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III SEMESTER

**36534-Lab.III: CLINICAL AND
THERAPEUTIC NUTRITION, DIETETICS IN LIFE STYLE
DISEASES, COMMUNITY NUTRITION**

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PREPARATION OF HOSPITAL DIETS

EX.NO:1 ROUTINE HOSPITAL DIETS

Introduction:

- Therapeutic nutrition begins with the normal diet advantages of using normal diet as the basis for therapeutic diets are;
- It emphasizes the similarity of psychologic and social needs of those who are ill and those who are well. Even though there are quantitative and qualitative differences in requirements.
- Food preparation is simplified when the modified diet is based upon the family pattern and the number of items required in special preparation is reduced to a minimum.
- The calculated values for the basic plan are useful in finding out the effects of addition or omission of certain foods for examples. If vegetables are restricted Vitamin A and C deficiency occurs.
- Recommended Dietary allowances is not applicable to under nourished or mal nourished individuals or for those suffering from disease or infective morbidity. The planning of a therapeutic diet implies the ability to adapt to the principles of normal nutrition to the various regimes for adequacy, correctness, economy and palatability.

Objectives:

- To correct deficiencies if any, to restrict some nutrients.
- To Change the cooking methods so as to give rest to digestive organs or to give rest to certain organs in the body.
- To reduce or increase the body weight whenever necessary.

Principles:

- One important aspect is that all therapeutic diet is adaptation of the normal diet and skeletal structure of the therapeutic diets must be based on the requirements of a healthy person.
- The person in charge of dietetic planning also must consider the patient as a person and consideration must be given to the economic status, dietary patterns, likes and dislikes family environment, preferences, religious status and availability of items.
- As a rule therapeutic diet must be easily digestible, safe, liquid, clear fluid, or bland based on the conditions.
- Best Sources must be selected to ensure maximum utilization from the food consumed because as a whole a patient has poor appetite.
- Confidence and Co-operation from the patient are essential for the success of diet therapy.

- The dietetic history of the patient must be collected to know of any intolerance of food or allergic manifestation in the patient.
- Working conditions and dietary habits at work place also must be considered before dietetic instructions are given
- common modification in diet therapy are changes in consistency by adopting a full liquid diet, clear liquid diet, fluid diet nasal feeding or tube feeding or soft diet.
- Changes in the preparation are made by avoiding all condiments and spices and suggesting bland diet which is chemically mechanically and thermally non-irritant in nature.

Calorie Diet

- **High calorie diets** are also prescribed for underweight persons or in fever or in hyperthyroidism
- **High proteins diets** are recommended for protein calorie malnutrition, cirrhosis of liver, peptic ulcer, TB, typhoid, nephritic syndrome, celiac disease and during pregnancy.
- **Fats** are restricted in a low caloric diet, liver disease and hypertension.

Minerals:

- A mineral like calcium is essential in the treatment of rickets and Osteomalacia and it is restricted in renal calculi. Sodium is restricted in hypertension, cardiac disease and in kidney disease.

Fibres

- Fibre content in the diet should be increased to remove constipation while it should be reduced in peptic ulcer, ulcerative colitis, celiac diseases, diarrhea and dysentery.
- Chemical Constituents like purine are restricted in the treatment of gout and low oxalic diet is prescribed for renal calculi.

Vitamins

In all therapeutic diets high vitamin content is recommended. Restriction of various items in diet will result in deficiency of one or two vitamins and so their supplementation is essential.

EX.NO:2: REGULAR NORMAL DIET

Regular Norm Full – Fluid Diet

NOTES

Introduction:

- It is most frequently used in all hospitals. It is used for ambulatory and bed patient whose condition does not necessitate a special diet of one of the routine diets. Many special diets progress ultimately to a regular diet.
- This diet is easily digested. It gives Maximum nourishment with minimum effort to the body. The diet is well balanced adequate in nutritional possible poor appetite. This diet gives 1800-2000kcal and 45-45g of protein.

Diet Plan:

- Plan a diet for in-patient who has poor appetite

Menu plan:

Timing	Food items	Serving/Quantity
Early Morning	Coffee	1 glass
Break Fast	Idli Mint Chutney	3 Nos ½ cup
Mid morning	Orange juice Germinated green gram	1 glass ½ cup
Lunch	Rice Boiled egg Sambar Spinach Rasam Curd	2 cup 1 No ½ cup 1 cup ½ cup
Evening	Tea Apple	1 glass 1 Nos
Dinner	Chappathi Channa curry Beet root	3 Nos ½ cup ½ cup
Bed time	Banana Milk	1 No 1 glass

Self-Instructional Material

EX.NO:3: SOFT DIET

Introduction:

This diet is one of the most frequently used routine diets, many hospital patients are placed on this until a diagnosis is made. It bridges the gap between acute illness and convalescence. It may be used in acute infection, following surgery, and for patients who are unable to chew.

The soft diet is made up of simple, easily digested food and contains no harsh fibre, low in fat and no rich highly seasoned food. It is nutritionally adequate when planned on the basis of normal diet. Patients with dental problems are given mechanically soft diet. It is often modified further for certain pathologic condition as bland and low residue diets.

In this diet, three meals with intermediate feedings should be given. This diet gives 1500 kcal and 35-45 g of proteins. Light diet is given before regular diet.

Diet Plan:

- Plan a soft diet for a patient suffering from dental problem / fever.

Menu Plan:

Timing	Food items	Serving / Quantity
Early morning	Ragi porridge with milk and jiggery	1 glass
Break fast	Upma Sugar	1 cup 6g
Mid morning	Pomegranate juice plain custard	100 ml 100 ml
Lunch	Double boiled rice , Mashed dhal , Potato mashed with sugar, Rasam, butter milk	1 cup, 1½cup, ½ cup ½ cup 200 ml
Evening	Milk with Horlicks Bread	200ml 20 Nos
Dinner	Rotti, Tomato chutney	2 Nos ½ cup
Bed Time	Milk with Complian	150 ml

EX.NO:4: FULL – FLUID DIET

Introduction:

This diet bridges the gap between the clear fluid and soft diet. It is used following operation, in acute gastritis, acute infection and in diarrhea. This is also suggested when mife is permitted and for patients not requiring special diet but too ill to eat solid or semi solid foods.

In this diet, foods which are liquid or which readily become liquid on reaching the stomach are given. This diet may be entirely adequate and may be used over as extended time without fear of developing deficiencies, provided it is carefully planned.

- This diet is given at 2-4 hours intervals
- This diet gives 1200 kcal and 35g of protein.

Diet Plan:

Plan a full, fluid menu for an old age man suffering chewing problem / severe diarrhea.

Menu Plan:

Timing	Food items	Serving quantity
6.am	Tea	150ml
8.00 am	Health Mix Porridge	200ml
10.00am	Egg Custard	½ cup
12.00 pm	Rice Mashed with chicken soup Butter Milk	150ml 100ml
2.00 pm	Carrot and tomato kheer	200ml
4.00	Fresh fruit, juice	200ml
6.00 pm	Green and veg. soup	200ml
8.00pm	1 no idly mashed with curd	1 cup
10.00pm	milk	100ml

EX. NO 5: TUBE FEEDING BLENDS

Introduction:

This is done by passing a tube into the stomach or duodenum through the nose which is called nasogastric feeding or directly by surgical operation known as gastrostomy and jejunostomy feeding. Short term (3-4 weeks) feedings usually are administered via nasogastric, nasoduodenal, or nasojejunal tubes. For long term feedings, gastrostomy or jejunostomy is usually indicated.

In order to minimize the risk of aspiration, tubes should not be placed in the stomach unless there is normal gastric emptying and an intact gas reflex and if possible, nasoenteric rather than nasogastric feeding tubes should be employed. This may be especially valuable in post operative and critically ill patients in whom gastric motility is impaired

A Satisfactory tube feeding must be

- Nutritionally adequate
- Well tolerated by patient so that vomiting not induced
- easily digested with no unfavorable reaction such as distension, diarrhea or constipation
- Easily prepared and
- Inexpensive.

Tube fed patients with constipation or diarrhea who are known to have otherwise healthful gastrointestinal tract fibre can be given fibre containing enteral formula, especially long term enteral feeding.

Natural Liquid Foods:

Foods like whole or skim milk, eggs and some form of carbohydrates such as cooked strained cereals, sugars or molasses can be given. Vegetable oil or cream and non fat dry milk are also incorporated to increase the calorie and protein levels respectively.

Foods like 'complan' can be added to different foods to increase the nutritive value.

Blenderised feeding:

In this ordinary food items which cannot be swallowed are blended to make thin liquid which can pass through nasogastric tube. In this food is cooked before putting in electric mixer.

- Water is added to make the volume to 1500ml.
- Gives 1500 calories.

- Each ml provides one calorie.
- Gives 50g protein.
- Cost is no more than an average meal in hospital.

Blenderised feeding can also be prepared by using starch, milk, skim milk powder, egg, soya flour, refined oil, salt and curd. Blenderised tube feeding are well tolerated and are only infrequently associated with diarrhea. They are less expensive than commercial formulas.

Composition of Blenderised foods:

Ingredients cooked / raw	Amount (g)
Rice	75
Green gram dal	40
Bread	20
milk	200
skim milk power	60
spinach	50
pumpkin	50
carrots	50
Banana	70
Suagar	60
Refined oil	20
Butter	7

Diet Plan:

- Plan whole day tube feeding formula for a patient suffering from nervous disturbances

Menu plan:

Timing	Food items	Serving/quantity
6.00am	Complan with milk	50ml
7.00am	Vegetable Soup	50ml
8.00am	Soft cooked dhal soup	50ml
9.00am	Proteinex	50ml
10.00am	Lemon juice	50ml
11.00am	Barly water	50ml

Tube Feeding Blends

NOTES

12.00am	Tender coconut water	50ml
1.00pm	-	-
2.00pm	Egg flip	50ml
3.00pm	Carrot Kheer	50ml
4.00pm	Coffee	50ml
5.00pm	Orange juice	50ml
6.00om	Mutton soup	50ml
7.00pm	Cerelac	50ml
8.00pm	Blender food	50ml
9.00pm	arrow root water	50ml
10pm	Milk	50ml

EX. NO: 6: DIET FOR TYPHOID

Typhoid is an infectious disease with an acute fever of short duration and occurs only in humans. Drinking water or milk and food contaminated by intestinal contents of the patients or carriers or by flies which often transmit the disease.

The patient may complain of diarrhea or constipation and severe stomach ache. Abnormal absorption of nutrients is decreased and the patient may feel headache and anorexia.

Dietary suggestions:

At first clear fluid diet is given, followed by full fluid and soft diet. On liquid diets the patient may not meet high calorie and high protein requirements. As the patient is improving soft diet can be given. The febrile period may upset water balance and liquid diets are helpful in meeting water and electrolyte requirements.

Scenario:

A 10years old girl vomiting and diarrhea and she diagnosed with typhoid. Prepare the diet menu for this condition (weight – 28kg, height -125cm)

Aim:

To plan and prepare a diet for typhoid condition.

Principle of diet:

Adequate diet according to ideals health condition of the person, it is extremely essential to consume small portion of food at regular intervals. So high calorie, high protein, high carbohydrate, low fat, high fluid, low fibre and blend diet is recommended.

Patient History:

Age	: 10	BMI	: 17.94
Gender	: Female	DBW	: 28KG
Height	: 125cm	Activity	: School Going Student
Weight	: 28kg	Health Condition	: Typhoid

Menu Plan for Typhoid:

Days	Early morning	Morning	Mid morning	Lunch	Evening	Dinner	bedtime
Day 1	Tea 150ml	Health mix porridge 200ml	Egg custard ½ cup	Rice mashed with chicken soup 150ml	Carrot tomato kheer 200ml	Idly-1 with curd mash 1cup	Milk 100ml
Day 2	Milk 200ml	Ragi porridge 200ml	Tender coconut 150ml	Rice mashed with dhal 1cup	Fresh fruits juice 20ml	Idiyappam 1no+ coconut milk slightly mashed	Milk 100ml
Day 3	Dry nuts powder with milk 200ml	Rice powder porridge 1cup	Veg clear soup 150ml	Urad dhal porridge leaves stocks 1cup	Urad dhal porridge 100ml	Appam 1no with jiggery	Banana

DISCUSSION

Typhoid is an infectious disease that is caused by salmonella bacteria and its common symptoms of chills and fever, constipation, fatigue, head ache, enlargement of spleen and liver.

Many patients also experience nausea and an acute loss of appetite. However, it is extremely essential to consume small portions of food at regular intervals to give the body some much needed strength and energy. Therefore high calorie foods are recommended.

Increased carbohydrates, vitamins, and minerals, water-rich fruits, adequate amounts of proteins, suggested. Semi solid food is easy to digest.

EX. NO 7: DIET FOR PEPTIC ULCER

The term peptic ulcer is used to describe any localized erosion of the mucosal lining of those portions of the alimentary tract that come in contact with gastric juice. Common causes include the bacteria H.Pylori and anti-inflammatory pain relievers. Symptoms include burning stomach pain, feeling fullness, bloating or belching, fatty food intolerance, heartburn and nausea.

Dietary suggestions:

It is customary to suggest bland or regular diet for ulcer patients. Moderate uses of seasonings are permitted. Regularity of meal time is essential. The patient gets benefited by small and frequent meals. In between meals, protein rich snacks should be taken. Moderate amounts of food should be eaten. Heavy meals are avoided.

Scenario:

A 30years old female teacher having peptic ulcer. Her weight is 64kg and height is 155cm calculate and plan a diet for peptic ulcer.

Aim:-

To plan and prepare a diet chart for peptic ulcer.

Principle of Diet:-

A healthy diet full of fruits, especially with Vitamin A and C. Vegetables and whole grains, probiotics are suggested

Patient History:

Age	: 30	BMI	: 26.6
Gender	: Female	DBW	: 64.kg
Height	: 155cm	Activity	: light (score - 35)
Weight	: 64kg	Health Condition:	Peptic ulcer, Overweight

Calculation:

$$1. \text{ Body Mass Index (BMI)} = \frac{\text{Weight}}{\text{Height (m}^2\text{)}}$$

Desirable BMI	Expected BMI
BMI = $\frac{64}{(1.55)^2}$	Standard BMI
BMI = 26.6	For Female: 21

2. Desirable Body weight = BMI × (Height m²)

Desirable DBW	Expected DBW
DBW = 26.6 × 2.40 = 63.84 DBW = 64kg	DBW = 21 × 2.40 = 50.4 DBW = 50kg

3. Total calorie Requirement (TCR):

TCR = DBW × Activity

Desirable TCR	Expected TCR
TCR = 64 × 35 = 2240 TCR = 2240 Kcal/day	TCR = 50 × 35 = 1750 TCR = 1750 kcal /day

4. Distribution of Total Calorie

$$\begin{aligned} \text{Carbohydrate/day} &= \frac{\text{TCR} \times 0.60}{4} \\ &= 1750 \times \frac{0.60}{4} \\ &= 263\text{g} \end{aligned}$$

$$\begin{aligned} \text{Protein/day} &= \frac{\text{TCR} \times 0.10}{4} \\ &= 44\text{g} \end{aligned}$$

$$\begin{aligned} \text{Fat/day} &= \frac{\text{TCR} \times 0.30}{9} \\ &= 58\text{g} \end{aligned}$$

5. R_x Diet: 1750 kcal, C_{263g} P_{44g} F_{58g}**Result:****1. Body mass index:**

- BMI = 26.6

2. Desirable body weight:

- Desirable DBW = 64kg
- Exceeded DBW = 50kg

3. Total Calorie Requirement (TCR)

- Desirable TCR = 2240 kcal 1day
- Expected TCR = 1750 kcal day

4. Distribution of Total calorie Requirements

- TCR /day = 1750 kcal/day
- Carbohydrate/day = 263g

- Protein/day = 44g
 - Fat/day = 58g
5. Rx. Diet = 1750 kcal, C_{263g} P_{44g} F_{58g}

Discussion:

Peptic ulcer is chronic ulcer found in region of gastro-intestinal tract where gastric juice comes into contact with mucous membrane. Such ulcer usually occurs in the first part of duodenum and in the stomach. They sometimes occur in the esophagus. This disintegration of tissue can result in necrosis.

High protein diet is recommended for the patients, so as to regenerate the disintegrated cell highly vitaminized & mineralized diet is given to reduce the irritation caused due to the reduce of excess of gastric juice and the produce antioxidant to facilitate healing.

Menu Plan for Peptic Ulcer:

Day	Break fast	Lunch	Dinner
Monday	Milk 200ml+ Almonds- + mini idly-10nos+ghee sambar 50gms	Rice 1cup +veg curry 50ml +egg boiled-1/veg poriya- ½ cup	Rice ½ cup+dhal 100ml+ beans pooriyal 125gms+ milk150ml+ pomegranate 50gms
Tuesday	Milk 200ml + 4dry raisin + poori 3nos + potato sabji 50gms	Rice 1 cup+green leaf curry/gobi curry 50m+potatokootu 50gms/curd-50ml	Chapathi 2nos veg kuruma100g+milk 100ml +banana 1
Wednesda	Milk 200ml+10peanuts +appam 2 nos + vegetables stew 100gms	Rice 1 cup+Carrot pooriyal125gms+eggboil 1+ spinach gravy 50gms	Rice ½ cup, rasam 75ml+ beetroot pooriyal 130gms + milk 150ml+ guava 1
Thursday	Milk 200ml +4 black dates + ghee dosa 2nos+ coconut chutney 50gms	Mushroom puloa1/2cup +carrot and cumcumber raitha 50gms	idly 2nos +onion tomato chutney 15gms +milk 150ml+chikku1no
Friday	Milk 200ml + 4 dry figs+toasted buter sandwich 2nos	Rice 1 cup, spinach dal – ½ cup, carrot pooriyal – 25 gms +veg salad 50gms	Idly -3nos+plain sambar/curd-1/2 cup +milk 200ml +papaya 50gm

Saturday	Milk 200ml +4 almonds+ragi dosa +tomato chutney 50gms	Rice 1 cup + fish curry 100ml/channa curry 1cup+egg 1	Pongal 1 1/2 cup, plain dhal-1/2 cup, milk 200ml+ papaya 50gms
Sunday	Milk 200ml+ 4 blackdates + idly 2nos + sambar	Rice 1 cup + spinach gravy 50gm +yam poriyal 25gms	Dosa 2 no + coconut chutney 15gm + milk 200ml+pears 50gms

EX. NO: 8: DIET FOR JAUNDICE

Damage to liver cells leads to increase in bilirubin resulting in jaundice. It is a symptom common to many diseases of the liver and biliary tract and consists of yellow pigmentation of conjunctiva, skin and body tissues because of the accumulation of bile pigments in the blood.

Problems like increased destruction of RBCs decreased functioning of the liver or obstruction to the flow of bile from the liver can result in jaundice.

Dietary suggestions:

Low carbohydrates and fat diets, high fibre, good protein, high vitamins and minerals rich foods are suggested.

Scenario:

A 35 years old mechanical engineer made has recently diagnosed with jaundice. His weight is 85kg height is 170cm he belongs to middle class family. calculate and prepare the diet menu.

Aim:

To plan and prepare the diet for jaundice

Principle:

Adequate diet according to ideal health condition of a person, increased iron content, increased vitamins and minerals. Low fat diets, high fibre, modulate good protein are recommended.

Patient History:

Age	: 35	BMI	: 29.4
Gender	: MALE	DBW	: 85
Height	: 170 CM	Activity	: HEAVY (45)
Weight	: 85 CM	Height Condition	: Jaundice, Obese

Calculation:

1. Body Mass Index:

$$\text{BMI} = \frac{\text{WEIGHT}}{\text{HEIGHT (m}^2\text{)}}$$

Desirable BMI	Expected BMI
$\text{BMI} = \frac{85}{(1.7)^2}$ $= 29.4$	Standard BMI for Normal male = 22

2. Desirable Body Weight (DBW)

$$\text{DBW} = \text{BMI} \times \text{Height (m}^2\text{)}$$

Desirable weight	Expected weight
DBW = 29.4 x 2.89 = 84.9	DBW = 22x2.89 = 63.5
DBW = 85kg	DBW = 64kg

3. Total Calorie Requirement (TCR)

TCR = DBW ×ACTIVITY

Desirable TCR	Expected TCR
TCR = 85x45 =3825 TCR =3825 Kcal/day	TCR = 64x 45 = 2880 TCR = 2880 Kcal/day

4. Distribution of Calorie Requirement (DCR):

- TCR/day = 2880 kcal/day
- Carbohydrates/day = $TCR \times \frac{0.60}{4}$
 $= 2880 \times \frac{0.60}{4}$
 $= 432g$
- Protein /day = $TCR \times \frac{0.10}{4}$
 $= 72g$
- Fat/day = $TCR \times \frac{0.30}{9}$
 $= 2880 \times \frac{0.3}{9}$
 $= 96g$

5. **Rx Diet** = 2880 kcal C_{432g} P_{12g} F_{96g}

RESULT:-

1. BMI
 - Desirable Body Mass Index = 29.4
2. Desirable Body Weight (DBW):
 - Desirable DBW = 85kg
 - Expected DBW = 64kg
3. Total Calorie Requirement (TCR)
 - Desirable TCR = 3825 kcal/day
 - Expected TCR = 2880 kcal/day
4. Distribution of Calorie Requirement
 - TCR/day = 2880 kcal/day
 - Carbohydrate = 432 g

- Protein = 72g

- Fat = 96g

5. Rx Diet: 2880 kcal C_{432g} P_{12g} F_{96g}

DISCUSSION

The patient is obese as well as affected by jaundice. His expected loss of weight per week is 945g/week (3825-2880=945) to maintain his healthy weight. For jaundice, he must be taken iron rich food, essential, low fat diet; high fibre and protein rich foods are recommended.

MENU PLAN FOR JAUNDICE

Day	Break fast	Lunch	Dinner
Monday	Tea/Milk 150ml +idly3nos+sambar-150ml	Rice-1cup, sambar-1 cup drumstick poriyal -1/2 cup/ butter, milk-100ml,rasam-50 ml	Chapathi-2 3nos 1/2 cup, promergranate -50g`
Tuesday	Milk 150ml +whole grain adai 2-3no + mint chutney 75ml	rice-1 cup, Chapathi -1 cauliflower poriyal-1/2 cup, snake guard curry- 1/2 butter milk - 100ml, rasam-50ml	Wheat dosa 2- 3soya beans gravy -50gms papaya- 50gm
Wednesday	1 cup roasted oats upma with vegetables +1 glass toned milk/1 cup tea	Methi Paratha -2 rice 1/2 cup, snake gurad curry-1/2 green leaves poriyal-1/2 cup, butter milk-100ml, rasam-50ml	Broken wheat upma 3/4cup, coconut chutney - 2 table spoon, banana -1 (small)
Thursday	Ladyfinger soaked water 150ml+ ragi dosa 2- 3+ pumpkin chutney 75gms	Rice - 1/2 cup, chapathi+1/2 cup french beans curry + 1/2 cup colocasia(arbi) sabji+1glass buttermilk	Chapathi-2-3nos, 3/4 cup, coconut chutney-2 table spoon, banana-1 (small)
Friday	Coffee 150ml +dosa 2-3 nos+ sambar 50ml	Rice-1/2 cup, green leafs gravy 1/2 cup, drumstick +kidney bean poriyal -1/2 cup, butter milk,-100ml rasam -50ml	Idly-2-3 sambar- 1/2 cup, Guava- 50g
Saturday	Green tea/lemon tea 150ml +thinai upma 1cup+cabbage chutney 75gms	Rice-1cup bottle guard gravy 1/2 cup green leafs bean poriyal-1/2cup, butter milk-100ml rasam-50ml	idyappam-2-3nos, vegstew-1/2 cup, pineapple gm
Sunday	Skim milk 150ml+samba wheat upma-1cup, kadamba chutney	Rice-1cup, mushroom peas masala-1/2 cup, egg white/mutton liver-50gm butter milk-100ml, rasam- 50 ml	Appam-2-3nos, coconut milk, banana-1 small

EX.NO:9: DIET FOR CHOLELITHIASIS

Cholelithiasis is the presence of one or more calculi in the gallbladder. Cholesterol may precipitate causing gallstones called cholelithiasis. High dietary fat intake over a long period predisposes to gallstones. Dietary deficiency of fibre may cause gallstones. Sugars and rapidly digestible starch operating via hyperinsulinemia may cause gallstones.

Dietary suggestions:

Hepatic herbal supportive, antioxidants, liver cell membrane protective and maintenance of adequate calorie, fluid and electrolytes, vitamins, especially fat soluble vitamins are routinely suggested.

Scenario:

A 52 years old house wife having moderate activity has diagnosed with cholelithiasis (height -150cm and weight is 48kg) calculate and prepare a diet plan to her condition.

Aim:

To plan and prepare a diet for cholelithiasis.

Principles of diets:

According to the patient condition, increased fibre, increased protein (beans, pulses, nuts) increasing, dietary calcium and vitamin-c low in carbohydrates. low in fat, diet are recommended.

Patient History:

Age	: 52	BMI	: 21.3
Gender	: Female	DBW	: 484g
Height	: 150cm	Activity	: Moderate (40)
Weight	: 48kg	Health Condition:	Gall stone (cholelithiasis)

Calculation:

1. Body Mass Index (BMI):

$$\text{BMI} = \frac{\text{Weight}}{\text{Height (m}^2\text{)}}$$

Desirable	Expected
$\text{BMI} = \frac{48}{(1.5)^2}$ $\text{BMI} = 21.33$	Standard BMI for female = 21

2. Desirable Body Weight (DBW)

$$\text{DBW} = \text{BMI} \times \text{HEIGHT (M}^2\text{)}$$

Desirable	Expected
$\text{DBW} = 21.33 \times 2.25$ $= 47.99$ $\text{DBW} = 48\text{KG}$	$\text{DBW} = 21 \times 2.25$ $= 47.88$ $\text{DBW} = 48\text{Kg}$

3. Total Calorie Requirement (TCR) = DBW × Activity

Desirable	Expected
$\text{TCR} = 48 \times 40$ $= 1920$ $\text{TCR} = 1920\text{Kcal/day}$	$\text{TCR} = 48 \times 40$ $= 1920$ $\text{TCR} = 1920\text{kcal/day}$

4. Distribution of calorie Requirement:-

$$\begin{aligned} \text{TCR/day} &= 1920 \text{ kcal/day} \\ \text{Carbohydrate/day} &= \frac{\text{TCR} \times 0.60}{4} \\ &= \frac{1920 \times 0.60}{4} = 288\text{g} \\ \text{Protein/day} &= \frac{\text{TCR} \times 0.10}{4} \\ &= \frac{1920 \times 0.10}{4} = 48\text{g} \\ \text{Fat/day} &= \frac{\text{TCR} \times 0.30}{9} \\ &= \frac{1920 \times 0.30}{9} = 64\text{g} \end{aligned}$$

$$\text{5. Rx diet} = 1920 \text{ kcal } C_{288\text{g}} P_{48\text{g}} F_{64\text{g}}$$

RESULT:-

1. BMI

- Desirable BMI = 21.33

2. DBW:

- Desirable DBW = 48kg
- Expected DBW = 48kg

3. TCR

- Desirable TCR = 1920kcal/d
- Expected TCR = 1920 kcal/d

4. DCR.

- TCR/day = 1920 kcal/d
- Carbohydrate/day = 288gm

- Protein/day 48g
 - Fat/day = 64g
5. Rx diet = 1920 kcal C_{288g} P_{48g} F_{64g}

DISCUSSION

Gallstones occur when bile, which is normally fluids, forms stones in your gall- bladder. This is the organ that sits beneath liver. Mostly commonly gallstones contain lumps of fatty materials that has solidified and hardened. Some times bile pigments or calcium deposits from gall stones. So our recommended diet should be low in calcium, high in fibre, protein and vitamins especially vitamin –C.

MENU PLAN FOR CHOLELITHIASIS:

Day	Break fast	Lunch	Dinner
Monday	Durva grass 150ml+idly 3nos+sambar150ml	Rice-1 cup, veg curry-1 cup, bitter guard poriyal-1/2 cup/egg white, butter milk-100ml, rasam-50 ml.	Chapathi-2-3 nos, dal-1/2 cup, pomegranate - 50g.
Tuesday	Green tea 150ml+pulses adai 2-3 no+mint chutney 75ml	Chapathi-1, palak gravy-1/2 cup, rice -1/2 cup, brinjal curry- 1/2 cup, butter milk-100 ml, rasam-50 ml.	Wheat dosa-2-3 nos, broccoli gravy- 50gm. Papaya-50 gm.
Wednesday	Skim milk 150ml+dosa 2-3 nos+beetroot chutney 75gms	Methi paratha-2 nos, rice-1/2 cup, bottle guard gravy-1/2 cup, country beans poriyal-1/2 cup, butter milk-100 ml, rasam-50 ml.	Broken wheat upma-3/4 cup, jaggery-2 table spoon, banana-1 (small).
Thursday	Ladyfinger soaked water 150ml+ragi dosa 2-3no+pumpkin chutney 75gms	Mix vegetable Rice-1 cup, pea's masala-1/2 cup.	Chapathi-2-3 nos, mosoor dal-1/2 cup, apple -50g.
Friday	Dry ginger coffee 150ml+puha upma 1cup+sambar50ml	Rice-1cup, green leafs gravy-1/2 cup, drumstick+kidney bean poriyal-1/2 cup, butter milk-100 ml, rasam-50 ml.	Idly-2-3nos, sambar-1/2 cup, pear-50g.

Saturday	Green tea/lemon tea 150ml+broken rice upma 1cup+cabbage chuntney 75 gms	Rice-1cup, Ridge guard gravy-1/2 cup, green leafs bean poriyal-1/2 cup, butter milk-100 ml, rasam-50 ml.	Idiyappam-2-3nos, veg stew-1/2 cup, pineapple-50gm.
Sunday	Skim milk 150ml+ Samba wheat upma - 1 cup, kadamba chutney	Rice-1cup, mushroom peas masala-1/2 cup, egg white/mutton liver-50gm, butter milk-100 ml, rasam-50 ml.	Dosa-2-3nos, garlic chutney, banana-1 small.

EX.NO:10 -DIET FOR HYPOTHYROIDISM

Hypothyroidism, also called underactive thyroid or low thyroid, is a disorder of the endocrine system in which the thyroid gland does not produce enough thyroid hormone. It can cause a number of symptoms, such as poor ability to tolerate cold, a feeling of tiredness, constipation, depression, and weight gain.

Dietary suggestions:

Low calorie, moderate PUFA and MUF, low carbohydrates and high protein, high minerals and Vitamins diets are suggested.

Scenario:

70 year old male with light activity has recently diagnosed with Hypothyroidism. His weight is 70kg and height is 163cm. Calculate and plans a menu for his Condition.

Aim:

To Plan and prepare a menu for Hypothyroidism.

Principles of Diet:

Low calorie, low fat particularly low saturated fat, low cholesterol, moderate PUFA and MUF, low carbohydrates and normal protein, high minerals & Vitamins, High fibre diet with increased amount of antioxidants are also recommended.

Patient History:

Age : 70 BMI : 26.41
 Gender : Male DBW : 70kg
 Height : 163cm Activity : light (35)
 Weight : 70kg. Health Condition: Hypothyroidism.

Calculation:

1. Body Mass Index

$$\text{BMI} = \frac{\text{WEIGHT}}{\text{HEIGHT (M}^2\text{)}}$$

Desirable	Expected
$\text{BMI} = \frac{70}{(1.63)^2}$ $\text{BMI} = 26.41$	Standard BMI for Male is 22

2. Desirable Body Weight (DBW)

$$\text{DBW} = \text{BMI} \times \text{Height (m}^2\text{)}$$

Desirable	Expected
DBW = 26.41×2.65	DBW = $22 \times (1.68)^2$
DBW = 70kg	DBW = 58g

3. Total Calorie Requirement (TCR)

$$\text{TCR} = \text{DBW} \times \text{ACTIVITY}$$

Desirable	Expected
TCR = 70×35 = 2450 TCR = 2450kcal/day	TCR = 58×35 = 2030 TCR = 2030 kcal/day

4. Distribution of calorie Requirement (DCR)

- TCR /day = 2030 kcal day
- Carbohydrate/day = $\frac{\text{TCR} \times 0.60}{4}$
= 305g
- Protein / day = $\frac{\text{TCR} \times 0.10}{4}$
= 51g
- Fat / day = $\frac{\text{TCR} \times 0.30}{9}$
= 68g

$$5. R_x \text{ diet} = 2030 \text{ kcal } C_{350\text{g}} P_{51\text{g}} F_{68\text{g}}$$

RESULT:-

1. BMI = 26.41
2. Desirable Body Mass Index = 26.41
 - Desirable Body Weight = 70kg
 - Expected Body Weight = 50kg
3. Total Caloric Requirements
 - Desirable Total Calorie Requirements. 2450kcal/day
 - Expected Total Calorie Requirements: 2030 kcal/day
4. Distribution Calorie Requirement
 - TCR/day = 2030kcal/day
 - Carbohydrate = 305g/day
 - Protein = 305g/day

- Fat = 68g/day

5. R_x diet: 2030 kcal C_{350g} P_{51g} F_{68g}

DISCUSSION:-

A healthy diet includes fruits, vegetables, whole grains, fish, lean meats and poultry low-fat dairy products, nuts, seeds, and legumes, limits sodium, saturated and trans fats, refined carbohydrates.

MENU PLAN FOR HYPOTHYROIDISM:

Day	Break fast	Lunch	Dinner
Monday	Durva grass 150ml +idly 3nos+sambar 150ml	Rice-1 cup, veg curry-1cup, bitter guard poriyal-1/2 cup/egg white, butter milk 100ml rasam – 50ml	Chapathi-2-3nos, dal-1/2 cup papaya
Tuesday	Green tea 150ml+ pulses adai 2-3 no+mint chutney 75ml	Chapathi-1, palak gravy-1/2 cup, rice - 1/2 cup, plantain stem curry -1/2 cup, butter milk 100ml rasam 50ml	wheat dosa –s-3 nos, broccoli gravy -50gms papaya- 50gm
Wednesday	skim milk 150ml+dosa 2-3 nos+beetroot chutney 75gms	Methi paratha-2 nos, rice-1/2 cup long beans gravy -1/2 cup, butter milk-100ml, rasam-50 ml	Onion dosa -3- 4nos,curry leaves chutney milk 150ml+guvav1
Thursday	Ladyfinger soaked water 150ml +ragi dosa 2- 3 no +pumpkin chutney 75gms	Mix vegetable Rice – 1 cup, potato peas curry 75gms	Chapathi 2-3nos, mosoor dal-1/2 cup, apple- 50g
Friday	Dry ginger coffee150ml+puha upma 1cup+sambar 50 ml	Rice – 1cup, green leaves gravy ½ cup +navy bean poriyal- 1/2 cup, butter milk – 100ml rasam – 50ml	Idly -2-3nos, peas kuruma -1/2 cup, pear-50g
Sunday	Skim milk 150ml+Samba wheat upma-1cup, kadamba chutney	Rice 1 cup, mushroom peas masala-1/2 cup, egg white/mutton liver- 50g butter milk- 100ml, rasam -50ml	Dosa-2 -3nos, garlic chutney, banana -1 small.

EX.NO:11 DIETFOR ATHEROSCLEROSIS

Atherosclerosis refers to the buildup of fats, cholesterol and other substances in and on your artery walls (plaque), which can restrict blood flow. The plaque can burst, triggering a blood clot. Although atherosclerosis is often considered a heart problem, it can affect arteries anywhere in your body

Dietary suggestions:

Low calorie, low fat particularly low saturated fat, low cholesterol, high in PUFA with ω -6 to ω -3 ratio 4-10:1, low carbohydrates and normal protein, minerals & Vitamins are suggested

Scenario:

To years old male with lightly activity has recently diagnosed with Atherosclerosis. Calculate and plan a menu for his cardiac condition. (Height; 163cm, weight; 70kg)

Aim:

To plan and prepare a menu for the condition of atherosclerosis

Principles of Diet:-

Low Calorie, low fat particularly low saturated fat, low cholesterol, moderate PUFA and MUFA, low carbohydrates, moderate amount of protein, High minerals and vitamins are suggested. High fibre diet with increased amount of anti oxidants is also recommended.

Patient History:

Age : 70 BMI : 26.41
Gender : male DBW : 70kg
Height : 163cm Activity: light (35)
Weight : 70cm Health condition: Atherosclerosis

Calculation:-

1. Body Mass Index (BMI):- $BMI = \frac{\text{Weight}}{\text{Height (m}^2\text{)}}$

DESIRABLE	EXPECTED
$BMI = \frac{70}{(1.63)^2}$ BMI = 26.41	Standard BMI For Male is 22

2. Desirable Body Weight (DBW)

$$\text{DBW} = \text{BMI} \times \text{Height (m}^2\text{)}$$

DESIRABLE	EXPECTED
$\text{DBW} = 26.41 \times (1.63)^2$ $= 26.4 \times 2.65$ $= 69.98$ $\text{DBW} = 70\text{kg}$	$\text{DBW} = 22 \times (1.63)^2$ $= 22 \times 2.65$ $= 58.3$ $\text{DBW} = 58\text{g}$

3. Total Calorie Requirement (TCR)

$$\text{TCR} = \text{DBW} \times \text{ACTIVITY}$$

DESIRABLE	EXPECTED
$\text{TCR} = 70 \times 35 = 2450$ $\text{TCR} = 2450 \text{ Kcal / day}$	$\text{TCR} = 58 \times 35 = 2030$ $\text{TCR} = 2030 \text{ Kcal / day}$

4. Distribution of Calorie Requirement (DCR)

- $\text{TCR / day} = 2030 \text{ kcal / day}$

- $\text{Carbohydrate/day} = \frac{\text{TCR} \times 0.60}{4}$
 $= \frac{2030 \times 0.10}{4}$

$$= 51 \text{ g}$$

- $\text{Fat/day} = \frac{\text{TCR} \times 0.30}{9}$

$$= 68 \text{ g}$$

5. Rx Diet: 2030Kcal, C_{305g}, P_{51g}, F_{68g}

RESULT:-

1. . BMI

Desirable BMI = 26.41

2. . DBW

- Desirable Body Weight = 70kg

- Expected Body Weight = 58kg

3. TCR

- Desirable TCR = 2450 kcal/day

- Expected TCR = 2030kcal/day

4. DCR

- TCR/day = 2030kcal/day

- Carbohydrates = 305g/day

- Protein = 51g

- Fat = 68g

5. Rx diet = 2030Kcal, C_{305g}, P_{51g}, F_{68g}

DISCUSSION:

Atherosclerosis the buildup of plaque in arteries, causing them to harden. It develops slowly over a number of years. The Changes of developing atherosclerosis are based on several different risk factors. A heart- healthy diet includes fruits, vegetables, whole grains, fish, lean meats and poultry, low fat, dairy- products, nuts, seeds and legumes, limited sodium saturated and trans-fats, refined carbohydrates

MENU PLAN FOR ATHEROSCLEROSIS

Day	Break fast	Lunch	Dinner
Monday	Durva grass 150ml+3nos+sambar150ml	Rice-1 cup, curry- 1cup, bitter gurard poriyal-1/2cup/egg white, butter milk- 100ml	Chapathi-2- 3nos, dal1/2 cup, pomegranate 50g
Tuesday	Green tea 150ml+dosa 2-3 no+mint chutney 75ml	Chapathi-1palak gravy -1/2cup, rice -1/2 cup brinjal curry ½ cup, butter milk 100ml rasam -50 ml	Wheat dosa 2-3 nos, broccoli gravy-50gm papaya-50gm
Wednesday	skim milk 150ml+dosa 2- 3nos+beetroot chutney 75gms	Methi paratha-2 nos, rice ½ cup, country beans poriyal-1/2 cup, butter milk-100ml, rasam 50ml	Broken wheat upma - 3/4 cup, jiggery- 2table spoon, banana-1 (small)
Thursday	Ladyfinger soaked water 150ml +ragi dosa 2- 3nos+pumpkin chutney 75gms	Mix vegetable Rice - 1cup, pea's masala- 1/2cup	Chapathi-2-3 nos, mosoor dal-1/2 cup apple-50g
Friday	Dry ginger coffee150ml + puha upma 1cup +sambar50ml	Rice-1cup, green leafs gravy-1/2 cup, drumstick+kidney bean poriyal-1/2 cup, butter milk-100ml, rasam-50ml	Idiyappam-2- 3nos, sambar- 1/2cup, pear- 50g
Saturday	Green tea/lemon tea 150ml+broken rice upma 1cup+cabbage chutney 75gms	Rice-1cup, Ridge gurad gravy ½ cup, green leafs bean poriyal-1/2 cup, butter milk-100 ml, rasam- 50ml	Idiyappam-2- 3nos, vegstew-1/2 cup, pineapple 50gms
Sunday	Skim milk 150ml + samba wheat upma-1 cup, kadamba chutney	Rice-1cup, mushroom peas masala-1/2cup, egg white/mutton liver-50gm, butter milk-100ml rasam- 50ml.	Dosa-2-3nos, garlic chutney, banana-1 small

EX.NO:12DIETFOR HOLESTEROLEMIA

Hypercholesterolemia, also called high cholesterol, is the presence of high levels of cholesterol in the blood. It is a form of hyperlipidemia, high blood lipids, and hyperlipoproteinemia (elevated levels of lipoproteins in the blood).

Dietary suggestions:

Low Calorie, moderate PUFA, moderate carbohydrates and protein, High minerals and vitamins are suggested.

Scenario:

48 years old male having moderate activity is recently diagnosed with hypercholesterolemia condition prepare and calculate the diet chart menu. (Height – 168cm weight – 79kg)

Aim:

To plan and prepare a menu for hypercholesterolemia condition.

Principles of Diet

Adequate diet accordingly in ideal condition of the person. Increased fibre, calcium, omega-3-fatty acids fruits, vegetables, whole grains are recommended.

Patient History:

Age : 48 BMI : 28.01
 Gender : male DBW : 79kg.
 Weight : 79kg Activity: moderate 40
 Height : 168cm Health Condition: hypercholesterolemia

Calculation:

$$1. \text{ BMI} = \frac{\text{Weight}}{\text{Height (m}^2\text{)}}$$

Desirable	Excepted
BMI= $\frac{79}{(168)^2}$ BMI= 28.01	STANDARD BMI FOR MEN: 22

2. Desirable Body weight

$$\text{DBW} = \text{BMI} \times \text{height cm}^2$$

Desirable	Expected
$28.01 \times (168)^2$ = 78.9 DBW=79kg	$22 \times (168)^2$ = 62.09 E. DBW = 62.09kg

3. Total calorie Requirement

$$= \text{DBW} \times \text{Activity}$$

Desirable	Expected
79×40	62×40
3160kcal/day	=2480kcal/day
TCR = 3160k/day	TCR= 2480/day

4. Distribution of Total Calorie Requirement

- TCR= 2480 kcal/day
- Carbohydrate = $\frac{\text{TCR} \times 0.60}{4}$
 $= \frac{2480 \times 0.60}{4}$
 $= 372\text{g/day}$
- Protein = $\frac{\text{TCR} \times 0.10}{4}$
 $= 62\text{g/day}$
- Fat = $\frac{\text{TCR} \times 0.30}{4}$
 $= 83\text{g/day}$

5. Rx diet= 2480kcal/day, C_{372g}/day, P_{62g}/day F_{83g}/day

RESULT

1. BMI
 - Desirable BMI = 28.01
2. Desirable Body weight = 62.09kg
3. TCR
 - Desirable Total calorie Requirement = 3160kcal/day
 - Expected Total calorie Requirement = 2480kcal/day
4. Distribution of Total calorie Requirement
 - Carbohydrate/day= 372g/day
 - Protein/day = 62g/day
 - Fat/day = 83g/day
5. Rx diet = 2480kcal/day, C_{372g}/day, P_{62g}/day F_{83g}/day

DISCUSSION

Hypercholesterolemia means too much LDL (bad) cholesterol in the blood. This condition increases fatty deposits in arteries and the risk of blockages.

A heart – healthy diet emphasizes fruits, vegetables, whole grains, poultry, fishes and nut and increased fibre intake are recommended. Diet should be low in saturated fats and cholesterol but polyunsaturated fats from vegetable oils and in other foods are permitted. A diet high in fibre can help to reduce cholesterol levels.

MENU PLAN FOR HYPERCHOLESTOLEMIA

Day	Break fast	Lunch	Dinner
Monday	idly 2-3 nos +milk150ml+horse gram chutney 75gms	Parboiled Rice (1cup) +Masoor Daal (1/4 th cup) +1/4 th fresh lime +Veg.cury(1/2 cup)	2-3Chapati+Veg/c urry (1/2 cup) + Fried Beetroot(1/3 cup)
Tuesday	Idly 3 nos Sambar 150ml Lemon tea 150ml+4 black raisin	2 chapati+mixed Dall(1/2 cup) +1 cuprice +ridge gourd Drumstick curry(1/2cup) + rasam, 50ml	2-3 chapati+veg/curr y(1/2 cup) + Fried Beetroot (1/3 cup)
Wednesday	Pomergranates juices 200ml poha upma 1cup Mint chutney 50gms	Rice 1 cup amaranth leaves pooriyal 100gms +radish sambar 100l+rasam75ml+butterm ilk50ml	Rice 1 / 2 cup dal 50ml+carrot pooriyal 50gms + lime juice 50ml
Thursday	Ragi pooidge 150ml+black dates 5nos	Rice 1cup/mushroom gravy 50gms + veg curry	2-3 chapathi+channa masala+milk 200ml +5gms walnuts
Friday	Dosa 3nos +tomato kurma+tender coconut 200ml+4almond s	2 chapati+Bengal gram Dhal (1/2 cup) + 1/4 th Fresh lime + green leaves (1/4 th cup)+ paneer/Soy bean curry (1/2 cup)	rice 1/2 cup+country porriyal 50gms + dal rasam 75ml+milk 150ml + mountain bananna 2nos
Saturday	Multi grain adai 2-3 nos+onion chutney+milk 200ml/coffee15 0ml/15gm peanuts	rice 1cup+ash gourd kootu 50gms +sundaikai curry 50ml+rasam 50ml+buttermil50ml+pap ad 1no	Rice and pulse upms 1cup+sambar50 ml+milk 150ml+chikku 1no
Sunday	Methi paraths 2nos+carrot nd cucumber raitha 25gms+milk 200ml+5dates	Broccoli and cauliflower pulao 1cup+paneer gravy	Cabbage gravy+2 cahpathi+milk15 0ml+guava 1no

EX. NO: 13 DIET FOR HYPER TENSION

Hypertension also known as high blood pressure (HBP), is a long-term medical condition in which the blood pressure in the arteries is persistently elevated. High blood pressure typically does not cause symptoms. Long-term high blood pressure, however, is a major risk factor for coronary artery disease, stroke, heart failure, atrial fibrillation, peripheral arterial disease, vision loss, chronic kidney disease, and dementia.

Dietary suggestions:

Usually DASH diet is suggested for hypertension. Eating a diet that is rich in whole grains, fruits, vegetables and low-fat dairy products and skimps on saturated fat and cholesterol can lower your blood pressure by up to 11 mm Hg if you have high blood pressure. This eating plan is known as the Dietary Approaches to Stop Hypertension (DASH) diet

Scenario:

A 42 year old school teacher has recently diagnosed with hypertension he belongs to middle class family his weight is 70kg and height is (170cm) calculate prepare the diet plan.

Aim

To plan and prepare diet for hypertension principle of diet.

Principles of Diet:

According to the persons condition increased fibre, higher potassium, calcium and higher magnesium diet and Low calorie, low fat, low sodium diet with normal protein intake is prescribed.

Patient History

Age	:	42	BMI	:	24.22
Gender	:	male	DBW	:	70kg
Height	:	170c	weight	:	70kg
Activity	:	light 35	health condition	:	Hypertension.

Calculation:

$$1. \text{ BMI} = \frac{\text{Weight}}{\text{Height (m}^2\text{)}}$$

Desirable	Expected
$\text{BMI} = \frac{70}{(1.70)^2}$ $\text{BMI} = 24.22$	Standard BMI For: Male = 22

$$2. \text{ Desirable Body weight} = \text{BMI} \times \text{height (m}^2\text{)}$$

Desirable	Expected
$24.22 \times (1.70)^2$ $= 69.9 = 70$	21×2.896 $= 60.89$ $= 63.58$

$$3. \text{ TCR} = \text{DBW} \times \text{Activity}$$

Desirable	Expected
70×35 $= 2450 \text{ kcal/day}$	63.5×35 $= 2222 \text{ kcal/day}$

4. Distribution of total calorie Requirements.

- $\text{TCR} = 2222 \text{ kcal/day}$
 - $\text{Carbohydrate} = \frac{\text{TCR} \times 0.60}{4}$

$$= \frac{\text{TCR} \times 0.60}{4} = \frac{2222 \times 0.60}{4}$$

$$= 333.3 \text{ gm/day}$$
 - $\text{Protein} = \frac{\text{TCR} \times 0.10}{4}$

$$= 55.55 \text{ gm/day}$$
 - $\text{Fat} = \frac{\text{TCR} \times 0.30}{9}$

$$= 74 \text{ gm/day}$$
5. Rx diet = 2222kcal/day C_{333.3gm}, P_{55.5gm} F_{74gm}/day

RESULT:-

1. BMI = 24.22
2. Desirable Body weight
 - Desirable Body weight = 70kg
 - Expected Body weight = 63.5kg
3. Total Calories Requirement:
 - Desirable total calories Requirement = 2450kcal/day
 - Expected total calories Requirement = 2222kcal/day
4. Distribution of total calorie Requirements
 - Carbohydrates./day = 333.3gms
 - Protein/day = 55.55gm
 - Fat/day = 74gm

5. R_x diet = 2222kcal/day C_{333.3gm}, P_{55.5gm} F_{74gm}/day

Diet for Hypertension

DISCUSSION

NOTES

An important part of a high blood pressure treatment plan is to stick to a healthy diet including limiting sodium intake. People with hypertension may need to reduce sodium intake.

MENU PLAN FOR HYPERTENSION

Day	Breakfast	Lunch	Dinner
Monday	milk-100ml, idly3nos+onion chutney-50ml	Rice-1cup, leached veg curry 1 cup, leached guard pooriyal -1/2 cup/egg white, curd- 50ml, rasam - 50ml	Rice - 1 cup/chapathi 2- 3 nos, dal - 1/2 cup
Tuesday	Green tea 150ml+ruti-2-3no+ peanut chutney 75ml	rice - 1/2 cup, chapathi-1 palak gravy-1/2cup, bottle guard poriyal - 1/2 cup/egg white -1 portion, rasam - 50ml	wheat dosa 2- 3nos, broccoli gravy - 50gms papaya-50gms
Wednesday	Health mix porridge200ml. almoind-4-5	Rice -1 1/2 cup, pumpkin gravy-1/2 cup, country beans poriyal-1/2 cup/fish or meat 2pcs(60g) curd-50ml, rasam 50ml	ragi upma-3/4 cup, jiggery -2 table spoon, apple -1 pc..
Thursday	Health mix porridge - 200ml. almond-4-5	Mix vegetable Rice-1 cup, Ladyfinger poriyal - 1/2 cup / egg (white portion)-1	Chapathi-2-3 nos, mosoor dal-1/2cup, apple-50g
Friday	Skim milk 150ml+ dosa 2-3 nos + onion chutney 75gms	Rice - 1cup, green leafs gravy 1/2 cup, drumstick+kidney bean poriyal-1/2cup, butter milk-100ml, rasam-50ml	idly-2-3nos sambar -1/2 cup, pear-50g
Saturday	Green tea/lemon tea 150ml+broken rice upma 1 cup+jaggary-20gms	Rice 1cup, Ridge guard gravy - 1/2 cup, green leafs bean poriyal- 1/2cup, butter milk- 100ml, rasam-50ml	Idiyappam- 2nos, vegstew- 1/2 cup, pineapple 25gm
Sunday	skim milk 150ml+sambar wheat upma-1cup, kadamba chutney	Rice-1cup mushroom peas masala-1/2 cup, egg poriyal -1/2 50gm butter milk - 100ml, rasam - 50ml	Dosa-2-3nos, garlic chutney, naspati-50gm

Self-Instructional Material

EX. NO: 14 - DIET FOR CANCER

Cancer refers to malignant neoplasm or tumours. It is one of the leading causes of death worldwide. But studies suggest that simple lifestyle changes, such as following a healthy diet, could prevent 30–50% of all cancers.

Dietary suggestions:

High-proteins, high calorie, high vitamin and minerals rich foods, Omega -3 fatty acids rich foods are suggested.

Scenario:

A 64 years house wife with maid has recently diagnosed with bone cancer. her height is 158cm and weight is 65kg. Calculate and prepare the menu.

Aim:

To plan and prepare the diet for cancer.

Principle of Diet:

High-proteins foods like milk products, egg, meats, poultry, fish, beans, legumes and nuts, high calorie, foods like butter and margarine etc, high vitamin and minerals rich foods and Omega -3 fatty acids rich foods are highly recommended.

Patient History:

Age	: 64	BMI	: 26.1
Gender	: female	DBW	: 65kg
Height	: 158cm	Activity	: Light (35)
Weight	: 65kg	Health condition:	Bone cancer.

Calculation:

1. **Body Mass Index (BMI) :**
- 2.

$$\text{BMI} = \frac{\text{Weight}}{\text{Height (m}^2\text{)}}$$

DESIRABLE	EXPECTED
$\text{BMI} = \frac{65}{(1.508)^2}$ $= 26.1$	Standard BMI of Female is 21

3. Desirable Body Weight (DBW)

$$\text{DBW} = \text{BMI} \times \text{Height (m}^2\text{)}$$

Desirable	Expected
DBW = 26.1X2049 = 64.9 DBW = 65kg	DBW = 21x2.49 = 52.2 DBW = 52kg

4. Total Calorie Requirement – (TCR)

Desirable	Expected
TCR = 65x35 TCR = 2275kcal/day	TCR = 52x35 = 1820 TCR 1820Kcal/day

5. Distribution of Calorie Requirement (DCR)

Calorie requirement distribution for 2275kcal/day cancer patient needs more calories

- TCR/day = 2275kcal/day

- Carbohydrate/day = $\frac{\text{TCR} \times 0.60}{4}$
= $\frac{2275 \times 0.60}{4}$
= 341g

- Protein/day = $\frac{\text{TCR} \times 0.10}{4}$
= $\frac{2275 \times 0.10}{4}$
= 57g

- Fat/day = $\frac{\text{TCR} \times 0.30}{9}$
= $\frac{2275 \times 0.30}{9}$
= 76g

5. **R_x diet** = 2275kcal, C_{341g}, P_{57g}, F_{76g}

RESULT:

1. BMI

- Desirable = 26.1

2. Desirable Body Weight (DBW)

- Desirable DBW = 65Kg

- Expected DBW = 52kg

3. Total Calorie Requirement (TCR)

- Desirable TCR = 2275kcal/day

- Excepted TCR = 1820kcal/day

4. Distribution of calorie Requirement

- TCR/day = 2275kcal/day
- carbohydrate/day = 341g
- Protein/day = 57g
- Fat/day = 76g

5. R_x Diet = 2275kcal, C_{341g}, P_{57g}, F_{76g}

DISCUSSION

A high -calorie, high protein diet is a must for keeping the patient's body fueled for the treatment process. Good nutrition is important for health and it's very essential to fighting bone cancer. Before and during bone cancer treatment patient needs to eat a high protein, high calorie diet.

MENU PLAN FOR CANCER

Day	Break fast	Lunch	Dinner
Monday	Brown bread(3 slices)+milk n Banana shake (1cup)+4almonds=3C ashew nuts	ParboiledRice(1cup)+ Masoor Daal(1/2cup)+ green leaves (1/4 th cup) +1/4 th fresh lime + Flash/Egg/Veg. curry (1/2 cup)	2-3 Chapati+veg/Fish curry (1/2cup) +Fried Beetroot (1/3 cup)
Tuesday	Idly 3nos Sambar 15ml + milk 200ml+4 black raisin	2 chapati+mixed Dall(1/2cup)+1/4 th Fresh lime + Potato n Drumstick curry (1/2 cup)+ Fried Fish (1pc)	2-3 Chapati+veg/Fish curry(1/2cup)+Fried Beetroot(1/3cup)
Wednesday	pomegranates juices 200ml poha upma 1cup Mint chutney 50gms	Rice 1cp amaranth leaves pooriyal 100gms/liver fry 75gms+radish sambar100ml+rasam 75ml+buttermilk 50ml	Rice 1/2cup dal 50ml+carrot pooriyal 150gm milk 150ml+banana 1no
Thursday	Ragi pooridge 150ml+black dates 5 nos+milk with turmeric powder 200ml	Rice 1cup egg boiled1/mushroom gravy 50gms + veg curry	2-3 chappathi+channa masala +mil 200ml+5gms walnuts
Friday	Dosa 3nos+tomato kurma+tender coconut 200ml+4 almonds	2 chapati+Bengal gram Daal (1/2 cup)+ 1/4 th Fresh lime +green leaves (1/4 th cup)+paneer/soy bean	Rice 1/2 cup+country pooriyal 50gms+dal rasam 75ml+milk

		curry(1/2 cup)	150ml+mountain banana 2nos
Saturday	Multi grain adai 2-3 nos + onion chutney+milk 200ml/coffee 150ml/15gm peanuts	Rice 1 cup+ash gourd kootu 50gms+sunaikai curry 50ml+rasam50ml+buttermil 50ml+papad 1no	Rice and pulse upma 1cup+sambar 50ml+milk 150ml+chikku 1no
Sunday	Methi paratha 2nos+carrot and cucumber raitha 25gms+milk 200ml+5 dates	Broccoli and cauliflower fulo 1cup+paneer gravy	Cabbage gravy+2chapathi+milk 150ml+guava 1no

EX. NO: 15 - DIET FOR DIABETES MELLITUS

Diabetes Mellitus is a chronic metabolic disorder that prevents the body to utilize glucose completely or partially. It is characterized by raised glucose concentration in the blood and alteration in carbohydrate, protein and fat metabolism. It should be controlled by diet.

Dietary suggestions:

Dietary calories from carbohydrate (45-60%), protein (10-35%) and fat (15-25%), should be prescribed. Amount of carbohydrate should be 130g/day. High fibre, high vitamin and minerals rich foods are suggested.

Scenario:

A 40 years old bank employee has type II diabetes mellitus and overweight. His weight is 72kg height is 169cm and he belongs to middle class. Calculate and prepare a diet menu for his conditions.

AIM:

To plan and prepare the diet for diabetes Mellitus.

PRINCIPLE OF DIET

Reduced level of fat, high vitamins and minerals diet, normal proteins, high fibre diet is prescribed

PATIENT HISTORY

Age	:	40	BMI	:	25.17
Gender	:	male	DBW	:	72kg
Weight	:	72kg	Status	:	middle class
Height	:	169cm	Activity	:	sedentary (30)
Health condition: Type II Diabetes Mellitus (NIDDM)					

CALCULATION

$$1. \text{ BODY MASS INDEX} = \frac{\text{Weight}}{\text{height (m}^2\text{)}} \\ \text{BMI}$$

Desirable BMI	Expected BMI
$\text{BMI} = \frac{72}{(1.69)^2}$ $= 25.17$	Standard BMI For male is $= 22$

2. DESIRABLE BODY WEIGHT:

$$DBW = BMI \times \text{height (m}^2\text{)}$$

Desirable	Expected
$DBW = 25.17 \times (1.69)^2$ $= 72$ $DBW = 72\text{kg}$	$EDBW = 22 \times (1.69)^2$ $= 63$ $= E.DBW = 63\text{kg}$

3. TOTAL CALORIE REQUIREMENT = DBW × ACTIVITY

Desirable TCR	Expected TCR
$TCR = 72 \times 30$ $= 2160$ $R = 216\text{Kcal/day}$	$TCR = 63 \times 30$ $= 1890$ $E.TCR = 1890\text{kcal/day}$

4. DISTRIBUTION OF TOTAL CALORIE REQUIREMENTS (DCR)

- Calorie Distribution For = 1890kcal/day
 - Total Calorie Requirement = 1890kcal/day
 - Carbohydrates/ Day = $\frac{TCR \times 0.60}{4}$
 $= \frac{1890 \times 0.60}{4}$
 $= 284\text{gm}$
 - Protein/day = $\frac{TCR \times 0.10}{4}$
 $= \frac{1890 \times 0.10}{4}$
 $= 47\text{g}$
 - Fat/day = $\frac{TCR \times 0.30}{9}$
 $= \frac{1890 \times 0.30}{9}$
 $= 63\text{gm}$
- 5. Rx Diet** = 1890kcal, C_{284gm}, P_{47gm} F_{63gm}.

RESULT:

1. BMI
 - Desirable BMI = 25.17
2. Desirable Body Weight = (DBW)
 - Desirable Body weight = 72kg
 - Expected Body weight = 63kg

NOTES

3.Total Calorie Requirement

- Desirable TCR = 2160kcal/day
- Expected TCR = 1890 kcal/day
-

4. Distribution of calorie Requirement (DCR)

- TCR/day = 1890kcal day
- Carbohydrate /day = 284 gm
- Protein/day = 47gm
- Fat/day = 63gm

5. R_x Diet = 1890kcal, C_{284gm}, P_{47gm} F_{63gm}.

DISCUSSION

Type II diabetes mellitus (adult onset diabetes) is not insulin dependent form an develop slowly middle and more stable. Insulin may be produced by fan crease but action is impaired.

The symptoms are hyperglycemia, glycosuria, acidosis, polyuria, and nocturia

Low calorie, high protein, low carbohydrates, low fat, high fibers, vitamins and minerals are highly recommended. Because the patient is overweight with diabetes.

MENU PLAN FOR DIAETES MELLITUS

Day	Break fast	Lunch	Dinner
Monday	Milk/coffee-200mlidly-3nos sambar-100ml, fruit salad-100gm	Rice-1cup non-veg curry/paneer-100gms, sambar-100ml rasam-50ml, butter milk-50mlspinach-100gm	phulka – pc veg kurma-100ml milk-150ml
Tuesday	Milk/coffee-200ml dpsa-2no Tomato chutney-50ml, health mix porridge – 150ml	Rice-1cup veg curry-100gm, green leafy gravy-100ml rasam-50ml buttermilk-50ml, roasted papad-1	Broken wheat upma -1cup, coconut chutney-50ml milk-100ml banana(small)-1
Wednesday	Ragi porridge-300ml masal vadai-2no	Rice – 1cup carrot pooriyal-1cup, / green leafy-1cup/egg-1, veg curry-1cup, rasa m 50ml, buttermilk-50ml	Wheat dosa-2no onion chutney-50ml, milk-100ml, banana (small)-1

NOTES

Thursday	Milk/coffee-200ml, idly-3nos. sambar-100ml veg- salad 100gm	veg pulav – 1cup/, chapathi-1no, dal-1/2cup, onion raitha ¼ cup	phulka – 2pcgreen peas gravy- 50ml, milk-150ml
Friday	Cereals/oats/corn flaks with milk -1 cup. Fresh juice without sugar-200ml	Rice-1cup veg curry -100gm, green leafy gravy-100ml, rasam- 50ml butter milk-50ml	chapathi-2nos, with tomato thokku-1/2 cup Milk – 100ml banana(small)-1
Saturday	Pongal-1/2 cup, sambar-50ml, urad dal vadai 1nos, green tea – 200ml, Biscuit-2nos, tea-100ml	Rice-1cup carrot poriyal-1cup/ green leafy-1cup/egg-1, veg curry-1 cup, rasam-50ml, buttermilk-50ml	dosa-2no Mint/Onion chutney-50ml, milk-100ml
Sunday	Ragi dosa-2nos, mint/tamato/garlic/oconut chutney. coffee/milk-200ml	Rice – 1 cup veg poriyal-1 cup / green leafy-1 cup/ egg-1, vathal kulambu-1 cup, rasam-50ml buttermilk-50ml	chapathi-2no, channa masala - 1/2 cup. milk-100ml banana (small)-1

EX.NO:16 - DIET FOR GESTATIONAL DIABETES

Gestational Diabetes mellitus (GDM) is defined as any degree of glucose intolerance with onset or first recognition during pregnancy. The definition applies whether insulin or only diet modification is used for treatment and whether or not the condition persists after pregnancy.

SCENARIO:

27 years old house wife with maid and 5 month pregnancy has went to doctor with diabetic condition. Doctors diagnosed as she has gestational diabetes. Calculate and prepare for diet menu to this condition. Her weight is 160cm long and weight is 70kg and she belongs to upper middle class.

AIM:

To plan and prepare diet for gestational diabetes (with 5 month pregnancy)

PRINCIPLES OF DIET:

Increased Vitamin and Minerals, Increased protein, Increased PUFAs / MUFAS, LOW/ moderate carbohydrates, increased omega -3- fatty acid are recommended.

PATIENT HISTORY

Age	: 27	BMI	: 27.34
Gender	: female	DBI	: 70kg
Height	: 160cm	Status	: Upper Middle Class
Weight	: 70kg	Activity:	: Light

Health condition: Gestational Diabetes, Pregnancy.

CALCULATION:

1. BODY MASS INDEX

$$(BMI) = \frac{\text{Weight}}{\text{height}(\text{m}^2)}$$

Desirable	Expected
$BMI = \frac{70}{(1.60)^2}$ $= 27.34$	BMI = Standard BMI of Female is 21

2. DEISRABLE BODY WEIGHT (DBW)

$$\text{DBW} = \text{BMI} \times \text{height (m}^2\text{)}$$

Desirable	Expected
$\text{DBW} = 27.34 \times 2.56$ $= 69.99$ $\text{DBW} = 70\text{kg}$	$\text{DBW} = 21 \times 2.56$ $= 53.76$ $\text{DBW} = 54\text{Kg}$

3. TOTAL CALORIE REQUIREMENT

$$\text{TCR} = \text{DBW} \times \text{ACTIVITY}$$

Desirable	Expected
$\text{TCR} = 70 \times 35$ $= 2450$ $\text{TCR} = 2450\text{Kcal}$	$\text{TCR} = 54 \times 35$ $= 1890$ $\text{TCR} = 1890\text{ Kcal}$

4. DISTRIBUTION OF CALORIE REQUIREMENT

Calorie distribution for 2190kcal/day

- Total Calorie Requirement /day For Pregnant Women = Total Calorie+300kcal
 $= 1890+300$
 $= 2190\text{kcal /day}$
- Carbo Hydrate/Day
 $= \frac{\text{TCR} \times 0.60}{4}$
 $= \frac{2190 \times 0.60}{4} = 329\text{g}$
- Protein/Day
 $= \frac{\text{TCR} \times 0.10}{4}$
 $= \frac{2190 \times 0.10}{4} = 55\text{g}$
- Fat/Day
 $= \frac{\text{TCR} \times 0.30}{9}$
 $= \frac{2190 \times 0.30}{9} = 73\text{g}$

5. Rx diet = 2190kcal, C_{329g}, P_{55g} F_{73g}

RESULT :-

1. Desirable BMI = 27.34
2. DBW (Desirable Body Weight)
 - Desirable DBW = 70kg
 - Expected DBW = 54kg
3. TCR (Total Calorie Requirement)

NOTES

- Desirable TCR 2450 kcal
 - Expected TCR for pregnant = Expected TCR + 300= 1890+219kcal
4. DCR (Distribution calorie Requirement)
- TCR/day = 2190kcal
 - Carbohydrate = 55g
 - protein/day = 55g
 - Fat/day = 73g
5. Rx diet = 2190kcal, C_{329g}, P_{55g} F_{73g}

DISCUSSION:

Gestational diabetes is high blood sugar (glucose) that starts during pregnancy. Eating a balanced healthy diet can help to manage gestational diabetes. The diet recommendations that follow are for women with gestational diabetes who do not take insulin.

When prepare menu for this condition we should include plenty of whole fruits and vegetables. Moderate amounts of lean protein and healthy fats. Moderate amounts of whole grains such as bread, cereal, pasta and rice, plus starchy vegetables such as corn and peas.

MENU PLAN FOR GESTATIONAL DIABETES

Day	Break fast	Lunch	Dinner
Monday	Milk-100ml, idly 3nos+onion chutney+50ml, black dates-10nos	Rice – 1cup, veg curry-1cup, guard poriyal-1/2 cup/egg-1, green leaves poriyal-1/4cup, curd-50ml, rasam-50ml	Chapathi-3-4 nos, dal-1/2 cup, milk-150ml pomegranate-50gms
Tuesday	Milk-150ml+almonds 4-5, 3-4no+peanut chutney 75ml	rice -1 chapathi-1, pulich keeri gravy-1/2cup, fish curry-1/2 cup/ egg-1 portion, rasam-50ml, butter milk-50ml	Wheat dsoa-3-4nos, broccoli gravy- 50gm chikko-50gm
Wednesday	Health mix porridge-200ml walnut-4-5 appam-3-4 coconut milk (without sugar)-ml	Rice-1/2cup,kovakkai gravy-1/2cup, beetroot proiyal-1/2 cup/egg-1 curd-50ml, rasam-50ml	Idiyappam3-4 veg kuruma—100ml, milk-150ml, apple-1
Thursday	milk-150ml, pea nuts, 10-12 multi pulse adai-3-4 garlic chutney -50ml	Mushroom +broccoli pulav-2 cup, cucumber carrot raitha1/2-cup+egg cury-1/2 cup	Chapathi 2-3nos, mosoor dal-1/2cup, banana-1
Friday	Skim milk 150ml+osa 3-4 nos+onion chutney 75gms	Rice 1 1/2cup, green leafs gravy-1/2cup, drumstick + kidney bean poriyal-1/2cup,	Idly 3-4 nos, sambar-1/2 cup, orange-1

NOTES

		butter milk-100, rasam-50ml	
Saturday	Green tea/lemon tea 150ml+broken rice upma 1cup+jaggary- 20gms, almond 4-5	Rice -1cupRidge guard gravy1/2cup, green leafs bean poriyal- 1/2cup/fish/meat 100gms butter milk- 100ml, rasam-50ml	Idyappam-3-4nos, vegstew-1/2 cup, pomegranate- 100gm
Sunday	milk 150ml +poor4- 5, potato shabji 100gm Dry raisin- 10-12	Rice -1cup, mushroom pean masala-1/2 , egg/meat 50gm, butter milk-100ml, rasam-50ml	Dosa-3-4nos, garlic chutney, naspati-50gm

EX. NO: 17 - DIET FOR UNDER WEIGHT

A 10 years school going boy and his weight is 20kg recently his mother went to his dietitian and complains about his underweight (Height is 130 cm long)

Aim:

To plan and prepare diet for underweight

Principle of Diet:

Adequate diets according to ideal body weight of the person increased protein, increased carbohydrates, moderate fat and fibre, increased vitamins and minerals are recommended.

Patient History:

Age	:	10	BMI	:	11.83
Gender	:	male	DBW	:	28kg
Height	:	130cm	Status	:	Middle-Class
Weight	:	20kg	Health condition:	:	Under Weight.

CALCULATION

1. BODY MASS INDEX:

$$(\text{BMI}) = \frac{\text{Weight}}{\text{Height (M)}^2}$$

Desirable BMI	Excepted
$\text{BMI} = \frac{20}{(1.3)^2}$ $= 11.83$	$\text{BM} = \frac{28}{(1.3)^2}$ $= 16.56$

2. DESIRABLE BODY WEIGHT

$$\begin{aligned} (\text{DBW}) &= (\text{Age} \times 2) + 8 \\ &= (10 \times 2) + 8 \\ &= (20) + 8 \\ &= 28 \end{aligned}$$

$$\text{DBW} = 28\text{Kg}$$

3. TOTAL CALORIE REQUIREMENT

$$\begin{aligned} \text{TCR} &= 1000 + (100 \times \text{Age in years}) \\ &= 1000 + (100 \times 10) \\ \text{TCR/Day} &= 200\text{kcal} \end{aligned}$$

4. DISTRIBUTION OF TOTAL CALORIE REQUIREMENT

- TCR/day = 2000kcal
 - Carbohydrates/day = $\frac{TCR \times 0.60}{4}$
= $\frac{1200}{4}$
 - Carbohydrate = 300g
 - Protein/day = $\frac{TCR \times 0.10}{4}$
= $\frac{2000 \times 0.30}{9}$
= 50g.
 - Fat/day = 67g
5. **Rx Diet** = 2000kcal, C_{300gm}, P_{50g} F_{67gm}

Diet for underweight

NOTES

RESULT

1. BMI =
 - Desirable Body Mass Index = 11.83
 - Expected Body Mass Index = 16.56
2. DESIRABLE BODY WEIGHT
 - Desirable Body Weight = 20kg
 - Expected Body Weight = 28kg
3. Total Calorie Requirement = 2000kcal/day
4. Distribution of Calorie Requirement
 - carbohydrate/day : 300gm/day
 - Protein/day : 50gm/day
 - Fat/day: 67gm/day
5. Rx Diet = 2000kcal, C_{300gm}, P_{50g} F_{67gm}

DISCUSSION

Since, the person is under weight (20kg) his average calorie intake is 1600 kcal per day. But his required calories is 2000kcal

Prescribed calorie is = 2000kcal

We prepared the weekly menu for 2000 kcal for underweight person.

MENU PLAN FOR UNDER WEIGHT

Day	Break fast	Lunch	Dinner
Monday	Milk 200ml+4almonds+ mini idly 10nos+ghee sambar 50gms	Rice 1cup+veg curry 80ml+eggboiled + veg poriyal	Rice ½ cup+dhal 100ml+beans pooriyal125gms+milk 150ml+pomegrante50 gms
Tuesday	Milk 200ml, +4dry raisin+poor 3nos+potao sabji	Rice 1 cup+mutton gravy	chapathi 2nos veg kuruma 100g+milk 100ml+banana 1

Self-Instructional Material

	50gms	+gobicurry 50ml+potato fry 50gms	
Wednesday	Milk 200ml+10 peanuts+appam2 nos+vegetables stew 100gms	Rice 1 cup+carrot pooriyal 125gms +egg boil 1 + spinach gravy 50gm	Rice 1/2cup. rasa, 75,1 + beetrootpooriyal 30g+milk150ml+chikk u 1 no
Thursday	milk 200ml, +4 black dates+ghee dosa 2nos+coconut chuntney 50gms	Mushroom puloa1/2 cup+ carrot and cucumber raitha 50gms	Idly 2nos+oniontomato chutney 15gms + milk 150ml+chikku 1 no
Friday	Milk 200ml, 4 dry figs + toasted butte sandwdch 2nos	Rice 1 cup+fish curry 100ml/channa curry 1 cup + egg1	Rice1/2 cu sambar 50ml, egg1 veg curry 50gm+milk 200ml+papaya 50gm
Sunday	Milk 200ml+4 blackdates + idly 2 nos + sambar 100ml	Rice 1 cup+spinach gravy 50gm +yam fry 25gms	Dosa 2no+ coconut chutney 15 gm + milk 200ml+ pears 50gms

EX. NO: 18 - DIET FOR STROKE

Intracerebral hemorrhage (ICH), also known as cerebral bleed, is a type of intracranial bleed that occurs within the brain tissue or ventricles. Symptoms can include headache, one-sided weakness, vomiting, seizures, decreased level of consciousness, and neck stiffness. The most common cause of intracerebral hemorrhage is high blood pressure (hypertension). Since high blood pressure by itself often causes no symptoms, many people with intracranial hemorrhage are not aware that they have high blood pressure, or that it needs to be treated.

Scenario:

A 45 yr old driver suddenly falls in stroke. The imaging report tells as he affected by Intra cerebral hemorrhage (ICH) His height is 168cm and weight is 78kg. Calculate and plan for diet.

AIM

To plan and prepare a diet for stroke patient.

PRINCIPLE OF DIET

Adequate diet according to ideal condition of a person, increased protein. Low-fat, low sugar, low cholesterol diet and increased vitamins and minerals diet are recommended

PATIENT HISTORY:

Age : 45 BMI : 27.65
 Gender : male DBW : 78kg
 Height : 168cm Status : lower middle class
 Weight : 78kg Activity : heavy (45)
 Health condition: Intra Cerebral Hemorrhage (ICH)

CALCULATION

1. BODY MASS INDEX (BMI)

$$\text{BMI} = \frac{\text{Weight}}{\text{Height (m)}^2}$$

$\text{BMI} = \frac{78}{(1.68)^2}$ $= 27.65$	Standard BMI For Male is = 22
--	----------------------------------

2. DESIRABLE BODY WEIGHT (DBW) DBW x BMIx height (m²)

Desirable	Expected
$DBW = 27.68 \times 2.82$ $= 77.9$ $DBW = 78Kg$	$DBW = 22 \times 2.82$ $= 62.0$ $DBW = 62kg$

3. TOTAL CALORIE REQUIREMENT (TCR)

$TCR = DBW \times ACTIVITY$

Desirable	Expected
$TCR = 78 \times 45$ $= 3510$ $TCR = 3510 \text{ kcal/day}$	$TCR = 62 \times 45 = 2790$ $TCR = 2790 \text{ kcal/day}$

4. DISTRIBUTION OF CALORIE REQUIREMENT (DCR)

- Low calorie diet required 2790 kcal/day
- $TCR/day = \frac{TCR \times 0.60}{4}$
 $= \frac{2790 \times 0.60}{4} = 418g$
- $Protein /day = \frac{TCR \times 0.10}{4} = \frac{2790 \times 0.10}{4} = 70g$
- $Fat/day = \frac{TCR \times 0.30}{9} = \frac{2790 \times 0.30}{9} = 93g$

5. Rx diet = 2790kcal/day, C418g. P7g F93g

RESULT

1. BMI
 - Desirable BMI = 27.65
2. DBW
 - Desirable DBW = 78kg
 - Expected DBW = 62kg
3. TCR
 - Desirable TCR = 3510kcal/day
 - Expected TCR = 2790 kcal/day
4. DCR
 - TCR/day= 2790kcal/day
 - carbohydrate/day = 418g
 - Protein/day = 7g
 - Fat/day = 93g
5. Rx Diet. 2790kcal, C418g, P70g, F93g

DISCUSSION:

Adequate diet according to ideal condition of a person, increased protein, low fat, low sugar and Low cholesterol diet are suggested
High Vitamin and minerals are recommended.

Diet for stroke

NOTES

MENU PLAN FOR STROKE

Day	Break fast	Lunch	Dinner
Monday	Tea/milk 150ml+idly 3nos+Garlic paste-150ml	Rice 1cup, sambar-1cup, drumstick poriyal-1/2cup/egg/white, butter milk-100ml rasam – 50ml	chapathi-2-3nos, dal1/2cup, pomegranate-50g
Tuesday	Milk 150ml+whole grain adai 2-3no+mint chutney 75ml	Rice-1 cup, chapathi-1 plantine flower poriyal-1/2cup, brinjal curry1/2 cup. butter milk-100ml, rasam,-50ml	Wheat dosa2-3nos, cauliflower gravy – 50g, papaya -50gm
Wednesday	1cup roasted oats upma with vegetables +1 glass tone milk /1cup tea	Methi paratha -2 nos, rice-1/2cup, bottle guard gravy-1/2 cup, country beans poriyal1/2 cup, butter milk-100ml, rasam 50ml	Broken wheat upma-3/4 cup, jiggery-2 table spoon, banana-1
Thursday	Ladyfinger soaked water+ragi dosa 2-3nos+pumpkin chutney 75gms	Rice ½ cup, chapathi+1/2 cup French beans curry+1/2 cup country beans poriyal-1/2cup colocasia(arbi) sabji+1glass buttermilk	chapathi-2-3nos, ridge gourd-1/2 cup, apple 50g
Friday	Dry ginger coffee 150ml+puha upma 1 cup+sambar50ml	Rice 1cup. green leafs gravy ½ cup, drumstick+kidney bean poriyal-1/2 cup, butter milk-100ml, rasam-50ml	idly-2-3nos, vegstew-1/2 cup, pineapple 50g
Saturday	Green tea/ lemon tea 15ml+broken rice upma 1 cup+cabbage chutney+75gms	Rice -1cjp, Ridge gurad gravy ½ cup, green leafs bean poriyal-1/2 cup, butter milk-100ml rasam-50ml.	Idiyappam 2,-3nos, veg stew-1/2 cp, pineapple 50gm
Sunday	skim milk 150ml+samba wheat upma-1cup, kadamba chutney	Rice-1cp, mushroom peas masala-1/2 cup, egg white/mutton liver-50gm, butter milk-100ml	Aappam-2 3nos, garlic chutney, banana-1small

Self-Instructional Material

EX. NO: 19 DIET FOR KIDNEY DISEASE

A 59 years old house wife without maid (her weight is 70kg, height is 155cm) was affected by chronic *Kidney Disease* stage II she belongs to lower middle class family. She has no other medical history. Calculate and prepare the diet menu for her condition.

AIM

To prepare the diet for chronic kidney disease stage – II.

PRINCIPLES OF DIET

According to the patient's health condition, increased carbohydrates, restricted protein, moderate fat, increased vitamins and minerals (except sodium, Potassium, phosphorus, and calcium) are recommended

PATIENT HISTORY:

Age	:	59	BMI	:	29.16
Gender	:	female	DBW	:	7kg
Height	:	155cm	Status	:	Lower Middle Class
Weight	:	70kg	Activity	:	Moderate (40)
Health condition:	Chronic Kidney Disease Stage II				

CALCULATION:

1. BODY MASS INDEX (BMI)

$$\text{BMI} = \frac{\text{Weight}}{\text{Height (M)}^2}$$

Desirable	Expected
$\text{BMI} = \frac{70}{(1.55)^2}$ $= 29.16$	Standard BMI For Female is = 21

2. DESIRABLE BODY WEIGHT (DBW)

$$\text{DBW} = \text{BMI} \times \text{Height (m}^2\text{)}$$

Desirable	Expected
$\text{DBW} = 29.16 \times 2.40$ $= 69.98$ $\text{DBW} = 70\text{g}$	$\text{DBW} = 21 \times 2.40 = 50.4$ $\text{DBW} = 50\text{g}$

3. TOTAL CALORIE REQUIREMENT (TCR)

$$\text{TCR} = \text{DBW} \times \text{ACTIVITY}$$

Desirable	Expected
$\text{TCR} = 70 \times 40$ $= 2800$ $\text{TCR} = 2800 \text{ kcal/day}$	$\text{TCR} = 50 \times 40 = 2000$ $\text{TCR} = 2000 \text{ kcal/day}$

5. DISTRIBUTION OF CALORIE REQUIREMENT (DCR)

Calorie Distribution for 2000kcal/Day

- Carbohydrate/day = $\frac{TCR \times 0.60}{4}$
= $\frac{2000 \times 0.60}{4}$
= 300g
- Protein/day = $\frac{TCR \times 0.10}{4}$
= 50g
- Fat/day = $\frac{TCR \times 0.30}{9}$
= $\frac{2000 \times 0.30}{9}$
= 66.66
= 67g

Rx Diet = 2000kcal, C300g, P50g, F67g

RESULT

1. BMI

- Desirable Body Mass Index = 29.16

2. Desirable Body weight (DBW)

- Desirable DBW = 70g
- Expected DBW = 50g

3. Total Calorie Requirement (TCR)

- Desirable TCR = 2800kcal/day
- Expected TCR = 2000kcal/day

4. Distribution of calorie Requirement (DCR)

- TCR/day = 2000kcal/day
- Carbohydrate/day = 50g
- Protein / day = 50g

5. Rx Diet = 2000kcal C300g, P50g F67g

DISCUSSION

The patient weight (70kg) and Total calorie requirement (2800kcal/day) is high. It indicates the patient has obese. also she has chronic kidney disease stage II. In this condition our prescribed menu should be low in protein high/moderate carbohydrate low sodium, / restricted sodium. Low / restricted. Potassium and minerals like calcium and phosphorus. Moderate fat also limited liquid intake should be prescribed.

NOTES

MENU PLAN FOR CHRONIC KIDNEY DISEASE

Day	Break fast	Lunch	Dinner
Monday	Milk -100ml, idly 3nos, +onion chutney-50ml	Milk – 100ml, idly 3nos, leached guard poriyal ½ cup/ egg white, curd-50ml rasasm-50ml	Rice- 1cup/chapathi2-3nos, dal-1/2 cup
Tuesday	Green tea 150ml. +ruti2-3nos+peanut chutney 75ml	rice 1/2cup, chapatahi-1, palak gravy-1/2 cup, bottle guard poriyal – 1/2cup/egg white-1portion, rasam-50ml	Wheat dosa- 2-3 nos, broccoli gravy-50gms, papaya-50gm
Wednesday	Health mix porridge- 200ml almond – 4-5	Rice-1 1/2 cup, pumpkin gravy ½ cup, country beans poriyal-1/2 cup/fish or meat 2pcs (60g) curd-50ml, rasam 50ml	Ragi upma- 3/4cup, jiggery - 2 table spoon, apple – 1pc
Thursday	milk- 150ml+ragi dosa2-3 nos+pumpkin chutney 75gms	Mix vegetable Rice-1cup, Ladyfinger poriyal -1/2 cup/egg (white portion)-1	Chapathi-2-3 nos, mosoor dal- 1/2 cup apple-50g
Friday	Skim milk 150ml +dosa 2-3 nos+onion chutney 75gms	Rice-1cp, green leafs gravy 1/2cup, drumstick + kidney bean poriyal-1/2 cup, butter milk-100ml, rasam-50ml	idly-2-3nos, sambar-1/2 cup, pear-50g
Saturday	Green tea/lemon tea 150ml+broken rice upma 1cup+jaggary-20 gms	Rice -1cup, Ridge guard gravy 1/2cup, green leafs bean poriiyal-1/2 cup, butter milk-100ml, rasam – 50ml	Idiyappam-2-3nos, veg stew- 1/2 cup, pineapple 25gms
Sunday	Skim milk 15ml+sambarwheat upma -1 cup, kadamba chutney	Rice-1cup mushroom peas masala-1/2 cup, eggwhite/meat/5gm, butter milk 10ml, rasam- 50ml	Dosa-2-3nos, garlic chutney, naspati-50gm

3. TOTAL CALORIE REQUIREMENT

TCT = DBW × ACTIVITY

Desirable		Excepted	
TCR	= 40X35	TCR	= 54x55
= 1400		=1890 Kcal	
D.TCR = 1400Kcal		Expected TCR = 1890kcal	

4. DISTRIBUTION OF TOTAL CALORIE REQUIREMENTS (DCR)

- TCR/Day = 1890kcal
- Carbohydrate/day = $\frac{TCR \times 0.60}{4}$
 $= \frac{1890 \times 0.60}{4}$
 $= \frac{1134}{4}$
 = 284gm
- Protein/day = $\frac{TCR \times 0.10}{4}$
 $= \frac{1890 \times 0.10}{4}$
 Protein/day = 47gm
- Fat/day = $\frac{TCR \times 0.30}{9}$
 $= \frac{1890 \times 0.30}{9}$
 = 63gm

5. Rx. diet: 1890kcal. C284gm P47gm F63gm

RESULTS

1. BMI

- Desirable BMI = 15.6

2. DBW (Desirable Body Weight)

- Desirable body weight = 40kg
- Expected body weight = 54kg

3. Total calorie Requirement (TCR)

- Desirable calorie Requirement = 1400kcal/day
- Expected calorie Requirement = 1890kcal/day

4. Distribution calorie Requirement (DCR)

- TCR/day = 1890kcal/day
 - Carbohydrate = 284gm/day
 - Protein = 47gm/day
 - Fat = 63gm/day
6. Rx. diet: 1890kcal. C284gm P47gm F63gm

DISCUSSION:

Since a person is under weight (40kg) her average calorie intake is 1400kcal. But required calories is 1890kcal/day
(1890-1400 kcal) = 490kcal/week

So, we prepared the weekly menu for 1890 kcal/day to overcome her under weight and we prepared iron rich foods for her anemic condition.

MENU PLAN FOR ANEMIA

Day	Break fast	Lunch	Dinner
Monday	Brown bread (3 slices) + milk n Banana shake (1cup) + 4 Almonds + 3 Cashew nuts	Parboile Rice (1cup)+ Massoor Daal(1/2cup)+green leaves (1/4 th cup)+ 1/4 th fresh lime +fish/ egg/ veg. curry(1/2cup)	2-3 chappati+veg./ Fish curry (1/2 cup)+ Fried Beetroot (1/3cup)
Tuesday	idly 3nos Sambar 150ml+ milk 200ml+ 4 black raisin	2 chapati+Mixed Dall(1/2 cup)+1/4 th Fresh lime+potato n Drumstick curry(1/2 cup)+ Fried Fish (1pc)	2-3 Chapati+veg/fish curry(1/2cup)+Fried Beetroot (1/3 cup)
Wednesday	Pomegrates juices 200ml+poha upma 1 cup + Mint chutney 50gms	rice 1 cup amaranth leaves jpooriyal 100gms / liver fry 75gms + radish sambar 100ml+rasam 75ml+buttermilk 50ml	Rice 1/2cup dal 50ml+ arrot jpooriyal50gm+milk 150ml+banana 1no
Thursday	Ragi pooridge 150ml;+black dates 5 nos+milk with turmeric powder 200ml	Rice 1 cup egg boiled1/ mushroom gravy 50gms+veg curry	2-3 chapathi+channa masala + milk+ 200ml+ 2gms walnuts
Friday	Dosa 3nos + tomato kurma +tender coconut 200ml+4 almonds	2 chapati+ Bengal gram Dasl (1/2c up) + (1/4 th cup_+paneer/Soy bean curry(1/2cup)	Rice ½ cup+country pooriyal 50gms+dal rasa 75ml+mil 150ml+mountain banan 2nos
Saturday	Multi grain adai 2-3 nos+onion chutney+milk 200ml/coffee 150ml/15gm peanuts	Rice 1cup+ash gourd kootu 50gm+sundaikai curry 50ml+rasam 50ml+buttermilk 50ml+papad 1no	Rice and pulse upma 1 cup+sambar 50ml+milk 150ml+chikku 1 no
Sunday	Methi paratha 2nos+carrot nd cucumber raitha 25gms +milk 2o00ml+ 5 dates	Broccoli and cauliflower jpulao 1 cp+paneer gravey	Cabbage gravy+2chapathi+milk 150ml+guava 1no

EX.NO:21 DIET FOR INFANT, CHILDREN & ADOLESCENCE

AIM

To plan a dietary menu (formula feed) for infant children and adolescence.

PRINCIPLES

- A nutritionally adequate and balanced diet is essential for optimal growth and development
- Appropriate diet and physical activity during childhood is essential for optimum body composition. BMI and to reduce the risk of diet related chronic disease in later life.
- Common infections and malnutrition contribute significantly to child mortality and morbidity.
- Given plenty of milk and milk products to children and adolescents.
- Promotes physical activity and appropriate life style practices

MENU PLAN FOR 0-3 MONTHS BABIES

Day	EVERY 2 HOURS
Monday	Breast milk or formula milk (cooled boiled tap water as required)
Tuesday	Breast milk or formula milk (cooled boiled tap water as required)
Tuesday	Breast milk or formula milk (cooled boiled tap water as required)
Wednesday	Breast milk or formula milk (cooled boiled tap water as required)
Thursday	Breast milk or formula milk (cooled boiled tap water as required)
Friday	Breast milk or formula milk (cooled boiled tap water as required)
Saturday	Breast milk or formula milk (cooled boiled tap water as required)
Sunday	Breast or formula milk (cooled boiled tap water as required)

MENU PLAN FOR 1-2 YEARS BABIES

Diet for Infant, Children & Adolescence

NOTES

Day	Break fast	Lunch	Dinner
Monday	Milk 200ml+apple and potato mashed with ghee 1 cup	¼ cup rice dhal+carrot boiled 10gms +egg1	Roti 1 no +paneer +milk 200ml+small banana1
Tuesday	Milk 200ml+sweet potato and carrot puree 1 cup	1/4 cup rice mashed+beetroot mashed 15gms+egg1	idly 1 nos+sambar 20ml+milk 200ml+pears
Wednesday	milk 200ml+idiyappam 1 no+coconut milk 25ml	1/4 cup rice mashed+chickpea stock 25ml+egg1	1/4 cup rice mashed+rasam 25ml+milk 200ml
Thursday	Milk 200ml+cereals health mix 1/2 cup+pomegranate 25gms+	½ cup rice+pumpkin curry 50ml+egg1	Veg rice ½ cup+milk 200ml+papaya 25gms
Friday	Milk 200ml+idly 1 sambar 50ml	½ cup rice mashed +mutton stock+egg1	Dosa 1 coconut chutney+milk 200ml+with turmeric powder
Saturday	Milk 200ml+appam 1+nos +veg stew 50ml	½ cup rice + carrot mashed+egg1	½ cup rice +dhal rasam 50ml+beans cooked 25gms+150ml milk
Sunday	Milk 200ml+health mix porridge 1 cup	½ cup mashed rice+fish curry 20gms	idly 2 sambar+milk 200ml+banana 1

MENU PLAN FOR 3-12 YEARS OLD CHILDREN

Day	Break fast	Lunch	Dinner
Monday	Milk 200ml+4 almonds +cereals cornflakes 1 cup + with honey	Curd rice 1 cup+ potato fry	Rice ½ cup + Veg curry +beans pooriyal+milk 150ml+ banana 1
Tuesday	Milk 200ml+4 dates+ butter jam bread sandwich 3 nos	Rice ½ cup+9 green leaves pokra 25gms+ sambar +yam fry + rasam	Rice 1/2 cup+fish curry+papaya 25gms
Wednesday	Milk 200ml+4 dry raisin+poori 3 nos + potato sabji	1 cup rice +mutton curry/veg curry +egg 1+rasam 50ml	Rice ½ cup+dhal 3gms+milk 200ml+guvava 1
Thursday	Strawberry milk shake 200ml+dosa 2 nos, dosa 2	Rice 1 cup+brinjal drumstick	Rice ½ cup+mushroom curry+milk 200ml+chikku 2

Self-Instructional Material

NOTES

	nos+mint chutney 75gms	curry+fish fry 2 nos + egg omelet 1	
Friday	avocado milk shake 200ml+5 walnuts	Rice 1cup+snake gurard curry 75ml, +mutton curry +rasam 50ml	idly 2 nos + coconut chutney+milk 200ml+pomegranate 25 gms
Saturday	Milk 200ml+4 cashews +appam 2-3 + chicken stew 50ml	Rice 1 cup+egg curry+rasam 50ml	Dosa 2 nos +m int chutney 2 tbsp+grapes 50gms + milk 200ml
Sunday	Milk 200ml+5 almonds +onion dosa+totmat chutney	Rice 1cup+ mutton liver gravy+sambar+go bi gravy+rasam 50ml	Rice pulao 1/2cup+raitaq20g ms +mango 30gms +milk 200ml

MENUN PLAN FOR 12-16 YEARS OLD BOY

Day	Break fast	Lunch	Dinner
Monday	Milk 200ml+almonds+mini idly 10nos+ghee sambar 50gms	Rice 1 cup + veg curry 50ml+egg boile+veg pooriyal	Rice 1/2cup+dhal 100ml+beans pooriyal 125gms+milk 150ml+pomegranate 50gms
Tuesday	Milk 200ml+ 10 peanuts +appam 2 nos + vegetables stew 100gms	Rice 1 cup+carrot pooriyal125gms +egg boil 1+spinach gravy 50gm	chapatti 2nos veg kuruma 100g +milk 100ml+banana 1
Wednesday	Milk 200ml+10 peanuts+appam 2nos+ vegetables stew 100gms	Rice 1 cup+carrot pooriyal125gms+e gg boil 1+spinach gravy 50gm	Ric Rice ½ cup, rasam 75ml,+ beetroot pooriyal 30gms+milk 150ml+guava 1
Thursday	Milk 200ml+4 black dates +ghee dosa 2nos ghee dosa 2nos+coconut chutney 50gms	Mushroom puloa1/2 cup+carrot and cumcumber raitha 50gms	Idly 2 nos+onion tomato chutney 15gms +milk 150ml+chikku 1no
Friday	Milk 200ml+4dry figs +toasted butter sandwidch 2nos	veg paratha 2nos+paneer masala 50gms+veg salad 50gms	paratha nos+onion raitha154gms+milk 200ml+banana
Saturday	Milk 200ml+4 almonds +ragi dosa +tomato chutney 50gms	Rice 1cup+ fish curry 100ml+/channa curry 1 cup+egg1	Rice 1/2cup+ sambar 50ml+ egg1 veg curry 50gm+milk 200ml+papaya 50gm
Sunday	Milk 200m,l+4 blackdates + idly 2nos + sambar 100ml+	Rice 1 cup+spinach gravy50gm+yam fry 25 gms	Dosa 2 nos+ coconut chutney 15gm + milk 200ml+pears 50gms

DISCUSSION

A child hood and adolescence are period of continuous growth and development. An infant growth rapidly, doubling its birth weight by 5 months and tripling it by 1 year of age. During the second year, the child increase not only in height by 7-8 cm but also gain 4 times of in birth weight. During the pre-adolescent period the child grows on average, 6-7 cm in height and 1.5 to 3kg in weight. Hence for the rapid growth nutritional diet is most important.

Breast-feeds are often well accepted and tolerated even by sick children and should be continued except in severe gastroenteritis associated with stock for older children, consuming an adult diet soft cooked food may be offered at frequent intervals.

ANNEXURE I

1. **Calculation of BMI** = $\frac{\text{weight}}{\text{Height (m}^2\text{)}}$

2. **Estimation of Desirable Body Weight (DBW)**

i. **Infant:** $\text{DBW (kg)} = (\text{Age in months} \div 2) + 3$

6-months old infants DBW (kg) = $(6 \div 2) + 3 = 3 + 3 = 6 \text{ kg}$	10-months old infants DBW (kg) = $(10 \div 2) + 3 = 5 + 3 = 8 \text{ kg}$	7-months old infants DBW (kg) = $(7 \div 2) + 3 = 3.5 + 3 = 6.5 \text{ kg or } 7 \text{ kg}$
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N.B: [Infant weight will be- Doubled at 5-6 months, Tripled at 12 months, Quadrupled at 24 months] (If birth wt is not known, use 3 kg or 3000 g)

Height or Length:	Example
At birth : 50 cm	50 cm
At 1 year : (--) + 24 cm	$50 + 24 = 74 \text{ cm}$
At 2 year : (--) + 12 cm	$74 + 12 = 86 \text{ cm}$
At 3 year : (--) + 8 cm	$86 + 8 = 94 \text{ cm}$
At 4-8 year : (--) + 6 cm	$94 + 6 = 100 \text{ cm}$

ii. **Children:** $\text{DBW (kg)} = (\text{Age in years} \times 2) + 8$

6-years old child DBW (kg) $= (6 \times 2) + 8$ $= 12 + 8 = 20 \text{ kg}$	8-years old child DBW (kg) $= (8 \times 2) + 8$ $= 16 + 8 = 24 \text{ kg}$	10-years old child DBW (kg) $= (10 \times 2) + 8$ $= 20 + 8 = 28 \text{ kg}$	2-years old child DBW (kg) $= (2 \times 2) + 8$ $= 4 + 8 = 12 \text{ kg}$
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N.B: [+2 for every year]

iii. **Adult: (Derived formula based on BMI (Body Mass Index))**

$$\text{DBW (kg)} = \text{Desirable BMI} \times \text{Height (m}^2\text{)}$$

N. B. Desirable BMI for men = 22 Desirable BMI for women = 20.8 or 21

3. **Estimation of Total Calorie Requirement (TCR) or TER/Day**

i. **Infant (1-12 months):** $\text{TCR/Day} = 120\text{-}110 \text{ kcal/ KDBW}$

ii. **Children (1-12 years):** $\text{TCR/Day} = 1000 + (100 \times \text{age in years})$

iii. Adolescents (13-18 years): TCR/Day = 45 kcal/ KDB

iv. Adult: TCR/Day = DBW (kg) x Activity level

Activity	Activity level	Example of Activity
Bed rest	27.5	
Sedentary	30	Secretary, Clerk, Typist, Cashier, Administrator, Bank Teller etc
Light	35	Teacher, Student, Nurse, Housewife with maids, Lab technician
Moderate	40	Housewife without maids, Vendor, Mechanic, Driver etc.
Heavy	45	Farmer, Labor, Fisherman, Heavy equipment operator etc

N.B. Pregnant Women: TCR/Day = Normal requirement + 300 kcal **N.B.**

Lactating Women: TCR/Day = Normal requirement + 500 kcal

4. **Distribution of Total Calorie Requirement (DCR)**

- CHO/day = $\text{TCR} \times 0.60 \div 4$
- Protein /day = $\text{TCR} \times 0.10 \div 4$
- Fat /day = $\text{TCR} \times 0.30 \div 9$

[C, P and F are rounded off to nearest 5]

5. **Rx Diet:** eg :1700 kcal, C255 g P45 g F55 g