution free air for breathing
  - Avoid exposure to excessive heat or excessive cold.
2. Makool o Mashroob (Food & Drink)
  - Eat healthy and balanced diet.
  - Avoid junk and smoked foods, preserved foods, alcohol, carbonated drinks, etc.
  - Avoid excess of non-vegetarian diet.
  - Salt intake should be restricted to less than 5g/day.
  - Avoid adding/sprinkling salt to cooked and uncooked food in addition to daily permissible limit. Various preparations which are high in salt should be moderated: Pickles, chutneys, sauces and ketchups, papads, chips, salted biscuits, cheese, salted butter, bakery products, etc.
  - Fruits and vegetables high in potassium and magnesium may be helpful in controlling the blood pressure. e.g. apple, apricot, banana, carrots, green beans, dates, tomatoes, orange, etc.
  - Diet should contain whole grains and items rich in fibre.
  - Diet containing saturated fats like red meat should be avoided.
  - Stop tobacco chewing and smoking.
3. Harakat o Sukoon Badani (Bodily movement & Repose)
  - Avoid sedentary lifestyle.
  - Exercise for 30-45 minutes at least five days a week.
  - Encourage outdoor activities like cycling, gardening, etc.
4. Harakat o Sukoon Nafsani (Psychic movement & Repose)
  - Avoid mental stress and anxiety.
  - Avoid extreme emotions, e.g. anger, fear, sadness, etc.
  - Lead a spiritual peaceful life.
5. Naum o Yaqza (Sleep and Wakefulness)
  - Six to eight hours sound sleep

6. Ihtibas o Istifragh (Retention and Evacuation)

- Avoid constipation
- Ensure proper evacuation, urination and perspiration
- Urine output should not be less than 1.5 litre/ day.

**Management**

Get blood pressure checked at regular intervals. When the blood pressure of a person remains beyond normal range of 140 mmHg (Systolic) or 90 mmHg (Diastolic), he/she should be treated according to the underlying condition.

- *Ilaj –bil- dawa* (Pharmacotherapy):

**Single Drugs:**

- |                               |  |
|-------------------------------|--|
| • Asrol                       | <i>Rauvolfia serpentina</i> Benth. ex Kurz |
| • Abresham Kham               | Silk cocoon                                |
| • Arjun bark (Arjuna)         | <i>Terminalia arjuna</i> (Roxb.) Bedd.     |
| • Gul-e-Gaozaban              | <i>Onosma bracteatum</i>                   |
| • Tukhm Khashkhash            | <i>Papaver somniferum</i> Linn.            |
| • Tukhm Kahu (Lettuce)        | <i>Lactuca sativa</i> Linn.                |
| • Kishneez Khushk (Coriander) | <i>Coriandrum sativum</i> Linn.            |
| • Sandal Safed                | <i>Santalum album</i> Linn.                |

**Compound Drugs:**

- Qurs Dawaus Shifa
- Khamira Abresham Sada
- Khamira Khashkhash
- Khamira Sandal
- Sharbat Buzoori Motadil
- Asrofin
- Qalbin

**Home Remedies:**

- 1 gm garlic paste mixed with a glass of butter milk.  
Dosage: Taken as such two times a day.
- 1 – 3 cloves of garlic.  
Dosage: Taken in morning on empty stomach.
- Extract onion juice.  
Dosage: ½ teaspoon juice mixed with ½ teaspoon honey taken twice daily.
- Equal quantities of dried watermelon seeds and poppy seeds (Khashkhash) grinded.  
Dosage: 1 teaspoon in morning on empty stomach and 1 teaspoon in evening.



- *Ilaj bi'l Tadbeer* (Regimenal therapy):
  - Riyazat zaefa (Light exercise)
  - Idraar (Diuresis)
  - Hammam (Turkish bath)
  - Fasd Basaliq (Venesection of basilic vein)

### Yogic Management

Selected practices of Sukshnavyayama

#### Asanas:

Tadasana, Katichakrasana, Trikonasana, Uttanapadasana, Pavanamuktasana, Vajrasana, Ushtrasana, Shashankasana, Vakrasana, Bhujangasana, Gomukhasana, Shavasana.

#### Pranayama

Nadi Suddhi, Ujjayi, Bhramari, Sheetali and Seetkari.

#### Meditation

Yoga Nidra and Meditation

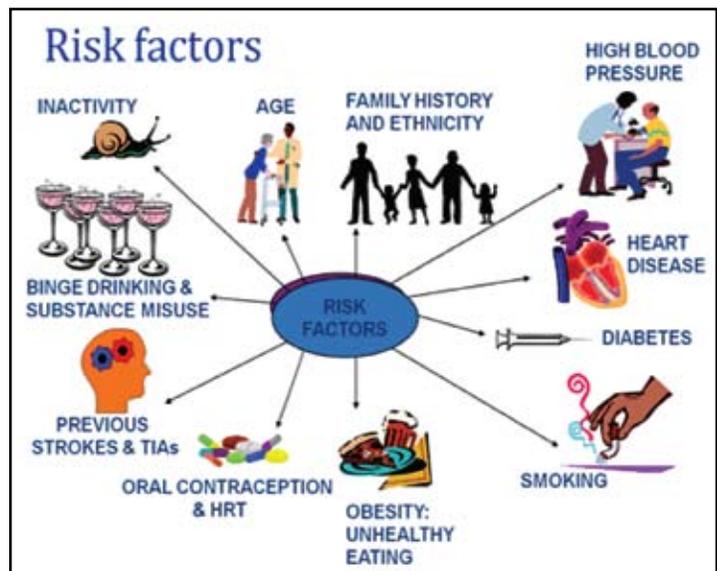
## FART TASHAHHUM AL-DAM (Hyperlipidaemia)

Fart Tashahhum al-Dam (Hyperlipidaemia) is a condition characterized by the abnormally elevated levels of the lipids and/or lipoproteins in the blood. It makes the patients susceptible to accelerated atherosclerosis leading to cardiovascular diseases and stroke which are one of the major causes of premature deaths due to non-communicable diseases (NCDs). Unani Physicians described Hyperlipidaemia as Ghilzat al-Dam due to predominance of Balgham (phlegm) which causes narrowing of vessels (Tazayyuq al-Uruq) or its obstruction (Tasaddud al-Uruq) affecting supply of Rooh to the vital organs like heart and brain resulting in diseases of these organs.

### Causes

Hyperlipidaemia may be categorized as primary (genetic) and secondary (lifestyle and other).

1. Primary hyperlipidaemia is probably due to genetic causes
2. Secondary hyperlipidaemia is due to certain diseases such as
  - Hypopituitarism
  - Hypothyroidism
  - Diabetes mellitus
  - Obesity
  - Cushing's syndrome
  - Nephrotic syndrome
  - Chronic Renal Failure
  - Chronic Liver Disease
  - Use of drugs, e.g. oral contraceptive pills (OCP), glucocorticoids,  $\beta$ -blockers and diuretics
  - Use of diets rich in saturated fat and carbohydrates
  - Alcohol consumption
  - Deviation from Asbab Sitta Zarooriya (Six Prerequisites of Healthy Living)



### Clinical Features

- Asymptomatic
- Sometimes it may appear as xanthoma (the deposition of lipids in subcutaneous tissue) or corneal arcus (deposit of lipid in cornea).
- Complications include coronary artery disease (CAD), heart attack and stroke.
- Most of the patients are asymptomatic, so they are only detected by examination of lipid profile. Normal range of lipid profile is as follows:



Test	Desirable	Borderline High	High
Total Cholesterol	<200 mg/dL	200-239 mg/dL	>239 mg/dL
LDL Cholesterol	60-129 mg/dL	130-159 mg/dL	160-189 mg/dL (Very High: >189 mg/dL)
HDL Cholesterol	>59 mg/dL	40-59 mg/dL	<40 mg/dL
Cholesterol/HDL ratio	4.0	5.0	6.0
Triglycerides	<150 mg/dL	150-199 mg/dl	200-499 mg/dl (Very High: >500 mg/dL )

### Prevention

To abide by the following principles of Asbab Sitta Zarooriya (Six prerequisites of healthy living):

1. Hawa (Air) - Fresh and pollution free air for breathing
2. Makool o Mashroob (Food & Drink)
  - Eat a healthy and balanced diet.
  - Avoid junk and smoked foods, preserved foods, alcohol, carbonated drinks, etc.
  - Avoid excess of non-vegetarian diet.
  - Avoid saturated fat and carbohydrates e.g. sweets, red meat, egg, dairy products, ghee, etc.
  - Increase use of lipid-lowering condiments in diet like seer (garlic), adrak (ginger), jauz buwa (nutmeg), javitri (mace), and zeera siyah (cumin), etc.
  - Increase use of whole grains, plant proteins, tree nuts, etc.
  - Oils which can be used are mustard oil, soya bean oil, groundnut oil, olive oil, sesame oil and sunflower oil.
  - Ghee, butter and coconut oil are harmful and should be avoided.
  - Stop tobacco chewing and smoking.
3. Harakat o Sukoon Badani (Bodily Movement & Repose)
  - Avoid sedentary lifestyle
  - Exercise for 30-45 minutes at least five days a week.
  - Encourage outdoor activities like cycling, gardening etc.
4. Harakat o Sukoon Nafsani (Psychic Movement & Repose)
  - Avoid mental stress and anxiety
  - Avoid extreme emotions, e.g. anger, fear, sadness, etc.
  - Lead a spiritual peaceful life
5. Naum o Yaqa (Sleep and Wakefulness)
  - Six to eight hours sound sleep

#### 6. Ihtibas o Istifragh (Retention and Evacuation)

- Avoid constipation
- Ensure proper evacuation, urination, perspiration
- Avoid dehydration, and ensure retention of electrolytes and minerals

#### Management

The aim of treating hyperlipidaemia is to prevent or reduce the risk and complications of CVD. Hyperlipidaemia is a chronic disease caused by the genetic predisposition interacting with an individual's diet and lifestyle. The causes like error in diet, regimen and lack of exercise should be taken care of. So each case of hyperlipidaemia is treated in its individual way with most appropriate Unani remedy having lipid-lowering activity.

- *Ilaj -bil- dawa* (Pharmacotherapy):

##### Single Drugs

- |                             |   |
|-----------------------------|---|
| • Arjun bark                | ( <i>Terminalia arjuna</i> Roxb.)           |
| • Muqil                     | ( <i>Commiphora mukul</i> Hook. ex Stocks.) |
| • Mur makki (Myrr)          | ( <i>Commiphora myrrha</i> Nees.)           |
| • Khal                      | (Vinegar)                                   |
| • Seer (Garlic)             | ( <i>Allium sativum</i> Linn.)              |
| • Adrak (Ginger)            | ( <i>Zingiber officinale</i> Roscoe.)       |
| • Unsul (Onion)             | ( <i>Allium cepa</i> Linn.)                 |
| • Zeera Siyah (Black Cumin) | ( <i>Carum carvi</i> Linn.)                 |
| • Bisbasa (Mace)            | ( <i>Myristica fragrans</i> Houtt.)         |
| • Jauzbuwa (Nutmeg)         | ( <i>Myristica fragrans</i> Houtt.)         |
| • Darchini (Cinnamon)       | ( <i>Cinnamomum zeylanicum</i> Blume.)      |
| • Maul-Jubn                 | (Whey)                                      |

##### Compound Drugs

- Majoon Seer Alvi Khani
- Arq Zeera
- Safoof Mohazzil
- Safoof Luk
- Jawarish Bisbasa

##### Home Remedies

- 5 ml lemon juice and honey each mixed in 120 ml of water.  
Dosage: Taken as such in the morning on empty stomach.
- Two teaspoon of Coriander seeds powdered, boiled in one cup of water and strained.  
Dosage: Taken as such once or twice a day.
- 1-3 Garlic cloves.  
Dosage: Taken as such in morning on empty stomach.



- Ginger rhizomes dried and powdered.  
Dosage: 3-5 gm once a day.
- *Ilaj bi'l Tadbeer* (Regimenal therapy):
  - *Riyazat* (Exercise)
  - *Hammam* (Turkish bath) with longer stay in hot air room

### Yogic Management

Selected practices of Sukshnavyayama

#### Asanas:

Tadasana, Katichakrasana, Uttanapadasana, Vakrasana, Urdhwahastottanasana, Pavanamuktasana, Vajrasana, Ushtrasana, Shashankasana, Bhujangasana, Gomukhasana, Shavasana.

#### Pranayama

Nadi Suddhi, Bhramari, Ujjayi, Sheetali and Seetkari

#### Meditation

Yoga Nidra and Meditation

## SAKTA (Stroke)

Sakta (Stroke) is a condition in which blood flow to an area of brain is disconnected and brain cells in the affected area begin to die due to cessation of oxygen supply and nutrients. When brain cells die during a stroke, abilities controlled by that area of the brain such as memory and muscle control are lost. A stroke may be caused by a blocked artery (ischemic stroke) or the leaking or bursting of a blood vessel (hemorrhagic stroke). Some people may experience only a temporary disruption of blood flow to their brain (transient ischemic attack, or TIA).

### Some Important Facts

- Stroke is the third most common cause of death, after cancer and ischemic heart disease.
- More than five million people die from stroke every year in the world.
- It is also the most prominent cause of physical deformity.
- Three adults suffer from a stroke every minute in India and around five million people are disabled globally due to the brain attack each year.
- Its incidence is accelerating in developing countries due to unhealthy lifestyles.
- Two-third of stroke victims are above 60 years of age.
- One-fifth of the victims die within a month of its occurrence and half the survivors become physically deformed.
- Hypertension accounts for 30-50% of stroke risk.
- Patients with diabetes mellitus are 2-3 times more predisposed to stroke.

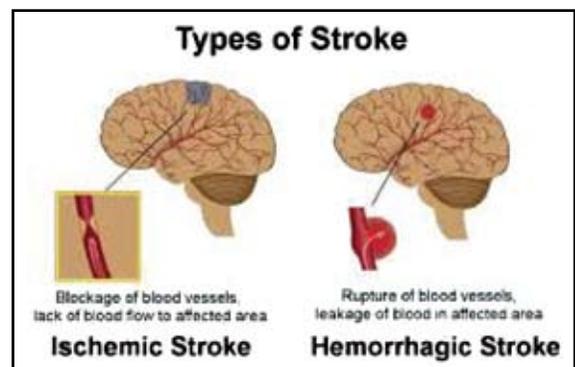
### Ischemic stroke

About 85 percent of strokes are ischemic strokes. Ischemic strokes occur when the arteries to the brain become narrowed or blocked, causing severely reduced blood flow (ischemia). The most common ischemic strokes include:

- **Thrombotic stroke** – A thrombotic stroke occurs when a blood clot (thrombus) forms in one of the arteries that supply blood to the brain.
- **Embolic stroke** – An embolic stroke occurs when a blood clot or other debris forms away from the brain, commonly in the heart, and is swept through bloodstream to lodge in narrower brain arteries.

### Hemorrhagic stroke

Hemorrhagic stroke occurs when a blood vessel in the brain leaks or ruptures. It can result from many conditions that affect the blood vessels, including uncontrolled high blood pressure (hypertension), overtreatment with anticoagulants and weak spots in the blood vessel walls (aneurysms).





## Transient Ischemic attack (TIA)

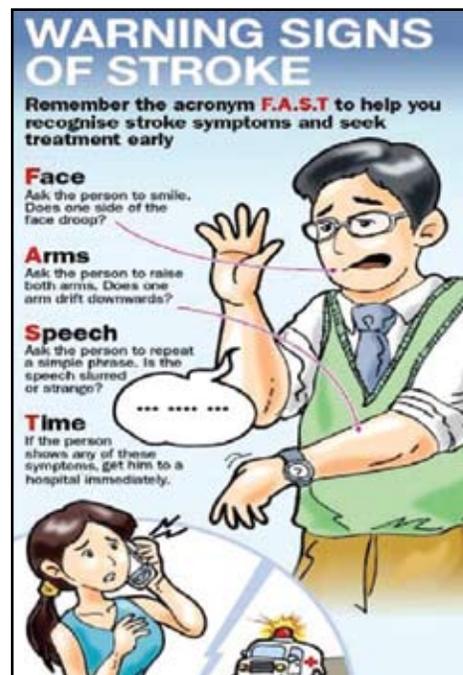
A transient ischemic attack (TIA), also known as a ministroke, is a brief period of symptoms similar to those appears in a stroke. A temporary decrease in blood supply to part of the brain causes TIAs, which often last less than five minutes.

Unani physicians have described different causes which may predispose to the disease which include *Soo-i Mizaj baarid* (cold morbid temperament), *Ghalba-e balgham* (predominance of phlegm) and *Ghalba-e dam* (predominance of Sanguine).

### Clinical Features:

Although stroke is a disease of the brain but it can affect the entire body. The effects of a stroke range from mild to severe and can include:

- Hemiplegia (the commonest manifestation)
- Sudden weakness or numbness in arms, face or leg especially on one side of the body.
- Sudden trouble in the vision of one or both eyes
- Sudden severe headache with no known cause
- Difficulty in speech
- Difficulty in walking
- Dizziness
- Loss of balance
- Lack of coordination



### Prevention:

To abide by the following principles of Asbab Sitta Zarooriya (Six Prerequisites of Healthy Living):

1. Hawa (Air) - Fresh and pollution free air for breathing
2. Makool o Mashroob (Food & Drink)
  - Eat healthy and balanced diet.
  - Avoid junk and smoked foods, preserved foods, alcohol, carbonated drinks, etc.
  - Avoid excess of non-vegetarian diet. Ma-ul leham and chicken soup are recommended.
  - Consume a low-fat, low salt, high-fiber diet such as whole grains, fruit and vegetables.
  - Fruits and vegetables high in potassium and magnesium may help control blood pressure, e.g. apple, apricot, banana, carrots, green beans, dates, tomatoes, oranges, etc.
  - Increase use of lipid-lowering condiments in diet like seer (garlic), adrak (ginger), jauz buwa (nutmeg), javitri (mace), and zeera siyah (cumin), etc.
  - Increase use of whole grains, plant proteins, tree nuts, etc.
  - Stop tobacco chewing and smoking.

3. Harakat o Sukoon Badani (Bodily Movement & Repose)
  - Avoid sedentary lifestyle.
  - Exercise for 30-45 minutes at least five days a week.
  - Head and shoulder side may be slightly raised in lying condition.
4. Harakat o Sukoon Nafsani (Psychic movement & Repose)
  - Avoid mental stress and anxiety.
  - Avoid extreme emotions, e.g. anger, fear, sadness, etc.
  - Lead a spiritual peaceful life.
5. Naum o Yaqza (Sleep and Wakefulness)
  - Six to eight hours sound sleep
6. Ihtibas o Istifragh (Retention and Evacuation)
  - Avoid constipation
  - Ensure proper evacuation, urination and perspiration

### Management

- *Ilaj –bil- dawa* (Pharmacotherapy):

#### Single drugs

- *Filfil Siyah* (*Piper nigrum* Linn.)
- *Azaraq* (*Strychnos nux-vomica*, Linn.)
- *Sudab* (*Ruta graveolens* Mill)
- *Qaranful* (*Syzygium aromaticum* (Linn.) Merr. & L.M. Perry)
- *Nakchikni* (*Centipeda minima* Linn.)
- *Seer* (*Allium sativum*)
- *Badranjboya* (*Nepeta hindostana* Haines)
- *Arjun* (*Terminalia arjuna* (Roxb.) Bedd.)
- *Ustukhudoos* (*Lavandula stoechas* Linn.)
- *Zanjbeel* (*Zingiber officinale* Roscoe)
- *Zardchob* (*Curcuma longa*)
- Honey

#### Compound drugs

- *Kushta Hartal*
- *Maa- ul asl*
- *Maa- ul Usool*
- *Maa-ul Buzoor*
- *Gulqand*
- *Habb-i Ayarij*



- *Hab Muntin*
- *Dawa-e Sardaaru*
- *Habb-i Muqil*
- *Majoon Jograj Gugul*
- *Majoon Azraaqi*
- *Sikanjabeen*
- *Kushta Gaudanti*
- *Roghan Surkh*
- *Roghan-i Naardeen*
- *Roghan-i Qust*
- *Roghan-i Seer*
- **Ilaj bi'l Tadbeer (Regimenal therapy)**
  - Fasd (Blood letting) through *Qaifal (Cephalic)* vein
  - Hijamah (Cupping)
  - Natool (Irrigation) on the affected part with lukewarm decoction of drugs
  - Dalk (Massage) with oils on affected part
  - Takmeed Haar (Hot fomentation) with drugs
  - Huqna (Enema)

### Yogic Management

#### Sukshmavyayama

Simple joint movements to improve range of motion and Yogic Sukshmavyayama such as Griva-sakti-vikasaka (Strengthening the Neck), Purna-bhuja-sakti-vikasaka (Developing the Arms), Mani-bandha-sakti-vikasaka (Developing the Wrists), Kara-tala-sakti-vikasaka (Developing the Palms), Janu-sakti-vikasaka (Strengthening the Knees), Gulpha-pada-prstha-pada-tala-sakti-vikasaka (Developing the Strength of the Ankles and the Feet) to strengthen the joints.

#### Asanas

Tadasana, Katichakrasana, Uttanapadasana, Pavanamuktasana, Vakrasana, Vajrasana, Parvatasana, Makarasana, Bhujangasana, Shavasana.

Note: Asanas are to be selected based on patient condition and treatment regimen.

#### Pranayama

Nadishodhana, Ujjayi, Bhramari.

#### Relaxation Techniques & Meditation

Yoga Nidra, Breath awareness and Meditation



### Practical Advice to Patients for the Prevention of Stroke

- Know the blood pressure. Have the blood pressure checked at least once a month, and, if it is elevated, treat it diligently, to keep it under control.
- Stopping the use of both smoking and non-smoking forms of tobacco.
- It is preferable to avoid alcohol due to several other ill effects on health. However for individuals who consume alcohol the consumption should be moderate.
- Avoid binge drinking. It is a major risk factor for stroke because it can acutely elevate blood pressure.
- Include exercise in the daily routine.
- Consume a low-salt, low-fat diet.
- Prefer whole grains and whole pulses and eat 10-40 gms of unsalted non-fried nuts every day.
- Get screening for hypercholesterolemia. If more than 200mg/dl, lower it by lifestyle changes like regular exercise and change in diet along with lipid lowering drugs.
- Control diabetes, if present concurrently.
- Avoid deep vein thrombosis. If a patient is recovering from illness or a surgery and is in bed, make sure he/she exercises the legs by raising it up and down 10-15 times every day



## MARZ AL-QALB AL-HUDARI (Rheumatic Heart Disease)

Marz Al-Qalb Al-Hudari (Rheumatic heart disease) is the most common acquired heart disease in children in many countries of the world, especially in developing countries. RHD is a chronic heart condition caused by rheumatic fever that can be prevented and controlled. Rheumatic fever is caused by a preceding group-A streptococcal infection. Ibn Sina had advised protection against sore throat infection to prevent RHD.

### Consequences of RHD

Acute rheumatic fever primarily affects the heart, joints and central nervous system. The major importance of acute rheumatic fever is its ability to cause fibrosis of heart valves, leading to crippling valvular heart disease, heart failure and death.

### Important facts

- The global burden of disease caused by rheumatic fever and RHD currently falls disproportionately on children and young adults living in low income countries and is responsible for about 233,000 deaths annually.
- At least 15.6 million people are estimated to be currently affected by RHD with a significant number of them requiring repeated hospitalization and, often heart surgery in the next five to 20 years.
- The worst affected areas are Sub-Saharan Africa, South-central Asia, Pacific and indigenous populations of Australia and New Zealand.
- Up to one percent of all school children in Africa, Asia, Eastern Mediterranean region, and Latin America show signs of the disease.

### Diagnosis

According to revised Jones criteria, the diagnosis of rheumatic fever can be made when two of the major criteria, or one major criterion plus two minor criteria, are present along with evidence of streptococcal infection.

#### Major criteria

- Polyarthritits: A temporary migrating inflammation of the large joints, usually starting in the legs and migrating upwards.
- Carditis: Inflammation of the heart muscle (myocarditis) which can manifest as congestive heart failure with shortness of breath, pericarditis with a rub, or a new heart murmur.
- Subcutaneous nodules: Painless, firm collections of collagen fibers over bones or tendons. They commonly appear on back of the wrist, outside elbow, and front of the knees.
- Erythema marginatum: A long-lasting reddish rash that begins on the trunk or arms as macules, which spread outward and clear in the middle to form rings, which continue to spread and coalesce with other rings, ultimately taking on a snake-like appearance. This rash typically spares the face and is made worse with heat.
- Sydenham's chorea (St. Vitus' dance): A characteristic series of rapid movements of the face and arms without purpose. This can occur very late in the disease for at least three months from onset of infection.

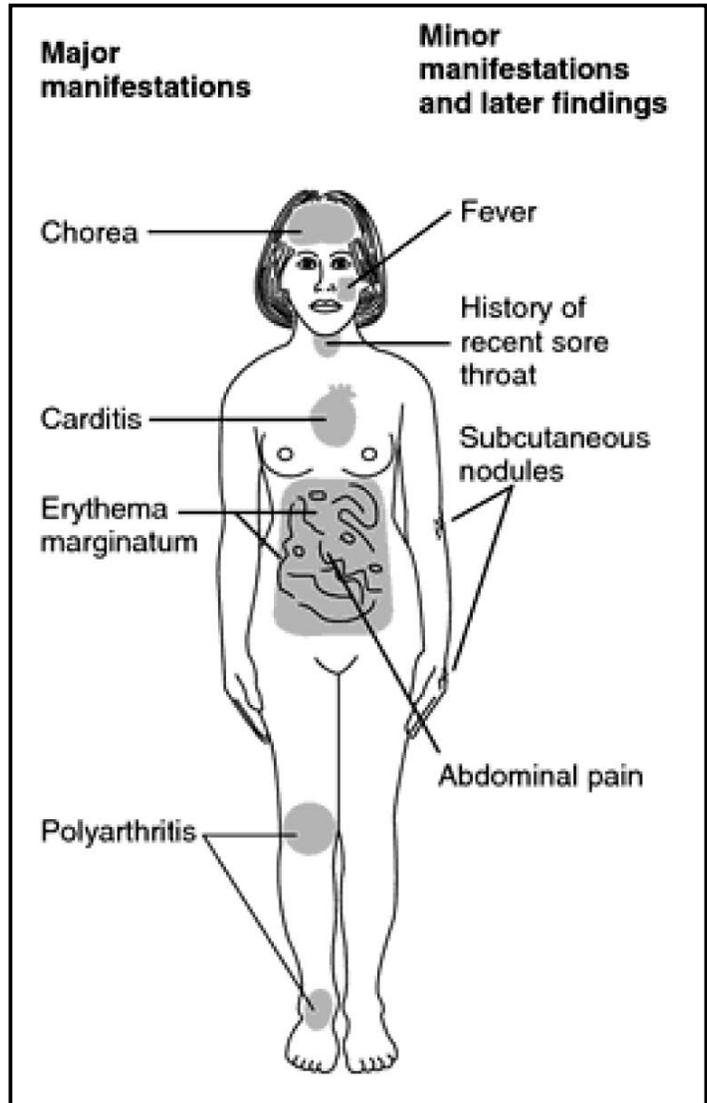
### Minor criteria

- Fever of 38.2–38.9 °C (100.8–102.0 °F)
- Arthralgia: Joint pain without swelling (cannot be included if polyarthritis is present as a major symptom)
- Raised ESR or C reactive protein
- Leukocytosis
- ECG showing features of heart block, such as a prolonged PR interval (cannot be included if carditis is present as a major symptom)
- Previous episode of rheumatic fever or inactive heart disease

### Prevention

To abide by the following principles of Asbab Sitta Zarooriya (Six Prerequisites of Healthy living):

1. Hawa (Air) – Fresh and pollution free air for breathing
2. Makool o Mashroob (Food & Drink)
  - Avoid tobacco, smoking, junk and smoked foods, cold and sour food items, preserved food, carbonated drinks, etc.
  - Avoid taking sweets at night.
3. Harakat o Sukoon Badani (Bodily Movement & Repose)
  - Avoid sedentary lifestyle.
  - Exercise for 30-45 minutes at least five days a week.
  - Promote oral hygiene and teeth cleaning to prevent throat infection.
4. Harakat o Sukoon Nafsani (Psychic Movement & Repose)
  - Avoid mental stress and anxiety
  - Avoid extreme emotions, e.g. anger, fear, sadness, etc.
  - Lead a spiritual peaceful life
5. Naum o Yaqza (Sleep and Wakefulness)
  - Six to eight hours sound sleep





6. Ihtibas o Istifragh (Retention and Evacuation)

- Avoid constipation
- Ensure proper evacuation, urination, perspiration and menstruation
- Avoid dehydration, and ensure retention of electrolytes and minerals

### Management

Early detection leads to better prognosis. Unani treatment may be used as an adjuvant therapy for the following purposes in RHD patients:

- To restore the healthy lifestyle.
- To enhance the immunity of the patient, e.g. Khameera Marwareed, Jawarish Jalinoos, Jawahar Mohra, etc.
- To cure sore throat, e.g. Sharbat Toot Siyah, Lauq Khayarshambar.
- To improve the quality of life of the patients- Hammam (Turkish Bath), Dalk (Massage), Hijama (Cupping), Inkebab (Inhalation) and Riyazat (Exercise), etc.

### Home Remedies

- In case of sore throat, 5 gm pulp of Khayarshambar boiled in milk.  
Dosage: Gargle 3 – 4 times a day.
- For joint pain, equal parts of Kalonji, Methi dana, Ajwain are powdered.  
Dosage: 3 gm OD in morning with water.



## ROLE OF YOGA IN THE MANAGEMENT OF NCDs

Yoga, being a science of consciousness, can play important role in the prevention, management and rehabilitation of diseases. The system of Yoga therapy is not symptom-based. It believes in treating the person as a whole. This holistic approach is aimed at restoring the abnormalities of body and mind physiology to normal, thereby restoring the health.

Yoga has preventive, promotive as well as curative potential. Yoga-based lifestyle confers so many advantages to the practitioner that beyond doubt it is one of the best ever designed lifestyles in the history of mankind. Scientific studies have started giving documented evidence to this belief of the practitioners. Since lifestyle-related diseases such as diabetes mellitus, cardio vascular diseases and hypertension are alarmingly on the rise in our modern society, Yoga-based lifestyle should be given special place in the prevention and management of these diseases. Today, Yoga has become popular because of its strengths in prevention and management of many lifestyle disorders including physiological and psychosomatic ones.

Yogic component has been incorporated along with integration of Unani Medicine in NPCDCS to enhance rapid and gentle healing of lifestyle diseases. This chapter intends to give a brief overview about yogic practices formulated by Yoga experts to orient one and all through Yoga instructors / volunteers for comprehensive health benefits of individuals and communities.

### Benefits of Yoga

- Increases – Feeling of wellness; Positive attitude; Energy levels; Memory attention; Concentration; Social skills; Increase Hemoglobin; Self acceptance; Flexibility; and Strength
- Reduces – Anxiety; Depression; Stress and Tension; Sugar; Cholesterol levels; Weight; Cell deterioration; Blood pressure; Arthritis; and Tension in muscles

### Common Yoga Practices for Physical Fitness

The widely practiced Yoga sadhanas are: Yama, Niyama, Asana, Pranayama, Pratyhara, Dharana, Dhyana, Samadhi, Bandhas, Shatkarmas, Yuktahara, Mantra-japa, Yukta-karma etc.

- a) **Asanas** – These are certain special patterns of postures that stabilize the mind and body. They aim at establishing proper rhythm in the neuromuscular tonic impulses and improving the general tone of the muscles.
- b) **Pranayama** –These are the practices in the control of respiratory impulses which form one of the main channels of the flow of autonomic nerve currents.
- c) **Bandhas and Mudras** - This consist of practices where in one tries to consciously control certain semi-voluntary and involuntary muscles in the body by influencing the activity of the autonomic nervous system. Bandhas and Mudras help to tone up the internal organs, decongest them and stimulate their healthy functioning.
- d) **Kriyas** – These are cleansing processes, usually classified into six divisions and therefore they are often called Shatkarmas or Shatkriyas. Each one of these consists of many subsections.
- e) **Meditation** –This is continuum of mental practice involving from initial withdraw of senses to the complete oblivion of the external environment. Literally, there are innumerable stages and practices, which could be included under this head.



## ANNEXURE 1

### Assessment of Mizaj (Temperament)

PARAMETERS (Ajnas-e-Ashra)	DAMVI (SANGUINE)	BALGHAMI (PHLEGMATIC)	SAFRAVI (BILIOUS)	SAUDAVI (MALENCHOLIC)
Complexion	Ruddy (Reddish/ Wheatish Brown)	Chalky (Whitish)	Pale (Yellowish)	Purple (Blackish)
Built	Muscular & Broad	Fatty & Broad	Muscular & Thin	Skeleton
Touch	Hot & Soft	Cold & Soft	Hot & Dry	Cold & Dry
Hair	Black, Lustrous Thick & Rapid Growth	Black, Thin & Slow Growth	Brown, Thin & Rapid Growth	Brown, Thin & Slow Growth
Movement	Active	Dull	Hyperactive	Less Active
Diet (Most Liked)	Cold & Dry	Hot & Dry	Cold & Moist	Hot & Moist
Weather (Most Suitable)	Spring	Summer	Winter	Autumn
Sleep	Normal (6-8 Hrs.)	In Excess	Inadequate	Insomnia
Pulse	Normal in Rate (70-80/ Min) Large in Volume	Slow in Rate (60-70/ min) Normal in Volume	Rapid in Rate (80-100/ Min) Normal in Volume	Slow in Rate (60-70/ Min) Less in Volume
Emotional	Normal	Calm & Quiet	Angry	Nervous

(Maximum number of ticks in a particular column denotes the dominant temperament)

TEMPERAMENT: \_\_\_\_\_

## ANNEXURE 2

### Measuring Blood Pressure

- Healthcare professionals taking blood pressure measurements need adequate initial training.
- Healthcare providers must ensure that devices for measuring blood pressure are properly validated, maintained and regularly recalibrated according to manufacturers' instructions.
- Where possible, standardize the environment when measuring blood pressure; i.e. provide a relaxed temperate setting, with the patient quiet and seated, with their arm outstretched and supported.
- If the first measurement exceeds 140/90 mmHg, take a second confirmatory reading at the end of the consultation.
- Measure blood pressure on both of the patient's arms with the higher value identifying the reference arm for future measurement.
- In patients with symptoms of postural hypotension (falls or postural dizziness) measure blood pressure while patient is standing (patient should be standing for more than one minute). In patients with symptoms or documented postural hypotension (fall in systolic BP when standing of 20 mmHg or more) consider referral to a specialist.
- Refer immediately patients with accelerated (malignant) hypertension (BP more than 180/110 mmHg with signs of papilloedema and/or retinal haemorrhage) or suspected phaeochromocytoma (possible signs include labile or postural hypotension, headache, palpitations, pallor and diaphoresis).
- To identify hypertension (persistent raised blood pressure, above 140/90 mmHg), ask the patient to return for at least two subsequent clinics where blood pressure is assessed from two readings under the best conditions available.
- Measurements should normally be made at monthly intervals. However, patients with more severe hypertension should be re-evaluated more urgently.

#### Procedure for Measuring Blood Pressure

- Standardize the environment as much as possible; i.e. relaxed temperate setting, with the patient seated, arm out-stretched, in line with mid-sternum, and supported.
- Correctly wrap a cuff containing an appropriately sized bladder around the upper arm and connect to a manometer. Cuffs should be marked to indicate the range of permissible arm circumferences; these marks should be easily seen when the cuff is being applied to an arm.
- Palpate the brachial pulse in the antecubital fossa of that arm.
- Rapidly inflate the cuff to 20 mmHg above the point where the brachial pulse disappears.
- Deflate the cuff and note the pressure at which the pulse re-appears: the approximate systolic pressure.
- Re-inflate the cuff to 20 mmHg above the point at which the brachial pulse disappears.
- Using one hand, place the stethoscope over the brachial artery ensuring complete skin contact with no clothing in between.



- Slowly deflate the cuff at 2–3 mmHg per second listening for Korotkoff sounds.
  - **Phase i:** The first appearance of faint repetitive clear tapping sounds gradually increasing in intensity and lasting for at least two consecutive beats: note the systolic pressure.
  - **Phase ii:** A brief period may follow when the sounds soften or ‘swish’.
  - **Auscultatory gap:** In some patients, the sounds may disappear altogether.
  - **Phase iii:** The return of sharper sounds becoming crisper for a short time.
  - **Phase iv:** The distinct, abrupt muffling of sounds, in quality
  - **Phase v:** The point at which all sounds disappear is the diastolic pressure.
- When the sounds have disappeared, quickly deflate if repeating the measurement.
- When possible, take readings at the beginning and end of consultations.



## ANNEXURE 3

### Measuring Waist Circumference

- Record the measurement of the circumference at a level midway between the lower rib margin and iliac crest in cms to the nearest 0.0 or 0.5 cm. Example: If the exact measurement is 87.7 cm, code the item 87.5cm.
- The circumference should preferably be measured on subjects while they are semi clothed, i.e. waist uncovered with the subjects wearing underclothes only. If it is not possible to follow this procedure, the alternative is to measure the circumference on subjects without heavy outer garments with all tight clothing, including the belt loosened and with the pockets emptied.
- Participants should stand with their feet fairly close together (about 12- 15 cm) with their weight equally distributed on each leg. Participants should be asked to breathe normally and at the time of the reading of the measurement asked to breathe out gently. This will prevent subjects from contracting their muscles or from holding their breath.
- A plastic metric tape should be used. The tape should be held firmly and its horizontal position should be ensured. It is recommended that the observer sits beside the participant while the readings are taken. The tape should be loose enough to allow the recorder to place one finger between the tape and the subject's body. The importance of the tightness of the tape should be emphasized in training.
- The length should be rechecked against a standard measure at least once a month and replaced as appropriate.
- The two sides of the tape should be differently coloured or have a scale only on one side. If the tape is uniformly coloured, with readings on both sides, one side should be blanked out.



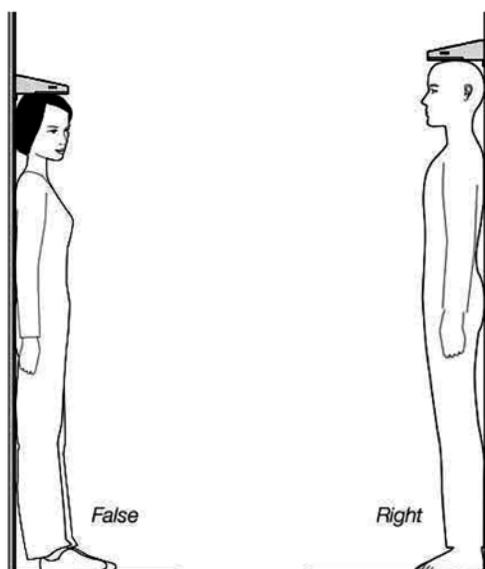
## ANNEXURE 4

### Measuring Body Mass Index (BMI)

#### Height and weight measurement

##### Measuring height:

- Height is measured in conjunction with the weight measurement. It may precede or follow this procedure.
- The height rule must be taped vertically to a hard flat surface, with no moulding (skirting board), with the base at floor level. A carpenter's level should be used to ensure vertical placement of the rule.
- The floor surface must be hard (tile, cement, etc.) and must not be carpeted or be covered with other soft materials. If only a carpeted surface is available, a wooden platform should be laid down to serve as a floor.
- The subject is asked to remove his/her shoes/footwear and heavy outer garments.
- To measure height, the participant should stand with his/her back to the height rule. The back of the head, back, buttocks, calves and heels should be touching the upright, feet together. The top of the external auditory meatus (ear canal) should be level with the inferior margin of the bony orbit (cheek bone). The position is aided by asking participant to hold the head in a position where he/she can look straight at a spot, head high, on the opposite wall.
- Place the triangle on the height rule and slide down to the head so that the hair (if present) is pressed flat.
- Record information on survey form to the nearest centimetre. For example, if 187.4, record as 187; if 187.5, record as 188; if 187.6, record as 188.
- Self-reported heights are not acceptable. Only persons who are immobile (e.g. amputees) may self-report their heights.



### Measuring weight:

- The floor surface on which the scale rests must be hard and should not be carpeted or covered with other soft material.
- The scale should be balanced with both weights at zero and the balance bar aligned.
- The subject should have removed his/her shoes/footwear and heavy outer garments (jacket, coat, sweater etc.).
- The subject should stand in the centre of the platform as standing off-centre may affect measurement.
- The weights are moved until the beam balances (the arrows are aligned).
- The weight is read and recorded on the form. Record weights to the nearest 200 g.
- Self-reported weights are not acceptable in mobile persons. Only participants who are immobile (e.g. amputees) may self-report their weights. Participants must not read the scales themselves.



NOTE: Check for the zero level every day before starting measurement every day. Check the scales using standard weights at least monthly and whenever the scales are installed at a new location. If the error is more than 1 kg the measurements taken since the scales were last checked should not be used. Check for the zero level every day before starting measurement and immediately afterwards. The Body Mass Index is calculated by dividing the body weight expressed in kilograms by the square of height expressed in metres.

$$\text{BMI} = \text{Weight (Kg)} / \text{Height}^2 \text{ (Metre)}$$



## ANNEXURE 5

### Normal values and their cut-offs of Anthropometric and Biochemical parameters relevant to NCDs

Cut-off values for various anthropometric and biochemical parameters	
Parameters	Cut Points
Waist Circumference (Normal)	Less than or equal to 90cm in men Less than or equal to 80cm in women
Body Mass Index	
Normal	18.0 to 22.9 kg/m <sup>2</sup>
Overweight	23.0 to 24.9 kg/m <sup>2</sup>
Obesity	More than or equal to 25 kg/m <sup>2</sup>
Blood Pressure	
Systolic	Less than 140mmHg
Diastolic	Less than 90mmHg
Blood Glucose Level	
Optimal	Less than 110mg/dl
Impaired Fasting Glucose	Between 110-126mg/dl
Diabetes	Less than 126mg/dl
Fasting	Less than 200mg/dl
2-hour post glucose load	
HbA1C	Less than 6%
Total Cholesterol	
Optimal	Less than 160 especially in presence of other risk factors.
Desirable	
Borderline	Less than 200
High	200-239 More than 240
Triglyceride	
Normal	Less than 150
Borderline High	150-199
High	200-499
Very High	More than 500

Parameters	Cut Points
<b>LDL-Cholesterol</b>	
Optimal	Less than 100
Near Optimal	100-129
Borderline High	130-159
High	160-189
Very High	More than 190
<b>HDL-Cholesterol</b>	Less than 40mg/dl in men Less than 50mg/dl in women
<b>Complete Blood Count</b>	
Hemoglobin	13.5-17.5 g/dl(Male) 12.0-15.5 g/dl(female)
Red Blood Cell count	4.32-5.72 tc/L(Male) 3.90-5.03 tc/L(female)
White Blood Cell count	3.5-10.5 bc/L 150-450 bc/L
Platelet count	
<b>Kidney Function Test</b>	
S.creatinine	0.7-1.4 mg/dl
Blood Urea	20-40 mg/dl
Total Protein	6.0-8.0 g/dl
Albumin	3.5-5.0 g/dl
Uric acid	2.5-7.0 mg/dl (female) 3.0-8.5 mg/dl (male)
Phosphate	2.5-4.5 mg/dl
Calcium	8.5-10.5 mg/dl
Bicarbonate	20-30 mEq/L
Potassium	3.5-5.5 mEq/L
Sodium	135-145 mEq/L
<b>Liver Function Test</b>	7 to 55 units per liter (U/L)
ALT	8 to 48 U/L
AST	45 to 115 U/L
ALP	3.5 to 5.0 g/dL
Albumin	6.3 to 7.9 g/dL
Total protein	0.1 to 1.2 mg/dL
Bilirubin	

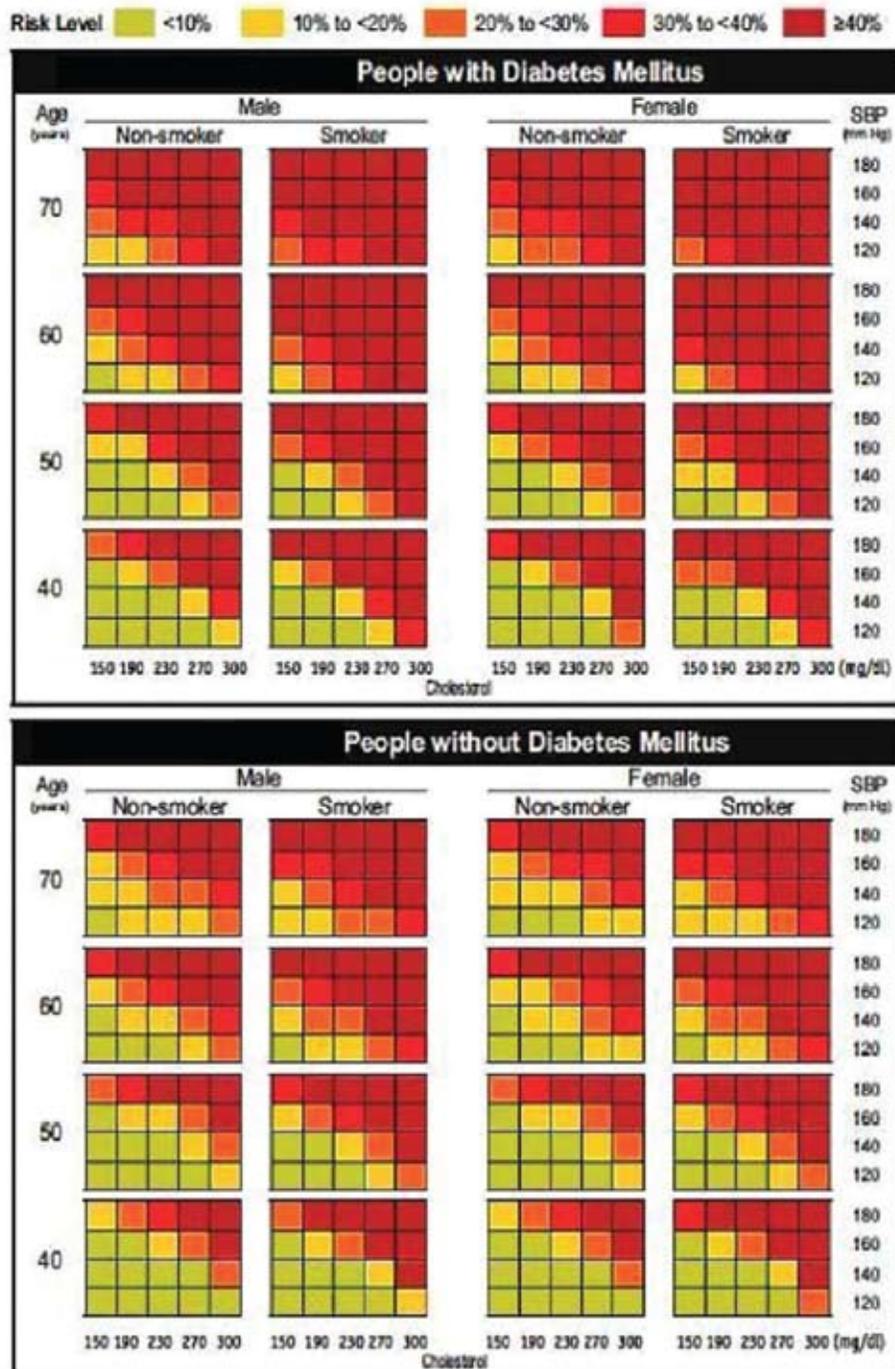


ANNEXURE 6

World Health Organization (WHO) / International Society of Hypertension (ISH)  
 Risk Prediction Charts

10 year risk of a fatal or non fatal cardiovascular event by gender, age, and systolic blood pressure, total blood cholesterol, smoking status and presence or absence of diabetes mellitus.

WHO/ ISH risk prediction chart applicable for Indian population



## Breast Self Examination

### Best time to do:

- Once a month.
- 10 days after your menstrual period.
- If not menstruating, pick a certain day-such as the first day of each month.
- If taking hormones then do it 1-2 days after withdrawal bleeding.

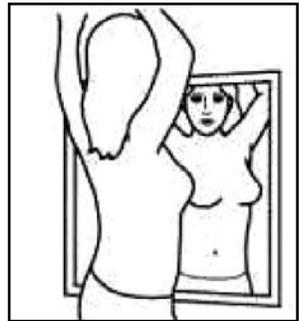
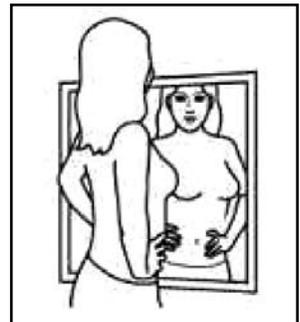
### Five Steps of Breast Self-Examination (BSE):

#### Step 1:

- Stand in front of the mirror with your shoulders straight and your arms on your hips and look at your breasts for:
  - their usual size, shape and color
  - whether they are evenly shaped without visible distortion or swelling

Consult the doctor if there is:

- dimpling, puckering, or bulging of the skin
- changed position or an inverted nipple (pushed inward instead of sticking out)
- redness, rash, or swelling of the breasts.



#### Step 2:

- Now, raise your arms and look for the same changes.
- Look for any dimpling of skin or in-drawing nipple.

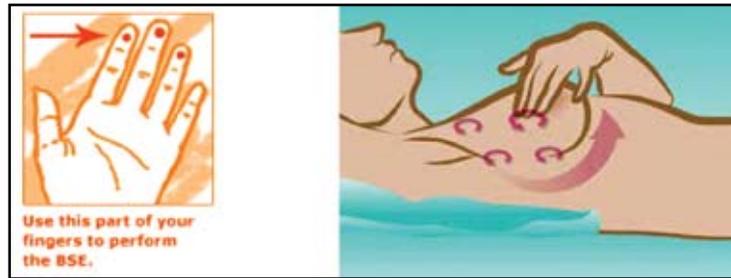
#### Step 3:

- While you're at the mirror, gently squeeze each nipple between your finger and thumb.
- Consult the doctor if there is presence of milky/yellow fluid or bloody nipple discharge.



#### Step 4:

- Lie down and use your right hand to feel your left breast and then your left hand to feel your right breast.
- Use a firm, smooth touch with the first few fingers of your hand, keeping the fingers flat and together.



- Cover the entire breast from top to bottom, side to side: from your collarbone to the top of your abdomen and from your armpit to your cleavage.
- Be sure to feel all the breast tissue
- Follow a pattern to be sure that you cover the whole breast. Begin at the nipple, moving in larger and larger circles until you reach the outer edge of the breast. Also move your fingers up and down vertically, in rows.

Begin examining each area just beneath your skin with a very soft touch, and then increase pressure so that you can feel the deeper tissue, down to your ribcage using fingers only.

#### Step 5:

- Feel your breasts while you are standing or sitting.
- It is easier to feel the breasts when their skin is wet and slippery (like while taking bath).
- Cover your entire breast, using the same hand movements described in Step 4.



## ANNEXURE 8

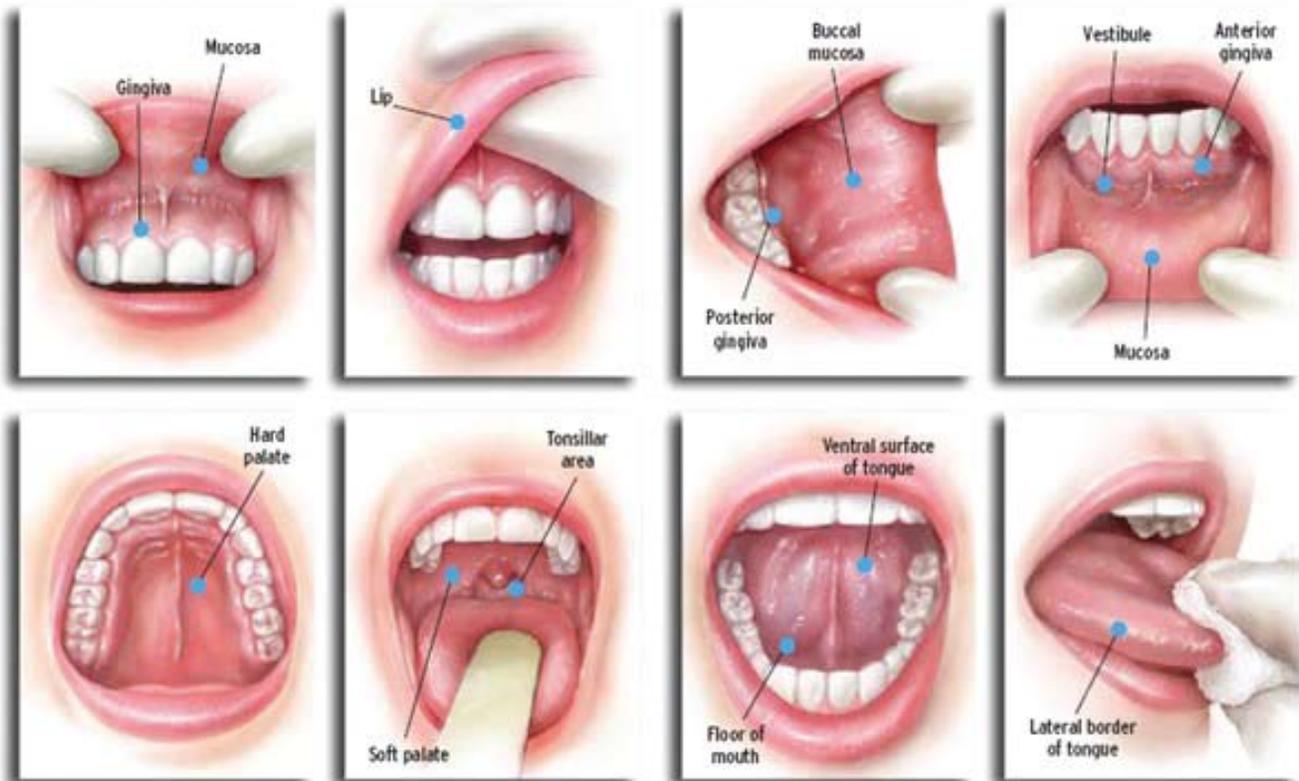
### Oral Cavity Self Examination

#### When to do Oral Self-Examination (OSE)

- All habitual tobacco users should do it once a month.

#### How to do it:

- Rinse the mouth with water and stand before a mirror in adequate light.
- Look in the mirror for any abnormal white or red patch, ulcer or roughened area, granular area or swelling in the mouth.
- If any such area is seen, the suspicious area should be felt with the fingers. (Normal oral mucosal is soft and pink.)
- Consult a doctor if any abnormal area is found.





## ANNEXURE 9

### General Guidelines for Yoga Practice

A Yoga practitioner should follow the guidelines given below while performing Yogic practices:

#### Before the Practice

- Saucha means cleanliness – an important prerequisite for yogic practice. It includes cleanliness of surroundings, body and mind.
- Yogic practice should be performed in a calm and quiet atmosphere with a relaxed body and mind.
- Yogic practice should be done on an empty stomach or light stomach. Consume small amount of honey in lukewarm water if you feel weak.
- Bladder and bowels should be empty before starting yogic practice.
- A mattress, yoga mat, durrie or folded blanket should be used for the practice.
- Light and comfortable cotton clothes are preferred to facilitate easy movement of the body.
- Yoga should not be performed in state of exhaustion, illness, in a hurry or in acute stress conditions.
- In case of chronic disease/ pain/cardiac problem, a physician or a Yoga therapist should be consulted prior to performing yogic practice.
- Yoga experts should be consulted before doing yogic practices during pregnancy and menstruation.

#### During the Practice

- Practice sessions should start with a prayer or invocation as it creates a conducive environment to relax the mind.
- Yogic practices shall be performed slowly, in a relaxed manner, with awareness of the body and breath.
- Do not hold the breath unless it is specially mentioned to do so during the practice.
- Breathing should be always through the nostrils unless instructed otherwise.
- Do not hold body tightly, or jerk the body at any point of time.
- Perform the practices according to your own capacity.
- It takes some time to get good results, so persistent and regular practice is very essential.
- There are contra-indications/ limitations for each yoga practice and such contra-indications should always be kept in mind.
- Yoga session should end with meditation/ deep silence/ Shanti path.

#### After Practice

- Bath maybe taken only after 20-30 minutes of practice.
- Food maybe consumed only after 20-30 minutes

## Yogasanas

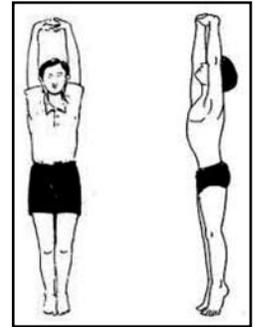
### I. Standing Postures

#### Tadasana (Palm tree posture)

Tada means palm tree or mountain. This asana teaches one to attain stability and firmness and forms the base for all the standing asanas.

#### Technique

- Stand with feet 3 inches apart.
- Interlock the fingers, and turn the wrist outwards. Now inhale, raise the arms up and bring them in line with the shoulders.
- Raise the heels off the floor and balance on the toes. Stay in this position for 10-15 seconds.
- Exhale, bring the heels down.
- Release the interlock of the fingers and bring the arms down parallel to the trunk, and come back to standing posture.



#### Benefits

- This asana brings stability in the body, helps to clear up congestion of the spinal nerves and corrects faulty posture.
- Helps to increase height up to a certain age.

#### Caution

- Avoid lifting the toes in case of acute cardiac problems, varicose veins and vertigo.

#### Vrksasana (Tree posture)

Vrksa means tree. The final position of this asana resembles the shape of a tree, hence the name.

#### Technique

- Stand with feet 2 inches apart.
- Focus on a point in front.
- Exhale, bend the right leg and place the foot on the inside of the left thigh. The heel should be touching the perineum.
- Inhale and extend the arms up and join the palms.
- Stay in the position for 10 to 30 seconds and breath normally.
- Exhale and bring the arms and right foot down.
- Relax and repeat the asana by bending the left leg.





### Benefits

- Improves neuro-muscular coordination, balance, endurance and alertness.
- It tones up the leg muscles and rejuvenates the ligaments also.

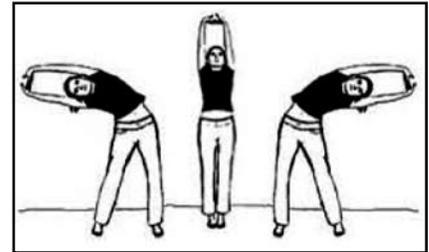
### Caution

- Please avoid this practice in case of arthritis, vertigo and obesity.

### Urdhva Hastottanasana (Up stretched arms posture)

#### Technique

- Stand with both the legs joined together.
- Raise both hands straight above the head.
- Interlock the fingers of both hands and reverse them.
- Now stretch both hands upward with both the palms facing the sky.
- Gradually bend the waist and hands to right side.
- Hold the posture for few seconds then repeat the action with bending to left side.
- Do it 5 times in the beginning.
- Exhale while bending and inhale while coming back.



### Benefits

- Helps to reduce waist circumference, constipation and strengthens the rib cage.

#### Note:

This practice may be gradually increased according to the need.

### Kati Chakrasana (Standing spinal twist posture)

The name of this yoga posture Kati chakrasana, literally means rotation of the waist. It gives a nice stretch to the waist and helps in making it more flexible and supple.

#### Technique

- Stand with feet at a distance of 1 – 1½ feet.
- Keep both hands in front of chest at the level of shoulders height and rotate the waist gradually towards right side. In this position right hand will be stretched straight while the left hand will be bent at elbow. Both hands will be at the same distance as in shoulders.
- After maintaining this stage for a few seconds repeat the same in other direction.
- Keep in mind that heel and toes become firmly established on the ground.
- Breath in while you turn & breathe out while coming back.
- Perform normal breathing while maintaining the posture.
- Practice this posture 10 to 15 times.

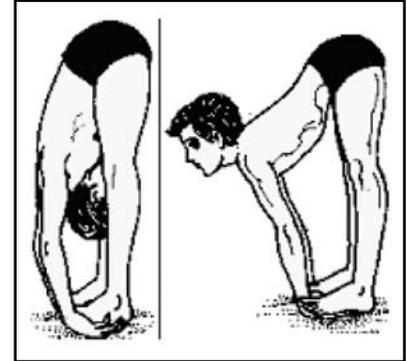


### Pada-Hastasna (Hands to feet posture)

Pada means feet, hasta means hands. Therefore, PadaHastasana means taking the palms down towards the feet. This is also referred as Uttanasana.

#### Technique

- Stand straight with feet 2 inches apart.
- Inhale slowly and raise the arms up.
- Stretch up the body from the waist.
- Exhale and bend forward until the trunk is parallel to the ground and entire palm rests on the ground.
- Maintain this final posture for 10-30 seconds.
- Those who are having stiff back should bend according to their capacity.
- Now inhale, come up slowly to the vertical position and stretch the arms above the head.
- Exhale and slowly return to the starting position in reverse order.
- Relax in Tadasana.



#### Benefits

- Makes the spine flexible, improves digestion, and prevents constipation and menstrual problems.

#### Caution

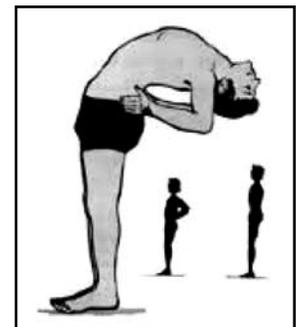
- Please avoid this practice in case of cardiac or back problems, abdominal inflammation, hernia and ulcers, high myopia, vertigo and during pregnancy.
- Those with vertebral and disc disorders should also avoid this practice.

### Ardha Chakrasana (Half wheel posture)

Ardha means half. Chakra means wheel. In this posture, as the body takes the shape of a half wheel, hence it is called Ardha Chakrasana.

#### Technique

- Support the back at the waist with all the fingers together pointing forward or downward.
- Drop the head backwards and stretching the neck muscles. As you inhale, bend backwards from the lumbar region; exhale and relax.
- Stay here for 10-30 seconds with normal breathing.
- Inhale and slowly come up.



#### Benefits

- Ardha Chakrasana makes the spine flexible and strengthens the spinal nerves.
- Helps in cervical spondylitis.



### Caution

- Avoid this posture in case of vertigo or a tendency to giddiness.
- Hypertensive patients shall bend with care.

### Trikonasana (Triangle posture)

Trikona means triangle. Tri means three and kona is an angle. As the asana resembles three arms of triangle made by the trunk and limbs, it has been named Trikonasana.

### Technique

- Stand with your feet comfortably apart.
- Slowly raise both the arms sideways till they are horizontal.
- Exhale, slowly bend to the right side and place the right hand just behind the right foot.
- The left arm is straight up, in line with the right arm.
- Turn the left palm forward.
- Turn your head and gaze at the tip of the left middle finger.
- Remain in the posture for 10-30 seconds with normal breathing.
- As you inhale slowly come up.
- Repeat for the left side.



### Benefits

- Prevents flat foot.
- Strengthens calf, thigh and waist muscles.
- Makes the spine flexible, improves lungs capacity.

### Caution

- Avoid this posture in case of slipped disc, sciatica, and after undergoing abdominal surgery.
- Do not do beyond limits and overdo the lateral stretch.
- If one cannot touch the feet, one can reach for the knees instead.

## II. Sitting Postures

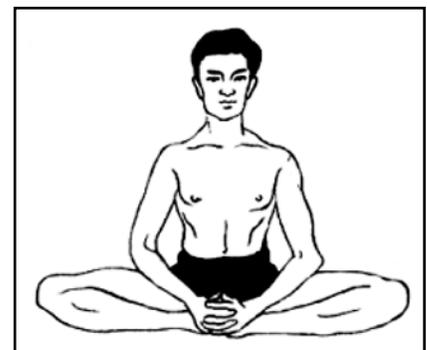
### Bhadrasana (Firm/ Auspicious posture)

Bhadra means firm or auspicious.

**Sthiti:** Long sitting posture (Visramasana)

### Technique

- Sit erect with the legs stretched out straight in the front.
- Keep the hands beside the hip. This is Dandasana.
- Now put the soles of your feet together.



- Exhale and clasp your hands together over your toes. Pull your heels as close as possible up to perineum region.
- If your thighs are not touching or are not close to the floor, place a soft cushion underneath the knees for support. This is the final position.
- Stay here for some time.

### Benefits

- Keeps the body firm and stabilize the mind.
- Keeps the knees and hip joints healthy.
- Helps to relieve knees pain.
- Acts on the abdominal organs and release any tension in the abdomen.
- Benefits women by relieving abdominal pain often experienced during menstruation.

### Caution

Avoid this practice in case of severe arthritis and sciatica.

### Ardha Ustrasana (Half camel posture)

**Sthiti:** Long sitting posture (Visramasana)

Ustra means camel. The final version of this asana resembles the hump of a camel. In this version, only the first stage (half) of the asana is being practiced.

### Technique

- Sit in Visramasana.
- Come to Dandasana.
- Fold your legs and sit on your heels.
- Keep the thighs close and big toes touching.
- Place the hands on the knees.
- The head and back should be straight.
- This is Vajrasana.
- Stand on your knees.
- Place the hands on the waist with finger pointing downward.
- Keep the elbows and shoulders parallel.
- Bend the head back and stretch the neck muscles; inhale and bend the trunk backwards as much as possible. As you exhale, relax.
- Keep the thighs perpendicular to the ground.
- Remain in the posture for 10-30 seconds with normal breathing.
- Return with inhalation; sit in Vajrasana.
- Relax in Visramasana.





## Note

If you can reach the heels, you can place your hands on them and bend backwards. This is called Ustrasana.

## Benefits

- Relieves constipation and back pain.
- Increase blood circulation to the head and cardiac region.

## Caution

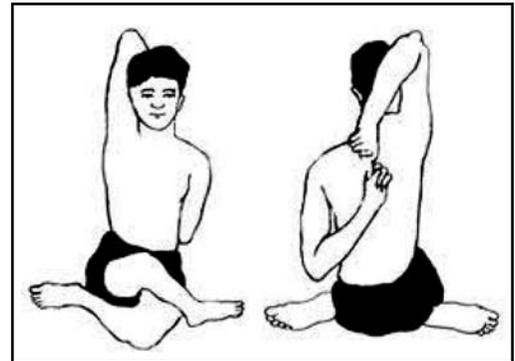
- In case of hernia and abdominal injuries, arthritis, vertigo and pregnancy, please avoid doing this asana.

## Gomukhasana (Cow face posture)

The name comes from the Sanskrit word Go meaning Cow, Mukha meaning face or mouth and Asana meaning posture or seat.

## Technique

- Sit on the ground.
- Bend the left heel and sit over it.
- Place the right leg over the left tucking the heel close to the left buttock. Sit as straight as possible.
- Raise the left arm and bend it from the elbow, turning it back and slightly downward.
- Turn the right arm behind and bend it from the elbow, trying to catch the fingers of the left hand.
- Try to stretch the left elbow as high as possible.
- Hold the position for few seconds.
- Now switch arms and legs and repeat.



## Benefits

- Helps to make the back flexible.
- Helps to remove stiff shoulders and back pain.
- Helps to stimulate the kidneys and can help those suffering from diabetes.
- Helps to develop the chest.
- Helps in sexual ailments.

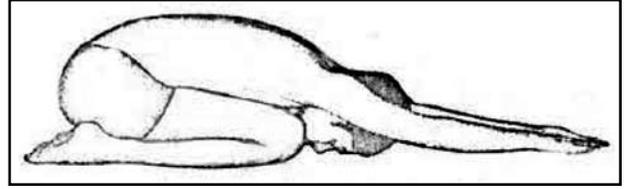
## Sasankasana (Hare posture)

Sasank means hare.

Sthiti: Vajrasana

### Technique

- Sit in Vajrasana
- Spread both the knees wide apart, keep the big toes touching.
- Keep the palms between the knees.
- Exhale and slowly stretch them full length.
- Bend forward and place the chin on the ground.
- Keep the arms parallel.
- Look in front and maintain the posture.
- Inhale and come up.
- Exhale and comeback to Vajrasana.
- Stretch your legs back to Visramasan.



### Benefits

- It helps to reduce stress, anger etc.
- It tones up reproductive organs, relieves constipation, improves digestion and relieves back pain.

### Caution

- Please avoid this posture in case of acute backache.
- Patients with osteoarthritis of the knees should exercise with caution or avoid Vajrasana.

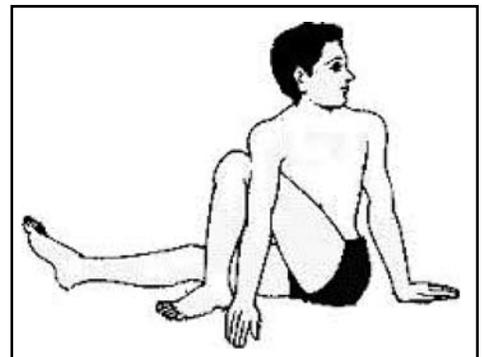
### Vakrasana (Spinal twist posture)

Vakra means twisted. In this asana, the spine is twisted which has a rejuvenating effect on its functioning.

Sthiti: Dandasana

### Technique

- Bend the right leg, and place the right foot beside the left knee.
- As you exhale, twist the body to the right.
- Bring the left arm around the right knee and clasp the right big toe or place the palm beside right foot.
- Take the right arm back and keep the palm on the ground with the back straight.
- Remain in the posture for 10-30 seconds with normal breathing and relax.
- Take out your hands with exhalation and relax.
- Repeat the same on the other side.





### Benefits

- Increases flexibility of the spine.
- Helps to overcome constipation, dyspepsia.
- Stimulates pancreas and helps in the management of diabetes.

### Caution

- Please avoid this posture in case of severe back pain, vertebral and disc disorders, after abdominal surgery and during menstruation.

### III. Prone Postures

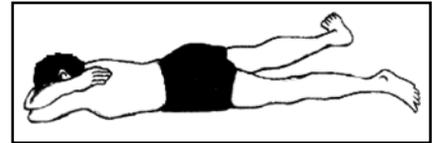
#### Makarasana (Crocodile posture)

In Sanskrit, Makara means crocodile. In this asana, the body resembles a crocodile.

**Sthiti:** Prone relaxation posture

#### Technique

- Lie down on your stomach with the feet wide apart, feet pointing outward.
- Bend both the arms and place the right hand on the left hand.
- Place the forehead on your hands.
- Keep the eyes closed. This is Makarasana.
- This asana is practiced for relaxation in all prone postures.



### Benefits

- Promotes relaxation of the lower back.
- Helps in recovery of back problems.
- Indicated for all orthopaedic ailments.
- Indicated to counter stress and anxiety.

### Caution

Avoid this practice in case of low blood pressure, severe cardiac problems and pregnancy.

#### Bhujangasana (Cobra posture)

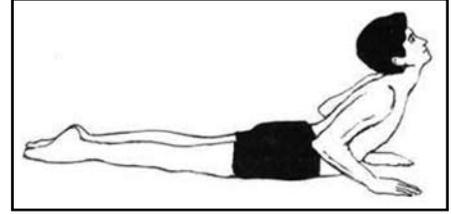
Bhujanga means snake or cobra. In this asana, the body is raised like hood of a snake.

**Sthiti:** Prone posture of Makarasana

#### Technique

- Lie down on your stomach, rest your head on your hands and relax the body.
- Now join your legs and stretch your arms.

- Keep the forehead on the ground.
- Now place your hands just beside the body; keep palms and elbows on the ground.
- As you inhale slowly, lift the chin and chest come up to navel region.
- Stay there comfortably.
- This is called Sarala Bhujangasana.
- Now come back and place your forehead on the ground.
- Keep your palms besides the chest where your elbows were and raise the elbows.
- Inhale; slowly lift the chin and chest up to navel region. This is Bhujangasana.
- Exhale, rest your forehead on the ground and place your palms and rest your head on the palms and spread your legs and relax.



#### Note

Keep the legs firm so that no load or strain is felt on the lumbar spine.

#### Benefits

- This asana is best for stress management.
- It reduces abdominal fat and alleviates constipation.
- It also helps to remove back ache and bronchial problems.

#### Caution

- Those who have undergone abdominal surgery should avoid this asana for 2-3 months.
- Those who suffer from hernia, ulcers should not practice this asana.

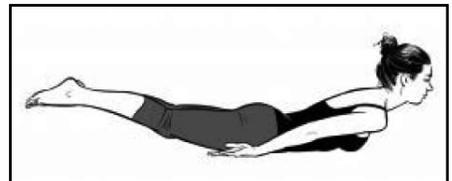
#### Salabhasana (Locust posture)

Salaba means a locust.

Sthiti: Prone posture of Makarasana

#### Technique

- Lie down on your stomach in Makarasana.
- Rest the chin on the floor; keep both hands beside the body; palms facing upwards.
- Inhale, raise the legs off the floor as much as you can without bending the knees.
- Extend the arms and legs well to ease the lift of the body off the floor.
- Stay in this position for 10-20 seconds breathing normally.
- Exhale, bring the legs down towards the floor.
- Rest for a few seconds in Makarasana.





## Note

Pull up the knee caps and squeeze the buttocks to improve the position. This asana is more beneficial when performed after Bhujangasana.

## Benefits

- Helps in sciatica and lower backache.
- Tones the hip muscles and those in the kidney region.
- Reduces fat on the thighs and buttocks; good in weight management.
- Helps the abdominal organs aiding digestion.

## Caution

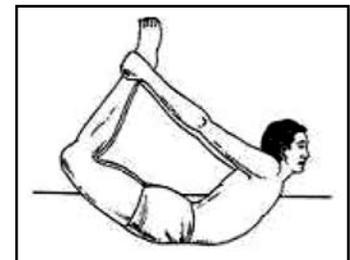
- Cardiac patients should avoid this posture, please proceed cautiously in case of severe lower back pain.
- People with high blood pressure, peptic ulcers and hernia should also avoid this posture.

## Dhanurasana (Bow posture)

“Dhanur” means bow in Sanskrit. Dhanurasana or the yogic bow pose, is so called as it resembles a bow when it is performed. In Dhanurasana, body and the legs take the shape of the bow, while the hands look like string.

## Technique

- Lie on your abdomen.
- Catch hold of your ankles with your hands keeping the arms straight.
- Raise your head as high as you can and at the same time pull the ankles up and back. In this posture only a small part of navel region remains touching the ground. This is called Bow Pose.
- Repeat it 3 to 4 times.
- Exhale while raising & inhale while coming back.



## Benefits

- It gives a good stretch to the shoulders, hands, thorax, thighs and the legs.
- It massages the abdomen and internal organs.
- It improves digestion.
- It massages the pancreas and is good for diabetic patients.
- It expands the chest and corrects stooping of the back and shoulders.

## IV. Supine Postures

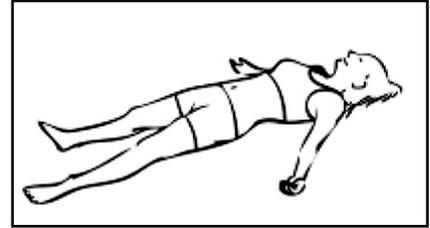
### Savasana (Dead body posture)

Sava means dead body. The final position in this asana resembles a dead body.

**Sthiti:** Supine relaxation posture.

### Technique

- Lie down on your back with arms and legs comfortably apart.
- Palms facing upward; eyes closed.
- Relax the whole body consciously.
- Become aware of natural breath and allow it to become rhythmic and slow.
- Remain in the position till you feel refreshed and relaxed.



### Benefits

- Helps to relieve all kinds of tensions and gives rest to both body and mind.
- Relaxes the whole psycho-physiological system.
- The mind, which is constantly attracted to the outer world, takes a U-turn and moves inwards, thus gradually getting absorbed; as the mind turns quiet and absorbed, the practitioner remains undisturbed by the external environment.

It is found very beneficial in the management of stress and its consequences.

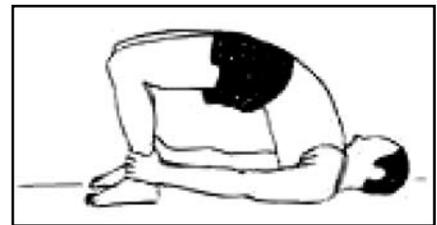
### Setubandhasana (Bridge posture)

Setubandha means formation of bridge. In this posture, the body is positioned like a bridge, hence the name. This is also called as Catuspadasana.

**Sthiti:** Supine lying; Savasana.

### Technique

- Bend both the legs at the knees and bring the heels near the buttocks.
- Hold both the ankles firmly; keep the knees and feet in one straight line.
- Inhale, slowly raise your buttocks and trunk up as much you can to form bridge.
- Remain in this position for 10-30 seconds, with normal breathing.
- Exhale, slowly return to the original position and relax in Savasana.



### Note

- In the final position, the shoulders and head remain in contact with the floor.
- If required, in the final position, you can support your body at the waist with your hands.

### Benefits

- Relieves depression and anxiety. Strengthens lower back muscles.
- Stretches abdominal organs, improves digestion and helps to relieve constipation.

### Caution

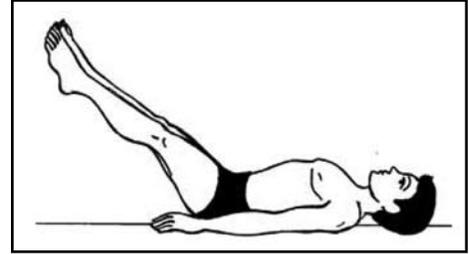
- People suffering from ulcers and hernia, and women in advanced stages of pregnancy should not practice this asana.

### Uttanapadasana (Extended stretch foot posture)

The name comes from the Sanskrit word *uttana* meaning intense stretch or straight or stretched and *pada* meaning leg or foot and *asana* meaning posture or seat.

### Technique

- Adopt spine lying position with legs together, hands by the side of the body.
- Make the palms rest on the ground.
- While inhaling slowly raise both the legs without bending the knee to 60° angle.
- Maintain this position with normal breathing.
- Exhale and slowly bring down both the legs and place them on the ground.



### Benefits

- Helps to strengthen muscles of abdomen, hips and back.
- Helps to reduce constipation.
- Helpful for weight loss/ obesity and slimming.

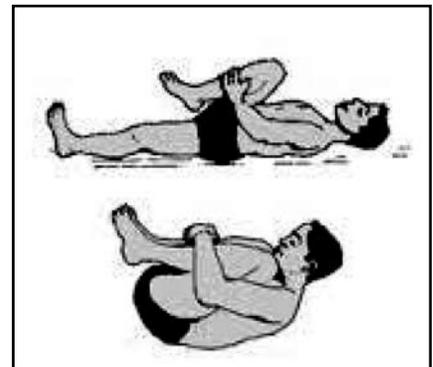
### Pavanamuktasana (Wind releasing posture)

Pavan means wind and mukta means to release or to make free. As the name suggests, this asana is useful in removing wind or flatulence from the stomach and intestines.

**Sthiti:** Savasana

### Technique

- Lie down flat on the back.
- Bend both the knees and bring the thighs to the chest.
- Interlock the fingers and clasp the shin below knees.
- Exhale; rise the head till your chin touches the knees and relax.
- This is Pavanamuktasana.
- Bring the head back to the ground.
- While exhaling, lower the legs to the floor.
- Rest in Savasana.



**Note**

- Synchronise your breathing with the leg movement.

- While touching the knee with the nose/ forehead, you should be able to feel the lumbar region stretch; keep the eyes closed and focus your attention on the lumbar region.

### Benefits

- Removes constipation; gives relief from flatulence, decreases the bloating sensation in the abdomen and aids digestion.
- Offers deep internal pressure, massage and stretching of the highly complicated network of muscles, ligaments and tendons in the pelvis and waist region.
- It tones up the back muscles and spinal nerves.

### Caution

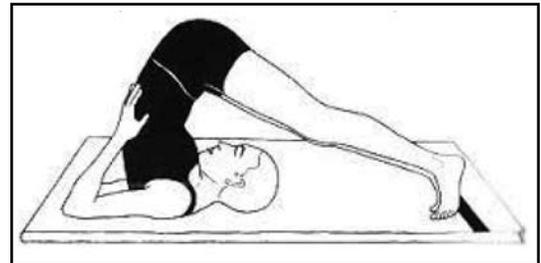
- Please avoid this practice in case of abdominal injuries, hernia, sciatica or severe back pain and during pregnancy.

### Halasana (Plough posture)

The name comes from Sanskrit word hala meaning plough and asana meaning posture or seat.

### Technique

- Lie on the back.
- Keep the legs extended and hands on the ground.
- Raise the feet gradually so that the toes can touch the ground.
- Keep the body straight from hip to the shoulders.
- Return the feet gradually to the original position by first placing the back on the ground and then legs on the ground without lifting the head and back.



### Benefits

- Improves the tone and strength of back muscles.
- Helps to improve functioning of the endocrine system.
- Gives a complete stretch to the spine which increase its elasticity and overall functioning.
- Effective in weight loss.

### Sarvangasana (Shoulder stand posture or All members pose)

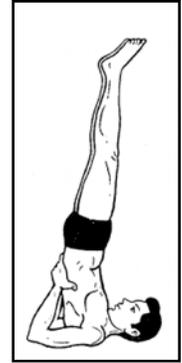
This is termed all-members pose, because all the parts of the body are engaged when this asana is performed.

### Technique

- Lie flat on the back with legs and feet together in a straight line.
- Place both the hands and arms close to the body with palms facing down.
- Relax the whole body.



- Now raise both the legs keeping them straight and together.
- Raise the whole body in straight position.
- Give support to the hips by both the hands balancing the body in a straight position.
- Body should rest on the head, neck and shoulders.
- Relax in the final position as far as comfortable.
- Now relax the body gradually by lowering the legs, arms and hands.
- Relax in Shavasana.



### Caution

- Please avoid this practice in case of high blood pressure, heart problems, middle ear trouble, weak age, spondylosis and slipped disc.

### V. Kapalbhati

**Sthiti:** Any meditative posture e.g. Sukasana/ Padmasana/ Vajrasana

### Technique

- Sit in any meditative posture.
- Close the eyes and relax the whole body.
- Inhale deeply through both nostrils, expand the chest.
- Expel the breath with forceful contractions of the abdominal muscles and relax.
- Do not strain.
- Continue active/ forceful exhalation and passive inhalation.
- Complete 30 rapid breaths, then take a deep breath and exhale slowly.
- This is one round Kapalbhati.
- Each round shall be followed by deep breathing.
- Repeat 2 more rounds.



**Breathing:** Forceful exhalation by contracting the abdominal muscles, without any undue movements in the chest and shoulder region. Inhalation should be passive throughout the practice.

**Number of rounds:** Beginners can practice up to 3 rounds of 20 breaths each. The count and rounds can be increased gradually over a period of time.

### Benefits

- Kapalbhati purifies the frontal air sinuses; helps to overcome cough disorders.
- It is useful in treating cold, rhinitis, sinusitis, asthma and bronchial infections.
- It rejuvenates whole body, and keep the face young and vibrant.
- It balances and strengthens the nervous system and tones up the digestive system.

### Caution

- Please avoid this practice in case of cardiac conditions and giddiness, high blood pressure, vertigo, chronic bleeding in the nose, epilepsy, migraine, stroke, hernia and gastric ulcers.

### Pranayama

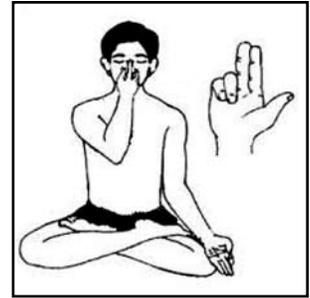
#### Nadisodhana or Anuloma Viloma Pranayama (Alternate nostril breathing)

The main characteristic feature of this pranayama is alternate breathing through the left and right nostrils without or with retention of breath (kumbhaka).

**Sthiti:** Any meditative posture.

#### Technique

- Sit in any meditative posture.
- Keep the spine and head straight with eyes closed.
- Relax the body with few deep breaths.
- Keep the left palm on the left knee in Jnana mudra.
- The right hand should be in Nasagra mudra.
- Place the ring and small fingers on the left nostril; fold the middle and index finger. Place the right thumb on the right nostril.
- Breath in from the left nostril; then close the left nostril with the small and ring fingers and release the thumb from the right nostril; exhale through the right nostril.
- Next, inhale through the right nostril.
- At the end of inhalation, close the right nostril, open the left nostril and exhale through it.
- This complete process is one round of the Nadisodhana or Anuloma Viloma Pranayama.
- Repeat 5 rounds.



#### Ratio and timing

- For beginners, the duration of inhalation and exhalation should be equal.
- Gradually make 1:2; inhalation: exhalation.

#### Breathing

- Breath should be slow, steady and controlled. It should not be forced or restricted in anyway.

#### Benefits

- The main purpose of this pranayama is to purify the principle channels of carrying energy called nadi's; hence nourishes the whole body.
- Induces tranquility and helps to improve concentration.
- Increases vitality and lowers the level of stress and anxiety.

**Note:** for further details of the yoga please refer to [www.yogamdniy.nic.in](http://www.yogamdniy.nic.in) and [www.ccrym.org](http://www.ccrym.org)



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