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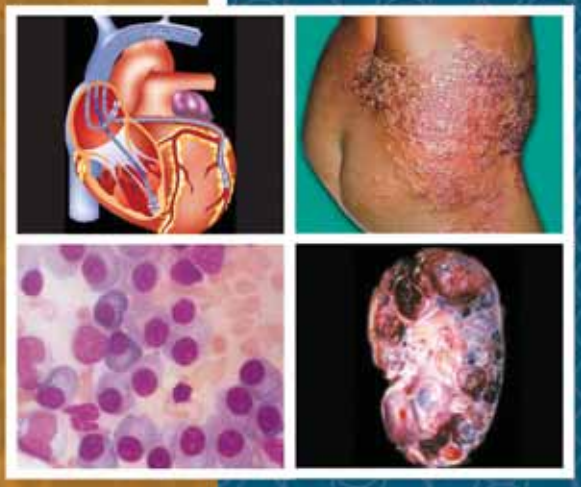
R Alagappan

Manual of Practical Medicine

As per the Competency-based Medical Education Curriculum (NMC)

7 th Edition



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Competency Table

GENERAL MEDICINE (CODE: IM)

Number	COMPETENCY The student should be able to	Chapter No.	Page No.
Topic: Heart Failure			
IM1.1	Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory	4	200-201 237-252
IM1.2	Describe and discuss the genetic basis of some forms of heart failure	4	217-237
IM1.3	Describe and discuss the aetiology microbiology pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis	4	237-245 252
IM1.4	Stage heart failure	4	279
IM1.5	Describe ,discuss and differentiate the processes involved in R Vs L heart failure, systolic vs diastolic failure	4	256-257
IM1.6	Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations	4	258-263
IM1.9	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever	4	237-238
IM1.11	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and estimate its severity including: measurement of pulse, blood pressure and respiratory rate, jugular venous forms and pulses, peripheral pulses, conjunctiva and fundus, lung, cardiac examination including palpation and auscultation with identification of heart sounds and murmurs, abdominal distension and splenic palpation	4	194-217
IM1.12	Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure	4	255
IM1.13	Measure the blood pressure accurately, recognise and discuss alterations in blood pressure in valvular heart disease and other causes of heart failure and cardiac tamponade	4	255-264
IM1.17	Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures	4	199-217
IM1.19	Enumerate the indications for and describe the findings of heart failure with the following conditions including: 2D echocardiography, brain natriuretic peptide, exercise testing, nuclear medicine testing and coronary angiogram	4	256-262
IM1.21	Describe and discuss and identify the clinical features of acute and subacute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy	4	252-255
IM1.24	Describe and discuss the pharmacology of drugs including indications, contraindications in the management of heart failure including diuretics, ACE inhibitors, Beta blockers, aldosterone antagonists and cardiac glycosides	4	258
Topic: Acute Myocardial Infarction			
IM2.1	Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease	4	276
IM2.2	Discuss the aetiology of risk factors both modifiable and non modifiable of atherosclerosis and IHD	4	281
IM2.5	Define the various acute coronary syndromes and describe their evolution, natural history and outcomes	4	272
IM2.9	Distinguish and differentiate between stable and unstable angina and AMI based on the clinical presentation	4	278
IM2.10	Order, perform and interpret an ECG	4	277-278
IM2.11	Order and interpret a Chest X-ray and markers of acute myocardial infarction	4	277-278

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Number	COMPETENCY The student should be able to	Chapter No.	Page No.
Topic: Pneumonia			
IM3.1	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia	5	340-342
IM3.2	Discuss and describe the aetiologies of various kinds of pneumonia and their microbiology depending on the setting and immune status of the host	5	340
IM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia	5	340
IM3.5	Perform, document and demonstrate a physical examination including general examination and appropriate examination of the lungs that establishes the diagnosis, complications and severity of disease	5	340-342
IM3.6	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation	5	342
IM3.7	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X-ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG	5	347-349
IM3.8	Demonstrate in a mannequin and interpret results of an arterial blood gas examination	5	319
IM3.9	Demonstrate in a mannequin and interpret results of a pleural fluid aspiration	5	320
IM3.11	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing	5	107, 350
IM3.14	Perform and interpret a sputum gram stain and AFB	5	331
Topic: Fever and Febrile Syndromes			
IM4.1	Describe and discuss the febrile response and the influence of host immune status, risk factors and comorbidities on the febrile response	1	22-25
IM4.2	Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel	1	25-28
IM4.3	Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g. Dengue, Chikungunya, Typhus)	1	23-25
IM4.5	Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies	1	27
IM4.6	Discuss and describe the pathophysiology and manifestations of malaria	3	131-135
IM4.8	Discuss and describe the pathophysiology, aetiology and clinical manifestations of fever of unknown origin (FUO) including in a normal host, neutropenic host, nosocomial host and a host with HIV disease	1	26
IM4.10	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)	1	27-28
IM4.15	Perform and interpret a malarial smear	3	133
IM4.22	Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance	3	134-135
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs	3	134-135
Topic: Liver disease			
IM5.3	Describe and discuss the pathologic changes in various forms of liver disease	5	399-402
IM5.4	Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis	5	404-406
IM5.5	Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease	5	410-411
IM5.12	Choose and interpret appropriate diagnostic tests including: CBC, bilirubin, function tests, Hepatitis serology and ascitic fluid examination in patient with liver diseases.	5	402
IM5.15	Assist in the performance and interpret the findings of an ascitic fluid analysis	5	415-416
IM5.16	Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis and hepatic encephalopathy	5	409-414
IM5.18	Enumerate the indications for hepatic transplantation	5	428-429
Topic: HIV			
IM6.2	Define and classify HIV AIDS based on the CDC criteria	3	123
IM6.3	Describe and discuss the relationship between CDC count and the risk of opportunistic infections	3	124-128
IM6.4	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related opportunistic infections	3	124-128

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Number	COMPETENCY The student should be able to	Chapter No.	Page No.
IM6.5	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related malignancies	3	127
IM6.9	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC	3	128
IM6.16	Discuss and describe the principles of HAART, the classes of antiretrovirals used, adverse reactions and interactions	3	129-130
Topic: Rheumatologic problems			
IM7.3	Classify cause of joint pain based on the pathophysiology	11	764
IM7.4	Develop a systematic clinical approach to joint pain based on the pathophysiology	11	765-766
IM7.5	Describe and discriminate acute, subacute and chronic causes of joint pain	11	766-767
IM7.6	Discriminate, describe and discuss arthralgia from arthritis and mechanical from inflammatory causes of joint pain	11	773
IM7.10	Describe the systemic manifestations of rheumatologic disease	11	768-769
IM7.19	Develop an appropriate treatment plan for patients with rheumatologic diseases	11	770-773
Topic: Hypertension			
IM8.1	Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension	4	182-183
IM8.2	Describe and discuss the pathophysiology of hypertension	4	182-183
IM8.4	Define and classify hypertension	4	183
IM8.5	Describe and discuss the differences between primary and secondary hypertension	4	183
Topic: Anemia			
IM9.1	Define, describe and classify anemia based on red blood cell size and reticulocyte count	7	438-439
IM9.2	Describe and discuss the morphological characteristics, aetiology and prevalence of each of the causes of anemia	7	439-446
IM9.6	Describe the appropriate diagnostic work up based on the presumed aetiology	7	440-441
IM9.8	Describe and discuss the various tests for iron deficiency	7	440-442
IM9.9	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B_{12} and folate	7	442-443
Topic: Acute Kidney Injury and Chronic renal failure			
IM10.1	Define, describe and differentiate between acute and chronic renal failure	8	500, 504
IM10.2	Classify, describe and differentiate the pathophysiologic causes of acute renal failure	8	500-501
IM10.3	Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF	8	500-501
IM10.4	Describe the evolution, natural history and treatment of ARF	8	503
IM10.5	Describe and discuss the aetiology of CRF	8	504
IM10.6	Stage Chronic Kidney Disease	8	504
IM10.9	Describe and discuss the pathophysiology of anemia and hyperparathyroidism in CKD	5	505
IM10.10	Describe and discuss the association between CKD glycemia and hypertension	5	505
IM10.12	Elicit document and present a medical history that will differentiate the aetiologies of disease, distinguish acute and chronic disease, identify predisposing conditions, nephrotoxic drugs and systemic causes	5	505
IM10.25	Identify and describe the priorities in the management of ARF including diet, volume management, alteration in doses of drugs, monitoring and indications for dialysis	5	507
IM10.26	Describe and discuss supportive therapy in CKD including diet, anti hypertensives, glycemic therapy, dyslipidemia, anemia, hyperkalemia, hyperphosphatemia and secondary hyperparathyroidism	5	507
IM10.27	Describe and discuss the indications for renal dialysis	5	507
Topic: Diabetes Mellitus			
IM11.1	Define and classify diabetes	10	718
IM11.2	Describe and discuss the epidemiology and pathogenesis and risk factors and clinical evolution of type 1 diabetes	10	718
IM11.3	Describe and discuss the epidemiology and pathogenesis and risk factors economic impact and clinical evolution of type 2 diabetes	10	726
IM11.4	Describe and discuss the genetic background and the influence of the environment on diabetes	10	719

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Number	COMPETENCY The student should be able to	Chapter No.	Page No.
IM11.7	Elicit document and present a medical history that will differentiate the aetiologies of diabetes including risk factors, precipitating factors, lifestyle, nutritional history, family history, medication history, co-morbidities and target organ disease	10	720
IM11.8	Perform a systematic examination that establishes the diagnosis and severity that includes skin, peripheral pulses, blood pressure measurement, fundus examination, detailed examination of the foot (pulses, nervous and deformities and injuries)	10	719-720
IM11.9	Describe and recognise the clinical features of patients who present with a diabetic emergency	10	720
IM11.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology		
IM11.11	Order and interpret laboratory tests to diagnose diabetes and its complications including: glucoses, glucose tolerance test, glycosylated hemoglobin, urinary micro albumin, ECG, electrolytes, ABG, ketones, renal function tests and lipid profile	10	720
IM11.17	Outline a therapeutic approach to therapy of T2Diabetes based on presentation, severity and complications in a cost effective manner	10	727-728
IM11.18	Describe and discuss the pharmacology, indications, adverse reactions and interactions of drugs used in the prevention and treatment of target organ damage and complications of Type II Diabetes including neuropathy, nephropathy, retinopathy, hypertension, dyslipidemia and cardiovascular disease	10	728
IM11.19	Demonstrate and counsel patients on the correct technique to administer insulin	10	729
IM11.22	Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment	10	721-722
IM11.23	Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of diabetic ketoacidosis	10	734
IM11.24	Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of Hyperosmolar non ketotic state	10	737
Topic: Thyroid dysfunction			
IM12.1	Describe the epidemiology and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease	10	691, 695
IM12.2	Describe and discuss the genetic basis of some forms of thyroid dysfunction	10	691
IM12.3	Describe and discuss the physiology of the hypothalamopituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function	10	691
IM12.4	Describe and discuss the principles of radio iodine uptake in the diagnosis of thyroid disorders	10	694
IM12.6	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and severity including systemic signs of thyrotoxicosis and hypothyroidism, palpation of the pulse for rate and rhythm abnormalities, neck palpation of the thyroid and lymph nodes and cardiovascular findings	10	694, 698
IM12.8	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis	10	698-699
IM12.9	Order and interpret diagnostic testing based on the clinical diagnosis including CBC, thyroid function tests and ECG and radio iodine uptake and scan	10	693-700
IM12.11	Interpret thyroid function tests in hypo and hyperthyroidism	10	691, 693, 694, 699, 700
IM12.12	Describe and discuss the iodisation programs of the government of India		
IM12.13	Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs	10	694, 695, 698
IM12.15	Describe and discuss the indications of thionamide therapy, radio iodine therapy and surgery in the management of thyrotoxicosis	10	694, 695
Topic: Obesity			
IM14.1	Define and measure obesity as it relates to the Indian population	2	63
IM14.2	Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes	2	63-65
IM14.4	Describe and discuss the impact of environmental factors including eating habits, food, work, environment and physical activity on the incidence of obesity	2	64
IM14.5	Describe and discuss the natural history of obesity and its complications	2	65-66
IM14.6	Elicit and document and present an appropriate history that includes the natural history, dietary history, modifiable risk factors, family history, clues for secondary causes and motivation to lose weight	2	65-66

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Number	COMPETENCY The student should be able to	Chapter No.	Page No.
IM14.7	Perform, document and demonstrate a physical examination based on the history that includes general examination, measurement of abdominal obesity, signs of secondary causes and comorbidities	2	64
IM14.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis	2	63-64
IM14.15	Describe and enumerate and educate patients, health care workers and the public on measures to prevent obesity and promote a healthy lifestyle	2	65-66
Topic: GI Bleeding			
IM15.1	Enumerate, describe and discuss the aetiology of upper and lower GI bleeding	6	384, 394-395
IM15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed	6	384
IM15.4	Elicit and document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors	6	385, 395
Topic: Diarrheal disorder			
IM16.1	Describe and discuss the aetiology of acute and chronic diarrhea including infectious and non infectious causes	6	385
IM16.2	Describe and discuss the acute systemic consequences of diarrhea including its impact on fluid balance	6	386
IM16.3	Describe and discuss the chronic effects of diarrhea including malabsorption	6	387
IM16.5	Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination	6	386, 387
IM16.6	Distinguish between diarrhea and dysentery based on clinical features	6	387
Topic: Headache			
IM17.1	Define and classify headache and describe the presenting features, precipitating factors, aggravating and relieving factors of various kinds of headache	9	617-618
IM17.2	Elicit and document and present an appropriate history including aura, precipitating aggravating and relieving factors, associated symptoms that help identify the cause of headaches	9	617
IM17.3	Classify migraine and describe the distinguishing features between classical and non classical forms of migraine	9	617
IM17.4	Perform and demonstrate a general neurologic examination and a focused examination for signs of intracranial tension including neck signs of meningitis	9	618
IM17.5	Generate document and present a differential diagnosis based on the clinical features, and prioritise the diagnosis based on the presentation	9	617-618
IM17.8	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture	9	619
IM17.12	Describe the indications, pharmacology, dose, side effects of prophylactic therapy in migraine	9	618
IM17.13	Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis	9	639-641
IM17.14	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy	9	619
Topic: Cerebrovascular accident			
IM18.1	Describe the functional and the vascular anatomy of the brain	9	601-603
IM18.2	Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non hemorrhagic stroke	9	599-600
IM18.3	Elicit and document and present an appropriate history including onset, progression, precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident	9	605-606
IM18.10	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)	9	607-608
IM18.11	Describe the initial supportive management of a patient presenting with a cerebrovascular accident (CVA)	9	608-609
IM18.14	Describe the initial management of a hemorrhagic stroke	9	608-609, 612
IM18.15	Enumerate the indications for surgery in a hemorrhagic stroke	9	612
Topic: Movement disorders			
IM19.1	Describe the functional anatomy of the locomotor system of the brain		
IM19.2	Classify movement disorders of the brain based on distribution, rhythm, repetition, exacerbating and relieving factors	9	622-623

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Number	COMPETENCY The student should be able to	Chapter No.	Page No.
IM19.3	Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the movement disorders	9	622-623
IM19.7	Choose and interpret diagnostic and imaging tests in the diagnosis of movement disorders	9	624
IM19.8	Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson's syndrome	9	625-626
IM19.9	Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders	9	625
Topic: Mineral, Fluid Electrolyte and Acid base Disorder			
IM22.1	Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia	8	511
IM22.3	Describe the approach to the management of hypercalcemia	8	511
IM22.5	Enumerate the causes and describe the clinical features and the correct approach to the diagnosis and management of the patient with hyponatremia	8	509-510
IM22.6	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyponatremia	8	510
IM22.7	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hypokalemia	8	510-511
IM22.8	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyperkalemia	8	511-512
IM22.9	Enumerate the causes and describe the clinical and laboratory features of metabolic acidosis	8	513
IM22.10	Enumerate the causes of describe the clinical and laboratory features of metabolic alkalosis	8	514
IM22.11	Enumerate the causes and describe the clinical and laboratory features of respiratory acidosis	8	513
IM22.12	Enumerate the causes and describe the clinical and laboratory features of respiratory alkalosis	8	514
IM22.13	Identify the underlying acid based disorder based on an ABG report and clinical situation	8	514-515
Topic: Nutritional and Vitamin Deficiencies			
IM23.1	Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses	2	49
IM23.2	Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital	2	50-57
IM23.3	Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies	2	52-58
Topic: Geriatrics			
IM24.1	Describe and discuss the epidemiology, pathogenesis, clinical evolution, presentation and course of common diseases in the elderly	13	830-832
IM24.2	Perform multidimensional geriatric assessment that includes medical, psycho-social and functional components	13	830
IM24.3	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of acute confusional states	13	833
IM24.4	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vascular events in the elderly	13	833
IM24.6	Describe and discuss the aetiopathogenesis causes, clinical presentation, difference in discussion presentation identification, functional changes, acute care, stabilization, management and rehabilitation of dementia in the elderly	13	833
IM24.7	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of personality changes in the elderly	13	832
IM24.13	Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of falls in the elderly	9	833
Topic: Miscellaneous Infections			
IM25.1	Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic diseases (e.g. Leptospirosis, Rabies) and non-febrile infectious disease (e.g. Tetanus)	3	119-120, 99-100, 75-76
IM25.2	Discuss and describe the common causes, pathophysiology and manifestations of these diseases	3	119-120, 99-100, 75-76

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Introduction to Internal Medicine

1
CHAPTER

The history

Name

Age (Date of birth)

Sex

Address

Source of history

Presenting complaints
(in chronological order)

History of presenting complaints
Duration/Severity
Mode of onset
Progression
Agg./Relieving factors
Associated symptoms

Past illness
H/o past medical/surgical illness

Personal history
H/o smoking/alcohol use
H/o illicit drug use
Pre/extramarital contact

Occupational history

Marital status

Living circumstances

In children
Prenatal/natal
Postnatal history
Developmental history
Immunisation history

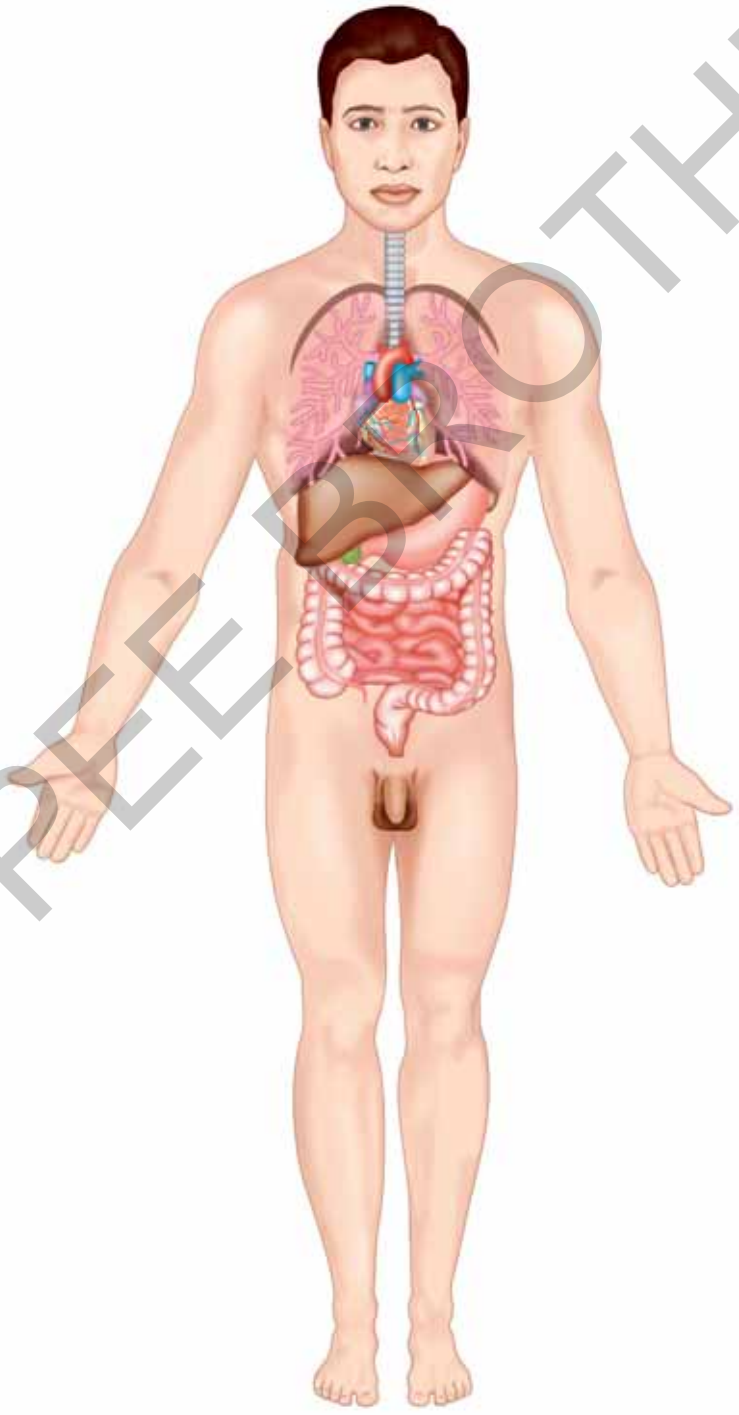
Diet history

Menstrual history

Family history

Drugs and allergies

Summary



The physical examination

General examination
Consciousness
Mental state
General appearance
Face and body habitus
Skin/Hair/Nails
Eyes-pallor
  Icterus
Oral cavity
  Dental hygiene
  Hydration
  Odour of breath
  Cyanosis
  Tongue
Clubbing
Pedal oedema
Lymph node enlargement

Vital signs
Temperature
Pulse
Respiration
Blood pressure

Anthropometry
Height and weight
BMI
In children
MAC and HC

System examination
(Prioritise the system which is involved)
Cardiovascular system
Respiratory system
Gastrointestinal system
Nervous system

Working diagnosis

Investigations

Explanation to the patient

Treatment/Future plan

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HISTORY TAKING

History taking is an art, which forms a vital part in approaching the patient's problem, and arriving at a diagnosis. History taking helps to form a healthy doctor-patient relationship. It also builds up the patient's confidence and trust in his doctor.

Even before going into the patient's complaints, important facts can be gained from the following data, asked as a routine from every patient, helping the consulting doctor to arrive at a most probable conclusion to the patient's problems.

- *Name:* Gives a clue to the country, state, and religion to which the patient may belong.
- *Age:* Problems setting in at childhood are probably congenital in origin. Degenerative, neoplastic, and vascular disorders are more common in the middle aged or elderly. In women beyond the menopausal age group, the incidence of problems like ischaemic heart disease increases in equal proportion as that in their male counterparts.
- *Sex:* Males are prone to inherit certain conditions transmitted as X-linked recessive diseases, e.g. haemophilia. They are more prone to develop conditions like IHD, bronchogenic carcinoma and decompensated liver disease, as they are habituated to smoking and consumption of alcohol, in larger numbers than their female counterparts. Females are more prone for developing autoimmune disorders like SLE, thyroid disorders, etc.
- *Religion:* Jews practice circumcision soon after birth, and so development of carcinoma of penis is rare in them. Muslims do not consume alcohol, and so are less prone to develop problems related to its consumption, e.g. decompensated liver disease. Sikhs do not smoke and are less likely to develop problems related to smoking, e.g. carcinoma of lung. Certain sections of Hindus do not consume meat products and consume a high fibre diet and are therefore protected from developing carcinoma of the colon.
- *Address:* People hailing from the urban region are prone to develop problems related to urbanisation like exposure to constant stress and atmospheric pollutants (industrial and vehicular) and problems developing consequent to this, e.g. IHD, COPD, interstitial lung disease, etc. Inhabitants of mountains or hilly regions may develop problems like primary pulmonary hypertension, may have a persistent patent ductus arteriosus (from childhood) or may be goitrous secondary to iodine deficiency. The particular place from which the patient hails may be endemic for certain diseases, e.g. fluorosis prevalent in certain pockets in Andhra Pradesh.

After having obtained the above details, the patient should be approached as follows:

- Greet the patient, preferably by his name and start off the consultation with some general questions such as, "What can I do for you?," or "How can I help you?," or "What is the problem?"
- *The presenting of complaints:* Allow the patient to tell his complaints in his own words. Do not put leading questions to the patient. The current complaints and their duration should be noted in a chronological order.
- *History of present illness:* Allow the patient to elaborate on the story of his illness from its onset to its present state. Take care so as not to put any leading questions to the patient which may distort the patient's history. The doctor may, however, interrupt the patient to ask for the presence of 'positive' or 'negative' symptoms pertaining to patient's current problems. In analysis of the symptoms, it is important to consider the mode of onset of the illness (acute, subacute, or insidious) and the progression of the illness to the present state (gradually deteriorating, getting better, remaining the same or having remissions and exacerbations). A review of all the systems can be made by questioning the patient on the presence or absence of symptoms pertaining to a particular system.
- *History of previous illnesses:* This should include all important previous illnesses, operations, or injuries that the patient might have suffered from birth onwards. The mode of delivery and the timing of attainment of the various developmental milestones in infancy may be important in some cases. It is always wise to be cautious while accepting readymade diagnosis from the patient like 'Typhoid fever,' 'Malaria,' etc. unless the patient has records of the mentioned illness. Tactful enquiry about sexually transmitted diseases and its treatment, when this is considered of possible relevance to the patient's problem, should be made.

  History of a previous single painless penile ulcer with associated painless masses over the inguinal regions, occurring 3 to 4 weeks after exposure to a commercial sex worker, which may have healed subsequently with or without treatment with the formation of a residual papery or velvety scar over the penis indicates a previous affliction by syphilis. This is important, as syphilis in its tertiary form, later in life, can present with systemic manifestations, e.g. aortic aneurysm and regurgitation, tabes dorsalis.

  History of white discharge per urethrum with associated dysuria, 2 to 3 days after exposure to a commercial sex worker indicates gonorrhoea. This is important as gonorrhoea can later lead to gonococcal arthritis or urethral stricture.
- *The menstrual history:* The following enquiries are made:
  - Age of menarche
  - Duration of each cycle
  - Regular or irregular cycles
  - Approximate volume of blood loss in each menstrual cycle
  - Age of attainment of menopause
  - Post-menopausal bleeding.
- *Obstetric history:* The following enquiries are made:
  - Number of times the patient conceived.
  - Number of times pregnancy was carried to term
  - Number of abortions (spontaneous or therapeutic).
  - Number of living children, their ages and the age of the last child delivered.

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  - The time interval between successive pregnancies/abortions.
  - Mode of delivery (vaginal, forceps assisted, or caesarean).
  - Development of oedema legs, hypertension or seizures in the antenatal or postnatal period (seizure within 48 hours of delivery is due to pregnancy induced hypertension, beyond 48 hours may be due to cerebral sinus thrombosis).
  - Presence of impaired glucose tolerance in the course of pregnancy or history of having given birth to a large baby may give a clue to the presence of diabetes mellitus in the patient.
- *Treatment history:* This should include all previous medical and surgical treatment and also any medication that the patient may be continuing to take to the present date. Details of drugs taken, including analgesics, oral contraceptives, psychotropic drugs and of previous surgery and radiotherapy are particularly important. It is important to find out if the patient had been allergic or had experienced any untoward reactions to any medication that he may have consumed previously, so that the same medication can be avoided in the patient in future and the patient is also appraised of the same. Knowledge of any current therapy that the patient may be on is necessary in order to avoid adverse drug reactions, when new drugs are introduced by the consulting doctor.
- *Family history:* Enquire about the presence of consanguinity in the patient's parents, any disease states in the patient's parents, brothers, sisters and close relatives (presence of disease states like HTN, DM, IHD in the above may make the patient more prone to develop a similar problem). It is prudent to record the state of health, important illnesses, the cause and age of death in any member of the patient's family (may give a clue to the presence of HOCM, or development of IHD). Presence of a hereditary disorder prevalent in the family should be enquired for. Marital status of the patient and the number of children that the patient has should also be enquired for (infertility in a patient may give a clue to the presence of immotile cilia syndrome, cystic fibrosis or Young's syndrome).
- *Social history:* Enquire about the patient's family life style, daily habits, and diet; about the nature of the patient's work (hard work or sedentary), as this may help in rehabilitation of the patient; about the possibility of over crowding at home (over crowding aids in the spread of communicable diseases) and the sanitation in and around the house; about the presence of pets in the house; about the use of alcohol (number of days in a week and also the quantity consumed each day), tobacco (whether chewed or smoked) and betel nut.

  An alcoholic consumes alcohol almost everyday and develops withdrawal symptoms on abstaining from alcohol.

  Smoking: Enquire about the number of cigarettes/beedis smoked per day and the duration of smoking. This may be presented as:

  Pack years: Duration of smoking in years × Number of packets of cigarettes smoked/day, e.g. two packs of cigarettes smoked per day for twenty years constitutes 40 pack years (Risk for development of bronchogenic carcinoma increases when pack years exceed 40).

  Smoking index: It is the number of cigarettes or beedis smoked per day and its duration, e.g. the smoking index of a person smoking 20 cigarettes or beedis per day for 20 years is 400. Smoking index greater than 300 constitutes a risk factor for bronchogenic carcinoma.

  Chewing betel nut or tobacco is a habit common with people living in the rural areas, and this increases the risk of developing oral malignancies.

  Enquire about history of travel abroad or other places within the country, as it may give a clue to the import of a disease by the patient, endemic in the place visited.
- *Occupational history:* Enquiry must be made on all previous and present occupation, as it may give a clue to the presence of an occupational disease in the patient and also to plan the rehabilitation, e.g.
  - Mesothelioma—exposure to asbestos.
  - Carcinoma of the urinary bladder—exposure to aromatic amines in dyestuff industry.
  - Silicosis—occurs in mine workers.

  On the other hand, the presence of a disease in an individual may make him unfit for his occupation by proving to be hazardous to him as well as to others, e.g.
  i. *Salmonella* infection or carrier state in food handlers.
  ii. Epilepsy in drivers of public transport vehicles.

GENERAL EXAMINATION

EXAMINATION OF THE SKIN

Pigmentation of the skin varies from dark skinned to fair individuals, depending on the race to which they belong.

- Generalised absence of skin pigmentation occurs in albinism. Syndromes with features of albinism are:
  - Chédiak-Higashi syndrome (phagocyte deficiency disease).
  - Phenylketonuria (inborn error of amino acid metabolism).
- Patchy absence of skin pigmentation may be due to vitiligo (Fig. 1.1). In the presence of vitiligo, suspect presence of DM or other autoimmune disorders in that patient.
- Circumscribed hypopigmented lesions of the skin may occur in
  - Hansen's disease (Tuberculoid or Borderline Tuberculoid types).
  - Tinea versicolor.
- Generalised hyperpigmentation of the skin is seen in
  - Haemochromatosis
  - Endocrine disorders
    - Addison's disease
    - Cushing's syndrome
    - Ectopic ACTH production.

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Fig. 1.1 Vitiligo

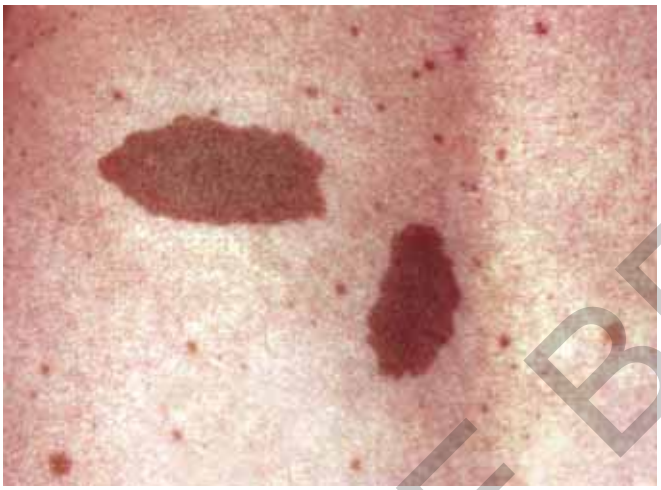

Fig. 1.2 Café au lait macule

- Patchy hyperpigmentation of the skin is seen in
  - Pellagra (in parts exposed to sunlight)
  - Porphyria Cutanea Tarda
  - Scleroderma
  - Café au lait spots* (Fig. 1.2)
  - Chloasma
  - Butterfly rash over face in SLE
  - Acanthosis nigricans
  - Drugs—chlorpromazine, clofazimine, heavy metals like gold, bismuth
  - Fixed drug eruptions.
- Yellow pigmentation of the skin:
  - Jaundice (there is yellowish discolouration of the skin, mucous membranes, and the sclera seen through the bulbar conjunctiva. This usually occurs when the total serum bilirubin value has exceeded 2 mg/dl).
  - Carotenaemia (this occurs due to excessive ingestion of carotene. There is a yellowish discolouration of the skin and the mucous membrane, but there is no yellow discolouration of the sclera.
  - Lemon yellow discolouration of the skin can occur in long standing severe anaemia.
- *Bluish discolouration:* Bluish discolouration of the skin, mucous membranes and sclera can occur in the presence of cyanosis. In peripheral cyanosis, the bluish discolouration is seen only in the peripheries like the tips of the fingers and toes, tip of the nose and ear lobes. The sclera and the mucous membranes are not discoloured. In central cyanosis, the mucous membranes, e.g. the tongue, the lips, as well as the sclera and the peripheries show a bluish discolouration. Bluish discolouration simulating cyanosis can be seen with methaemoglobinaemia and sulphaemoglobinaemia.
- *Ruddy complexion:* This complexion, whereby the patient has a reddish hue with a tinge of bluish discolouration is seen in patients with polycythemia vera, in whom there is an increased haemoglobin concentration.
- *Pallor:* This complexion, in which the patient appears pale, is seen over the skin, mucous membranes, lower palpebral conjunctiva, finger nails and palms of the hands, indicating that the patient has anaemia. Loss of the pigmentation of the palmar creases of the hands gives a clue that the Hb may be less than 7 gm% in that patient.
- Look for the presence of macules, papules, vesicles, pustules or scars, which may suggest the presence of exanthematous fever.

  Segmental distribution of vesicles on an erythematous base, on one-half of the body, suggests a diagnosis of herpes zoster. Herpes zoster involving many segments simultaneously suggests an immunodeficiency disorder in the patient, e.g. AIDS, DM.
- *Dermatographia:* Firm stroking of the skin results in a red linear elevation followed by a wheal, surrounded by a diffuse pink flare. This occurs in patients with allergic predisposition and urticaria. Dermatographism is also seen in carcinoid syndrome.
- Some other important skin markers to be looked for in order to get a clue to the diagnosis in a patient are:
  - Purplish striae over the lower, anterior abdominal wall in Cushing's syndrome.
  - Erythema marginatum in rheumatic fever.
  - Purpuras, ecchymosis are seen in purpuras (ITP, Henoch-Schönlein purpura), coagulation defects, leukaemias.
  - Adenoma sebaceum (Fig. 1.3), Shagreen patch (Fig. 1.4), Ash leaf macules } Tuberous sclerosis
  - Haemangiomas present externally may also be present in the CNS.

*Café au lait spots are macules, present in more than 90% of patients with neurofibromatosis (both types I and II). They appear as light brown round to ovoid macules, with smooth borders, often located over nerve trunks, their long axis being parallel to the underlying cutaneous nerve. Its presence is significant when 6 or more of these macules, each more than 1.5 cm in diameter, are present. Café au lait macules with irregular borders are present over the midline of the body and are seen in McCune-Albright syndrome (fibrous dysplasia).

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Fig. 1.6 Acanthosis nigricans

HAIR

The scalp contains approximately 1,00,000 hairs. Each hair grows for about 1,000 days.

Rate of hair loss per day is approximately 100 normally.

Look for:

- Presence and colour of scalp hair
- Presence and distribution of hair over body (Secondary sexual character).

Stages of Hair Follicle Growth

Racial characteristics of hair colour and texture are determined genetically. The growth of hair is cyclic. Secondary sexual male (14–15 years) and female (12–13 years) pattern of hair appear at puberty. Adrenal androgen decides the growth of pubic hair and it occurs even in the absence of gonadotrophin.

There are three different types of hair:

1. *Lanugo hairs:* Fine long hairs covering the foetus and they are shed one month before full-term.
2. *Vellus hairs:* Fine short vellus hairs replace lanugo hairs.
3. *Terminal hairs:* They replace the vellus hairs on the scalp and the pubic vellus hairs are replaced by dark, curly hairs at the time of puberty.

There are three phases of hair growth. The duration of these phases vary in different regions of the body.

Axillary hair and facial hair in case of males grow 2 years after the appearance of pubic hair. The shape of hairs varies depending on the race.

- *Asians:* Straight hair
- *Mongoloids:* Sparse facial and body hair
- *Negroids:* Curly hair
- *Europeans:* Wavy hair.

Temporal recession and baldness are common in males and the process is androgen dependent. Temporal recession in female may suggest virilization. Frontal baldness is a marker for myotonic dystrophy and also seen in some cases of systemic lupus erythematosus.

Phases of Hair Growth (Fig. 1.7)

- *Anagen phase:* It is the actively growing phase and in the case of scalp, it lasts for 3 to 5 years.
- *Catagen phase:* It is the conversion stage from active to resting and it lasts for a few weeks.
- *Telogen phase:* It is the resting stage lasting for a few months and is replaced by anagen phase.

The length of anagen phase determines the length of the hair. Normally 85% of scalp hairs are in anagen phase and the remaining 15% are in telogen phase. The anagen phase is shorter and the telogen phase is longer in eyebrows and sexually determined hair.

Types of Alopecia (Loss of Hair)

Cicatricial Alopecia

- Trauma
- Burns
- *Infections:* Folliculitis, herpes zoster, gumma, lupus vulgaris
- Morphea, lichen planus, sarcoidosis, DLE
- *Cutaneous neoplasms:* Basal cell Ca
- Drugs—mepacrine.

Non-cicatricial Alopecia

- *Alopecia areata (Fig. 1.8) (most common):* It is an autoimmune disease characterised by single or multiple



Fig. 1.7 Hair follicle growth stages

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Fig. 1.8 Alopecia areata



Fig. 1.9 Virilisation

areas of alopecia without inflammation. If it involves the whole of scalp it is called alopecia totalis and the whole of body is called alopecia universalis. It is associated with other autoimmune diseases like SLE, vitiligo, autoimmune thyroiditis and autoimmune haemolytic anaemia.

- *Physiologic:* Androgenic alopecia is an autosomal dominant male pattern baldness. The early change is a bilateral frontal recession of the hairline. This pattern is usually familial. 5-alpha reductase inhibitor finasteride is useful in the treatment. Other causes are puberty, pregnancy and neonatal period.
- *Systemic diseases:* SLE, hyperthyroidism, hypothyroidism, acrodermatitis enteropathica, pernicious anaemia and Down's syndrome.
- *Infection:* Moth eaten type in syphilis and fungal infections.
- *Drugs:* Antimetabolites, cytotoxics, heparin, carbimazole, iodine, bismuth, vitamin A, allopurinol and amphetamines.
- *Telogen effluvium:* Systemic illness (typhoid, measles, pneumonia) post-partum and post-surgical.
- Radiation.

Colour of Hair

White hair — albinism (due to absence of pigment).
Grey hair — is a sign of ageing.
Poliosis — patchy loss of pigmentation of hair in the region of an adjoining vitiligo.
Flag sign — brownish discolouration of hair, with interspersed normal colour of hair, is seen in protein energy malnutrition.

Causes of Hypertrichosis (Excess Hair)

- Familial
- Sexual precocity
- Hypothyroidism
- Adrenal hyperplasia or neoplasm
- Virilising ovarian tumours (Fig. 1.9)
- Drugs (Androgens, Minoxidil)
- Hirsutism (male distribution of hair in females).

Decreased Body Hair Distribution (Loss of Secondary Sexual Character)

This is seen in the following conditions:

- Decompensated liver disease
- Klinefelter's syndrome
- Bilateral testicular atrophy as seen in Hansen's disease.

FACE

Forehead

Prominent Forehead

This is seen in:

- Acromegaly
- Chronic hydrocephalus
- Frontal balding as seen in myotonic dystrophy
- Rickets
- Thalassaemia.

Wrinkling of Forehead

- Bilateral wrinkling of the forehead is seen in anxiety states or in the presence of bilateral ptosis as in Myasthenia Gravis, bilateral third nerve palsy or bilateral Horner's syndrome.
- Unilateral wrinkling of forehead is seen on the side of unilateral ptosis, as in unilateral third nerve palsy or Horner's syndrome.

Absence of Wrinkling of Forehead

- Unilateral absence of wrinkling of forehead is seen in Bell's palsy, on the affected side.
- Bilateral absence of wrinkling of forehead is seen in myotonic dystrophy and in hyperthyroidism (Joffroy's sign).

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Hypertelorism

This means the presence of wide spaced eyes. This is diagnosed when the inter inner canthal distance between the two eyes is more than half of the inter pupillary distance (Fig. 1.10).

Low Set Ears

An imaginary horizontal line is drawn from the outer canthus of the eye to the pinna of the ear on the same side. Normally about 1/3rd of the total length of the pinna is seen above the line. If less than 1/3rd of the total length of the pinna is seen above the line in a patient, he is said to have low set ears.

A prominent crease seen over the lobule of the pinna is a marker for development of ischaemic heart disease.

High Arched Palate

This is said to be present when the roof of the palate is not seen when the examiner's eyes are kept at level with the patient's upper incisor teeth, with the patient's mouth wide opened or 3 cm above an imaginary line joining the upper incisor teeth and uvula.

It is also said to be present when the roof of the palate extends above an imaginary line drawn connecting the two malar prominences.



Fig. 1.10 Hypertelorism

EYES

Look for the following features when examining the patient's eyes:

- Ptosis (unilateral or bilateral) (Figs 1.11 and 1.12)
- Pallor
- Cyanosis
- Icterus
- Bitot's spots (vitamin A deficiency)
- Phlyctenular conjunctivitis (may give a clue to presence of PT)
- Arcus senilis (gives a clue to the presence of atherosclerosis) (Fig. 1.13)
- KF ring (Fig. 1.13) is seen in Wilson's disease, primary biliary cirrhosis, cryptogenic cirrhosis, intraocular copper foreign body (uniocular KF ring), carotenaemia
- Corneal opacities may be drug induced, e.g. Amiodarone or due to storage disorders
- Cataract (early formation of cataract may be due to hypoparathyroidism, hyperparathyroidism, diabetes mellitus or prolonged oral steroid intake)
- Subconjunctival haemorrhage (may be seen in whooping cough or leptospirosis)
- Corneal ulcers (seen in Bell's palsy and in trigeminal nerve palsy)
- Enlargement of the lacrimal glands (Sjögren's syndrome)
- Ectopia lentis (upward subluxation of lens may be seen in Marfan's syndrome, whereas downward subluxation of the lens may be seen in homocystinuria)
- Blue sclera (Fig. 1.14).

Arcus senilis	*KF ring*
1. Greyish white in colour	Yellowish green in colour
2. Present just internal to the limbus	Present on the limbus
3. A clear zone of iris seen in between the limbus and the ring	No zone of iris seen in between limbus and the ring
4. Due to deposition of calcium and lipids on the cornea	Due to deposition of copper on the Descemet's membrane of the cornea
5. Seen in middle to old aged people	Seen in the young
6. Its presence suggests a possible presence of atherosclerosis or hyperlipidaemia in the patient	Its presence suggests the presence of Wilson's disease

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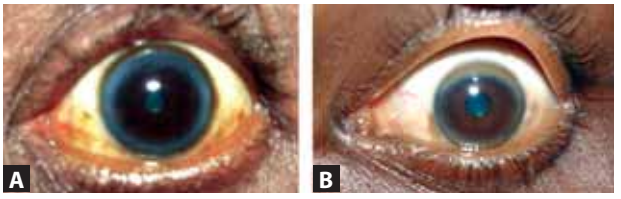
Fig. 1.11 Unilateral ptosis



Fig. 1.12 Bilateral ptosis



Figs 1.13 (A) Arcus senilis; (B) Kayser-Fleischer ring



Fig. 1.14 Blue sclera (Osteogenesis imperfecta)

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Arcus senilis	*KF ring*
7. It is a complete ring	The ring is incomplete initially, appearing first in the superior aspect of the limbus, then progressing to appear in the temporal aspect, then inferiorly and finally medially
8. It is seen well with the naked eye	Confirmation of its presence may require a slit-lamp examination
9. It does not disappear at all	It disappears with treatment, disappearance being in the same pattern as its appearance

THE TONGUE

The tongue is often red with prominent papillae— fungiform papillae over the edges and the tip, filiform papillae over the centre, and the circumvallate papillae set in a wide 'V' shape with its apex pointing backwards separating the anterior 2/3 from posterior 1/3. The tongue aids in appreciating the various types of taste of food and also helps in the process of mastication. Note the colour, size, shape, coating, surface, mobility and local lesions.

Macroglossia
- Down's syndrome
- Acromegaly
- Myxoedema
- Amyloidosis
- Angioedema
- Tumours

Microglossia
- Pseudobulbar palsy
- Facial haemiatrophy
- Marked dehydration
- Starvation

Colour (Fig. 1.15)
- Blue tongue—central cyanosis
- Brown tongue
  - Uraemia
  - Acute liver necrosis
- White tongue
  - Centrally coated (enteric fever)
  - Leukoplakia
  - Excessive furring
- Scarlet red tongue—niacin deficiency
- Dark red tongue
  - Polycythemia
  - Riboflavin deficiency
- Black tongue
  - Melanoglossia
  - Bismuth
  - Iron
  - Antibiotics like penicillin
- Slate blue tongue—haemochromatosis
- Abnormal pigmentation—brownish black tongue
  - Addison's disease
  - Nelson's syndrome
  - Peutz-Jeghers syndrome
  - Chronic cachexia
  - Malnutrition



Fig. 1.15 Pallor of tongue

Dryness of tongue
- Dehydration
- Haemorrhage
- Mouth breathing
- Uraemia
- Coma
- Atropine/belladonna
- Sjögren's syndrome

Ulcers

Single
- Tuberculosis
- Carcinoma
- Syphilis
- Dental irritation.

Multiple
- Aphthous ulcers
- Herpes
- Secondary syphilis
- Pemphigus
- Chickenpox
- Vitamin B deficiency.

Recurrent
- Aphthous ulcers
- SLE
- Coeliac disease
- Behçet's syndrome
- Lichen planus
- Pemphigus
- Neutropenia.

Fissured Tongue (Scrotal) (Fig. 1.16)

- Down's syndrome
- Vitamin B deficiency
- Acromegaly
- Congenital malformation.

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Fig. 1.16 Fissured tongue

Geographic Tongue (Fig. 1.17)

Asymptomatic inflammatory condition with rapid loss and regrowth of filiform papillae leading to denuded red patches 'wandering' across the surface of the tongue—no clinical significance.

Hairy Leukoplakia (Fig. 1.18)

It is caused by EB virus and is typically seen in the lateral margin of the tongue and is diagnostic of AIDS.

Hairy Tongue (Fig. 1.19)

Formation of keratin layer prior to desquamation can result in elongation of filiform papillae over the medial dorsal surface of the tongue.

Median Rhomboid Glossitis (Fig. 1.20)

It is red due to depapillation of rhomboid area at the centre of the dorsum of the tongue with associated candidiasis. It is marker of immune deficiency disorders.

Bald Tongue (Ironed Out Tongue)

It is due to the diffuse atrophy of the papillae. It is commonly seen in pellagra, xerostomia and iron/B_{12} deficiency disorders.

Tongue in Neurology

Fasciculation (fibrillation) within the tongue when lying in the oral cavity is a feature of motor neurone disease and also occurs in syringomyelia. Wasting of half of the tongue is due to hypoglossal nerve palsy and it deviates to the same side on protrusion. Myotonia can be better demonstrated in the tongue in myotonic dystrophy. Spastic tongue is due to pseudobulbar palsy.



Fig. 1.17 Geographic tongue

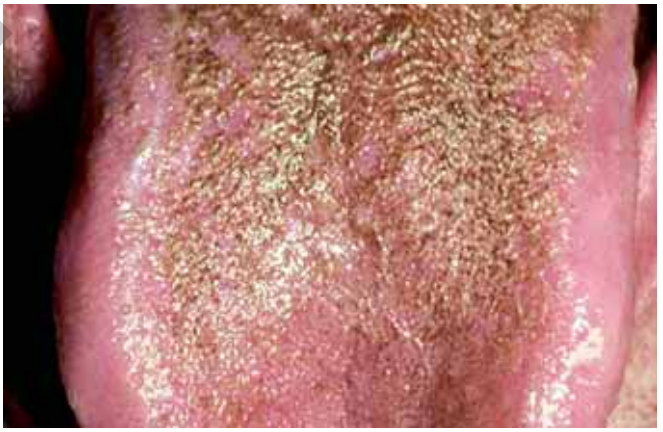

Fig. 1.19 Black hairy tongue



Fig. 1.18 Oral hairy leukoplakia



Fig. 1.20 Median rhomboid glossitis

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CHARACTERISTIC TYPES OF FACIES (FIG. 1.21)

- *Acromegalic facies:* Prominent lower jaw, coarse features, large nose, lips, ears, prominent forehead and cheek bones and widespread teeth.
- *Cushing's syndrome:* Rounded 'moon face' with excessive hair growth.
- *Hypothyroid face:* Puffy face with a dull expression with swollen eyelids and loss of hair over eyebrows.
- *Hyperthyroid face:* Anxious look with widely opened eyes with the upper and lower limbus seen, associated with infrequent blinking and absence of wrinkling of the forehead.
- *Leonine facies:* Seen in leprosy, and shows thickening of the skin and ear lobes with a flattened nasal bridge and loss of hair over the lateral aspect of eyebrows and eyelashes (madarosis).
- *Elfin facies:* This is seen in supravalvular aortic stenosis, or pulmonary artery stenosis (William's syndrome). There is a presence of a wide mouth with large lips (pouting effect), widely spaced teeth, broad forehead, pointed chin, protruding ears and eyes set wide apart.
- *Congenital pulmonary stenosis:* A broad face with eyes set wide apart (moon face).
- *Face in pneumonia:* In lobar pneumonia, the alae nasi are over active, eyes bright and shiny, and herpetic lesions may be present over the angles of the mouth.
- *Face in COPD:* Anxious look with bluish discolouration of lips, tip of the nose, ear lobes and breathing out through pursed lips.



Fig. 1.21 Facies in medicine

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- *Pel-Ebstein fever* is a type of fever lasting for 3 to 10 days followed by an afebrile period of 3 to 10 days, e.g. Hodgkins and other lymphomas.
- *Saddle back fever:* Initially fever lasts for 2 to 3 days followed by a remission lasting for 2 days and the fever reappears and continues for 2 to 3 days, e.g. dengue fever.
- *Borrelia infection and rat bite fever:* Both are associated with several days of fever followed by several days of afebrile period and then the cycle repeats.

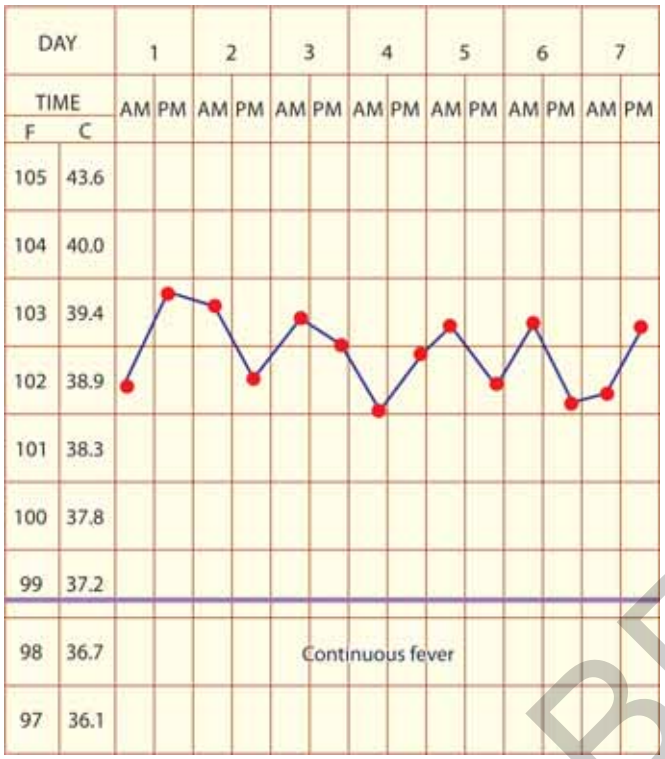

Fig. 1.51 Continuous fever

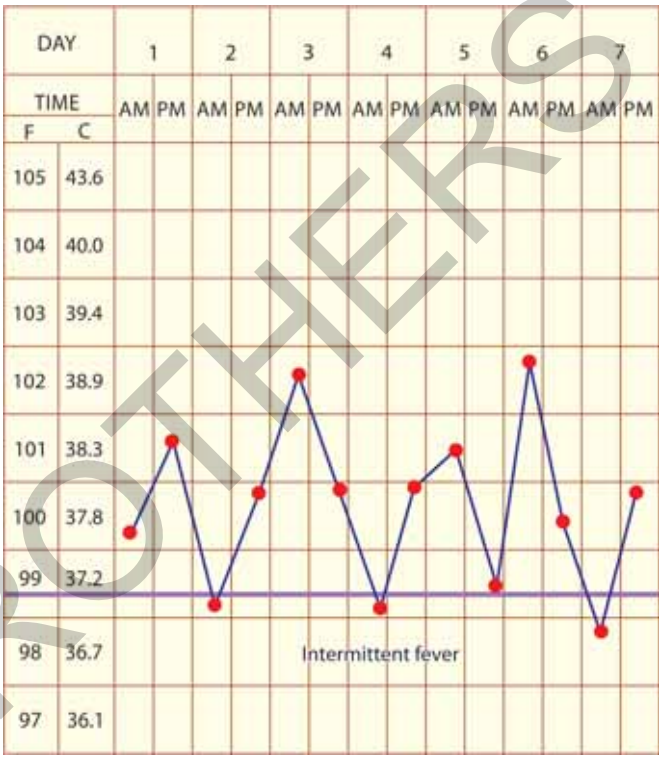

Fig. 1.53 Intermittent fever

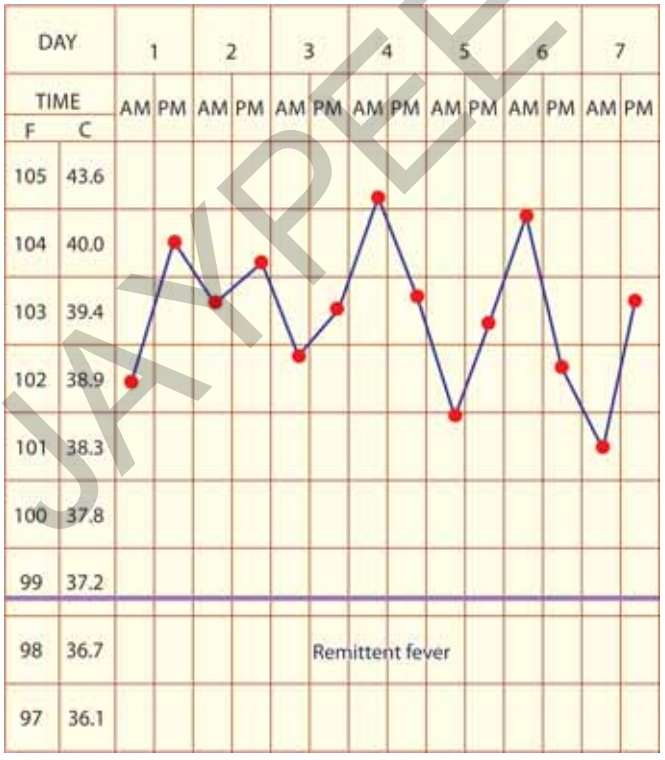

Fig. 1.52 Remittent fever

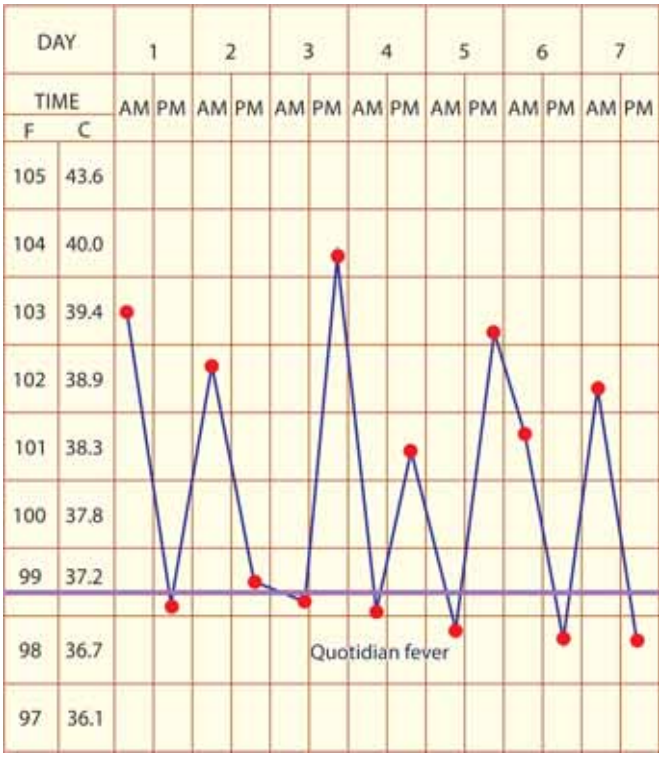

Fig. 1.54 Quotidian fever

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- Anaphylaxis
- Neurogenic shock
- Endocrinologic shock.

Hypovolemic Shock

Because of decreased blood volume, there is inadequate ventricular filling, decreased preload and stroke volume.

Cardiogenic Shock

Systolic arterial pressure is < 80 mm Hg and cardiac index is < 1.8 L/min/m^2. LV filling pressure is elevated.

Common Causes

MI (> 40% of LV involvement), myocarditis, following cardiac arrest or prolonged cardiac surgery.

Cardiac Causes of Acute Circulatory Failure

Endocardial	Mitral valve disease
	Aortic valve disease
Myocardial	RV infarct
	LV infarct
	Cardiomyopathy
	Myocarditis
	Atrial arrhythmias
Pericardial	Tamponade
	Constrictive pericarditis
Great vessels	Aortic dissection
	Pulmonary embolism.

Extracardiac Obstructive Shock

There is inability of the ventricles to fill during diastole, markedly limiting stroke volume and ultimately the cardiac output.

Distributive Shock

There is profound decrease in peripheral vascular resistance by the release of histamine, kinins, prostaglandins, lipid A, endorphins, TNF, IL-1 and IL-2. Some prostaglandins and leukotrienes produce vasoconstriction.

Patient may suffer from more than one form of shock simultaneously.

Clinical Features

Patients have hypotension (mean arterial BP <60 mm Hg, systolic BP <100 mm Hg), tachycardia (>120/min), oliguria (<30 ml/hr), altered sensorium, cold clammy extremities (not a characteristic of distributive shock).

Patients also have manifestations specific to the type of shock.

Investigations

- Complete blood count
- Serum electrolytes
- Serum creatinine
- Coagulation studies
- Blood grouping and typing
- ABG
- Examination of the stool and nasogastric contents for blood
- Culture of appropriate body fluids
- Chest X-ray
- ECG
- Right heart catheterisation (gives clue as to the type of shock)
- Ventilation-perfusion lung scan
- Echocardiogram
- Endocrine studies.

Management

Shock is an emergency necessitating IMCU management.

Goals

- To keep mean arterial pressure > 60 mm Hg or systolic BP > 100 mm Hg.
- To maintain blood flow to organs which are vulnerable (kidneys, liver, brain and lungs).
- To maintain arterial blood lactate < 22 mmol/l.

Treatment

- Maintenance of airway and ventilation is essential.
- Volume resuscitation should be done in all cases except in cardiogenic shock.
  - The pneumatic antishock garment (PASG) with sequential inflation of legs and abdominal compartments to 15–40 mm Hg may be useful in all types of shock except cardiogenic shock. It helps by increasing peripheral vascular resistance.
  - Trendelenburg's position to aid venous return and cardiac index.
  - Fluid resuscitation by giving 500 ml bolus of normal saline with further infusions depending on BP and other parameters. Fresh frozen plasma or packed cells may be needed.
- Vasopressors
  - Dopamine is the pressor of first choice except in cyclic anti-depressant and phenothiazine overdoses (5 µg/kg/min if renal perfusion is impaired or 10 µg/kg/min when renal perfusion is adequate).
  - Norepinephrine given in a dose of 2 to 8 µg/minute causes peripheral vasoconstriction and lesser chronotropic and inotropic response.
  - Dobutamine can be given in a dose of 1 to 10 µg/kg/minute to increase cardiac output in a low cardiac output state.
  - Amrinone can be given by adding 500 mg to 150 ml of normal saline for a final volume of 250 ml. A loading dose of 0.75 mg/kg is given over 2 to 3 minutes, with infusion following at 5 to 10 µg/kg/minute.
  - Isoproterenol in a dose of 1 to 4 µg/minute can be tried only in atropine unresponsive bradycardia requiring pacemaker.
- Sodium bicarbonate should be given when pH falls less than 7.2. Inappropriate bicarbonate use may cause CNS acidosis and diminish peripheral tissue oxygenation.

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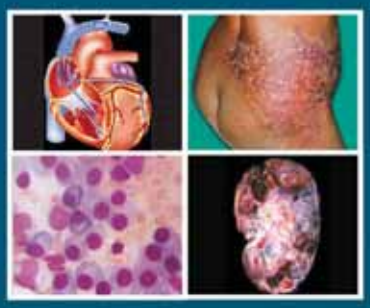

Manual of Practical Medicine

It is my privilege and honor to introduce the seventh edition of "Manual of Practical Medicine". The basic principles involved in clinical examination have not changed. All the chapters have been revised and updated.

Many newer monoclonal antibodies used in the management of various systemic disorders have been dealt with in detail in the respective chapters. The newer classifications in many disorders have been incorporated. Two new topics, one in infectious diseases chapter 'Covid 19' and the other in the connective tissue disorders chapter 'Gout' have been added.The national protocol in the management tuberculosis, especially drug resistant tuberculosis is given in detail. The newer antiviral drugs in the management of hepatitis B & C are included. The newer drug therapy for multiple sclerosis is incorporated.



R Alagappan MD FICP has served in the teaching faculty of Tamil Nadu Medical Services for nearly three decades as the Assistant Professor of Medicine, Lecturer, Medical Registrar, Professor of Therapeutics, Professor of Medicine, and finally retired as the Director–Professor and Head, Institute of Internal Medicine, Madras Medical College and Senior Physician, Government General Hospital, Chennai, Tamil Nadu, India.

He has been the Examiner for both undergraduate and postgraduate courses in many southern universities. He is a Fellow of Indian College of Physicians (ICP). He is also the Life Member, Diabetic Association of India, Geriatric Society of India, National Council on Hypertension and Indian Society of Clinical Pharmacology and Therapeutics. He has presented more than 75 scientific papers in many regional and national conferences. He has also conducted many regional and national conferences besides several continuing medical education (CME) programs. He is the author of *Medicine for Dental Students*.

Printed in India

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Medical Publishers (P) Ltd.
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ISBN 978-93-5465-642-2