INTEGRATION OF AYUSH (AYURVEDA) WITH NATIONAL PROGRAM FOR PREVENTION AND CONTROL OF CANCER, DIABETES, CARDIOVASCULAR DISEASES AND STROKE (NPCDCS)

GUIDELINES & TRAINING MANUAL

CENTRAL COUNCIL FOR RESEARCH IN AYURVEDIC SCIENCES,
Ministry of AYUSH, Govt. of India, New Delhi
In collaboration with

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

SUPERVISION

Prof. Vd. K. S. Dhiman
Director General,
Central Council for Research in Ayurvedic Sciences,
Ministry of AYUSH,
New Delhi

Dr. (Prof.) Jagdish Prasad
Director General,
Directorate General of Health Services
Ministry of Health& Family Welfare,
New Delhi

GUIDANCE

Dr. Manoj Nesari
Advisor (Ay.),
Ministry of AYUSH, New Delhi

Dr. M. M. Padhi
Deputy Director General
CCRAS, New Delhi

COMPILED BY

Dr. L. Swasti Charan
Chief Medical Officer,
Dte. G.H.S, Nirman Bhawan,
New Delhi

Dr Bharti
Assistant Director (Ay.)
Programme Officer, NPCDCS
CCRAS, New Delhi

Dr. N. Srikanth
Assistant Director (Ay.)
Programme Officer, NPCDCS
CCRAS, New Delhi

Dr. V.K. Shahi
Research Officer (Ay.) S-4
Programme Co-ordinator, NPCDCS
CCRAS, New Delhi

Dr. Sarada Ota
Research Officer (Ay.) S-2
Nodal Officer (Bhilwara)
CCRAS, New Delhi

Dr. Renu Singh
Research Officer (Ay.)
Nodal Officer (Gaya)
CCRAS, New Delhi

Dr. Shruti Khanduri
Research Officer (Ay.)
Nodal Officer (Surendranagar)
CCRAS, New Delhi

Dr. Arun Bhadula
Senior Consultant (Ay.)
NPCDCS Programme
CCRAS, New Delhi

Dr. K. Sandya Rani
Senior Consultant (Ay.)
NPCDCS Programme
CCRAS, New Delhi

FOREWORD

Non-Communicable Diseases (NCDs) are the group of non-contagious, chronic diseases affecting the individual's quality of life. Cardiovascular disease, cancer, chronic respiratory diseases, and diabetes are the NCDs responsible for the greatest number of deaths worldwide and are the leading cause of death globally killing approximately 36 million people every year from heart disease, stroke, diabetes, cancers etc. with major negative consequences for socioeconomic development. The main cause is the increased exposure to tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol, as well as inadequate health care services. There are proven interventions to prevent non-communicable diseases and manage them in people with early or established disease. These interventions could prevent millions of early deaths from non-communicable diseases and are highly cost-effective, able to be implemented in resource-poor settings, and would strengthen health systems, in particular primary health care.

This training module is meant to provide information and knowledge that is essential in the prevention and management of NCDs.

Acknowledgements

CONTENTS

INTRODUCTION

Non-communicable diseases (NCDs), also known as chronic diseases, are not passed from person to person. These are of long duration and generally have slow progression. All age groups and all regions are affected by NCDs. NCDs are often associated with older age groups, but evidence shows that 16 million of all deaths attributed to non-communicable diseases (NCDs) occur before the age of 70[1]. The major Non-communicable diseases are Cancer, Diabetes, Cardiovascular diseases (like heart attacks and stroke), Rheumatic Heart Disease (RHD) and Chronic Obstructive Pulmonary Disease and Asthma. Children, adults and the elderly are all vulnerable to the risk factors that contribute to non-communicable diseases. The World Health Organization's World Health Report 2002 identified tobacco use, alcohol consumption, overweight, physical inactivity, stress and high fat diet as the most important risk factors for NCDs. An important way to reduce the burden of NCDs on global public health is by focusing on the importance of lessening, preventing, detecting, and correcting modifiable risk factors and hence controlling the major modifiable risk factors associated with these diseases.

NCD BURDEN IN INDIA[2]

In India, deaths from NCDs are projected to almost double from about 4.5 million in 1998 to 8 million by the year 2020. In the year 2005, 53% of all deaths were due to NCDs and this is projected to increase by 18% over the next 10 years. India leads the world presently with 35 million diabetic subjects and this figure is projected to increase to about 80 million by the year 2030. Approximately 20% of world's diabetic population resides in India. It has been estimated that in India more than 2.4 million deaths are due to cardiovascular disease, which is approximately 25% of all the deaths, which is far greater than the deaths due to infectious diseases like diarrhoea, respiratory infection and tuberculosis. In about 15 years, India is expected to lead the world in Cardiovascular mortality. Various epidemiological studies in the Indian subcontinent have indicated a rising trend in the prevalence of hypertension, which ranges between 20 - 36%. Annually around 70 new cancer cases are detected for every 100, 000 populations in India and in any given year, there are almost 15 lakh cancer patients.

NCDs AND AYURVEDA

The main objective of Ayurveda is to *"Maintain the health of a healthy individual by prevention of disease and to cure the diseased ones*[3]*."* Ayurveda being the foremost life science describes ways to prevent and manage lifestyle disorders. It provides proper dietary management and lifestyle advices through *Dinacharya* (daily regimen), *Ritucharya* (seasonal regimen), *Panchakarma* (Bio-purification therapies), and *Rasayana* (rejuvenation) therapies. The *Sadvritta* (ideal routines) and *Aachara Rasayana* (code of conduct) are of utmost importance to maintain a healthy and happy socio-psychological well being of a person.

[1] http://www.who.int/mediacentre/factsheets/fs355/en/ on 15-12-2015
[2] http://ncd.in/need.html on 15-12-2015
[3] Agnivesha's Charaka Samhita, Sutrasthana.

INTEGRATION OF AYUSH (AYURVEDA) WITH NATIONAL PROGRAM FOR PREVENTION AND CONTROL OF CANCER, DIABETES, CARDIOVASCULAR DISEASES AND STROKE (NPCDCS)

To prevent and contain the projected increase in the burden of Non-Communicable Diseases, Ministry of Health and Family Welfare, Government of India, has launched the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular diseases and Stroke (NPCDCS) in 2008 on pilot basis and thereafter in July, 2010 in 21 states during the year 2010-12 with the aim of health promotion; prevention and control of NCDs through early screening[4].

The western system of medicine is looking towards Complementary and Alternative systems of medicine (CAMs) for the management of these alarming problems. In this endeavour, Ayurveda, the age old indigenous system of health care that primarily focuses on prevention of diseases through life style modifications and interventions (based on the fundamental concepts) can play an important role in prevention, control and treatment of NCDs (Diabetes and its complications, Hypertension) and management of risk factors like High lipid levels etc. As per the NPCDCS programme, Integration of AYUSH (Ayurveda, Yoga, Unani, Siddha & Homoeopathy) for prevention and health promotion is one of its mandate.

Moreover, integration of Ayurveda can also provide cost-effective management of NCDs, as these conditions require lifelong management and strengthen the primary healthcare network in order to ensure the success of its action plan.

[4] A Guide for Health workers, Developed for NPCDCS Programme Dte.GHS, Ministry of Health & Family Welfare, Govt. of India

OBJECTIVES

- To integrate Ayurveda to the existing healthcare system for promotion, prevention and control of non-communicable diseases through NPCDCS program.
- To ensure early diagnosis of NCDs for management through life style and behavioral changes through the principles of Ayurveda.
- To reduce drug dependency in chronic cases through Ayurveda, Yoga practices and Lifestyle changes.
- To provide as an adjuvant therapy to reduce complications and associated symptoms.
- To carry out capacity building of human resources
- To ensure Evaluation, Monitoring and Surveillance of NCDs through this project in terms of the components of the project

ROLES AND RESPONSIBILITIES OF STAFF UNDER NPCDCS

	1. ….. SENIOR CONSULTANT (AYURVEDA) 2. ….. RESEARCH ASSOCIATE (AYURVEDA) 3. ….. NCD CLINIC AT CHC 4. ….. NCD CLINIC AT DISTRICT LEVEL 5. ….. YOGA INSTRUCTOR 6. ….. YOGA VOLUNTEER 7. ….. PHARMACIST (AYURVEDA) 8. ….. DATA ENTRY OPERATOR (DEO) 9. ….. MULTI TASKING STAFF (MTS)

1. ROLES AND RESPONSIBILITIES OF SENIOR CONSULTANT (AYURVEDA)

- To establish one Lifestyle Clinic with Ayurveda component in or near the NCD clinics in the identified area provided by DNO (NPCDCS).
- To coordinate with the DNO (NPCDCS) and In-charges of NCD Clinics for Investigations support (diagnostic and laboratory).
- To provide service to NCD patients by giving consultation, life style counseling (*Pathya-apathya)* and medicine.
- To generate awareness about risk factors of NCDs and importance of healthy diet, regular physical activity and Ayurvedic approach.
- To co-ordinate with Yoga Instructor for Yoga prescription with practical demonstration of Yogic practices as required for NCDs patients.
- To collect data of NCD patients at Life Style Clinics in the provided Case Record Forms (CRFs).
- To compile data from all the Life Style Clinics and send it to concerned CCRAS institute (both Hard & Soft copy) and soft copy to CCRAS Hqrs. (npcdcs.ccras@gmail.com) on monthly basis **(on or before date 5th of every month)**.
- To prepare and submit monthly, quarterly and annual progress report of the program to concerned CCRAS Institute.
- To disburse medicines and IEC materials to CHCs / blocks and to maintain stock registers for the same.
- To coordinate monthly meeting at Distt. Hqrs. Hospital in consultation with District NPCDCS authorities and In-charge of concerned CCRAS Institute.
- To contact directly with the In-charge of concerned CCRAS institute or NPCDCS team of CCRAS Hqrs. for any related queries and problems faced during the execution of the programme.
- To supervise the work of Lifestyle Clinics at the Community Health Centres (CHCs) / Blocks.
- To visit at least one CHC per week and ensure proper data generation (filling of CRFs), checking of stock register and Patient Registration Record at CHCs / Blocks.
- To enquire outreach activities and their performance time to time.
- To check the stock register and consumption of medicines randomly from any CHCs/District Hqrs. during visit / as and when required.
- Any other duties assigned to him/her by the competent authority.

2. ROLES AND RESPONSIBILITIES OF RESEARCH ASSOCIATE (AYURVEDA)

1. To establish one Lifestyle Clinic with Ayurveda component in addition to the existing NCD cell, in identified area provided at CHC as decided by the In-charge of the local CCRAS institute in consultation with NPCDCS Health authorities.
2. To coordinate with the In-charge of CHC / NPCDCS cell for diagnostic and laboratory Investigations etc.
3. To generate awareness about risk factors of NCDs and importance of healthy diet, regular physical activity and Ayurvedic approach.
4. To provide service to NCD patients by giving consultation, life style counseling (*Pathya-apathya)* and medicines.
5. To co-ordinate with Yoga Instructor for Yoga prescription with practical demonstration of Yogic practices as required for NCDs patients.
6. To monitor outreach activities and conduct health awareness camps in coordination with the PHC and sub center (At least 1 camp/week per PHC).
7. To identify Yoga volunteers (one male & one female) at PHC level in consultation with Yoga Instructor.
8. To collect data of NCD patients at Life Style Clinic of concerned CHC in provided Case Record Forms (CRFs) and send it to NPCDCS (Ay.) cell of concerned District Hospital and concerned CCRAS institute on monthly basis **(on or before date 2nd of every month)**.
9. To collect and compile data of all the Camps conducted under Lifestyle Clinic at CHCs and send it to NPCDCS (Ay.) cell of concerned District Hospital and concerned CCRAS institute on monthly basis **(on or before date 2nd of every month)**.
10. To prepare and submit monthly, quarterly and Annual progress report of the work done under NPCDCS program to Distt. Hqrs. Hospital of the concerned District.
11. To distribute medicines and IEC materials to the NCDs patients/ public visiting life style clinic and camps and maintain stock registers for the same.
12. To coordinate with Sr. Consultant (Ay.) at District Hospital for program related work and to attend the monthly meeting at District Hospital.
13. To contact directly with the In-charge of concerned CCRAS institute or NPCDCS team of CCRAS Hqrs. for any related queries and problems faced during the execution of the programme.
14. Any other duties assigned to him/her by the competent authority.

3. ROLE OF NCD CLINIC AT CHC

1. Conduct opportunistic screening
2. Laboratory Investigations for Blood sugar, Blood cholesterol etc.
3. Diagnose and treat Diabetes and Hypertension
4. Provide Health education to the patients and general public
5. Refer the complicated cases to district hospital

Role of Doctor

1. To conduct comprehensive examination for diagnosis and management of the NCD cases.
2. To rule out complications or advanced stage.
3. To refer complicated cases to higher care facility.
4. To provide follow up care to the patients.
5. Overall supervision of NCD Unit.
6. Assist in training of the Health personnel.

Role of Nurse

1. To conduct screening of Diabetes, Hypertension and common cancers.
2. To assist the physician during the examination of patients.
3. To explain the patient and family about risk factors of NCDs and promote Healthy Life style
4. To assist in follow up care

Role of Counselor

1. To provide counseling on diet and life style management
2. To assist in follow up care and referral

4. ROLE OF NCD CLINIC AT DISTRICT LEVEL

The identified district hospital will be strengthened under NPCDCS for providing NCD services. The hospital will establish one CCU and provide the essential man power and will provide basic laboratory facilities available attached to it. An 'NCD clinic' will be established at the identified district hospital to provide emergency, rehabilitative care and management of cancer, diabetes, hypertension and acute cardiovascular diseases. The clinic shall run on all working days or at least thrice a weak.

Following activities will be performed by a District under the NPCDCS:

A. Opportunistic screening

NCD clinic at district hospital shall screen persons above the age of 30 years for diabetes, hypertension, cardiovascular diseases and common cancers (>30 years) and identify individuals who are at a high risk of developing NCDs warranting further investigation/ action. Such screening will involve simple history (such as family history of Diabetes, history of alcohol, tobacco consumption, dietary habits etc.), general physical examination (calculation of BMI, blood pressure,

blood sugar estimation etc.) to identify those individuals who are at a high risk of developing Cancer, Diabetes and CVDs, warranting further investigation/action.

B. Detailed investigation

Detailed investigation of persons those who are at high risk of developing NCDs after screening and those who are referred form CHCs will be done at district hospital. Laboratory services at District hospital will be strengthened/established to provide necessary Lab. Investigations and Diagnostic such as Blood Sugar, Lipid Profile, KFT, X-Ray, ECG, USG, Echo, CT scan, MRI etc.

C. Outsourcing of certain laboratory investigations

District hospital may outsource certain essential laboratory investigations and diagnostics that are not available at district hospitals. The District Hospital shall display the list of Laboratories in which these investigations would be outsourced.

D. Out-patient and In-patient Care

NCD Clinic at District Hospital shall provide regular management and annual assessment of persons suffering from cancer, diabetes and hypertension. People with established cardiovascular diseases shall also be managed at district hospital. Cardiac care unit established at hospital shall manage acute and emergent cases of cardiovascular diseases. The hospital shall ensure the availability of essential drugs.

E. Day Care Chemotherapy Facility

Identified district hospital shall provide a day care chemotherapy facility for patients on simple chemotherapy regimens. The day care facility shall have 2 beds along with necessary equipments such as IV stands, BP instruments, sterilizer etc. Necessary Staff will be provided by hospital for smooth functioning of the centre.

F. Palliative Care

District hospital shall provide guidance to develop skills Home based palliative care for chronic, and debilitating patients. A team consisting of nurse and counselor from the Health System shall be trained in identifying symptoms, pain management, communication, psychosocial & emotional care, nursing needs of the terminally ill and ethics of palliative care. The nurse shall be trained in wound dressing, mouth care, oral morphine use, diet, hygiene etc.

G. Referral & Transport facility to serious patients

To ensure timely and emergent care to the patient at distant CHC or below, district hospital shall make provision for transporting the serious patients to the hospital or at nearest tertiary level facility.

Complicated cases shall be referred to nearest tertiary health care facility with a referral card. Patients suffering from lymphomas and leukaemia shall be referred to tertiary care centers (TCC) for Chemotherapy as blood bank facilities and required human resources are available there.

H. Health promotion

Apart from clinical services district hospital shall be involved in promotion of healthy lifestyle through health education and counseling to the patients and their attendants regarding increased intake of healthy foods increased physical activity through sports, exercise, etc.; avoidance of tobacco and alcohol; stress management warning signs of cancer etc.

I. Training

District Hospital assists and conducts training to the health personnel of Community Health Centre as per guidelines.

J. Data recording and reporting

Data shall be collected in prescribed formats and monthly report shall be sent to the District NCD Unit of the programme.

5. ROLES AND RESPONSIBILITIES OF YOGA INSTRUCTOR

1. To work under the guidance and direction of Sr. consultant / Research Associate.
2. To generate awareness about role of yoga in prevention of NCDs, harmful effects of alcohol and tobacco
3. To help Research Associates (Ay.) of CHC in identifying Yoga volunteers (one male and one female per PHC).
4. To impart training to the identified Yoga volunteers on Yoga procedures to enable them to conduct Yoga practices regularly at concerned PHC.
5. To prescribe and demonstrate the *Yoga -Asanas* and other related procedures to the person susceptible for NCDs and patients (disease specific yoga procedures) in co-ordination with Ayurvedic consultant/ Research Associate and maintain the records.
6. To maintain record of yogic practices in prescribed format.
7. To monitor whether the yoga practices is going on regularly to public by the Yoga volunteers.
8. To offer brief advice for tobacco cessation.
9. Any other duties assigned to him by the competent authority.

6. ROLE AND RESPONSIBILITY OF YOGA VOLUNTEER

1. To work under the guidance and direction of Yoga Instructor / Research Associate.
2. To conduct yoga and meditation classes for public and patients at the PHCs regularly.
3. To provide data of classes on regular basis (verified by Yoga instructor on random basis) to respective CHC.
4. To offer brief advice for tobacco cessation.

5. To prepare a line list of all trained personnel and refer them to NCD Clinics
6. To maintain record of yogic practices in a register on daily basis.

7. ROLES AND RESPONSIBILITIES OF PHARMACIST (Ay.)

1. To work under the guidance and direction of Sr. Consultant / Research Associates.
2. To attend the outreach activities / health camps and dispense medicine in the health camps with the team as instructed by the Research Associates.
3. To dispense medicines as prescribed by the Sr. Consultants/Research Associates at respective Life Style Clinics and camps and to keep all relevant records as required.
4. To explain the procedure for taking medicines as advised by Sr. Consultants/ Research Associates.
5. To counsel patients for better compliance of prescribed medicines, promotion of Health and prevention of diseases.
6. To undertake the formalities for procurement of store materials such as preparation of indent, receipt of store materials, recording in stock ledger, verification of stock etc.
7. Issuance of store materials, maintaining its formalities and keeping all relevant records.
8. To assure the proper storage of drugs to preserve their efficiency.
9. To maintain Inventory Control, keeping in view the expiry date of drugs to ensure timely utilization of the drugs.
10. To maintain the proper labeling of drugs.
11. Any other duties assigned to him/her by the competent authority.

8. ROLES AND RESPONSIBILITIES OF DATA ENTRY OPERATOR

1. To work under the guidance and direction of Sr. consultant / Research Associates / Yoga Instructor.
2. To assist Sr. Consultant/ Research Associate and Yoga Instructor in organizing information (compile, enter and store the data) received from various levels related to NPCDCS program.
3. To assist in preparation of reports as required and maintenance of records of activities and tasks under the project.
4. To maintain files of source documents or other information related to data entered.
5. To organize maintenance of IT hardware, software etc. to ensure that the computer is maintained in a neat and orderly manner.
6. To comply with data integrity and security policies. No data related to the program should be passed on to others without the approval of competent authority.
7. Any other duties assigned to him/ her by the competent authority.

9. ROLES AND RESPONSIBILITIES OF MULTI TASKING STAFF (MTS)

1. To work under the guidance and direction of Sr. consultant/ Research Associate, Yoga Instructor, Pharmacist and Data Entry Operator.
2. To report on duty half an hour before opening of hospital.
3. To open, close and maintain the cleanliness of the premises and furniture etc.

4. Physical maintenance of records of life style clinics at District Hqr. Hospital and CHC/ PHC level.
5. To carry files, papers, medicines and equipments as required.
6. To assist in routine office work like diary, dispatch, Photocopying, sending of FAX, etc.
7. To assist in outreach activities such as organization of camps, distribution of IEC materials etc.
8. To coordinate supply of electricity, water, housekeeping etc. of the premises.
9. Any other work assigned by the superior authority.

DIABETES
(मधुमेह)

INTRODUCTION

Diabetes, often referred to as Diabetes mellitus, is a group of metabolic diseases in which the person has high blood glucose (blood sugar), either because insulin production is inadequate, or because the body's cells do not respond properly to insulin, or both. Patients with high blood sugar levels typically experience frequent urination *(polyuria),* increased thirst (*polydipsia*), excessive hunger (*polyphagia*) and exhaustion.

EPIDEMIOLOGY

In 2000, India (31.7 million) followed by China (20.8 million) topped the world with the highest number of people with Diabetes mellitus. Its prevalence is predicted to double globally from 171 million in 2000 to 366 million in 2030 with a maximum increase in India to an extent that by 2030 Diabetes mellitus may afflict up to 79.4 million individuals in India.[5]

TYPES

Diabetes is due to either the Pancreas not producing enough insulin or the cells of the body not responding properly to the insulin produced. There are three main types of Diabetes mellitus:

- **Type 1 Diabetes Mellitus (T1DM)** results from the pancreas failure to produce enough insulin. This form was previously referred to as "Insulin-Dependent Diabetes Mellitus" (IDDM) or "juvenile diabetes". The cause is unknown.
- **Type 2 Diabetes Mellitus (T2DM)** is the **commonest** type of Diabetes which occurs usually after thirties. It begins with insulin resistance, a condition in which cells fail to respond to insulin properly. As the disease progresses a lack of insulin may also develop. This form was previously referred to as "Non Insulin-Dependent Diabetes Mellitus" (NIDDM) or "Adult-onset Diabetes". Type 2 diabetes is due primarily to lifestyle factors and genetics. The primary cause is excessive body weight and not enough exercise.
- **Gestational Diabetes** (GD) mellitus resembles type 2 diabetes in several respects, but occurs during pregnancy. It occurs in about 2–10% of all pregnancies and may improve or disappear after delivery. However, after pregnancy approximately 5–10% of women suffering from Gestational diabetes are found to have Diabetes mellitus, most commonly type 2. Gestational diabetes is fully treatable, but requires careful medical supervision throughout the pregnancy. Management may include dietary changes, blood glucose monitoring, and in some cases insulin may be required.

Pre-diabetes indicates a condition that occurs when a person's blood glucose levels are higher than normal but not high enough for a diagnosis of type 2 DM.

[5] Seema Abhijeet Kaveeshwar and Jon Cornwall; The current state of diabetes mellitus in India; Australasian Medical Journal 2014; 7(1): 45–48.

RISK FACTORS FOR DIABETES[6]

"One of every four people with diabetes doesn't know they have it"[7]

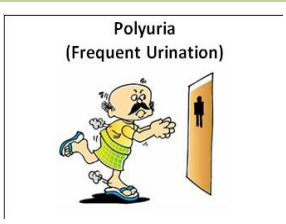
Type 1: Usually starts in childhood because Pancreas stops making insulin. The main causes are:

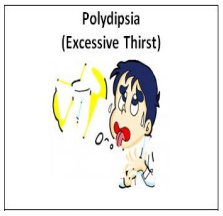
- Familial predisposition
- Some rare Infection or illness
- Diseases of the pancreas

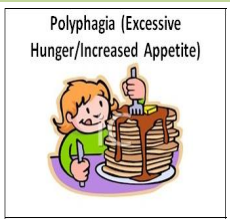
Type 2: usually affects adults, but can begin at any time of life. The main causative factors are:

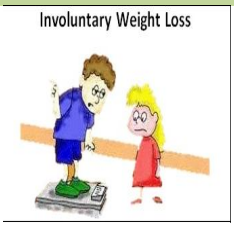
- Age - Above 35 years
- Low levels of HDL ("good") cholesterol and high levels of triglycerides
- Sedentary lifestyle
- Psychological factors (Stress, Depression etc.)
- Impaired glucose tolerance
- Obesity or being overweight
- Family history
- Polycystic Ovary syndrome

COMMON SYMPTOMS OF DIABETES









- ☐ Frequent urination (Polyuria)
- ☐ Extreme hunger (Polyphagia)
- ☐ Unexplained weight loss – even after eating frequently
- ☐ Tingling or numbness in the hands or feet
- ☐ Wounds that are slow to heal
- ☐ Excessive thirst (Polydipsia)
- ☐ Sudden vision changes
- ☐ Feeling of tiredness
- ☐ More infections than usual
- ☐ Fatigue

[6] http://www.webmd.com/diabetes/risk-factors-for-diabetes
[7] www.cdc.gov/features/**diabetes**factsheet/

Table 1. Criteria for Diagnosing Diabetes[8]

Test	Results	Interpretation
Fasting Plasma Glucose *(no calorie intake for at least 8 hours)*	≥ 126 mg/dL	Diabetes
	100–125 mg/dL	Impaired glucose tolerance
	Lower than 100 mg/dL	Normal
Random Plasma Glucose *(alongwith presence of symptoms of Diabetes)*	200 mg/dL or higher	Diabetes
	140–199 mg/dL	Impaired glucose tolerance
	Lower than 140 mg/dL	Normal

Table 2. Criteria for Diagnosing diabetes[9] using HbA1c

Test	Results	Interpretation
HbA1c	6.5% or higher	Diabetes
	5.7–6.4%	Impaired glucose tolerance
	Lower than 5.7%	Normal

MANAGEMENT OF TYPE 2 DIABETES

Even in asymptomatic patient, management of T2DM should be initiated as soon as diagnosis is established.

1. **Initial assessment of individuals suspected of having T2DM needs to include a risk assessment consisting of:**
   - History and physical examination;
   - Assessment of blood glucose level;
   - Presence of Cardiovasular Disease risk factors (lipid profile); and
   - End-organ damage (Proteinuria/ECG/fundus examination).

Modification of lifestyle is an important aspect of the management of all types of diabetes. The patient may be educated for -

- Lifestyle interventions
- Cessation of smoking
- Exercise and physical activity
- Healthy eating

TARGETS OF CONTROL IN THE MANAGEMENT OF DIABETES[10]

Fasting blood glucose	80-120 mg/dl
Post meal blood glucose	<160 mg/dl
HbA1c	<7%

Note: After 40 years, blood sugar should be checked regularly. If a person is overweight, the blood sugar level should be checked even before the age of 40 years.

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8 Endocrinology and Metabolism (Part 15), Section 1 –Endocrinology, Diabetes mellitus, Harrison's Principles of Internal Medicine, 17th Edition, Vol. II, Year 2008, pg.2277.

9 Type 2 Diabetes Screening and Treatment Guideline; Group Health Cooperative; Last guideline approval: June 2015.

10 Guidelines for Medical Officers, Prevention and Management of Cardiovascular diseases, Diabetes and Stroke, Center for Chronic Disease Control, Public Health Foundation of India, Developed for NPCDCS Programme under GOI-WHO collaborative programme (2008-09), Prevention and Management of Diabetes, page no. 44, August, 2009.

Complications of Diabetes

- ✓ Cardiovascular disease(Angiopathy)
- ✓ Nerve damage (Neuropathy).
- ✓ Kidney damage (Nephropathy).
- ✓ Eye damage (Retinopathy).
- ✓ Diabetic Foot ulcer
- ✓ Skin infections
- ✓ Acute emergencies like
  - Diabetic ketoacidosis
  - Non ketotic hyperosmolar diabetic coma
  - Hypoglycemia/ Hyperglycaemia
  - Diabetic coma
  - Respiratory infections

DIABETES IN AYURVEDA

Prameha is a disease caused by vitiation of *Kapha* & *Meda*. Total twenty types of *Prameha* have been described in three broad groups i.e. *Vataj, Pittaj* and *Kaphaj pramehas*. The cardinal symptoms of *Prameha* are described as "*Prabhutavila Mutrata*[11] (Excessive and/or turbid urine)". *Prameha* is of two types (1) *Sahaj* (Hereditary) and (2) *Apathya nimittaja* (caused by lifestyle).

Madhumeha is considered as a subtype of *Vataja Prameha*. Specific *lakshana* of *Madhumeha* have been described as "*Mutre abhidhavanti pipalikashcha*[12] (Glycosuria may be detected by attraction of ants towards urine)". The level of sugar in blood rises above the normal levels and sugar may also be detected in urine.

Diabetes is also considered as a *Maharoga* (major disease) because it affects most of the systems of the body.

Causes of Madhumeha:

1. Excessive sleeping (*Swapna sukham*), lack of physical activity or exercise. (*Aasya sukham*)
2. Excessive intake of sweet, sugar (*Guda vaikrit*), milk (*payah*), dairy products (*Dadhi*).
3. Excessive intake of carbohydrate rich diet especially newly harvested for e.g. rice, maida etc. *(Nava-annapana)*
4. Excessive or regular intake of fried or oily food items.
5. Psychological factors like fear, grief, anger etc.
6. Children of parents suffering from *Madhumeha* are more likely to have this disease.

Symptoms:

- Excessive and frequent urination *(Prabhuta mutrata)*
- Passing of turbid urine *(Avila mutrata)*
- Excessive thirst (*Pipasa - Trishana*) and hunger
- Burning/Tingling/Pricking sensation in the hands or feet *(Hasta pada suptata)*
- Feeling of tiredness (*Alasya*)

[11] Astanga Hridaya Nidansthana Chap.-10
[12] Sushruta, Sushruta Samhita

PREVENTIVE MEASURES AS PER AYURVEDA

Do's (Pathya)

- Regular exercise especially walking.
- Timely intake of diet.
- Intake of old harvested cereals, barley (*Yava*), Sorghum (*Jowar*), whole wheat atta, bitter gourd (*Karela*), green leafy vegetables, garlic (*Lasuna*), turmeric (*Haridra*), aloe (*Kumari*) in vegetables and fruits like Guava, Oranges, Indian Blackberry (*Jamun*) etc. may be useful.
- Reduce intake of rice, food rich in carbohydrate and fried or processed food.
- Regular practice of Yoga, Meditation etc. under the supervision of Yoga specialist is suggested.

Don'ts (Apathya)

- Sugarcane juice, jaggery, sugar, milk products.
- Sedentary lifestyle.
- Sleeping in the day time and excessive sleeping
- Alcohol
- Staying too long on empty stomach.
- Cold drinks, Ice cream, burger- pizza and other fast foods etc.

The role of *ahara* (dietary regimen) & *vihara* (lifestyle) are equally or even more important in diabetes to control blood sugar level as well as to prevent complications of this disease.

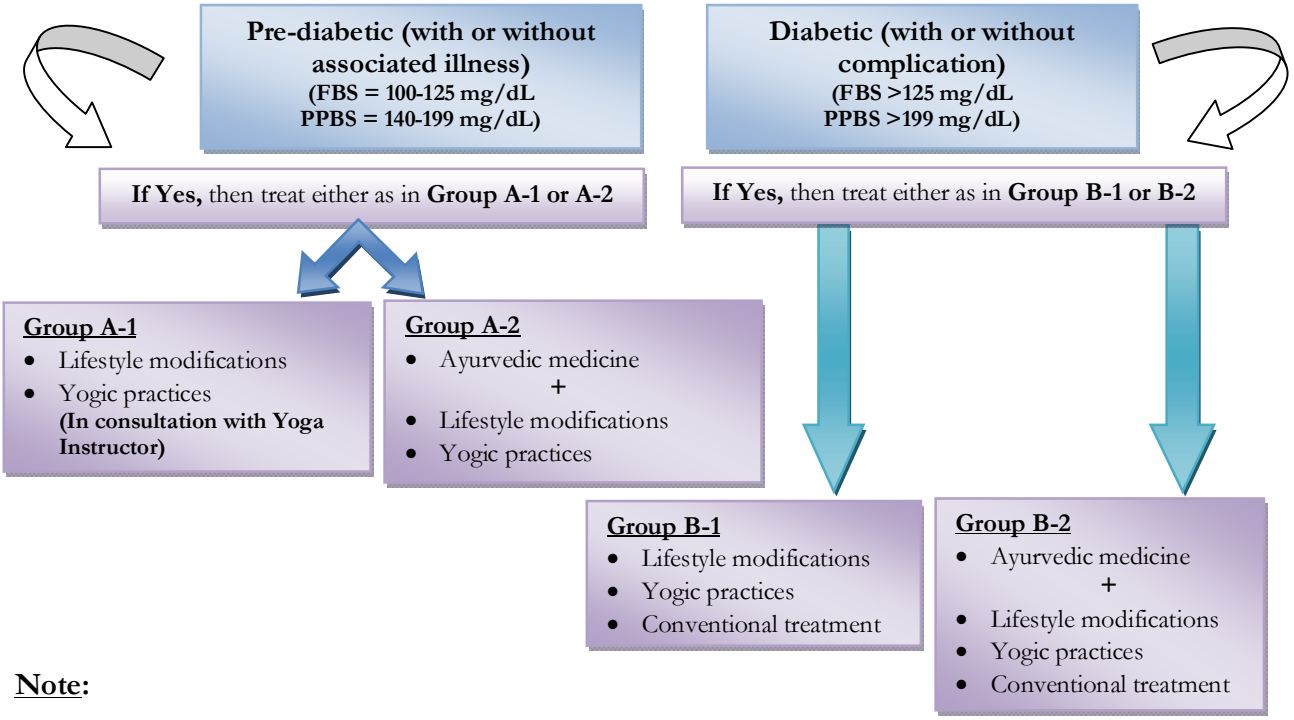
Common complications of Diabetes (Madhumeha)[13] as per Ayurveda

- Excessive thirst (*Trishna*)
- Diarrhoea (*Atisara*)
- Fever (*Jwara*)
- Anorexia (*Arochaka*)
- Indigestion (*Avipaka*)
- Diabetic carbuncles (*Mamsa pidaka viz. Alaji, Vidradhi etc.*)
- Gangrene (*Mamsa putita*)
- Chardi (*Nausea*)
- Fainting (*Murcha*)

Note: People with Diabetes have twice the risk of developing CVD as the general population. The prevalence rate of stroke can be up to five times greater, and prevalence of heart attack up to ten times greater, for people with diabetes than for those without diabetes.[14]

[13] Agnivesha, Charaka, Dridhabala, Charaka Samhita, Nidana sthana 4/47.
[14] http:/ health.gov.au

Guidelines for management of Pre-Diabetes & Diabetes for Ayurveda integration with NPCDCS



Note:

- **From any of the two groups of Pre-diabetes, if inspite of the management the patient shows persistently high blood sugar level i.e. FBS >125 mg/dL or PPBS >199 mg/dL, the patient may be shifted to Diabetes group and managed accordingly.**
- **From any of the two groups of Diabetes, if inspite of the treatment, the patient does not respond to the treatment or develops any complications, he/she may be referred to a proper set up.**

YOGIC MANAGEMENT — ANNEXURE-VI

The Yogic practices are found to be useful in the management of Diabetes mellitus through various research studies. The aim of the Yogic treatment in the management of diabetes is twofold:

a. To stimulate the pancreatic cells to produce adequate amount of Insulin

b. To reduce the Insulin resistance

In general, the practices prescribed for the Diabetic patients are as under:

Kriyas: *Kunjal, Kapalabhati, Agnisara.*

Selected Asanas*: Suryanamaskara, Tadasana, Katichakrasana, Sarvangasana, Halasana, Matsyasana, Ushtrasana, Gomukhasana, Ardhamatsyendrasana, Mandukasana, Paschimottanasana, Pawanmuktaasana, Bhujangasana, Shalabhasana, Dhanurasana, Vajrasana, Shavasana.*

Pranayama*: Nadishodhana, Suryabhedi, Bhastrika*

Bandhas: *Uddiayana Bandha*

Meditation: Breath awareness

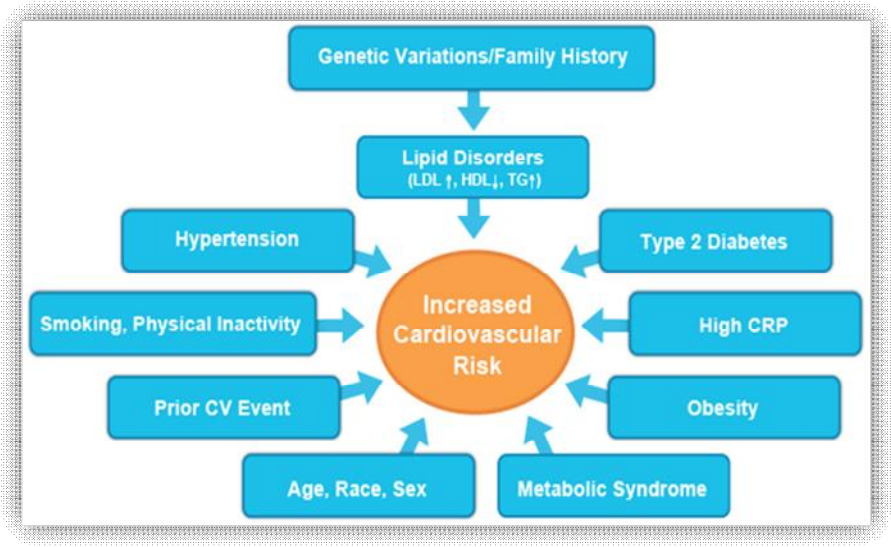
CARDIOVASCULAR DISEASES

Cardiovascular diseases[15] (CVDs) refer to a group of disorders/ailments that affect the heart and the blood vessels. CVDs include:

Coronary heart disease	Disease of the blood vessels supplying the heart muscle
Cerebro-vascular disease	Disease of the blood vessels supplying the brain
Peripheral arterial disease	Disease of blood vessels supplying the arms and legs
Rheumatic heart disease	Damage to the heart muscle and heart valves from rheumatic fever, caused by streptococcal bacteria
Congenital heart disease	Malformations of heart structure existing at birth
Deep vein thrombosis and pulmonary embolism	Blood clots in the leg veins, which can dislodge and move to the heart and lungs

Atherosclerosis is caused by a buildup of **plaque** (made up of fat, cholesterol and other substances found in the blood) in a person's arteries; this buildup can accumulate to the point that a clot forms and clogs the artery completely, leading to either a **stroke** or a **heart attack.** The site of the plaque determines the type of heart disease.

RISK FACTORS



Major risk factors associated with CVD that cannot be modified include:

- Advancing age
- Genetic predisposition

[15] http://www.who.int/mediacentre/factsheets/fs317/en/index.html

Modifiable risk factors include:

- Behavioral factors such as tobacco, smoking
- Insufficient physical activity
- Excessive alcohol consumption.
- High blood pressure
- High blood cholesterol
- Hypertriglyceridemia
- Overweight

Note: People with diabetes have twice the risk of developing CVD as the general population. The prevalence rate of stroke can be up to five times greater, and prevalence of heart attack up to ten times greater, for people with diabetes than for those without diabetes.[16]

PREVENTION OF CVDS

At least 80% of premature deaths from heart disease and stroke could be avoided through

- Regular physical activity and
- Eat healthy food:

A low-fat, high-fiber diet	Whole grains and fruit and vegetables
Eating at least five servings of fruit and vegetables	Limiting salt intake to less than one teaspoon/day

- **Engage in physical activity**
  Engaging in physical activity for at least 30 minutes every day of the week will help to prevent heart attacks and strokes.
- Maintain an ideal body weight.
- Stop tobacco, alcohol, smoking
- Reduce sugar consumption, psychosocial stress
- Check blood pressure and cholesterol regularly
- Minimize risk by controlling blood pressure and blood sugar.

[16] http://www.health.gov.au/internet/main/publishing.nsf/content/chronic-cardio

HYPERTENSION
(उच्च रक्तचाप)

INTRODUCTION

Hypertension[17] is a condition when, blood flows through the blood vessels with a force greater than normal. It is also called High blood pressure. Blood pressure may be different at different times of the day. It is usually higher when individuals first wake up, after exercise, or under stress. Having higher blood pressure for short intervals of time is normal. However, when blood pressure stays high for a longer duration, it can cause serious health problems. It can strain the heart, damage blood vessels, and increases the risk of heart attack, stroke, kidney problems, and even lead to death.

EPIDEMIOLOGY OF HYPERTENSION

Hypertension (HTN) exerts a substantial public health burden on cardiovascular health status and healthcare systems in India. HTN is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease (CHD) deaths in India[18].

In an analysis of worldwide data for the global burden of HTN, 20.6% of Indian men and 20.9% of Indian women were suffering from HTN in 2005. The rates for HTN in percentage are projected to go up to 22.9 and 23.6 for Indian men and women, respectively by 2025. Recent studies from India have shown the prevalence of HTN to be 25% in urban and 10% in rural people in India.[19]

TYPES OF HYPERTENSION

Based on the etiology, high blood pressure is classified as either primary (essential) hypertension or secondary hypertension.

Primary/Essential Hypertension

Primary or "essential" hypertension has no known cause, however many of the lifestyle factors contribute to this condition. About 90–95% of cases of hypertension are categorized as primary hypertension with no obvious underlying cause.

Secondary Hypertension

Secondary hypertension is caused by some other medical conditions/problems or the use of certain medications. Incidence of Secondary hypertension is comparatively very low. The causes of secondary hypertension include:

- Kidney diseases (Reno-vascular disease and Chronic renal disease etc.) are the most common secondary cause of Hypertension.
- Endocrine disorders: Hyperthyroidism, Cushing's syndrome, Pheochromocytoma, hyperaldosteronism, hyperparathyroidism
- Coarctation of the aorta
- Pregnancy, Use of contraceptive pills etc.

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[17] http://www.ncbi.nlm.nih.gov/pubmedhealth/PMHT0024201/

[18] Gupta R;Trends in hypertension epidemiology in India; J Hum Hypertens. 2004 Feb;18(2):73-8

[19] Debaprasad Chakrabarti et. al.;Prevalence, Awareness and Control of Hypertension in Rural Population of Tripura Journal of Evidence Based Medicine & Healthcare Vol. 2;Issue 50; Nov. 2015; Page: 8575-8578

RISK FACTORS FOR HIGH BLOOD PRESSURE

- Age
- Smoking
- Processed and fatty foods
- Lack of physical activity (or sedentary lifestyle)
- Being overweight or Obese
- Stress
- Excess alcohol consumption
- High sodium intake/high salt intake
- Family history of High blood pressure

SYMPTOMS OF HYPERTENSIVE CRISIS[20]

When blood pressure readings rise to dangerously high levels (systolic 180 or higher OR diastolic 110 or higher), it is known as **hypertensive crisis**, and emergency medical treatment is needed.

A person in hypertensive crisis may experience:

- Severe headaches
- Shortness of breath
- Severe anxiety
- Bleeding from nose

CRITERIA FOR DIAGNOSING HIGH BLOOD PRESSURE[21]

The diagnosis of hypertension should be based on multiple BP measurements taken on several separate occasions e.g. at least twice at an interval of 10-15 days.
The classification provided in the table below is based on consistent elevation during two or more properly measured BP readings in sitting position.

Category	Systolic (Top Number)	Diastolic (Bottom number)
Normo – tensive	< 120	and < 80
Pre – hypertensive	120-139	or 80-89
Hypertensive		
Stage 1 Hypertension	140-159	or 90-99
Stage 2 Hypertension	≥ 160	or ≥ 100
Isolated systolic hypertension (ISH)	≥ 140	and < 90

The Risk assessment should cover

- Assessment of medical history
- Physical Examination
- Laboratory investigations

Assessment of medical history

Ask for:

a. Risk factors
b. Family history
c. Symptoms of consequences of hypertension
d. Frequent intake of pain relieving drugs (NSAIDS)
e. Steroid intake
f. Breathing difficulty particularly on exertion
g. Swelling of feet
h. Urinary difficulties

[20]http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/AboutHighBloodPressure/Hypertensive-Crisis

[21] Harrison's Principles of Internal Medicine, 17th Edition, Vol. II, Year 2008, pg.1553

Laboratory Tests

Essential:

- Blood Sugar
- Kidney Function Tests
- Lipid profile

Desirable (at CHC/sub-district level hospitals depending upon the available facilities for laboratory investigations)

- Haemogram
- Serum creatinine
- Serum electrolytes (Sodium, Potassium levels)
- Complete Urine analysis
- Electrocardiogram(ECG)
- X-Ray chest

MANAGEMENT OF HYPERTENSION[22]

- Risk for cardiovascular diseases should be assessed
- BP levels should be closely and regularly monitored
- Clinical investigations should be done carefully
- Uncomplicated cases of high blood pressure can be treated. Complicated cases may be referred to district level.

DRUG THERAPY

Whether a person requires allopathic medicines for his high blood pressure and which medicine is best for the patient would depend on:

- The blood pressure reading
- Whether the high blood pressure has already affected target organs in the body such as heart, kidneys, eyes and arteries
- Concurrent medical conditions such as diabetes, heart disease, kidney disease and other risk factors like use of tobacco, obesity and hyperlipidemia (lipid profile) etc.

Other considerations will be age, gender (male/female)[23] and body weight.

Table 2: Treatment target[24]

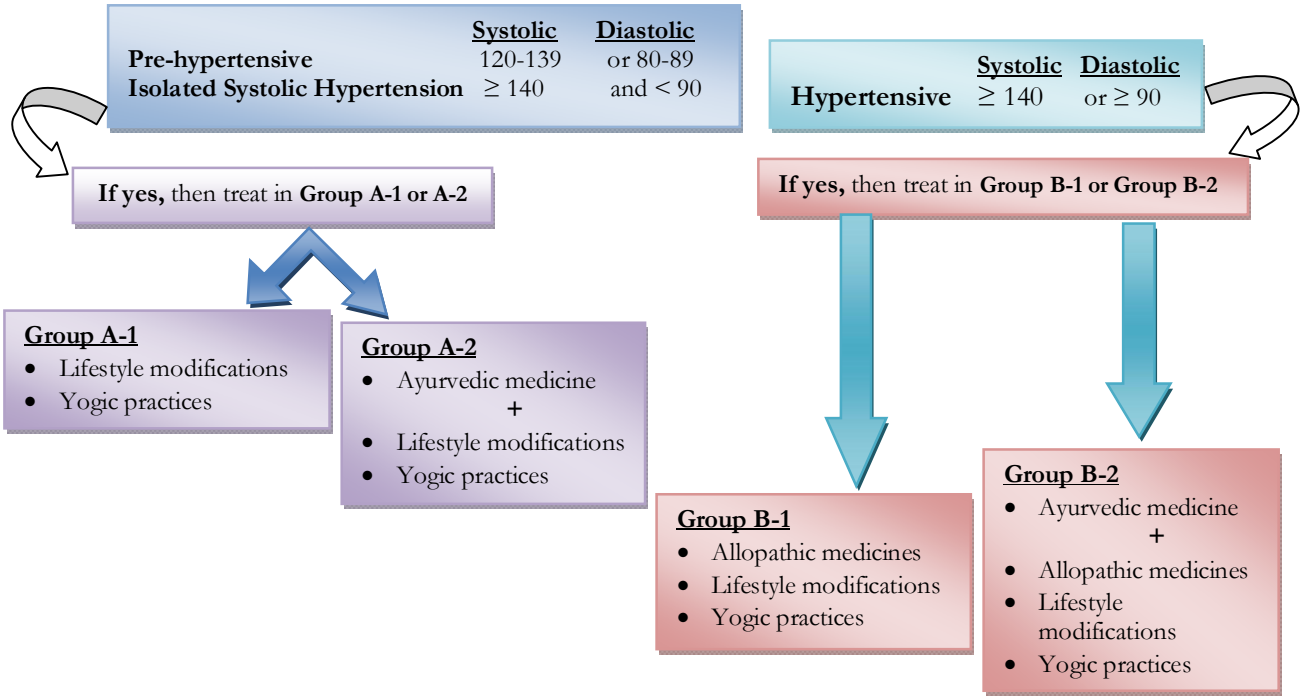
Patient group	BP to be maintained at following levels
People with proteinuria >1 g/day (with or without diabetes)	< 125/75
People with associated condition/s or end-organ damage: • Coronary heart disease, Diabetes, Chronic kidney disease, Proteinuria (> 300 mg/day), Stroke/TI	< 130/80
People with none of the following: • Coronary heart disease, Diabetes, Chronic kidney disease, Proteinuria (> 300 mg/day), Stroke/TIA	< 140/90 or lower if tolerated

[22] Heart Foundation Guide to management of hypertension 2008. Updated December 2010

[23] Doumas M et. Al., Gender differences in hypertension: myths and reality; Curr. Hypertens. Rep. 2013 Aug; 15(4):321-30

[24] Heart Foundation Guide to management of hypertension 2008. Updated December 2010

Guidelines for management of Pre-hypertension & Hypertension for Ayurveda integration with NPCDCS



Note:

- **From any of the two groups of Pre-hypertensive, if inspite of the management the patient shows rise in blood pressure** (Systolic ≥ 140 or Diastolic ≥ 90) **then, the patient may be shifted to hypertensive group and managed accordingly.**
- **From any of the two groups of hypertension, if inspite of the treatment, the patient does not respond to the treatment or develops any complications, he/she may be referred to a proper set up.**

  - **Regular physical activity:** All patients should be advised to become physically active, as part of a comprehensive plan to control hypertension, regardless of drug treatment.
  - **Smoking cessation** may not directly reduce BP, but markedly reduces overall cardiovascular risk. The risk of myocardial infarction and stroke is higher in people who smoke than in non-smokers.
  - **Dietary salt restriction: 1 teaspoon/day/person**. Recommend low-salt and reduced-salt foods as part of a healthy eating pattern.
  - **Dietary modification:** A healthy eating pattern includes mainly plant-based foods e.g. fruits, vegetables, pulses and a wide selection of wholegrain foods, moderate amounts of low-fat or reduced-fat dairy products, moderate amounts of lean unprocessed meats, poultry and fish, moderate amounts of polyunsaturated and monounsaturated fats (e.g. olive oil)
  - **Weight reduction:** Reduction in body weight lowers systolic BP. Weight loss of 10 kg can reduce systolic BP by 6–10 mmHg.[25]

[25] National Heart Foundation of Australia. Guide to management of hypertension 2008. Assessing and managing raised blood pressure in adults. NHF; 2008

Referral: The patients with following conditions/ associations should be referred to a proper setup -

- The patients of Hypertensive crisis (BP ≥ 180/110 mmHg)
- If Hypertension is associated with co-existing heart disease stroke or peripheral vascular disease
- Evidence of Left Ventricular Hypertrophy (LVH) on ECG
- Presence of urinary proteinuria
- Serum creatinine > 1.6mg/dl
- Persistent Hypertension (BP ≥ 140/90 mmHg) despite 3 months of treatment

HYPERTENSION IN AYURVEDA

As per *Ayurveda*, the disease is supposed to be *Vataja* probably due to *Vaishamya* (imbalance) of *Vyanavayu*. Cardiac functions (*Hridaya dharan*) are regulated mainly by *Vata* particularly *Vyana (*responsible for *Praspandana, Asriktasravana)* and *Prana* (responsible for *Rakta anudhavana*). Associated conditions like Palpitation (*Hrida drava),* Headache (*Shirahashula*), Vertigo (*Bhrama*), Transient Insomnia (*Nidranasha*), Tinnitus (*Karna nada*) are described as *Vataja Vikara* in *Ayurveda*.

Some similar situations are described in *Ayurvedic* texts under *Raktagatavata, Raktavritavata, Pittavritavata.*

Causes:

1. Obesity.
2. Sedentary lifestyle and lack of physical exercise.
3. Excessive intake of oily, salty, sour and spicy food items.
4. Alcohol consumption, smoking.
5. Psychological factors such as stress, anxiety, anger etc.

Symptoms:

Any of the following symptom/s may be present -

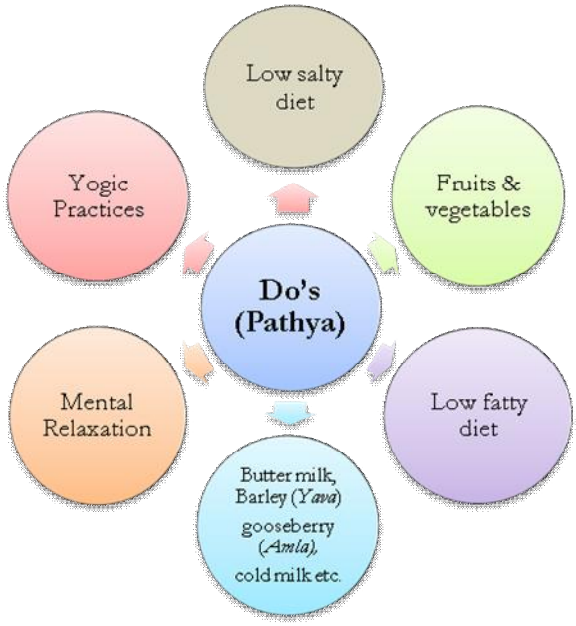
- Headache, Vertigo
- Breathlessness
- Discomfort/Pain in chest
- Irritability
- Nausea, vomiting
- Loss of appetite
- Bleeding from nose
- Haziness of vision
- Swelling in legs and under eyes
- Feeling of burning sensation and/or numbness in hands and feet.
- Feeling of tiredness, restlessness

PREVENTIVE MEASURES AS PER AYURVEDA

Do's

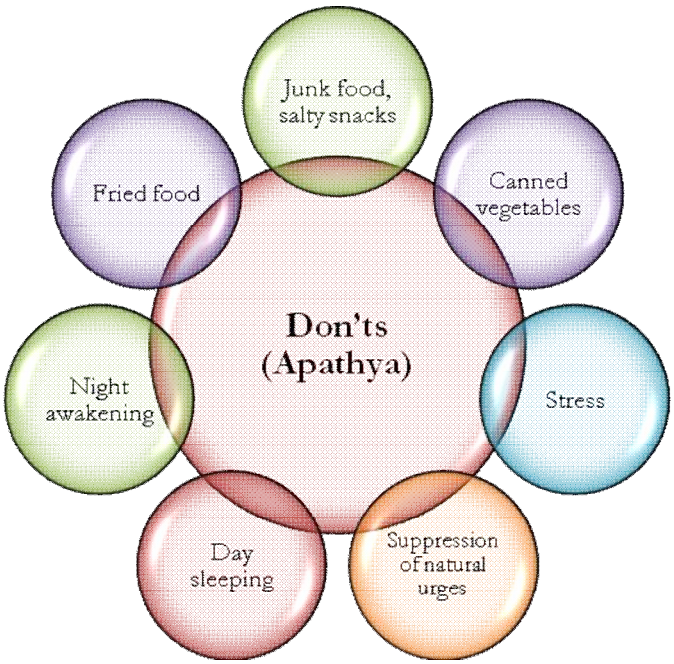
- Regular blood pressure check-up.
- Lifestyle modifications like timely intake of balanced diet, more use of fruits and green vegetables.
- Regular physical exercise.
- Daily brisk walking for half an hour.

- Reduce intake of oily, salty, sour and spicy food items.
- Weight reduction.
- Barley(*Yava*), sorghum(*Jowar*), wheat, green gram(*Mudga/Moong dal*), horse gram(*Kulatha*), moringa (*Shigru*), Bitter gourd (*karela*), bottle gourd(*Ghia/ Lauki*), turnip(*Shalgam*), carrot(*Gajar*), radish(*Muli*), Indian gooseberry (*Amla),* cucumber(*Kira*), black grapes(*Draksha*), pomegranate(*Anar*), apple, pineapple, cold milk etc.
- Timely sleeping and awakening.
- Regular practice of Yoga, Meditation etc. under the supervision of Yoga expert.



Don'ts:

- Excessive intake of salt (sprinkling over salad, curd etc.)
- Excessive use of butter, ghee, chillies (red-green), pickles, Sesame Oil (*Til taila*), Bengal gram(*Chana Dal*), mustard oil (*Sarson ka Taila*), sour fruits, curd, tea, coffee etc.
- Intake of animal fat, processed/oily food items.
- Alcohol consumption and smoking.
- Practice of day sleeping and awakening at night.



YOGIC MANAGEMENT ANNEXURE-VI

The role of Yoga in the management of Hypertension is well documented. This is to be done under the supervision of Yoga Instructor (in consultant with Ayurvedic Physician). In general, the practices prescribed for the Hypertension cases are:

Kriyas: *Jalneti.*

Selected Asanas: *Tadasana, Katichakrasana, Konasana, Uttanapadasana, Pavanamuktasana, Vajrasana, Ushtrasana, Shashankasana, Bhujangasana, Gomukhasana, Makarasana, Vakrasana, Shavasana.*

Pranayama: *Nadishodhana, Ujjayi, Shitali, Sitkari and Bhramari.*

Meditation: Breath awareness.

Contraindications: The head stand (*Shirshasana*/Topsy-turvy) postures and hyperventilation breathing practices should be avoided. Concentrate more on *pranayama* and meditation than the other practices.

OVERWEIGHT, OBESITY & DYSLIPIDEMIA (स्थौल्य एवं मेदोविकार)

INTRODUCTION

Obesity is a medical condition in which excess body fat gets accumulated to the extent that it may have a negative effect on health, leading to reduced life expectancy and/or increased health problems. Obesity increases the likelihood of various diseases, particularly heart disease, type 2 diabetes, obstructive sleep apnea, certain types of cancer, and osteoarthritis. It is most commonly caused by a combination of excessive food energy intake, lack of physical activity, and genetic susceptibility, although a few cases are caused primarily by genes, endocrine disorders, medications, or psychiatric illness.[26]

EPIDEMIOLOGY & HEALTH ASSOCIATED RISKS

Current estimates suggest that the global prevalence of obesity has increased by two fold from 1980 to 2014.[27] A major proportion of Diabetes, Ischemic Heart Disease, Hypertension, Ischemic Stroke, Osteoarthritis, and Cancer burden may be attributed to Overweight and Obesity.[28]

CAUSES & RISKS FACTORS FOR OVERWEIGHT/OBESITY

- Increased intake of energy-dense foods that are high in fat, carbohydrates
- Overeating and Irregular food habits
- Lack of Physical activities due to sedentary life style
- Genetics, Medical Reasons or Psychiatric illness
- Day – time sleeping

ASSESSING OVERWEIGHT/OBESITY

According to the National Institute for Health and Clinical Excellence (NICE), Overweight and Obesity are assessed using Body Mass Index (BMI). It is defined as a person's weight in kilograms divided by the square of his / her height in meters (kg/m^2).

$$\text{Body Mass Index(BMI)} = \frac{\text{Body weight (in kilograms)}}{\text{Height (in metres)}^2}$$

It is used because, for most people, BMI correlates with their proportion of body fat, as a person having BMI of 25 to 29.9kg/m^2 is considered 'Overweight' and 'Obesity' as a BMI of 30kg/m^2 or more[29]. This classification accords with that recommended by the World Health Organization (WHO).[30]

Classification of overweight and obesity among adults[31]:

Classification	BMI (kg/m2)	Risk of co-morbidities
Underweight	Less than 18.5	Low (but risk of other clinical problems increased)
Healthy weight	18.5–24.9	Average
Overweight (or pre-obese)	25–29.9	Increased
Obesity, class I	30–34.9	Moderate
Obesity, class II	35–39.9	Severe
Obesity, class III (severely or morbidly obese)	40 or more	Very severe

[26] https://en.wikipedia.org/wiki/Obesity
[27] World Health Organization. Obesity and overweight-Fact sheet N°311; 2014. Available from: http://www.who.int/mediacentre/factsheets/fs311/en/)
[28] World Health Organization. 10 facts on obesity. 2013. Available from: http://www.who.int/features/factfiles/obesity/en/
[29] Healthy Weight, Healthy Lives: A toolkit for developing local strategies
[30] http://www.who.int/mediacentre/factsheets/fs311/en/ Obesity and Overweight updated January 2015
[31] National Institute for Health and Clinical Excellence, 2006

Although BMI is an acceptable approximation of total body fat and is used to estimate the relative risk of disease in most people, it is not always an accurate predictor of body fat or fat distribution, particularly in muscular individuals, because of differences in body-fat proportions and distribution. Therefore, **waist circumference** should also be used in addition to BMI to measure **Central obesity** and disease risk in individuals with a BMI less than 35kg/m^2. However, where BMI is greater than 35kg/m^2, waist circumference adds little to the absolute measure of risk provided by BMI.

Waist circumference thresholds used to assess health risks in the general population[32]

At increased risk	Male	Female
Increased risk	94 cm (37 inches) or more	80 cm (31 inches) or more
Greatly increased risk	102 cm (40 inches) or more	88 cm (35 inches) or more

The World Health Organization (WHO) has recommended that an individual's relative health risk could be more accurately classified using both BMI and waist circumference.

Combining BMI and waist measurement to assess obesity and the risk of type 2 Diabetes and Cardiovascular Disease for general Adult population[33]

Classification	BMI (kg/m2)	Waist circumference and risk of co-morbidities	
		Men: 94–102 cm	Men: More than 102 cm
		Women: 80-88 cm	Women: More than 88 cm
Underweight	Less than 18.5	–	–
Healthy weight	18.5–24.9	–	Increased
Overweight (or pre-obese)	25–29.9	Increased	High
Obese	30 or more	High	Very high

MANAGEMENT STRATEGY FOR OVERWIGHT/OBESITY

A Guide for Obesity/Overweight management[34]:

BMI classification	Waist circumference			Co-morbidities*
	Low	High	Very high	
Overweight				
Obesity I				
Obesity II				
Obesity III				

General advice on healthy weight and lifestyle

Diet and physical activity;

Diet and physical activity; consider drugs

Diet and physical activity; consider drugs; consider surgery

* ***Co-morbidities*** *may be type 2 Diabetes, Hypertension, Cardiovascular Disease, Osteoarthritis, Dyslipidemia and Sleep apnea etc.*

[32] National Institute for Health and Clinical Excellence, 2006, International Diabetes Federation (2005), WHO/IASO/IOTF (2000), World Health Organization (2000)
[33] National Institute for Health and Clinical Excellence, 2006
[34] National Institute for Health and Clinical Excellence, 2006

Therapeutic approach

1. Determine degree of Overweight or Obesity
2. Assess environmental, social, psychological and family factors – including family history of overweight and obesity
3. Assess lifestyle- diet and physical activity
4. Assess co-morbidities -using the following tests – lipid profile and blood glucose (both preferably fasting) and Blood pressure measurement

Do's:

- Take low-fat and low-calorie food items.
- Take frequent small meals to avoid food cravings.
- Take more proteins to stay longer without food.
- Use warm water for drinking.
- Include cabbage in daily meal. It will stop the conversion of sugars to fat.
- Steamed, boiled and baked vegetables rather than fried.
- Drink skimmed milk instead of whole milk.
- Include lemon in diet and drinks.
- Take Healthy foods such as – oatmeal, walnuts, salads, bitter gourd (*Karela*), drumstick (Shigru), barley(*Yava*), wheat, honey(*Madhu*), Indian Gooseberry (Amla), pomegranate(*Anar*) and snake gourd etc.
- Brisk morning walk of 30 minutes.
- Yoga and Meditation to manage stress and fatigue.

Dont's:

- Watching TV while having food.
- High carbohydrate vegetables like – potato, rice etc.
- More sugary or sweet products, more dairy products, fried and oily foods, fast foods, excess salt.
- Sedentary habits.
- Excessive sleep.
- Alcohol and Smoking
- Salty foods or excessive salt in meals.

DYSLIPIDEMIA (मेदोविकार)

Dyslipidemia is an abnormal amount of lipids (e.g. cholesterol and/or fat) in the blood. There are a number of different forms of Dyslipidemia. **Hypercholesterolemia** indicates elevated blood cholesterol levels. **Hyper-triglyceridemia** implies elevated triglycerides (TGs). **Hyper-lipidemia** indicates elevated cholesterol and TGs that is, an elevation of lipids in the blood.

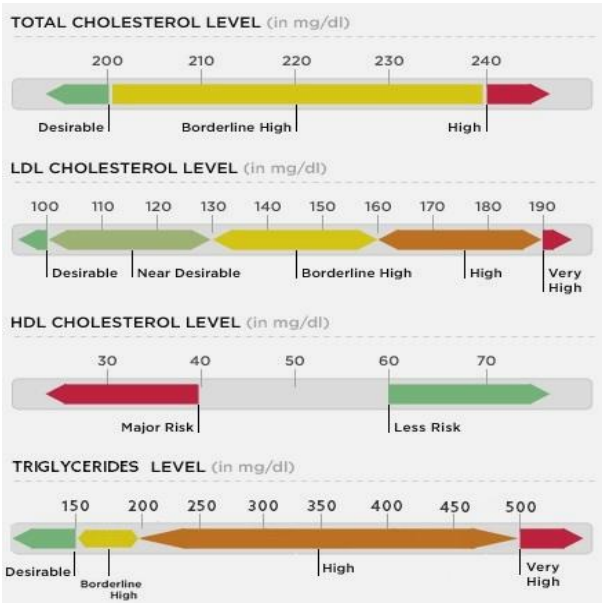
Dyslipidemia is one of the life style disorders due to the today's faulty life style. It may be manifested by elevation of the Total cholesterol, the bad Low Density Lipoprotein (LDL) cholesterol and/or the rise in triglyceride concentrations and a decrease in the good High Density Lipoprotein (HDL) cholesterol concentration in the blood. Dyslipidemia is widely regarded as a major risk factor for Coronary Heart Disease (CHD) and Atherosclerotic Cardiovascular Disease (ASCVD); for every 1% increase in cholesterol level there is 1-2% increase in the incidence of CHD.[35]

[35] ijapr.in/articles/research/fulltext/2714136.pdf

Predisposing factors	
• **Heredity/Genetic**	• Advanced age
• **Gender (women generally have lower total cholesterol levels than men of the same age before menopause)**	• Cigarette smoking
• **Excessive alcohol consumption**	• Diet high in saturated fats, trans-fatty acids, and cholesterol and diet low in fiber
• **Physical inactivity**	• Overweight or obesity (especially abdominal obesity)
• **Certain medications (e.g., beta blockers, diuretics)**	• Anabolic steroids
• **Diabetes mellitus**	• Hypothyroidism

Table 1. Cholesterol Guidelines Based on the National Cholesterol Education Program Adult[36]

CLASSIFICATION OF BLOOD LIPID LEVELS FOR THERAPEUTIC INTERPRETATION	
Blood lipids	**Serum level (mg/dl)**
Total Cholesterol	
Desirable	<200
Borderline high	200-239
High	>240
LDL Cholesterol	
Optimal	<100
Near Optimal	100-129
Borderline High	130-159
High	160-189
Very High	≥190
Serum Triglycerides	
Borderline High	<150
High	150-199
Very High	200-499
	≥500
Serum HDL Cholesterol	
Low	<40
High	≥60



LDL-Low-density lipoprotein; **HDL-** High-Density lipoprotein.

Treatment goals

- All patients with established CVD or diabetes should be counseled about non pharmacological treatment and suitable medications should also be initiated.
- Other patients should be counseled about non pharmacological treatment

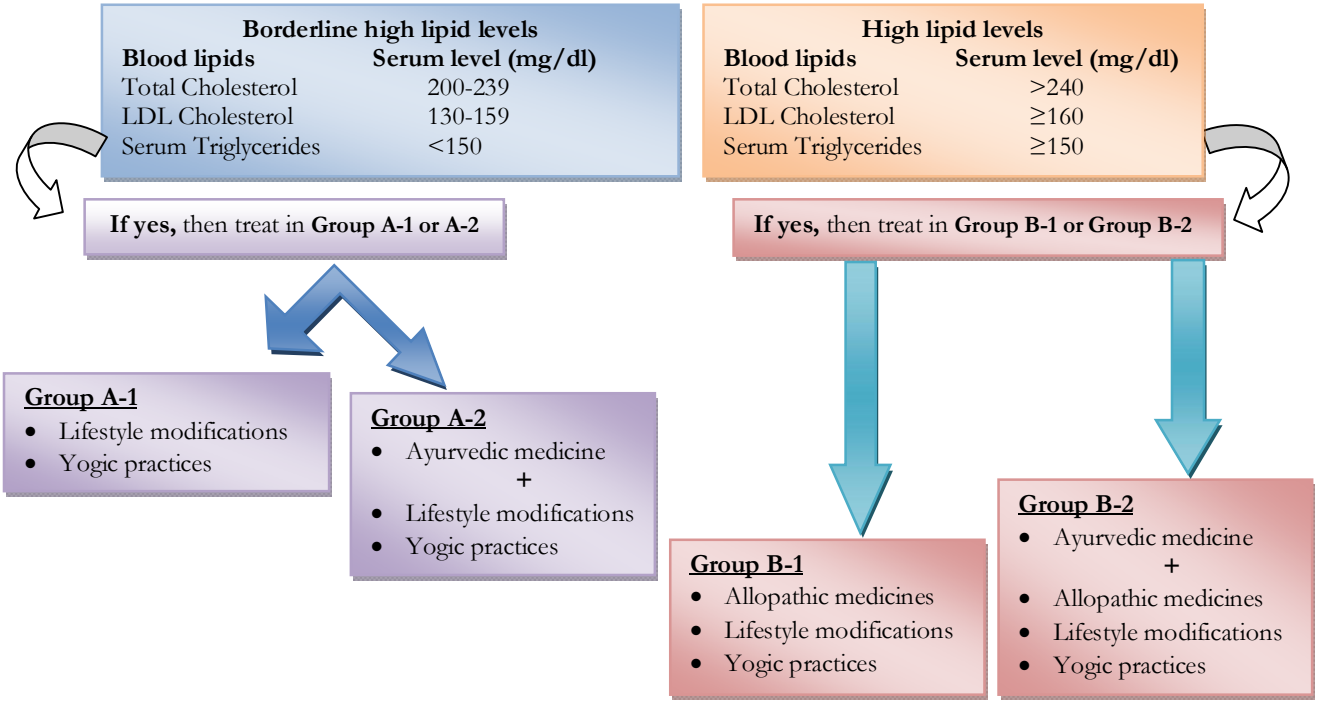
Non pharmacological Therapy

- Maintain healthy body weight and waist circumference
- Moderate intensity physical activity
- Smoking/Tobacco cessation
- Less use of saturated fats

[36] http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3_rpt.htm

Lifestyle changes[37]	
Smoking Cessation	Results in 36% reduction in the relative risk of mortality from Coronary Artery Diseases.
Diet	↓ saturated and trans fats ↓ simple sugars and refined carbohydrates ↑ fruits and vegetables ↑ whole-grain cereals ↑ proportion of mono- and polyunsaturated oils, including omega-3 fatty acids
Optimal Waist Circumference	< 94 cm (37 inches) for men < 80 cm (32 inches) for women Differs by ethnicity with lower cut-offs appropriate for South and East Asians.
Optimal BMI	< 25 kg/m^2

Guidelines for management of Borderline-high lipidemia & established Hyper-lipidemia for Ayurveda integration with NPCDCS



Note:

- **From any of the two groups of Borderline high lipid levels, if inspite of the management the patient shows rise in lipid levels then, the patient may be shifted to high lipid group and managed accordingly.**
- **From any of the two groups, if inspite of the treatment, the patient does not respond to the treatment or develops any complications, he/she may be referred to a proper set up.**

[37] ACSM's Health & Fitness Journal July/August 2006 Vol. 10, No. 4

OBESITY (STHOULYA) & LIPID DISORDERS (MEDOROGA) IN AYURVEDA

Atisthaulya (Obesity) is considered and described as one of the eight despicable conditions by *Charaka.*[38] A person with excessive accumulation of *Meda* (fat/adipose tissue) and *Mamsa* (flesh/muscle tissue) leading to flabbiness of hips, abdomen, and breast has been categorized as *Atisthula.* It is considered as one of *Santarpanottha Vikaras* (disease due to over calories) in Ayurveda. *Medodushti* (disorders of fat metabolism) may be one of the risk factors for Ischemic Heart Disease (IHD).

Lipids can be easily co-related to that of *Medo Dhatu*. Abnormal composition of *Medo Dhatu* is considered as *Medo Dosha* and subsequently as *Medoroga*. It is a condition caused by derangement of *Agni* in general and *Medodhatvagni* in particular leading to improper formation of *Medo Dhatu* in excess, which subsequently starts accumulating in the *Srotas* resulting into obstruction to the flow of *Vata,* in turn aggravating the *Vata dosha* which moves back into the *Pakvashaya* causing further excitation of *Agni* requiring frequent meals thus the vicious cycle continues resulting into *Medoroga*.

Causes:

1. Sedentary lifestyle
2. Excessive and frequent intake of food.
3. Excessive intake of oily, sweet, cold, heavy food items.
4. Lack of physical and mental activity / Lack of exercise.
5. Day sleeping.
6. Children of obese parents are likely to be obese.

Symptoms:

1. Breathlessness even on little exertion / physical activity.
2. Lack of interest in doing work.
3. Profuse sweating with foul body odor.
4. Excessive hunger.
5. Feeling of tiredness.
6. Excessive sleep.

Do's:

1. Intake of regular and balanced diet.
2. Use of lukewarm water (*Ushnodaka*) for drinking.
3. Use of Barley (*Yava*), Sorghum (*Jowar*), Indian gooseberry (*Amla*), Honey (*Madhu*) and Butter milk (*Takra*)
4. Use of Green gram (*Moong*), Horse gram (*Kulathi*), Bengal gram (*Chana*) and Spilt Red Gram (*Arhar*)
5. Plenty of green leafy vegetables and fruits
6. Fibrous food items
7. Brisk walking and jogging in fresh air everyday in early morning
8. Regular exercise
9. Practice of Yoga & Naturopathy in consultation with the specialist

[38] Agnivesha, Charaka, Dridhabala, Charaka Samhita, Sutra Sthana, Ashtauninditeeya Adhyaya, 21/3. 5th ed. Vaidya Jadavaji Trikamji Aacharya., editor. Varanasi: Chaukhamba Sanskrit Sansthan; 2009. p. 116

Don'ts:

1. Frequent and excessive intake of oily / heavy food items
2. Sleeping in day time *(Diva-swapna)*
3. Sleeping immediately after taking meals
4. Canned food products
5. Sedentary lifestyle.
6. Junk food like burger, pizza, cold drinks and fried food items

YOGIC MANAGEMENT ANNEXURE-VI

The role of Yoga in the management of Obesity is well documented now. This is to be done under the supervision of Yoga Instructor (in consultation with Ayurvedic Physician). In general, the practices prescribed for the Obesity[39] cases are:

Kriyas: *Kunjal, Kapalbhati.*

Selected Asanas: *Surya Namaskar, Tadasana, Katichakrasana, Konasana, Pavanmuktasana , Ardha Padmasana , Padmasana, Pascimottanasana , Halasana, Bhujangasana, Shalabhasana, Dhanurasana, Naukasana, Navasana, Parvatasana, Vakrasana, Padahasthasna, Vajrasana, Shashankasana, Sarvangasana, Ardhamatsyendrasana, Shavasana*

Pranayama: *Nadishodhana, Suryabhedi, Bhastrika.*

Meditation: Breath awareness (BAW) and relaxation techniques viz. Instant relaxation technique (IRT), quick relaxation technique (QRT), deep relaxation technique (DRT) and cyclic meditation (CM).

[39] A study of Efficacy and Mechanisms of Uni-Nostril Yoga Breathing and Obesity, Research project of Central Council for Research in Yoga & Naturopathy Deptt. Of AYUSH, Ministry of Health and Family Welfare, 2009

STROKE

Stroke is a brain injury caused by a sudden interruption in the blood supply of the brain. It occurs when part of the brain does not receive the needed blood flow for one of two reasons i.e. either the blood supply to a part of the brain is suddenly interrupted, or a blood vessel in the brain ruptures and blood invades the surrounding areas.

INCIDENCE

Stroke is one of the leading causes of death and disability in India. The estimated adjusted prevalence rate of stroke ranges, 84-262/100,000 in rural and 334-424/100,000 in urban areas. The incidence rate is 119-145/100,000 based on the recent population based studies.[40]

RISK FACTORS[41]

There are 2 types of risk factors for stroke: **controllable** and **uncontrollable**. Controllable risk factors generally fall into two categories: lifestyle risk factors or medical risk factors. Lifestyle risk factors can often be changed, while medical risk factors can usually be treated.

Controllable Risk Factors

Controllable Disease conditions that Increases Stroke Risk	
High Blood Pressure	Atherosclerosis
Atrial Fibrillation	Diabetes mellitus
Hypercholesterolemia	
Lifestyle Risk Factors that can be changed	
Tobacco use and Smoking	Alcohol Use
Physical Inactivity	Obesity

Uncontrollable Risk Factors

Age	Gender[42]
Race	Family History
Previous Stroke or TIA	

Stroke symptoms /Identification of an acute event[43]

	SUDDEN numbness or weakness of face, arm or leg, especially on one side of the body
	SUDDEN confusion, trouble speaking, or understanding
	SUDDEN trouble seeing in one or both eyes
	SUDDEN trouble walking, dizziness, loss of balance or coordination
	SUDDEN severe headache with no known cause

[40] Pandian and Sudhan; Stroke epidemiology and stroke care services in India; Journal of Stroke. 2013 Sep;15(3):128-34.

[41] Miss.B.M.Gund et. al.; Stroke: A Brain Attack; IOSR Journal Of Pharmacy; Volume 3, Issue 8 (September 2013), pp 01-23

[42] Peter Appelros et. al.; Sex Differences in Stroke Epidemiology; A Systematic Review; Stroke AHA; 2009; 40: pp 1082-1090

[43] http://www.stroke.org/understand-stroke/recognizing-stroke/signs-and-symptoms-stroke

Use FAST to Remember the Warning Signs of a Stroke[44]

F	**FACE**: Ask the person to smile. Does one side of the face droop?	
A	**ARMS**: Ask the person to raise both arms. Does one arm drift downward?	
S	**SPEECH**: Ask the person to repeat a simple phrase. Is the speech slurred or strange?	
T	**TIME**: If any of these signs is observed, seek medical care immediately.	

PREVENTION

1. Identify and review the risk factors.
2. Reduce the risk factors through lifestyle changes
3. Recognize the signs and symptoms of a stroke (**by "*FAST*" as given above**) and respond immediately.
4. Eating a healthy diet
5. Maintaining a healthy weight
6. Getting enough exercise
7. Not smoking
8. Avoid alcohol
9. Check Cholesterol
10. Control Blood Pressure
11. Manage Heart Disease

Sequel of stroke may be Hemiplegia/Hemiparesis, which is described as **"*PAKSHAGHAT*"** in Ayurveda.

Pakshaghat in Ayurveda:

Aggravated *Vata dosha* affects either side of the body, paralyzing motor and / or sensory functions of the limbs, causing *Pakshaghat*. Usually right half / left half or lower half of the body is affected.

Signs & Symptoms

- Limping gait / difficulty in speech / tickle of fluid while drinking sometimes
- Numbness / pain of affected part of the body
- Loss of motor functions / activities
- Loss of sensation sometimes

Do's:

- *Masha* (Black Gram), *Kulattha* (Horse Gram), *Palandu* (Onion), *Rasona* (Garlic), *Shunthi* / *Ardraka* (Ginger), *Mulaka* (Radish), *Kushmanda* (Ash gourd), *Mudga* (Green gram) in regular diet.
- Fruits like *Dadima* (Pomegranate), *Amra* (Mango), *Draksha* (Grape), etc., can also be taken.

[44] http://www.stroke.org/understand-stroke/recognizing-stroke/act-fast

Don'ts:

- Pungent and astringent or salty food and incompatible diet.
- Excess consumption of chana, peas, barley etc.
- Excessive starvation, Excess exercises, Suppressing of natural urges, awakening in the nights.
- Excessive consumption of alcohol and smoking.

Management:

Panchakarma (*Snehana, Swedana, Virechana, Vasti, Nasya* etc.)

Some Ayurvedic medicinal plants like *Bala (Sida cordifolia), Nirgundi (Vitex negundo), Rasna (Pluchea lanceolata), Shallaki (Boswellia serrata), Rasona (Allium sativum), Ashwagandha (Withania somnifera), Shunthi (Zingiber officinalis), Eranda (Ricinus communis), Haritaki (Terminalia chebula)* etc.

YOGIC MANAGEMENT ANNEXURE-VI

This is to be done under the supervision of Yoga Instructor (in consultation with Ayurvedic Physician). In general, the practices prescribed for the Stroke cases are: (as applicable according to the patient's condition and in consultation with physician)

Kriyas: *Kunjal, Kapalbhati.*

Selected Asanas: *Surya Namaskar, Tadasana, Katichakrasana, Konasana, Pavanmuktasana , Bhujangasana, Uttanpadasana(Ekpad), Vakrasana, Makarasana, Ardhshalabhasana, Shavasana*

Pranayama: *Nadishodhana, Suryabhedi, Bhastrika.*

Meditation: Breath awareness (BAW) and relaxation techniques viz. Instant relaxation technique (IRT), quick relaxation technique (QRT), deep relaxation technique (DRT) and cyclic meditation (CM).

CANCER
(कर्कटार्बुद)

Cancer is the second leading cause of death after heart diseases. The carcinogenic agents that people breathe, eat, drink and are otherwise exposed to, largely determine the occurrence of the disease. The common causative factors include tobacco use, being overweight or obese, unhealthy diet with low fruit and vegetable intake, lack of physical activity, alcohol use, sexually transmitted HPV-infection, infection by HBV, ionizing and non-ionizing radiation, urban air pollution, smoke (indoor or industrial) etc. Tobacco use is the single most important risk factor for cancer causing about 20% of global cancer deaths and around 70% of global lung cancer deaths.[45]

The high rates of cervical and breast cancers have created a higher cancer burden in women than men and hence these diseases are of major societal and familial consequence.

Probable Signs for early detection of Cancer (CAUTION):

- **C**hange in bowel or bladder habits
- **A** sore that does not heal
- **U**nusual bleeding or discharge
- **T**hickening or lump in the breast or elsewhere
- **I**ndigestion or difficulty in swallowing
- **O**bvious change in a wart or mole
- **N**agging cough or hoarseness of voice

Cancer can be treated successfully if detected early. Screening is a means of early detection of the disease in asymptomatic individuals with the goal of decreasing morbidity and mortality. Screening can potentially save lives as shown in cervical, and breast cancer. Public education on the avoidance of identified risk factors for cancer and encouraging healthy habits contributes to its prevention and control.[46]

The social origin of lifestyle must also be considered in cancer prevention. It is now known that over one-third of cancers are preventable, and one-third potentially curable provided they are diagnosed early in their course. The quality of life of patients with incurable disease can be improved with palliative care.[47]

General measures for prevention of Cancer

- Stop using tobacco in all forms
- Avoid consuming alcohol
- Adopt healthy food habits
- Choose predominantly plant based diets rich in fruits and vegetables
- Restrict the intake of red-meat (beef, pork etc.) and preserved meat
- Engage in regular physical activity
- Maintain optimum weight for height and age

[45] http://www.who.int/mediacentre/factsheets/fs297/en/

[46] Oncology and Hematology (Part 6), Prevention and Early Detection of Cancer, Education and Healthful habits, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg.486.

[47] M. Krishnan Nair et.al., Cancer: Current scenario, intervention strategies and projections for 2015.

CANCER IN AYURVEDA

In Ayurveda, cancer is described as inflammatory or non-inflammatory swelling and mentioned either as '*Granthi*' (minor neoplasm) or '*Arbuda*' (major neoplasm). Aggravated *Vata* and *Kapha doshas* affect the tissues resulting in development of a round, firm, large, deep rooted, slow growing fleshy growth associated with mild pain. 6 types of tumors have been described in Ayurveda based on the aggravated *Dosha* and the tissue involved viz. *Vataj, Pittaj, Kaphaj, Medoj, Mamsaj* and *Raktarbuda*. Among these *Mamsarbuda* and *Raktarbuda* are described as incurable.[48]

ORAL CANCER

Oral cancer is one of the most common cancers in India. Chewing tobacco is the major cause for Oral cancer. Smoking and alcohol consumption are powerful and synergistic risk factors for the development of oral **Squamous Cell Carcinoma** (**SCC**). Heavy drinkers and smokers have 38 times greater risk than the abstainers[49].

Incidence

Oral Squamous Cell Carcinoma is the 6th most common cancer globally and its incidence is increasing. The burden of oral cavity SCC varies significantly with cultural variations. India, Pakistan, Sri Lanka and Bangladesh have the highest incidence with up to 25% of all new cancers affecting the oral cavity.

Signs & Symptoms

- Raised white or red patch/sloughing ulcer/hard mass
- Pain/difficulty in opening mouth or swallowing
- Lump in the neck
- Numbness of the tongue or other area of the mouth
- Change in voice quality/Hoarseness of voice

Screening strategy for Oral cancer

Examine the interior of the mouth regularly to detect symptoms early.

Examination of the mouth

Examine the interiors of the mouth i.e., inside of cheeks and lips, the floor and roof of the mouth, the tongue and the lymph nodes in the neck, standing before a mirror in adequate light, for any red or white patch, or any other abnormal area. Feel the suspicious area with fingers to know its hardness and extent of spread.

[48] Sushruta Samhita, Nidansthana

[49] Blot WJ, McLaughlin JK, Winn DM, Austin DF, Greenberg RS, Preston Martin S. Smoking and drinking in relation to oral and pharyngeal cancer. Cancer Res. 1988; 48: 3282-3287.

Oral Cancer Diagnostic Tests [50]

After thorough examination, if symptoms indicate cancer, then suspect oral cancer. One or more of the following tests may be used to confirm cancer and its spread.

Biopsy

A small tissue sample is taken for histo-pathological examination. Biopsy is the only sure way to know if the abnormal area is Cancer. Brush biopsy or Exfoliative cytology, Incisional biopsy, Fine-needle-aspiration biopsy (FNA), Mucosal staining or Chemiluminescent light are some of the biopsy techniques.

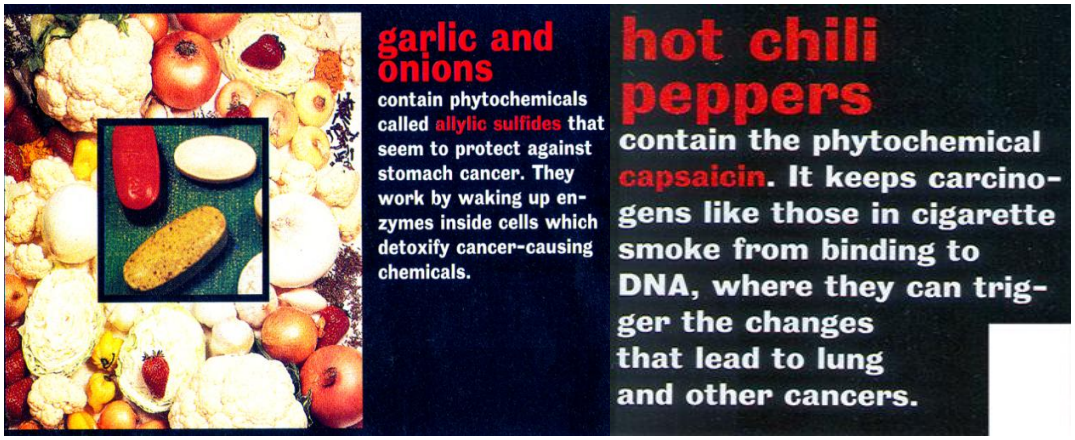
Oral Cancer Prevention

Cancers of the mouth are among the most preventable cancers.

To minimize the risk of developing oral cancer:

Do's:

- Eat a well-balanced, healthy diet with a variety of fruits and vegetables
- Examination of dentures by a dentist at least every five years
- Remove the dentures at night and clean them daily
- Wear a lip balm with sunscreen and a hat with a brim to limit sun exposure



Don'ts:

- Tobacco in all forms.
- Drinking alcohol.

BREAST CANCER

Breast cancer is a malignant proliferation of epithelial cells lining the ducts or lobules of the breast. Breast cancer is a hormone dependent disease. Women without functioning ovaries who never receive Oestrogen replacement therapy may not develop breast cancer.[51]

Incidence

India is experiencing an unprecedented rise in the number of breast cancer cases across all sections of society, as are also other countries. Presently, India already has one of the worst survivals from breast

[50] http://www.mdanderson.org/patient-and-cancer-information /cancer-information/cancer-types/oral-cancer/diagnosis/index.html
[51] Oncology and Hematology (Part 6), Breast cancer, ... and Epidemiology, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg.563.

cancer, in the world; has the highest number of women dying from breast cancer in the world; and India ranks number one in the numbers of healthy life years lost (DALY - Disability Adjusted Life Years) due to breast cancer.[52]

Symptoms[53]

- Presence of any palpable mass/nodule in the breast(s) which are hard, irregular, tethered or fixed, or painless
- Abnormal skin changes or retractions over the breast or nipple discharges
- Enlargement or Inflammation in the regional lymph nodes

Screening strategy for Breast Cancer[54]

- Breast self-examination (BSE) - monthly (preferably during the follicular phase of the menstrual cycle i.e. days 5-7 of the cycle are the best time for the breast examination)
- Clinical breast examination by a care giver
- Mammography

Regular Self-examination increases the likelihood of detecting a mass at a smaller size when it can be treated with more limited surgery. Self-examination leads to increased biopsy rate though it does not itself reduce breast cancer.

Diagnostic Tests

- Mammography
- Biopsy –Aspiration Biopsy

Prevention

Early detection can achieve a longer survival. The major benefit of BSE is identification of tumors appropriate for conservative local therapy. Breast cancer is virtually unique among the epithelial tumors in adults in that screening in the form of annual mammography improves survival.

CERVICAL CANCER

Veneral transmission of Human Papilloma Virus (HPV) is the etiological factor of Cervical cancer. Over 66 types of HPVs have been isolated, and many are associated with genital warts. Those types commonly associated with cervical carcinoma are 16, 18, 31, 33, 52 and 58, but 70% cases are caused by HPV-16 and -18. These along with many other types are also associated with Cervical Intraepithelial Neoplasia (CIN).[55]

[52] http://www.breastcancerindia.net/statistics/stat_global.html
[53] Oncology and Hematology (Part 6), Breast cancer, Evaluation Breast masses in Men and Women, The Palpable Breast Mass, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg. 564.
[54] Oncology and Hematology (Part 6), Breast cancer, Evaluation Breast masses in Men and Women, The Palpable Breast Mass, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg.564.
[55] Oncology and Hematology (Part 6), Gynecologic Malignancies, Cervix Cancer, Etiology and Genetics, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg.608.

Incidence

Worldwide cervical cancer is the third commonest cancer diagnosed. Cervical cancer is on the declining trend in India according to the population-based registries; yet it continues to be a major public health problem for women in India. The epidemiological risk factors are early age at marriage, multiple sexual partners, multiple pregnancies, poor genital hygiene, malnutrition, use of oral contraceptives, and lack of awareness[56].

Symptoms[57]

Patients with Cervical cancer are generally asymptomatic, and the disease is detected on routine pelvic examination.

- Abnormal bleeding or post coital spotting that may increase to inter-menstrual or prominent menstrual bleeding
- Feeling of any mass per vaginum
- Yellowish vaginal discharge
- Lumbo-sacral back pain
- Lower extremity edema
- Urinary symptoms

Screening strategy

In developed countries, screening for precancerous and cancerous cells using Pap tests has reduced cervical cancer development and death by 80%. However, in India and other developing countries, screening examinations like Pap tests and Human Papilloma Virus (HPV) testing is not possible for most women, especially those living in rural areas, because of the cost, the need for a laboratory to get results, and a lack of trained health care workers.

- **Pap smear test**- The Pap smear is 90-95 % accurate in detecting early lesions such as Cervical Intraepithelial Neoplasia (CIN) but is less sensitive in detecting cancer when frankly invasive cancer or fungating masses are present. Inflammation, necrosis and haemorrhage may produce false –positive smears, and colposcopic-directed biopsy is required when any lesion is visible on the cervix, regardless of Pap smear findings.[58]

- **Visual Inspection with Acetic acid (VIA) test-** The VIA test is performed by applying vinegar to the cervix using a cotton swab. After 60 seconds, the cervix is examined with the naked eye using a lamp. Precancerous tissue turns white when vinegar is applied, while healthy tissue does not change color. The results are known immediately, and the test can be done by primary health care workers.[59]

Diagnostic tests[60]

- **Colposcopic-directed Biopsy** is a technique using a binocular microscope and 3% acetic acid applied to the cervix in which abnormal areas appear white and can be biopsied directly.

[56] Aswathy Sreedevi et.al. India Epidemiology of cervical cancer with special focus on India, Int J Womens Health. 2015; 7: 405–414.
[57] Oncology and Hematology (Part 6), Gynecologic Malignancies, Cervix Cancer, Clinical Presentation and Staging, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg.608.
[58] Oncology and Hematology (Part 6), Gynecologic Malignancies, Cervix Cancer, Screening and Prevention, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg.608.
[59] Cervical Cancer Screening with Vinegar Could Prevent Thousands of Deaths Each Year in Developing Countries, ASCO Annual Meeting, June 2, 2013.
[60] Oncology and Hematology (Part 6), Gynecologic Malignancies, Cervix Cancer, Screening and Prevention, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg.608.

- **Cone Biopsy**- in case of Endo-cervical tumor. Cone Biopsy alone is therapeutic for CIN in many patients.

Staging[61]

Stage 0 - Carcinoma in situ
Stage I - Disease confined to the cervix
Stage II - Disease invades beyond the cervix but not to the pelvic wall or lower third of the vagina
Stage III - Disease extends to the pelvic wall or lower third of the vagina or causes hydronephrosis
Stage IV - Present when the tumor invades the mucosa of bladder or rectum or extends beyond the true pelvis

Prevention strategy for cervical cancer

Vaccination against pathologic HPV appears to be an effective Cervical cancer prevention strategy. Vaccines are made with inactivated virus like particles that are non-infectious but highly immunogenic. Since not all oncogenic HPVs are targeted, patients will need to continue Pap Smear surveillance.[62]

HPV is necessary for the development of cervical cancer. Therefore, preventing HPV infection can prevent cervical cancer. This can be achieved by complete abstinence from sexual activity or by a vaccine[63]. Primary prevention involves a risk reduction approach through behavioral intervention for sexual and health care-seeking behavior or through mass immunization against high-risk HPV.[64]

Treatment

Carcinoma in situ (Stage 0) can be managed successfully by cone biopsy or by abdominal hysterectomy. For Stage I disease, results appears equivalent for either hysterectomy or radiation therapy. Patients with disease stages II-IV are primarily managed with external beam irradiation and intra-cavitary treatment or combined modality therapy.[65]

Referral: **All the cancers should be detected at the earliest and referred to proper set ups for early treatment.**

YOGIC MANAGEMENT ANNEXURE-VI

This is to be done under the supervision of Yoga Instructor (in consultant with Ayurvedic Physician). In general, the practices prescribed for the prevention of Cancer and to improve quality of life in cancer patients are:

Kriyas: *Kapalbhati.*

Selected Asanas: *Surya Namaskar, Tadasana, Ushtrasana, Vakrasana, Gomukhasana, Bhujangasana, Shalabhasana, Dhanurasana, Simhasana, Shavasana.*

Pranayama: *Nadishodhana, Ujjai, Shitali, Sitkari, Bhastrika*

Meditation: Breath awareness (BAW)

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[61] Oncology and Hematology (Part 6), Gynecologic Malignancies, Cervix Cancer, Clinical Presentation and Staging, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg.608.
[62] Oncology and Hematology (Part 6), Gynecologic Malignancies, Cervix Cancer, Screening and Prevention, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg.608.
[63] Cervical cancer: prevention and treatment, Denny L, Discovery Med. 2012 Aug; 14(75):125-31.
[64] Human papillomavirus infection (HPV) & screening strategies for cervical cancer, Sehgal A, Singh V, Indian J Med Res. 2009 Sep; 130(3):234-40.
[65] Oncology and Hematology (Part 6), Gynecologic Malignancies, Cervix Cancer, Treatment of Cervix Cancer, Harrison's Principles of Internal Medicine, 17th Edition, Vol. I, Year 2008, pg.608.

RHEUMATIC HEART DISEASE (RHD)

Rheumatic Heart Disease (RHD) is a condition where there is permanent damage to the heart valves secondary to Rheumatic Fever (RF). RHD is the most common cardiovascular disease in children and young adults. If the damaged heart valves are not repaired or replaced by cardiac surgery, the condition may become fatal.

Epidemiology

RHD affects more than 1.5 crore people worldwide and causes over 2.3 lakh deaths per year. India contributes to about 25% to 50% of newly diagnosed cases of RHD of the world. The Indian Council of Medical Research (ICMR) had conducted school surveys in several parts of the country at different points of time; the data obtained from these studies shows decline in RHD prevalence in many States. The prevalence of RHD is estimated at 0.9 per 1000 children in the age-group of 5-14 years by the study. However, the prevalence of RHD in some parts of the country still remains high.

RHD is widespread in low-income and overcrowded communities, where there is lack of hygiene and sanitation. RF and RHD have been nearly eradicated in developed countries, probably because of better living conditions, and better access to health care facilities.

Pathogenesis

Rheumatic Fever follows untreated infection with a bacterium called "Group- A Beta Hemolytic Streptococcus". Repeated episodes of Rheumatic Fever lead to worsening damage to the heart valves and therefore early diagnosis of RHD is very important.

Diagnosis

1. Diagnosis of Streptococcal pharyngitis

Symptoms of Streptococcal pharyngitis include pain in throat and difficulty in swallowing, usually associated with high fever and hoarseness of voice. These symptoms last for more than a week. Clinical examination reveals pus points over tonsils and swollen cervical lymph nodes.

The final confirmation is however by throat swab culture positive for Group- A Streptococcus, high or rising Anti-Streptolysin O titre, etc.

2. Diagnosis of Rheumatic Fever

Rheumatic Fever has very typical signs and symptoms. RF must be suspected in any child presenting with pain and swelling in large joints with or without fever, and with history of bacterial sore throat in the recent past. Symptoms of breathlessness, palpitations, chest pain may accompany and are indicative of carditis due to Rheumatic Fever.

Diagnosis of Rheumatic Fever is conventionally made using 'modified Jones criteria', which is a set of guidelines to aid clinicians. The Major and Minor criteria are as given in the table below:

Major criteria	Minor criteria
Carditis: Clinical and/or Subclinical*	Monoarthralgia
Arthritis: • Monoarthritis or polyarthritis • Polyarthralgia	Fever (≥38°C)
Chorea	ESR ≥30 mm/h and/or CRP ≥3.0 mg/dl
Erythema marginatum	Prolonged PR interval, after accounting for age variability (unless carditis is a major criterion)
Subcutaneous nodules	

**Subclinical carditis indicates echocardiographic valvulitis.*

CRP: C-Reactive Protein; ESR: Erythrocyte Sedimentation Rate

The following criteria are taken into account in Indian context for making diagnosis of RF:

- All patients must have evidence of preceding Streptococcal infection. This could be in the form of positive throat culture for Group- A Streptococcus, high or rising anti-streptolysin O titre or other Streptococcal antibodies (anti-DNASE B).
- For diagnosing first episode of RF:
    - Two Major criteria or,
    - One Major plus two Minor criteria
- For diagnosing recurrence of RF:
    - Two Major criteria or,
    - One Major plus two Minor criteria or,
    - Three Minor criteria

3. Diagnosis of Rheumatic Heart Disease:

- History and physical examination are quite typical and therefore clinical diagnosis of RHD is generally quite obvious. Common symptoms of RHD include breathlessness on exertion, tiredness, swelling of feet. Patients with severe valve disease may present with orthopnea, paroxysmal nocturnal dyspnoea and heart failure. Cardiac murmurs are hallmark of RHD.
- The investigations like X-ray chest, ECG and Echocardiography further help to determine severity of the valve damage.

Treatment and Prevention

RHD can be prevented by prevention and management of Streptococcal pharyngitis and Rheumatic Fever.

Streptococcus bacteria can easily spread from person to person as it is highly contagious. The bacteria spread to other people through coughing and sneezing, by not washing one's hands, lack of hygiene, etc. Therefore, it is important to understand that RF can be prevented by treating streptococcal infections.

Primary prevention:

Primary prevention of RF (the prevention of initial attack) is recommended by treating the streptococcal throat infections by administering a single intramuscular injection of long acting Penicillin (Benzathine Penicillin) or by oral antibiotic (usually Penicillin) for a period of 10 days.

Secondary Prevention:

Patients who develop one episode of RF following a streptococcal sore throat are at a much higher risk for developing further episodes of RF, if they develop recurrent throat infections. They need to receive preventive treatment with Penicillin injection for longer durations, so that RF does not recur. This is called as secondary prophylaxis. Secondary prophylaxis is recommended for all people who have a history of RF or RHD.

General preventive measures:

Do's:

- Get regular check-ups at local health clinic
- Keep sores clean and covered
- Wash hands regularly
- Watch out for symptoms in children – people aged between 5 and 14 are most likely to get rheumatic fever
- Eat a healthy diet

Don'ts:

- Do not ignore a sore throat. Consult a doctor for proper treatment of sore throat.
- Do not to add further stress to the heart either by smoking of by being overweight.

Referral: All the diagnosed and suspected cases of RHD should be referred to proper set ups for appropriate management.

YOGIC MANAGEMENT ANNEXURE-VI

This is to be done under the supervision of Yoga Instructor (in consultant with Ayurvedic Physician). In general, the practices prescribed for the prevention of RHD[66] are:

Selected Asanas: *Tadasana, Katichakrasana, Konasana, Pavanmuktasana, Makarasana, Bhujangasana, Shalabhasana, Vakrasana, Paschimottnasana, Ushtrasana*

Pranayama: *Nadi-shodhana, Bhastrika, Suryabhedi*

Meditation: Breath awareness (BAW)

[66] Effect of Asans and Pranayams on Neurological, Neuromuscular & Cardio Respiratory Functions in Healthy Human Volunteers, Research project of Central Council for Research in Yoga & Naturopathy Deptt. Of AYUSH, Ministry of Health and Family Welfare, 2009

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Chronic Obstructive Pulmonary Disease (COPD), is characterized by air flow limitation which is not fully reversible. It includes *emphysema* characterized by destruction and enlargement of lung alveoli and *chronic bronchitis* clinically defined by chronic cough and phlegm. Chronic bronchitis without air flow obstruction is not included in COPD[67]. The three most common symptoms in COPD are cough, sputum and exertional dyspnea. COPD often occurs along with a number of other conditions, due in part to share risk factors. These conditions include ischemic heart disease, high blood pressure, diabetes mellitus, muscle wasting, osteoporosis, lung cancer, anxiety disorder and depression.[68]

INCIDENCE

Worldwide, COPD affects 329 million people or nearly 5% of the population[69]. It became the third leading cause of death[70].

CAUSES

- Tobacco smoking
- Secondhand / passive smoking
- Air pollution
- Occupational exposures- (Chemical, Paint, Coal mining, Gold mining & Cotton textile industry etc.)
- Genetics (playing a smaller role)
- Respiratory infections

SIGNS AND SYMPTOMS

- Shortness of breath / exertional dyspnea
- Productive cough
- Chest tightness
- Physical findings may include barrel chest, expiratory wheezing

DIAGNOSIS

- Spirometry
- Chest X-ray
- Complete blood count (CBC)

[67] Harrisons Principles of Internal Medicine, Vol. II, 17th Edition, Page No.1635.
[68] Decramer M et.al. (April 2012). "Chronic obstructive pulmonary disease". Lancet 379 (9823): 1341–51.
[69] Vos T, Flaxman AD et al. (December 2012). "Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010".Lancet380 (9859):2163–96.
[70] The 10 leading causes of death in the world, 2000 and 2011". World Health Organization. July 2013.

The degree of air flow obstruction is an important prognostic factor in COPD and is the basis for the GOLD disease classification.[71]

Gold Stage	Severity	Symptoms	Spirometry
0	At Risk	Chronic cough, sputum production	Normal
I	Mild	With or without chronic cough or sputum production	$FEV_1/FVC < 0.7$ & $FEV_1 \geq 80\%$ predicted
IIA	Moderate	With or without chronic cough or sputum production	$FEV_1/FVC < 0.7$ & $50\% \leq FEV_1 < 80\%$ predicted
III	Severe	With or without chronic cough or sputum production	$FEV_1/FVC < 0.7$ & $30\% \leq FEV_1 < 50\%$ predicted
IV	Very Severe	With or without chronic cough or sputum production	$FEV_1/FVC < 0.7$ & $FEV_1 < 30\%$ predicted Or $FEV_1 < 50\%$ predicted with respiratory failure or signs of right heart failure

Note: Global Initiative for Chronic Obstructive Lung Disease (GOLD)

PREVENTION

- By reducing exposure to known environmental risk factors
- By decreasing smoking
- Improve indoor and outdoor air quality – Keep the house ventilated; avoid close door cooking with a stove.
- **Occupational exposures** - education of workers and management about the risks, checking workers for early signs of COPD, use of respirators, and dust control.

TREATMENT

The major goals of management are:

- To reduce risk factors
- Manage stable COPD
- Prevent and treat acute exacerbations
- Manage associated illnesses.

Stopping smoking, vaccinations, rehabilitation, and often inhaled bronchodilators and steroids, Long-term antibiotics to reduce the frequency of exacerbations, long-term oxygen therapy, Pulmonary rehabilitation (a program of exercise), Nutritive diet to improve their breathing muscle strength, surgery (lung transplantation or lung volume reduction surgery) for those with very severe disease.

[71] From Pauwels et.al. in Harrisons Principles of Internal Medicine, Vol. II, 17th Edition, 2008.

COPD IN AYURVEDA

According to Ayurveda the vitiated *Pranvayu* combines with deranged *Kapha dosha* in the lungs causing obstruction in the *pranavaha srotasa* (respiratory tract).This results in gasping, labored breathing and respiratory distress. This condition is called *Swasa roga*.

'*Shwasa Roga*' is a disease of '*Pranavaha srotas*' (Tracheobronchial tree). The abnormal, rapid or difficult breathing when present as a cardinal feature of a disease is called '*Shwasa roga*'. When *Prana Vayu* get vitiated and becomes defiled, get obstructed by *Kapha* and moves in opposite direction i.e. upwards and unable to perform normal functions, this condition is termed as *Shwasa roga*.[72] This closely resembles Chronic Obstructive Pulmonary Disease (COPD). COPD has been defined as a preventable and treatable disease with some significant extra-pulmonary effects that may contribute to the severity in individual patients.[73]

CAUSES

- Consuming dry, heavy diet, excessive intake of cold water and cold drinks, intake of meals much more than the digesting capacity
- Exposure to dust, smoke and cold air
- Living in cold/damp areas
- Taking cold water bath
- Suppression of urges
- External reasons like Injury of throat or chest,

MANAGEMENT THROUGH AYURVEDA

The sub acute and chronic cases can be managed through Ayurveda. **The patients with acute episodes should be referred to an appropriate set up.**

Do's

- Light and digestible food items like barley (*yava*), Green gram (*moong),* Pointed gourd *(parwal),* Bottle gourd *(lauki),* Carrot *(gajar),* Allium *(lasun),* Bengal gram *(besan)* etc.
- *Tulasi patra* boiled in milk / water / tea, Black pepper (*kali mirch),* Long Piper (*pippali),* Jaggery (*guda),* Turmeric *(haridra),* Ginger (*ardraka)*, Big dry grape (*munakka),* Mulethi *(madhuyasthi)*, Honey (*madhu*), Tankana (*suhaga*) etc.
- Apple, chiku, khajura (dates), dried grapes small (kishmish), papaya, pear etc. can be taken.

Don'ts

- *Guru, Vishtambhi, Abhishyandhi* and *Vidahi ahara*. e.g. Fried food, Black gram (*Urad dal*), Curd (*Dahi*), Ice cream, Cold drinks etc.
- Physical exercise, heavy work.
- Sitting at cold place, exposure to cold air and dust

[72] Tripathi Brahmananda., Dr, editor. Charaka samhita, Chikitsasthana. 2002; 17(45):621.

[73] (Ayu. 2010 Jan-Mar; 31(1): 48–52.doi: 10.4103/0974-8520.68204, PMCID: PMC3215321, Efficacy of *Vasadi Syrup* and *Shwasaghna Dhuma* in the patients of COPD*(Shwasa Roga),* Praveen Kumar Sharma,* Sharad Johri,** and B. L. Mehra***)

YOGIC MANAGEMENT ANNEXURE-VI

The role of Yoga in the management of COPD/ Bronchial Asthma is well documented. This is to be done under the supervision of Yoga Instructor (in consultant with Ayurvedic Physician). In general, the practices prescribed for the COPD/ Bronchial Asthma[74] cases are:

Kriyas: *Agnisara, Jalaneti, Vamandhouti (Kunjal), Kapalbhati.*

Selected Asanas: *Surya Namaskar, Tadasana, Katichakrasana, Konasana, Pavanamuktasan, Setubandhasan, Ushtrasan, Bhujangasan, Dhanurasan, Gomukhasan, Vajrasan, Vakrasan,*

Pranayama: *Bhastrika, Surya Bhedi, Ujjai.*

Meditation: Breath awareness (BAW)

[74] A Randomized Controlled Trial on the Efficacy of Yoga in the Management of Bronchial Asthma, Research project of Central Council For Research in Yoga & Naturopathy Deptt. of AYUSH, Ministry of Health and Family Welfare, 2010.

CONCLUSION

To sum up, non-communicable diseases (Cancer, Diabetes, Cardio-vascular Diseases, Stroke, COPD, etc.) are linked to common risk factors, such as use of tobacco, alcohol, unhealthy diet, and physical inactivity. Development of these diseases and risk factors associated with these can be prevented if healthy lifestyle is adopted. Therefore, it is important to educate people about the risk factors and preventive measures for these diseases.

Risk factors for Cancer, Diabetes, CVDs and Stroke and Their Prevention

Behavioral Risk Factors	Physiological Risk Factors	Disease Outcomes
Unhealthy Diet	BMI (Obesity)	Heart Disease
Physical Inactivity	Blood Pressure	Stroke
Tobacco Use	Blood Glucose	Diabetes
Alcohol Use	Cholesterol	Cancer
Stress	Weight loss	
Primary Prevention	**Secondary Prevention**	**Tertiary Prevention**

There is strong evidence that significant reduction can be achieved by introduction of simple public health interventions addressing major risk factors such as unhealthy diet, physical inactivity and use of tobacco & alcohol in any form for Cancer, Diabetes, CVDs and Stroke.

The general public is to be oriented to this fact that clinical treatment provides solutions at an individual level and only after the disease has developed while prevention can be started much earlier through life style changes. Public health measures such as proving information and education help to avert the disease itself and benefit and protect the entire population. Different stakeholders, therefore, need to be oriented towards various prevention methods and approaches to reduce the burden of these diseases.

It is important that primary prevention strategies should be targeted from childhood, preferably involving health education programmes at school levels. It should aim at promoting healthy diets, exercise and avoiding the use of tobacco & alcohol. Further, the primary prevention strategies may be complemented by basic provisions like availability of fresh fruits and vegetables in nearby areas, facilities for Physical activity/exercise and making the village or city smoke free etc.

"Integration" is the act of combining or adding various parts to make a unified approach. The implementation of integrating various AYUSH systems with the main stream in the health sector is the need of the hour to achieve objective of improving health. Sharing of public health knowledge and skills by professionals in allopathic system of medicine and involvement of qualified and trained people from Ayurveda, Yoga, and Naturopathy, Unani, Siddha and Homeopathy (AYUSH) professionals may bring Health for All in India. Ayurveda practitioners can play an active role in catering health services grass root level with a strong preventive approach so as to control NCDs to a greater extent.

Ayurveda advocates healthy balanced food and life style with an individualistic approach with unique Philosophy of mind-body constitution and set of life circumstances. With appropriate use of Ayurvedic preventive measures such as *Dincharya, Ritucharya, Ahar vidhi* and therapeutic measures most of the NCDs can be prevented at all levels and longevity can be achieved which is the target of Ayurveda i.e. *Jivet Shardah Shatam*….

ANNEXURE – I

STEPS FOR MEASURING BLOOD PRESSURE

- Blood pressure can be measured with the patient sitting on a chair with back straight or in lying down position.
- The patient should be seated for at least 5 minutes, in a relaxed manner. He/ She should not be moving or speaking.
- The arm must be supported at the level of the heart. Ensure no tight clothing constricts the arm.
- Place the cuff on at least 80% of the arm (but not more than 100%) on the upper left portion of arm neatly with the centre of the bladder over the brachial artery. The bladder should encircle the arm.
- The column of mercury must be vertical, and at the observers eyes level.
- Rest the arm of the person on table so that the elbow of the person is parallel to heart. Wrap the blood pressure cuff around the arm slightly above the crease of forearm. Place the stethoscope on the crease of the forearm and pump the blood pressure cuff up to 200. The metal attachment on the side of the pump allows you to inflate and deflate the cuff.
- Estimate the systolic pressure by palpatory method:
    - Palpate the radial / brachial artery
    - Inflate cuff until pulsation disappears
    - Deflate cuff
    - Estimate systolic pressure
- As you deflate the cuff, you will hear sounds (Korotkoff sounds) of different intensity. The first appearance of faint, repetitive, clear tapping sounds, which gradually increase in intensity, measures the systolic blood pressure. The point at which all sounds finally disappear completely is the diastolic pressure.
- The blood pressure should be recorded as soon as it is measured.
- Normal blood pressure is 120/80 mm of Hg.

ANNEXURE – II

CALCULATION OF BODY MASS INDEX (BMI)

What is Body Mass Index (BMI)?

Body Mass Index (BMI) is a number calculated from a person's weight and height. BMI is a fairly reliable indicator of body fatness for most people.

$$\text{Body Mass Index(BMI)} = \frac{\text{Body weight (in kilograms)}}{\text{Height (in metres)}^2}$$

Height & Weight measurement procedure

The person should be asked to remove as much outerwear as possible and as per convenience. Regardless of the clothing worn, the person should be asked to remove his/her shoes/footwear. Additionally, the person will be asked to empty his/her pockets and other objects like eyeglasses, mobile, keys, pocket diaries, wallet etc., if possible, so that accurate height and weight measurements can be obtained.

Method for measurement of Weight

- The person should be asked to step up backwards onto the weighing machine and stand still over the center of the scale with body weight evenly distributed between both feet. In order to ensure confidentiality and to prevent the person from seeing his/her weight, it is required that the person step on the scale backward facing away from the readout.
- The person's arms should be hanging freely by the sides of the body, with palms facing the thighs.
- The person should hold his/her head up, and face forward.
- The reading on the weighing machine should be observed and recorded.

Method for measurement of Height

- The person should be asked to stand with his/her back against the board/wall. The back, scapulae and buttocks are in contact with the vertical board/wall if possible, or whichever part of the body touches the board first. The weight of the person should be evenly distributed on both feet.
- The person should be asked to place the legs together, bringing the ankles or knees together, whichever comes together first (often they will come together simultaneously).
- The person is instructed to stand erect (stand up straight and look straight ahead).
- The person's position should be verified from both the FRONT and from the LEFT side of the body.
- The person's head is positioned in the Frankfort Horizontal Plane. In this position, an imaginary line can be drawn from the bottom of the eye socket (orbital margin) to the external opening of the ear (external auditory canal).
- The person should be asked to inhale deeply and hold his/her breath while maintaining the head and body in the same position. Sometimes a person will either lift his/her head or pull up onto the toes

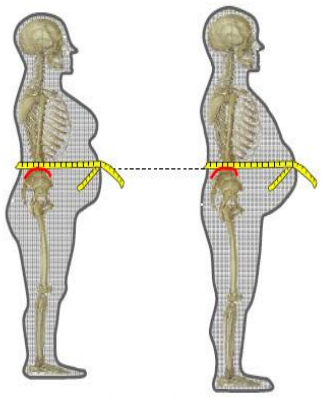
when taking the deep breath. If this happens, the measurer will need to re-position the body and head before taking the measurement.

- The height measured should be recorded.

What is Waist Circumference (WC)?

Waist Circumference (WC) is an indirect measure of abdominal fat in the body. Waist can be measured using a non-stretchable fibre measure tape with the participant standing erect in a relaxed position with both feet together and looking straight.

Waist circumference measurement technique



Accurate measurement of waist circumference is achieved using the following technique:

- Ensure that the patient is standing erect and has relaxed the abdominal muscles. Measurement is taken at the end of normal expiration.
- Locate the top of the hip bone (iliac crest) and take the measurement just above this bony landmark, just where one finger can fit between the iliac crest and the lowest rib.
- Ensure that the tape measure is positioned horizontally, parallel to the floor.
- Measuring at a level just above the iliac crest, and positioning the tape horizontally, irrespective of whether the umbilicus is above or below the tape, provides the correct waist circumference measurement and should correspond to the maximal abdominal diameter.
- Tape should not be too tight or do not make compressions in the skin while measuring the waist.
- When measuring waist circumference it is important not to be tempted to measure around the narrower part of the abdomen situated below the umbilicus. Using the anatomical landmark of the iliac crest and ensuring that measurement is taken on a horizontal plane just above this level provides the most accurate, reliable and reproducible technique for waist circumference measurement.

ANNEXURE - III

BREAST SELF-EXAMINATION (BSE)

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-Exam (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:

  (Breast awareness)

  - 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 - IV

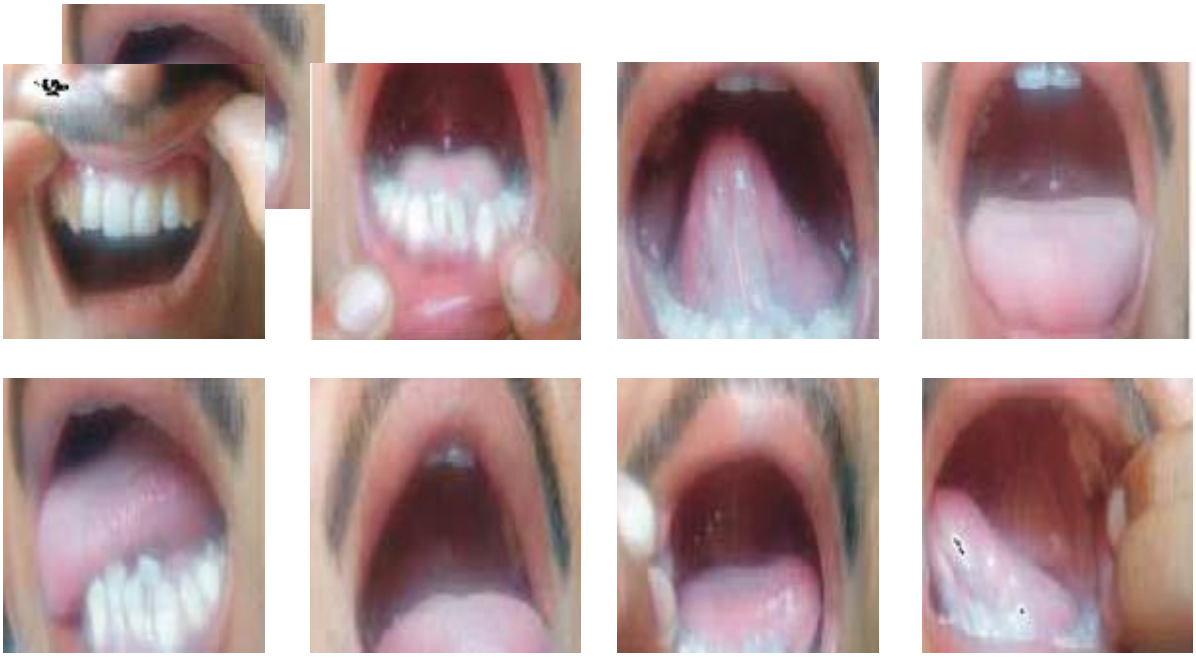
ORAL CAVITY SELF-EXAMINATION

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 - V

GENERAL GUIDELINES FOR YOGA PRACTICE

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

BEFORE THE PRACTICE

- *'Shauch'* 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 to honey in lukewarm water if you feel weak.
- Bladder and bowels should be empty before starting Yogic practices.
- 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 problems, a physician or a Yoga therapist should be consulted prior to performing Yogic practices.
- 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 contraindications should always be kept in mind.
- Yoga session should end with meditation/deep silence/Shanti path.

AFTER PRACTICE

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

A few dietary guidelines can ensure that the body and mind are flexible and well-prepared for practice. A vegetarian diet is usually recommended, and for a person over 30 years, two meals a day suffice, except in cases of illness or very high physical activity or labour.

Yoga is essentially a path to liberation from all bondage. However, medical research in recent years has an uncovered many physical and mental benefits that Yoga offers, corroborating the experiences of million so practitioners. A small sampling of research shows that:

- Yoga is beneficial for physical fitness, musculoskeletal functioning and cardiovascular health.
- It is beneficial in the management of diabetes, respiratory disorders, hypertension, hypotension and many lifestyle related disorders.
- Yoga helps to reduce depression, fatigue, anxiety disorders and stress.
- Yoga regulates menopausal symptoms.
- In essence, Yoga is a process of creating a body and mind that are stepping-stones, not hurdles, to an exuberant and fulfilling life.

YOGASANAS FOR NON COMMUNICABLE DISEASES

NAME OF THE DISEASE	YOGA ASANAS	PRANAYAMA	KRIYA
DIABETES MELLITUS	*Suryanamaskara, Tadasana, Katichakrasana, Sarvangasana, Halasana, Matsyasana, Ushtrasana, Gomukhasana, Ardhamatsyendrasana, Mandukasana, Paschimottanasana, Pawanmuktaasana, Bhujangasana, Shalabhasana, Dhanurasana, Vajrasana, Shavasana.*	*Nadishodhana, Suryabhedi, Bhastrika*	*Kunjal, Kapalabhati, Agnisara*
HYPERTENSION	*Tadasana, Katichakrasana, Konasana, Uttanapadasana, Pavanamuktasana, Vajrasana, Ushtrasana, Shashankasana, Bhujangasana, Gomukhasana, Makarasana, Vakrasana, Shavasana.*	*Nadishodhana, Ujjayi, Shitali, Sitkari and Bhramari*	*Jalneti*
OBESITY& DYSLIPIDEMIA	*Surya Namaskar, Tadasana, Katichakrasana, Konasana, Pavanmuktasana , Ardha Padmasana , Padmasana, Pascimottanasana , Halasana, Bhujangasana, Shalabhasana, Dhanurasana, Naukasana, Navasana, Parvatasana, Vakrasana, Padahasthasna, Vajrasana, Shashankasana, Sarvangasana, Ardhamatsyendrasana, Shavasana*	*Nadishodhana, Suryabhedi, Bhastrika.*	*Kunjal, Kapalabhati*
STROKE	*Surya Namaskar, Tadasana, Katichakrasana, Konasana, Pavanmuktasana , Bhujangasana, Uttanpadasana(Ekpad), Vakrasana, Makarasana, Ardhshalabhasana, Shavasan*	*Nadishodhana, Suryabhedi, Bhastrika*	*Kunjal, Kapalbhati*
CANCER	*Surya Namaskar, Tadasana, Ushtrasana, Vakrasana, Gomukhasana, Bhujangasana, Shalabhasana, Dhanurasana, Simhasana, Shavasana.*	*Nadishodhana, Ujjai, Shitali, Sitkari, Bhastrika*	*Kapalbhati.*

RHD	*Tadasana, Katichakrasana, Konasana, Pavanmuktasana, Makarasana, Bhujangasana, Shalabhasana, Vakrasana, Paschimottnasana, Ushtrasana*	*Nadishodhana, Bhastrika, Suryabhedi*	
COPD	*Surya Namaskar, Tadasana, Katichakrasana, Konasana, Pavanamuktasan, Setubandhasan, Ushtrasan, Bhujangasan, Dhanurasan, Gomukhasan, Vajrasan, Vakrasan,*	*Bhastrika, Suryabhedi, Ujjai*	*Agnisara, Jalaneti, Vamandhouti (Kunjal), Kapalbhati.*

ANNEXURE - VI

YOGASANAS

SURYA NAMASKAR: This is a combination of seven Yoga postures in a sequence of sixteen movements.

Stand erect with the feet together. Place folded hands on your touching the Adams apple with your thumbs and bend the head little so that index fingers are touching the centre of the forehead (Jyoti Kendra).

1. Inhale; raise the arms straight above the head touching the ears. Exhale.
2. Inhale and spread the arms vertically in line with the shoulders.
3. With feet firm on the ground keeping the body up to waist erect. Bend the upper portion of the body backward.
4. Bring the arms together touching the ears, above head.
5. Bend forward exhaling and try to touch the forehead on the knees placing the palms by the side of the feet on the floor. Knees should be kept straight, pull the stomach inside.
6. Inhale and stretch the left leg towards the back keeping the hands on the floor in the same position.
7. Bend forward and touch the floor with the forehead
8. Inhale and raise your head upward and see towards the sky.
9. Spread the right leg along with the left
10. Keeping the palms and toes where they are, inhale, bend your arms and lower the body towards the ground touching only the forehead, chest and the knees on the ground. The buttocks should be kept high. Exhale.
11. Inhale. Raise the body on the palms and toes bringing the pelvis to the floor looking toward the sky while holding the breath.
12. Exhale and lift the buttock and bend the head in, to see the navel.

13. Bring the right leg in between the hands and bend forward to touch the ground with forehead.
14. Inhale and raise the trunk looking up toward the sky.
15. Bring the left leg along with the right leg, the head touching the knees as in posture no. 5, keeping the hands by the side of the feet, fully exhaled.
16. Inhale and stand up, palms together on the chest as in the starting position (2 rounds) lie down and relax your whole body.

ARDHA CAKRASANA (The Half Wheel Posture)

Ardha means half. Chakra means wheel. In this posture, as the body takes the shape of half heel, 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.
- Strengthens the neck muscles and improves breathing capacity.
- Helps in cervical spondylitis.

Cautions

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

ARDHA-MATSYENDRASANA

Technique

- Sit with the legs straight.
- Bend the right leg at the knee and place the heel tight at the perineum.
- Keep the foot of the left leg by the side of the right thigh near the knee.
- Now, bring the right hand round the outer side of the left knee passing between the chest and the knee and catch hold of the left big toe.
- The right shoulder blade rests on the outer side of the left knee.
- Take the left hand round the back and try to catch the right thigh. Now look back over the left shoulder.
- Now, keep the trunk in vertical position and keep in the pose for a while.
- Release the position with an exhalation and come back to the starting position.

Benefits

- It stimulates the digestive fire in the stomach.
- Energizes the spine and make it flexible.
- Also stimulates the liver and kidney and stretches neck, shoulders, and hips.
- Helps to cure constipation and reduces the abdominal girth.

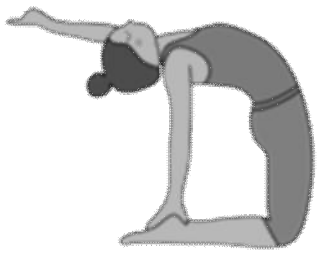
Caution

- Not for the persons who have spine or back injury.

ARDHA USHTRASANA (The Half Camel Posture)

Ushtra 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 *Visramasan* (Long sitting posture).
- 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 fingers 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 Visramasan.

Benefits

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

Caution

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

BAALASANA

Baalasana is a resting pose that can precede or follow any asana.

Technique

- Firstly kneel on the floor.
- Touch your big toes together and sit on the heels, then separate the knees as wide as your hips.
- Exhale and lay the trunk down between your thighs.
- Stay in the same position for 30 seconds to a few minutes.
- To release, first lengthen the front torso, and then with an inhalation lift the body slowly to the erect position.

Caution

- Avoid Baalasana in case of Diarrhoea, Pregnancy, Knee injury.

BHADRASANA (The Firm/Auspicious Posture)

Bhadra means firm or auspicious.

Technique

- Sit erect with the legs stretched out straight in the front.
- Keep the hands beside the hips. This is Dandasana.
- Now put the soles of both feet together.
- Exhale and clasp the hands together over the toes. Pull the heels as close as possible up to perineum region.
- If the 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.

Benefits

- Keeps the knees and hip joints healthy.

Caution

- Avoid this practice in case of severe arthritis and sciatica.

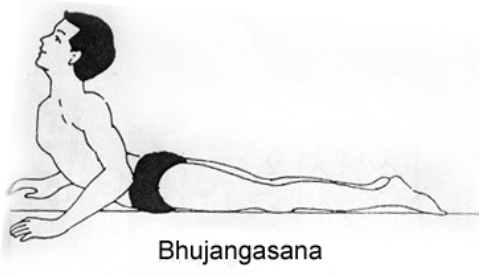
BHUJANGASANA (The Cobra Posture)

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

Technique

- Prone posture or Makarasana: Lie down on the stomach, rest the head on the hands and relax the body.
- Now join the legs and stretch the arms.
- Keep the forehead on the ground.
- Now place the hands just beside the body; keep palms and elbows on the ground.

- Inhale slowly, lift the chin and chest come up to navel region.
- Stay in the same position comfortably.
- This is called Sarala Bhujangasana.
- Now come back and place the forehead on the ground.
- Keep the palms besides the chest where the elbows were and raise the elbows.


Bhujangasana

- Inhale; slowly lift the chin and chest up to navel region. This is Bhujangasana.
- Exhale, rest the forehead on the ground and place the palms and rest the head on the palms and spread the 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

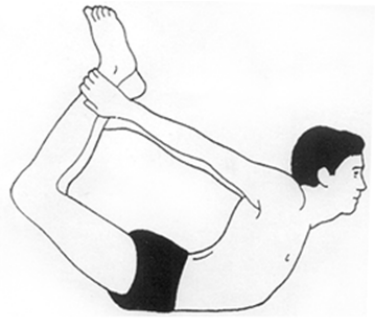
- Those who have undergone abdominal surgery should avoid this asana for 2-3 months.
- Those who suffer from hernia, ulcers should not practice this asana.

DHANURASANA (Bow Posture)

"Dhanur" means Bow in Sanskrit. In Dhanurasana, body and the legs take the shape of the bow, while the hands look like the string.

Technique

- Lie on the abdomen.
- Catch hold of the ankles with the hands keeping the arms straight.
- Raise the head as high as possible 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 rising & 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.

GOMUKHASANA (The Cow Face Posture)

Go meaning "cow", Mukha meaning "head" or "mouth".

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.

HALASANA (The Plough Posture)

Hala means "plough" in Sanskrit.

Technique

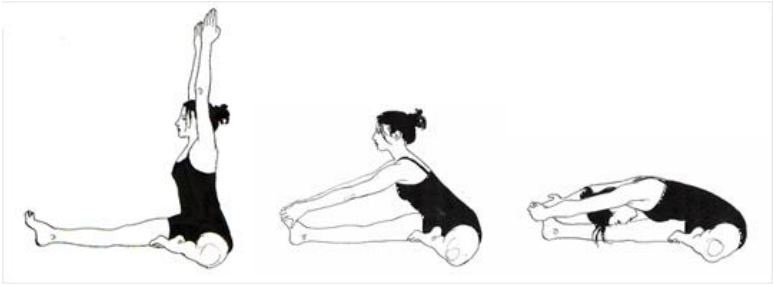
- Lie on the back.
- Keep the legs extended and hands on the ground.
- Raise the feet gradually so that the toes can touch the ground.
- Keep the body straight from hip to the shoulders.
- Return the feet gradually to the original position by first placing the back on the ground and then legs on the 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 increases its elasticity and overall functioning.
- Effective in weight loss.

JANU-SIRSASANA

Technique



- Start while sitting in Dandasana .
- Bend the left leg so that bottom part of the foot is touching to the right thigh and touch the heel in groin.
- Keep the spine straight.
- Breathe in and raise the arms up.
- Start bending forward very slowly while exhaling keeping spine straight.
- Reach the maximum forward position. If needed get the help of the thigh muscles to stretch.
- After reaching at the maximum bend position, lower the arms to hold right foot.
- Maintain this position till you feel comfortable while breathing slowly.
- Releasing the stretch: Inhale and come up with a straight back and repeat the same procedure with the other leg.

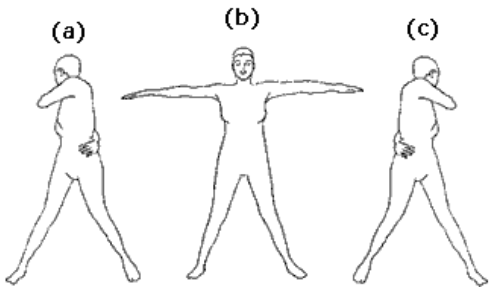
Caution

- Not for the persons who have asthma, diarrhoea, and knee injury.

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 distance of 1to 1.5 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.
- Breathe in while you turn & breathe out while coming back.
- Perform normal breathing while maintaining the posture.
- Practice this posture 10 to 15 times.

KONASANA

In this asana one hand touches the opposite knee while the other hand goes upright straight at 90 degree.

Technique

- Stand erect with legs together, hands by the side of the thighs.
- Make 1.5 feet distance between two legs and raise both the hands towards each side, so to make a parallel line with shoulder.
- Now bending towards left side, slowly bring your right hand down towards the left knee and bring left hand towards the sky.
- The same should be repeated from the right side by bringing your left hand towards right knee and right hand towards the sky. This makes one round of Konasana.
- Now slowly return to the original position and relax for a while then repeat again.

Benefits

- Its practice makes the spine flexible and useful in back pain (hip).

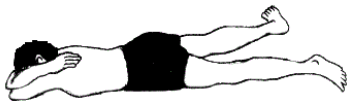
Caution

- Those suffering from cervical and lumbar spondylitis and hypertension should not practice it.

MAKARASANA (The Crocodile Posture)

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

Technique



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

Benefits

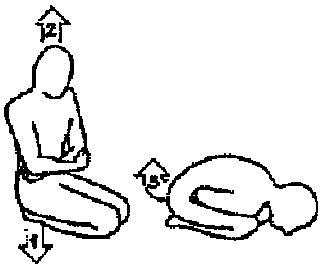
- Promotes relaxation of the lower back.
- Helps in recovery of back problems.
- Indicated for all orthopedic ailments.
- Indicated to counter stress and anxiety.

Caution

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

MANDUKASANA

Technique



- Sit in Vajrasana
- Close both the fists of the hands and keep them on the belly on both the sides of the navel.
- Bend the body forward and lift the head and look forward.
- Come back slowly to the previous position and relax.

Benefits

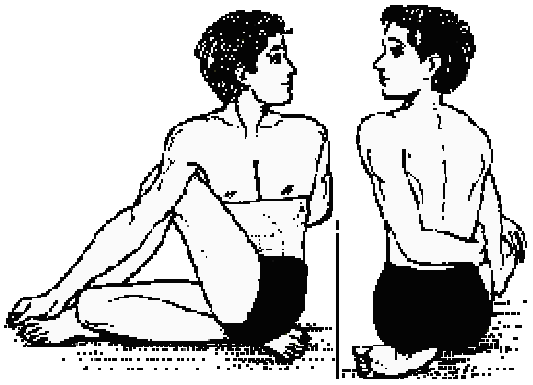
- Diabetes and digestive disorders.
- Reducing the weight of thighs, hips and the abdomen.

Caution

- Not for the people who are suffering from peptic or duodenal ulcer, severe back pain and cardiac problem, and patients who have undergone abdominal surgery.

MATSYENDRASANA

Technique



- Sit with the legs straight.
- Bring the right foot over the left leg and place it on the floor outside the left hip. The right knee will point directly up at the ceiling.
- Exhale and twist toward the inside of the right thigh. Press the right hand against the floor just behind the right buttock, and set the left upper arm on the outside of the right thigh near the knee. Pull the trunk and inner right thigh so that they are placed snugly together.
- Press the inner right foot very actively into the floor, lengthen through the body.
- Continue the twist of the trunk by turning it to the right.
- With every inhalation lift a little more through the sternum, pushing the fingers against the floor to help.
- Twist a little more with every exhalation.
- Be sure to distribute the twist evenly throughout the entire length of the spine; don't concentrate it in the lower back, i.e. right shoulder rolling back as the left shoulder rolls forward.
- Stay for 30 seconds to 1 minute, then release with an exhalation, return to the starting position, and repeat to the left for the same length of time.

Benefits

- It stimulates the pancreas, liver, spleen, kidneys, stomach and ascending and descending colons.
- It is useful in the treatment of diabetes.
- It tones the nerve roots, and adjusts and realigns the vertebral column.
- The back muscles are pulled and stretched in a different direction than usual and this relieves them of tension. Therefore this asana is recommended in the cases of lumbago, rheumatism and slipped disc.

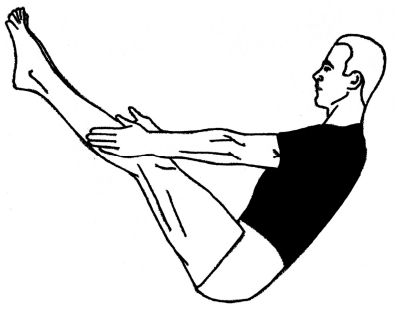
Caution

- Avoid in pregnancy.
- People with sciatica or slipped disc may benefit from this asana, but great care should be taken.

NAVASANA (ARDH-NAUKA ASANA)

It strengthens the abdominal and deep hip flexor muscles.

Technique



- Start with Shavasana with legs together, hands by the side of the body and palms touching to ground.
- Breathe in and start raising your legs, arms, head and trunk together to reach 30-45 degrees (for both legs and trunk).
- Keep the spine and legs straight.
- Position your arms just parallel to the legs.
- Hold the position as long as it is comfortable while breathing normally.
- While returning, firstly place the head & trunk back to the ground.
- Now slowly bring legs back to the ground. Relax in shavasana for 1-2 minutes.

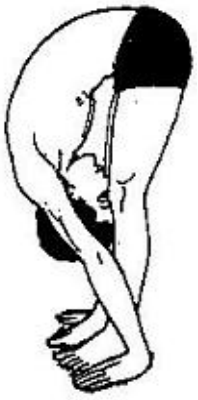
Caution

- Not for the persons who have recent or chronic injury to the back, arms or shoulders, pregnancy, menstruation, or recent abdominal surgery.

PADA-HASTASANA (The Hands to Feet Posture)

Pada means feet, hasta means hands. 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.
- Exhale, and bend forward until the 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
- Makes the spine flexible, improves digestions, 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.

PADMASANA

This is the posture for meditation.

Technique

- Keep the right foot on the left thigh.
- Bend the left knee, hold the left foot with both hands, gently glide it over the crossed right leg and place it on the right thigh.
- This will give symmetrical placement of the legs i.e. lotus position.
- The hands should be kept on the knees with palms open, and the thumb and second finger of each hand should touch forming a letter O.
- Stay in the position as long as possible and after that release the pose and be comfortable.

Caution

- Those suffering from chronic knee pain should not practice it.
- Those getting cramps in calf-muscles should practice it cautiously.
- Do not try to perform it forcefully.

PARVATASANA

Technique

- Sit in Padmasana , take both the hands forward and lock the fingers of both the hands together.
- Take the hands over the head and turn the palms upside down facing the roof. Stretch the body upwards with the arms stretched towards the sky.
- Stabilize the position and continue normal breathing.
- Relax the body and bring the hands to the previous position.
- Come to Padmasana. Then, straighten the left leg and then the right leg.
- Get both the legs together and take the sitting posture.

Benefits

- Makes spine flexible, relieves pain in backbone.

Caution

- Those having complaints of reeling sensation should not practice it.

PASCHIMOTTANASANA

Technique

- Sit in Dandasana, then bring the arms straight out to the sides and up over the head.
- Inhale and draw the spine up long.
- Then, exhale and begin to come forward, hinging at the hips.
- On each inhalation, extend the spine and on each exhalation come a bit further into the forward bend.
- Keep the neck in line to the extended spine.
- Do not keep the back elevated.
- Hold the ankles or shins with the hands, whichever possible.
- Stay in the pose for 1 to 5 minutes.
- To come up, release the hands, straighten the elbows and lift the trunk away from the thighs, inhale and lift the trunk further to be in erect position.

Benefits

- Therapeutic for high blood pressure, insomnia, and sinusitis.
- reduces obesity

Caution

- Not for the people who have asthma, diarrhoea and Back injury.

PAVANAMUKTASANA (The Wind Releasing Posture)

Pavan means wind and mukta means to release or to make free. This asana is useful in removing wind or flatulence from the stomach and intestines.

Technique

- Lie down flat on the back (Shavasana).
- 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 Pavanmuktasana.
- Bring the head back to the ground.
- While exhaling, lower the legs to the floor.
- Rest in Shavasana

Note

- Synchronize your breathing with the leg movement.
- While touching the knee with the nose/ forehead, should be able to feel the lumbar region stretch; keep the eyes closed and focus the 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.

SHALABHASANA (The Locust Posture)

Shalaba means a locust.

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 posture. This asana is more beneficial when performed after Bhujangasana
- This Asana may be performed with one leg i.e. **Ardha Shalabhasana.**

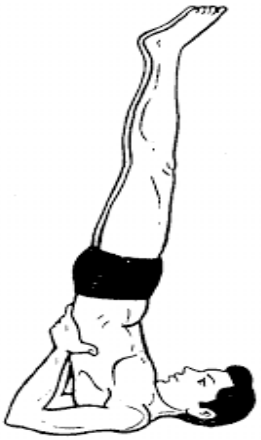
Benefits

- 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.

SARVANGASANA (Shoulder Stand Posture or All members Pose)



This is termed "all – members' pose," because all the parts of the party 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.

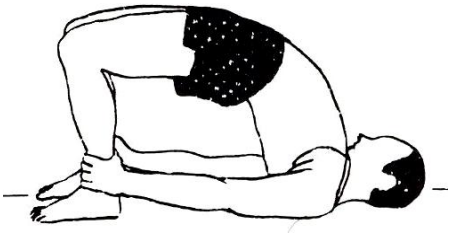
Caution

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

SETUBANDHASANA (The 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 Chatuspadasana.

Technique



- Lie down in Shavasana (Supine lying).
- 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 the buttocks and trunk up as much as possible to form bridge.
- Remain in this position for 10-30 seconds, with normal breathing.
- Exhale, slowly return to the original position and relax in Shavasana.

Note

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

Benefits

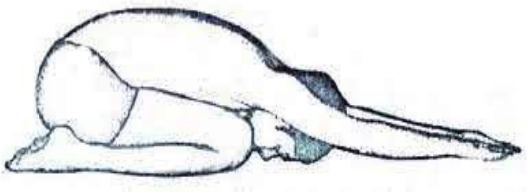
- Relieves depression and anxiety, Strengthens lower back muscles.
- Stretches abdominal organs, improves digestion and helps to relieve constipation.

Caution

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

SHASHANKASANA (The Hare Posture)

Shashanka means hare.



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 the hands to full length.
- Bend forward and place the chin on the ground.
- Keep the arms parallel and touch the elbows on the ground.
- 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.

SHAVASANA (The Dead body Posture)

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

Technique

- Lie down on you back with arms and legs comfortably apart (Supine Relaxation Posture).
- 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.

SIMHASANA

Technique

- Sit in Vajrasana
- Now raise the buttocks a little and Keep the heel and toes of the right leg over that of left leg.
- Sit on the heels and place both hands on the respective knees. Spread out the fingers.
- Open the mouth wide, bring the tongue out as much as possible. Gaze at the tip of the nose.
- While returning to the original position, take the tongue in, release the tension, loosen your hands and come back to the original position.

Benefits

- Relieves tension in the chest and face.

Caution

- Persons with knee injury, always be cautious in flexed-knee sitting positions and, if necessary, sit on a chair to do the pose.

TADASANA (Palm Tree Posture)

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

Technique

- Stand with feet 2 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 certain age**.**

A word of caution

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

TRIKONASANA (The Triangle Posture)

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

Technique

- Stand with your feet 4 feet 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

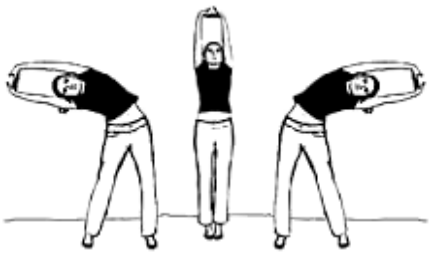
- Prevents flat foot.
- Strengthens calf, thigh and waist muscles.
- Makes the spine flexible, improves lungs capacity.

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.

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.

USHTRASANA

The word "ushtra" refers to "Camel".

Technique

- Sit with legs stretched, heels together, palms pressing on the ground by the side of buttocks, to keep the body at right angles to the legs with an erect spine.
- Come to Vajrasana and then raise up making the trunk vertical.
- Inhale and bend the body backwards and bring the hands on the heels.
- To release, inhale and lift the head up, place the hands on the hips and tilt forward into a straight line and exhale. Perform once or twice.

Benefits

- This asana stretches the upper and lower thigh and knees.
- It will open the chest allowing for deeper breathing.

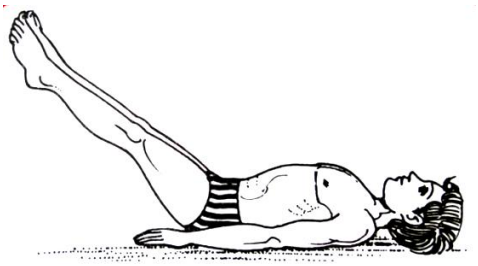
Caution

- Not for the persons who have hernia, recent or chronic knee, shoulder, neck or back injury or inflammation.

UTTANAPADASANA (The extended stretch foot Posture)

The name comes from the Sanskrit words uttana meaning "intense stretch" or "straight" or "stretched" and Pada meaning "leg" or "foot" and asana meaning "posture" or "seat".

Technique



- Adopt supine 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 degree angle.
- Maintain this position with normal breathing.
- Exhale and slowly bring down both the legs and place them on the ground.

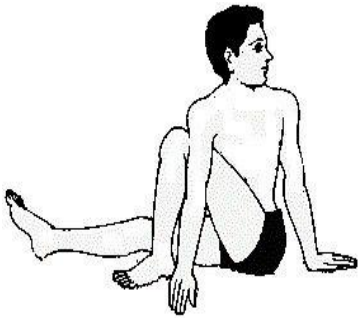
Benefits

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

VAKRASANA (The Spinal Twist Posture)

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

Technique



- Sit in Dandasana.
- Bend the right leg, and place the right foot beside the left knee.
- While exhalation, 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.
- 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.

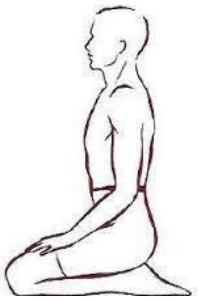
Caution

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

VAJRASANA

Like Padmasana, this is also the Asana for meditation. One can sit comfortably for a prolonged period in this Asana. This can be done immediately after consuming food as it improves digestion. This is a very good pose for people suffering from sciatica and sacral infections.

Technique



- Sit with legs extended together, hands by the side of the body, palm resting on the ground, fingers of the hands together pointing forward.
- Fold the right leg at the knee and place the foot under the right buttock.
- Similarly folding the left foot, place it under the left buttock. While sitting on the bent feet, the heels should remain out, toes inside and soles upward.
- Hands resting on the respective thighs.
- Sit erect, gaze in front and then close the eyes.
- While returning to the original position, bend little towards right side take out your left leg and extend it. Similarly extend your right leg and return to the original position.

Benefits

- Relieves sciatica pain. 'Vajrasana', if done for 10 minutes after a full meal relieves heaviness in stomach due to overeating.

VRIKSHASANA (The Tree Posture)

Vriksha 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 breathe 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.

PRANAYAMA

Pranayama is about breathing and concentrating the mind. Pranayama controls the energy within the organism, in order to restore and maintain health.

ANULOMA VILOMA (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). This is a preparatory process before performing pranayam. It corrects the breathing pattern and increases the vital capacity of the lungs.

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 Gnyana 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;
- Breathe 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 AnulomaViloma.
- 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 nadis; hence nourishes the whole body.
- Induces tranquility and helps to improve concentration.
- Increases vitality and lowers the level of stress and anxiety.

NADI-SODHANA

This is one of the fundamental types of Pranayam.

Technique

- Place the right hand in Nasagra Mudra (forefinger and middle finger bent towards the palm; thumb, ring, and little finger in the air).
- Close the right nostril with the thumb and inhale into the left nostril (Puraka); then close both the nostrils and retain breath as much as possible (Kumbhaka); then open the right nostril and exhale through the right nostril (Rechaka) and remain in the same position for as much time as possible – this is one round of pranayam.
- Then repeat the same process with the right nostril.
- Continue, doing 5-20 rounds.

Note

Initially the ratio of Puraka, Kumbhaka, Rechaka will be 1:1:1; after one week gradually one can increase the ratio upto 1: 2: 1½ and then upto 1: 3: 2 and finally upto 1: 4: 2.

Benefits

- This type of Pranayam creates positive and negative air pressures in the lungs and the stomach cavity. This also causes good effects on the internal organs.

Caution

- Avoid jerks in the whole process. It should be smooth, continuous and relaxing.
- Perform the whole cycle upto the person's capacity.

BHASTRIKA

Bhastrika is primarily consists of forced rapid deep breathing while the emphasis is on the expulsion or explosion of air.

Technique

- Sit straight in a comfortable posture. Keep the left hand rest on the left knee in Gnyanmudra or Anjalimudra and place the right hand next to the nose.
- Inhale and exhale quickly in short and shallow breaths through both nostrils from four to ten times.
- Again inhale and exhale through the nostrils contracting the middle and lower portions of the abdomen.
- Now, inhale through the right nostril and retain the breath for a while. Then exhale completely, through the left nostril. Repeat this for 3 times and after this again Bhastrika (above 3 steps) can be done for some more time.

BHRAMARI

Bhramari is derived from bhramara which means a black bee. During the practice of this pranayama, the sound produced resembles the buzzing a black bee.

Technique

- Sit in any meditative posture with eyes closed.
- Inhale deeply through the nose.
- Close the eyes with index fingers, mouth with ring and small fingers and ears from respective thumbs as shown in the figure. This is also called Shanmukhi Mudra.
- Exhale slowly in a controlled manner while making a deep, steady humming such as that of black bee. This one round of Bhramari.
- Repeat 5 rounds.

Benefits

- The practice of Bhramari relives stress and helps in alleviating anxiety, anger and hyperactivity.
- The resonance effect of humming sound creates a soothing effect on the mind and nervous system.
- It is a great tranquilizer; found good in the management of stress related disorders.
- It is great preparatory pranayama for concentration and meditation.

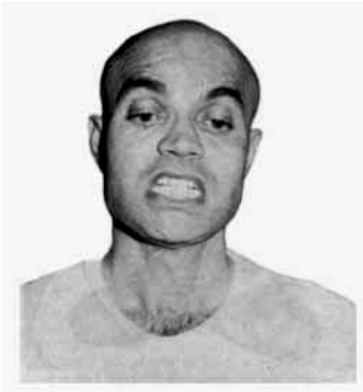
Caution

- Please avoid this practice in case of nose and ear infections.

SITKARI

Sitkari pertains to the sound made by drawing air in through the front teeth-either tightly closed or slightly opened-with the tongue tip regulating the air pressure and sound.

Technique

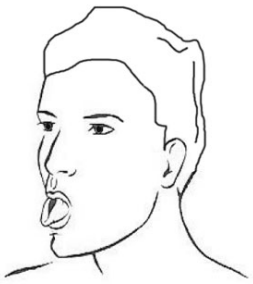


- Sit in a comfortable position.
- A hissing sound is produced when the breath is drawn in, through the mouth, with the tongue touching the upper palate and teeth should be closed together.
- When the breath is drawn in, a hissing sound similar to 'si, si, si', is produced.
- Hold the breath till the capacity and then throw out the breath through both the nostrils.

SHITALI

Shitali refers to the sound caused when air is drawn in through the protruding tongue folded into a tube.

Technique



- Purse your lips into a tiny "o" shape. Fold the tongue like a pipe and keep it floating outside, so that it doesn't touch teeth or gums.
- Slowly inhale through the mouth, feel the cooled air. If mouth becomes dry, slow down the procedure.
- To exhale, use the tip of your tongue softly against the top inside roof of the mouth. Exhale even more slowly as compared to inhalation. The air will exit through the nose.

SURYA BHEDI

Surya means sun, referring to the right nostril which is the path of the Pingala Nadi. Inhale solely through this nostril, heat is created in the body and the impurity that blocks the flow of Prana is dispelled.

- Fold the index and middle finger of the right hand against the palm of that hand.
- Use the ring and little fingers to close the left nostril and take breath through right nostril. After holding the breath for a while, exhale through the left nostril.
- Perform this upto the person's capacity.

UJJAI

In Ujjai breathing, the glottis is partially closed. The glottis is that part in the throat area that closes while swallowing, but which is open while breathing. When the glottis is partially closed while breathing, one can hear a sound resonate from within, as well as feel a flow of air on the palate. A slightly different sound is heard on inhalation and exhalation.

Technique

- Place the palm facing the open lips, as if you were holding a mirror there Exhale through your mouth, as if trying to fog the mirror Inhale through the mouth, as if trying to remove the fog.
- Don't force the breath! Just breath easily, feeling what is going on in the throat.
- Listen to the sounds in the back of the throat. They sound something like what one can hear when a conch shell is placed against the ear, or like the sound of a whisper.
- Breathe 10 breaths this way.
- Close the mouth and continue.

Caution

- Many people experience dizziness or lose consciousness while practicing beginner or advanced Breathing Techniques. Do not rush things and practice all exercises as slowly as you can.

DHYANA IN SAMBHAVI MUDRA

Dhyana or meditation is an act of continuous contemplation.

Technique

- Sit in any meditative posture
- Keep the spine comfortable erect.
- Hold Gnyana Mudra as follows:
    - Touch the tip of the thumb to the tip of the index finder, forming a circle.
    - The other three fingers are straight and relaxed.
    - All three fingers are side-by-side and touching.
    - Keep the palms facing upwards upon the thighs.
    - Arms and shoulders should be loose and relaxed.
- Close the eyes and sit with a slightly upturned face.
- Need not concentrate. Just maintain a mild focus between the eyebrows and be conscious of the breath.
- Dissolve the thoughts and attain single and pure thought.
- Meditate.

Note

- For beginners, soothing music may be played in the back ground during meditation.
- Stay as long as possible.

Benefits

- Meditation is the most important component of Yoga practice.
- It helps the practitioner to eliminate negative emotions like fear, anger, depression, anxiety and to develop positive emotions.
- Keeps the mind calm and quiet.
- Increases concentration, memory, clarity of thought and willpower.
- Rejuvenates the whole body and mind giving them proper rest.
- Meditation leads to self-realization.

MEDITATION (YOGIC RELAXATION TECHNIQUES)

There are three relaxation techniques, developed by Vivekananda Kendra Yoga Research foundation viz. **Instant relaxation technique, Quick relaxation technique and Deep relaxation technique.**
These are easy to perform and beneficial relaxation techniques. **Instant relaxation technique** can be practised for sometime after every individual exercise. **Quick relaxation technique** or **Deep relaxation**

technique can be practised after the Asanas or independently in one's daily routine to provide sufficient rest to the body systems.

Deep Relaxation Techniques (DRT)

- Lie down in shavasana. Be comfortable and relax completely.

- Bring the awareness to the tip of the toes, gently move the toes and relax. Slowly and subsequently relax the soles, ankle joints, calf muscles, knees, thighs muscles, buttock muscles, hip joints, pelvic region and the waist region. **Relax the lower part of the body completely**. R….e….l…a…x.

- Gently bring the awareness to the abdominal region and observe the abdominal movements for some time, relax the abdominal muscles and relax the chest muscles.
- Bring the awareness to the lower back, relax the lower back, vertebral joints, muscles and nerves, the back and shoulder blades; then the fingers, palms, wrist joints, forearms, elbow joints, arm (triceps and biceps) and shoulders; neck, head and the muscles and nerves of the neck; **relax the middle part of the body**. R…..e…l…a…x.

- Gently bring the awareness to the head region. Relax slowly and subsequently chin, lower jaw, upper jaw, lower gums, upper gums, lower and upper teeth and tongue; hard and soft palate, throat and vocal chords; lips, nose, cheek muscles; eye balls muscles, eye lids, eye brows and forehead, temple muscles, ears, the sides of the head , back of the head and crown of the head. **Relax the head region**, totally relax. R…e…l…a…x.

- Observe the whole body from toes to head and relax. Slowly come out of the body consciousness and visualize the body lying on the ground completely relaxed.

- Slowly come back to body consciousness. Inhale deeply. Gently move the whole body a little. Feel the lightness, alertness and movement of energy throughout the body. Slowly bring the legs together and the hands by the side of the body. Turn over to the left or the right side and come up slowly.

Quick Relaxation Techniques (QRT)

- Lie down in shavasana. Observe the abdominal movements. Observe the movements of abdominal muscles going up and down with **normal breathing**. Do five cycles.

- Synchronize the abdominal movements going up and down with **deep breathing**. Do five cycles.

- Energize the body and feel the lightness, while inhaling deeply and slowly. During exhalation completely collapse all the muscles, release the tension and enjoy the relaxation. Do five cycles.
- Exhale slowly. Then come up slowly and gradually from either the right or the left side of the body.

Instant relaxation Technique (IRT)

- Lie down in shavasana. Bring the legs together; join the heels and toes together and place the palms by the side of the thighs.
- Keep the face relaxed and smiling throughout.
- Start tightening from the toes, then ankle joints, calf muscles, knees, thigh muscles, buttocks.
- Breathe out and pull the abdomen inside. Make fists and tighten the arms.

- Inhale and expand the chest. Tighten the shoulders, neck muscles and the facial muscles, then the whole body from the toes to the head for some time.
- Relax the whole body instantaneously.
- Keep the legs and arms apart with the open palms facing the roof.
- Assume the most comfortable position, let the whole body relax. Enjoy the relaxation

SANKALPA

Hame hamare man ko hamesha santulit rakhana hai,
Isi main hi hamara atma vikas samaya hua hai.

SANKALPA: (End the Yoga Practice Session with a *Sankalpa*)

KRIYAS

Kriyas are cleansing techniques used to purify the body and mind which ultimately open the pathways of the body. It has been explained in the Niyama of Eight Limbs of Yoga (Ashtanga Yoga) that one has to do the practice of saucha/sauca by means of yogic kriyas.

AGNISARA

This cleansing technique draws its name from the words 'Agni' (Fire), 'Sara' (Essence)

Technique

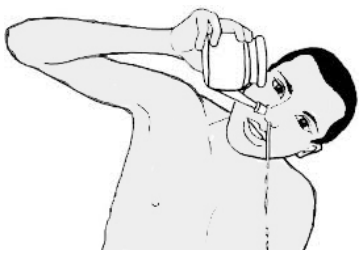
- Stand with slightly bending forward from the waist, keep the back straight.
- Take support by resting hands on the knees or just above so that the back is not strained. Keep the arms straight.
- Breathe in deeply. Then, exhale fully contracting the abdomen and lungs so that all the air is expelled.
- While holding breath in this position, contract or 'flap' the abdominal muscles in and out.
- This should be done rapidly while holding the exhaled position WITHOUT inhaling. Do this as many times possible and then take a slow, deep breath inside. This is one round of the practice.

Caution

- People with High BP, heart disease or internal ulcers of any kind should avoid this. Also, people with hyperthyroidism or chronic diarrhoea should avoid this.

JALNETI

Technique



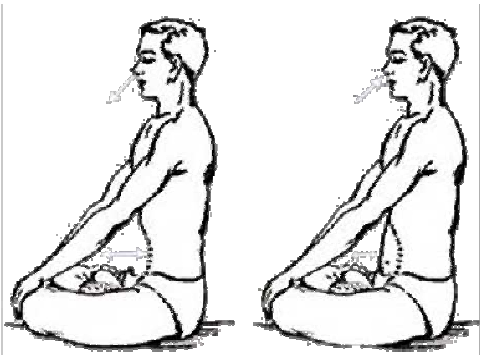
- "Neti Pot" (special pot to perform Jalneti) is filled with warm, slightly salted water and the spout of the pot is inserted into one nostril.
- The position of the head and pot are adjusted to allow the water to flow out of the other nostril.

Caution

- In case of any pain during the procedure, check whether the spout of the pot is inserted too fast, or that it entered the wrong way and is stalled against the nasal wall. If so, stop immediately, withdraw and reinsert the spout of the pot carefully in another direction until you find a clear uninterrupted passage.

KAPALABHATI

Technique



- Sit in any meditative posture. e.g. Sukhasana/ Padmasana/ Vajrasana
- Close the eyes and relax the whole body.
- Expel the breath with forceful contractions of the abdominal muscles and relax.
- Do not strain.
- Continue active/forceful exhalation and passive inhalation.
- Perform this rapid breathing upto the person's capacity, and then take a deep breath and exhale slowly.
- Repeat the whole process upto the person's capacity.

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

- Kapalabhati 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 keeps the face young and vibrant.
- It balances and strengthens the nervous system and tones up the digestive system.
- It purifies the blood.

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.

KUNJAL/VAMAN DHOUTI

Technique

- Take approximately one litre of lukewarm water (or more according to the person's capacity).

- Drink all of it, as quickly as possible, until you can't take any more. It is essential to drink fast rather than sip the water.
- Once the stomach is full, the urge to vomit seems automatic
- Now, lean forward, keep the body as horizontal as possible and insert the middle and index fingers of right hand as far back into the throat as possible, till the uvula. This will induce instantaneous vomiting.
- Keep reticulating your uvula and vomiting until all the water is comes out of stomach.

Caution

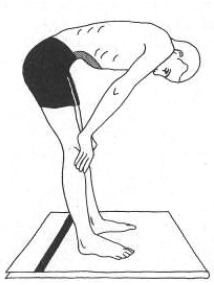
- There are certain conditions for which Dhautis must not be practiced. These are: stomach or intestinal ulcers, hernia, heart problems, and high blood pressure.
- Dhauti should not be done daily or made a regular habit. Once every three months should achieve the desired results.

BANDHAS

Uddiyan Bandha

This bandha involves movement of the muscles of the stomach and especially the muscles of the diaphragm. The muscle of the diaphragm is stretched in upward direction.

Technique



- Stand up with distance of 1 to 1.5 feet between the legs.
- Bend the knees a little and place the palms on the respective knees.
- Bend the shoulders and the neck a little forwards and so that the weight of the body is shifted onto the knees through the hands.
- This reduces the strain on the stomach and the muscles of the stomach can be relaxed.
- Inhale deeply and then exhale gradually.

Benefits

- The diaphragm will be moved to a great extent in this bandha, hence the muscles of the diaphragm get well exercised and this movement also helps in the regular breathing.
- When the strength and the efficiency of diaphragm is improved, the breathing system also works more efficiently.
- The bandha is also useful for awakening of Kundalini power.
- The air pressure resulting in pranayama is regulated in proper direction due to the position of this bandha.

Caution

- Persons suffering from stomach ailments and hernia, heart troubles or defective blood circulation should not attempt to perform the bandha.

CONTACT DETAILS OF OFFICIALS AT CCRAS, HQRS. NEW DELHI

Name of the Officers	Contact Numbers & E-mail IDs
Prof. Vd. K.S. Dhiman **Director General,** **CCRAS, 61-65, Institutional Area,** **Opp. 'D'Block, Janakpuri, New Delhi -58**	011 28524457 dg-ccras@nic.in
Dr. M.M. Padhi **Deputy Director General** **CCRAS, 61-65, Institutional Area,** **Opp. 'D'Block, Janakpuri, New Delhi -58**	011 28522010 ccras_tec@nic.in
Dr. N. Srikanth **Assistant Director (Ayurveda)** **CCRAS, New Delhi**	011 28522767 srikanthccras@gmail.com ayurveda1-ccras@gov.in
Dr. Bharti **Assistant Director (Ayurveda),** **CCRAS, New Delhi**	011-28520081 drbharti2@gmail.com ayurveda2-ccras@gov.in
Dr. V.K. Shahi **Research Officer (Ayurveda)(S-4)** **Programme Co-ordinator (NPCDCS)** **CCRAS, New Delhi**	011-28521121 shahivk@gmail.com
Dr. Sarada Ota **Research Officer (Ayurveda) (S-2)** **Nodal Officer (NPCDCS –Bhilwara Distt.)** **CCRAS, New Delhi**	011-28525410 sarada_ota@yahoo.com
Dr. Renu Singh, **Research Officer (Ayurveda)** **Nodal Officer (NPCDCS –Gaya Distt.)** **CCRAS, New Delhi**	drrenusingh@yahoo.com
Dr. Shruti Khanduri **Research Officer (Ayurveda)** **Nodal Officer (NPCDCS – Surendranagar Distt.)** **CCRAS, New Delhi**	drshruti.ayurveda@gmail.com

CONTACT DETAILS OF PERIPHERAL INSTITUTES OF CCRAS

Name of the Officers	Contact Numbers & E-mail IDs
Dr. H.M.L. Meena **In-charge Research Officer (Ay.)(S-3)** **Ayurveda Central Research Institute (ACRI),** **Indira colony, Bani Park, Jhotwara road,** **Jaipur – 302016**	09785297017,0141-2282618 acri.jaipur@gmail.com acri-jaipur@nic.in

Dr. G. Babu **In-charge, Assistant Director (Ayurveda)** **Ayurveda Contraceptive Drug Research Institute (ACDRI), O/3, New Mental Campus, Meghani Nagar, Ahemdabad-380016**	08096455323, 079-22683065 acdri-ahemdabad@gov.in
Dr. A.N. Mishra, **In-charge Research Officer (Ay.)(S-4),** **Ayurveda Regional Reserach Institute,** **Agam Kuan, Patna-800007**	09801392185, 0612-2631678/2630903 acri-patna@gov.in

DIRECTORATE OF HEALTH SERVICES, MINISTRY OF HEALTH & FAMILY WELFARE, NIRMAN BHAWAN, NEW DELHI

Name of the Officers	Contact Numbers & E-mail IDs
Dr. (Prof.) Jagdish Prasad **DGHS** **Room No. 446-A, Nirman Bhawan, Maulana Azad Road, New Delhi- 110108**	011 23061063 011 23061438 011 23061110 jagdish.prasad55@nic.in
Dr. Mohd. Shaukat Usta. **DDG (NCD)** **Directorate General of Health Services** **Nirman Bhawan, New Delhi**	011-23063247 ddgncd2013@gmail.com
Dr. Chinmoyee Das **DADG(NCD), Directorate General of Health Services** **Nirman Bhawan, New Delhi**	011-23061936 drchinmoyeedas@gmail.com
Dr. L. Swasticharan **Chief Medical Officer** **Dte.G.H.S, 652-A-II, Nirman Bhawan** **Maulana Azad Road, New Delhi- 110108**	09818988281 011 23063537 drswasti@yahoo.com swasticharan.l@nic.in

CONTACTS DETAILS OF OFFICIALS - GAYA, (BIHAR), NPCDCS

Name of the Officers	Contact numbers & E-mail IDs
Dr. Mahesh Kumar Sinha **State Programme Officer- NCD,** **Parviar Kalyan Bhawan , Seikhpura, Patna (NPCDCS)**	0612-3259447, 09473197725, npcdcsbihar@gmail.com
Dr. Y.N. Pathak **State Programme Officer, State Health Society Bihar** **Parviar Kalyan Bhawan , Seikhpura, Patna**	09470003829
Dr. T.A. Lari **Sate Programme Officer (AYUSH)**	09473191942

Parviar Kalyan Bhawan , Seikhpura, Patna	
Md. Masood Alam, **State Consultant (NTCP)** **Parviar Kalyan Bhawan , Seikhpura, Patna**	09473197722

CONTACT DETAILS OF OFFICIALS FOR BHILWARA DISTRICT, JAIPUR (RAJASTHAN), NPCDCS

Name of the Officers	Contact Numbers & E-mail IDs
Director (Public Health), **Directorate of Medical & Health Services**	0141-2229858 directorph-ri@nic.in
Dr. Sunil Singh **Dy.CM & HO(Health)** **& State Nodal Officer (NCD/ATC)**	0141-2221237 09571771225 npcdcsrajasthan@gmail.com
Dr. C.P. Sharma, **State Programme Officer (NCD)**	09462220291, ncd.rajasthan@yahoo.com
Dr. TD. Khatri, **R.O. (Medical Officer)**	09414716607 drtdkhatri@gmail.com
Dr. R.N. Meena, **State Nodal Officer**	09413923136 addtiha@gmail.com

CONTACT DETAILS OF OFFICIALS FOR SURENDRANAGAR DISTRICT AHEMDABAD (GUJARAT), NPCDCS

Name of the Officers	Contact numbers & Email IDs
Dr. Sunil R Avashia **Add. Director, Medical Services**	07923253287
Dr. Jayadip Oza, **State Programme Officer (NCD)** **Ist Floor, Commissionerate of Health** **5, Jivaraj Mehta Bhawan, Gandhinagar**	07923253286 npcdcsgujarat@gmail.com
Dr. A.A. Memon, **District Programme Officer, NPCDCS** **District Hospital, Surendranagar**	09687040444 npcdcsgujarat@gmail.com