



## **Internship Report**

**On**

**Nutritional Management of Diabetic Patients with complications of Electrolyte Imbalance, CKD and Stroke at BIRDEM General Hospital**

### **Supervised By:**

**Ms. Tasmia Tasnim**

Lecturer (Senior Scale)

Department of Nutrition and Food Engineering

Faculty of Allied Health Science

Daffodil International University

### **Submitted By:**

**Sumiya Hossain**

ID: 172-34-643

Department of Nutrition and Food Engineering

Daffodil International University

## Letter of Transmittal

Ms. Fouzia Akter

Department of Nutrition and Food Engineering

Faculty of Allied Health Science

Daffodil International University

Subject: Submission of internship report.

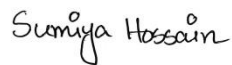
Dear Ma'am,

I am here by submitting I may internship report on Nutritional Management of diabetic patients with complications of electrolyte imbalance, CKD and stroke which is significant for the NFE program curriculum. Now, I would like to Thank you so much for the direction, advice and support you have given to this report and it is a significant achievement to work under your supportive supervision. I have got the opportunity to work in BIRDEM general hospital for 30 days. It's difficult to complete this report without your supervision.

This internship has given me both academic and practical exposure. I learned about the management of diabetes, diabetes patients with other complications diet chart, dietary guidelines and nutritional assessment.

I shall be highly obliged if you are kind enough to receive this report and provide your valuable judgment.

Sincerely yours,



Sumiya Hossain

ID: 172-34-643

Nutrition and Food Engineering

Daffodil International University

## Letter of Authorization

Ms. Fouzia Akter

Head

Department of Nutrition and Food Engineering

Faculty of Allied Health Science

Daffodil International University

Subject: An announcement

Dear Sir,

I am Sumiya Hossain genuinely declare that, this internship report I masterminded is certainly is not a copy from some different reports or articles.

Exactly what I understand and saw is formed here from my experience. I moreover declare that it will not be submitted to other individual in future.

Sincerely yours,

*Sumiya Hossain*

Sumiya Hossain

ID: 172-34-643

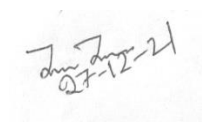
Nutrition and Food Engineering

Daffodil International University

## LETTER OF APPROVAL

I am pleased to certify that the project report on “**Nutritional Management of Diabetic Patients with complications of Electrolyte Imbalance, CKD and Stroke at BIRDEM General Hospital**” prepared by **Sumiya Hossain** bearing **ID: 172-34-643**, of the Department of Nutrition and Food Engineering, Daffodil International University has been approved for presentation and defense/viva-voice.

I am pleased to hereby certify that the data and finding presented in the internship report are the authentic work of **Sumiya Hossain** bearing **ID: 172-34-643**, I strongly recommend the internship report to be presented by **Sumiya Hossain** for further academic recommendations and defense/viva voce. **Sumiya Hossain** bears a strong moral character and a very pleasant personality. It has indeed a great pleasure working with her. I wish her all success in life.



**Ms. Tasmia Tasnim**  
**Lecturer (Senior Scale)**  
Department of Nutrition and Food Engineering (NFE)  
Faculty of Allied Health Sciences  
Daffodil International University

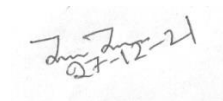
## LETTER OF RECOMMENDATION

This is to certify that the internship report entitled “**Nutritional Management of Diabetic Patients with complications of Electrolyte Imbalance, CKD and Stroke at BIRDEM General Hospital**” which is submitted for assessment to the examination committee by **Sumiya Hossain** bearing **ID: 172-34-643**, Department of Nutrition and Food Engineering (NFE), Daffodil International University (DIU).

I am pleased to declare that this report is entirely written by the author and all the related works have been conducted by the intern under my strong supervision and observation. This is a piece of original work and has not been submitted or published anywhere for any other purpose. I strongly recommend the approval of the report by the authority and I also pursue a positive and fair evaluation of the work.

I wish her all the success in life.

Yours sincerely



**Ms. Tasmia Tasnim**  
**Lecturer (Senior Scale)**  
Department of Nutrition and Food Engineering (NFE)  
Faculty of Allied Health Sciences  
Daffodil International University

**Ms. Fouzia Akter**

**Head**

Department of Nutrition and Food Engineering  
Faculty of Allied Health Science  
Daffodil International University

## **Acknowledgment**

At first, I would like to express my gratitude to Almighty Allah who has given me the possibility to complete the Internee report.

The internship opportunity I had with BIRDEM General Hospital was a great opportunity for learning and self-development. During this period of time I met with a lot of professional and wonderful people who helped me a lot.

I am grateful to our Honorable Associate Dean and professor (Dr. Md Bellal Hossain), Head (Ms. Fouzia Akter) and my supervisor (Ms. Tasmia Tasnim) Daffodil International University, Department of Nutrition and Food Engineering for their guidance, stimulating suggestions and encouragement helped me to coordinate my internee especially in writing this report.

With due respect and admiration, I must express my heartiest gratitude to Joint Director (administration) Md. Ashfaqur Rahman sir for accepting this internship and to allow me to complete my internship from Birdem General Hospital.

I would also like to express my sincere gratitude to my internship coordinator Quamrun Nahar, PhD (Principal Research Officer, BIRDEM) gave her valuable time and given me to chance to learn something despite having her busy schedule.

I express my heartfelt thanks and Honorable Head of the department of Nutrition and Food Engineering and my supervisor for their arranging all facilities to make my internship training experience easier.

Last but not the least; I would like to express my special thanks to all the patients for their co-operative support.

<b>Table of Contents</b>	<b>Page Number</b>
Title Page	i
Letter of Transmittal	ii
Letter of Authorization	iii
Letter of Approval	iv
Letter of Recommendation	v
Acknowledgement	vi
Table of contents	vii
<b>Chapter One:</b>	
1.1 Introduction	01
1.2 Origin of the report	01
1.3 Objective of the program	02
<b>Chapter Two:</b>	
2.1 Overview of BIRDEM General Hospital	03
2.2 Vision	04
2.3 Mission	04
2.4 Services and Facilities	05
2.5 Joining process for Internship	06
<b>Chapter Three:</b>	
3.1 Activities	07
3.2 Daily ward round and Observation	07
3.3 Patients Management	08
3.4 Particular Objectives	08
<b>Chapter Four:</b>	
4.1 Diabetes	09
4.2 Diabetes Complications	
I. Electrolyte Imbalance	09
II. CKD	09
III. Stroke	10
<b>Chapter Five:</b>	
Conclusion	11
Patients Diet Chats	12-38

# Chapter One

## **1.1 Introduction**

Diabetes mellitus is a group of illnesses that disrupt your body's natural ability to use blood sugar which is also known as glucose. Blood glucose is an important source of energy for the cells that make up our muscle tissues. It is essential to our health. It's also the primary source of energy for our brain. It originates from the foods we eat. Insulin, a hormone produced by the pancreas, aids glucose absorption into your cells so that it may be used for energy. So, sometimes our body does not generate enough insulin or it does not use it properly. According to the World Health Organization's Global Health Days 2016, around 422 million people around the world had diabetes, with the majority living in developing countries, and more than 80% of diabetes deaths occur in low and middle-income nations. Additionally, 80% of diabetes patients live in low and middle-income nations. They also reported that, diabetes impacted 8% around 12.88 million of Bangladesh's total population in 2016, and diabetes was responsible for 3% of all fatalities among the ages. Over time, there seems to be a growth in the prevalence of diabetes mellitus in the Bangladeshi population. Due to diabetes they are several types of complications are developed in the diabetic patients. The complications may get higher at risk if anyone has uncontrolled blood sugar or long duration time of diabetes. Cardiovascular disease, kidney damage, nerve damage, eye, skin and foot damage, depression these conditions may develop due to diabetes. So, proper medication, diet, exercise and controlled blood glucose may help to reduce these high risks complications.

## **1.2 Origin of the report:**

For the students of Nutrition and Food Engineering of Daffodil International University has mandatory internship program. It is the final phase in a student's educational pursuit. This internship program is the completion of our bachelor's degree and our promising future. So, as a student of Nutrition and Food Engineering we have to choose a reputed organization related to hospital or industry for training which required to properly comprehend a topic gained in formal qualifications. So, as I am interested in hospital sector for this reason I choose BIRDEM General Hospital for my internship program. In the functional world of current nourishing wellbeing, there is indeed a massive difference between scholastic training and the implementation of theoretical study. So, this practical works can help me to fulfill the lackings of the knowledge.



This report focuses on a requirement of the B.Sc. in Nutrition and Food Engineering program. The topic of my report is 'Nutritional Management of Diabetic Patients with complications of Electrolyte Imbalance, CKD and Stroke at BIRDEM General Hospital' where the main purpose is to observe their management system, patients' handlings, and nutritional problem solving which can help me in my near future.

### **General objectives of the Program:**

The ultimate goal is to complete the requirements of our department in order to receive my bachelor's degree. As I am interested in health sector and willing to gather my practical knowledge by working in hospital so that is the main reason for choosing this institute. Now, by doing practical works it can help to enhance my limited knowledge.

## Chapter Two

### 2.1 Overview of BIRDEM General Hospital:

In Bangladesh, BIRDEM is a specialized private hospital for diabetes patients. It is one of Bangladesh's best hospitals. Dr. Mohammad Ibrahim founded the organization in 1980.

Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders is shortly known as BIEDEM at Shahbag, Dhaka. Though initially focused on diabetes care, it has now enlarged to include patients of other specialties, and is now known as BIRDEM General Hospital. It's a tertiary-care institution. It has evolved into a 16-story complex with over 600 units. Everyday 3000 patients were treated in BIRDEM's Out Patients Department. There is no other hospital in Bangladesh that serves as many diabetic patients as this one.



## **2.2 Vision:**

- “No diabetic individuals shall die unfed, untreated or unemployed in Bangladesh”
- “Medical care will be provided with all individuals at a reasonable cost”

## **2.3 Mission:**

- To give complete medical care including rehabilitation to all diabetic individuals regardless of gender, socioeconomic status or financial status.
- To provide all the Bangladeshis with reasonable BADAS medical treatment through self-sustaining institutes by expending these services.
- To establish medical products and best quality foods for the all diabetic patients.
- To make high quality specialist manpower (physicians, technicians, research scientists, associate employees and nurses)
- To establish medical care management throughout a comprehensive and integrated management system.

## **2.4 Services and Facilities:**

In BIRDEM General Hospital, there are many services and facilities for their patients. These are:

• Out Patients Department (OPD)	• Indoor Service
• General Ward	• Cabin
• ICU	• CCU
• HDU	• OT/ Post-Operative
• Medical Emergency	• Surgical Emergency
• Radiology and Imaging	• Blood Bank





## **2.5 Joining Process for Internship:**

For joining in BIRDEM General Hospital as an intern, at first I contact with my supervisor Ms. Tasmia Tasnim Ma'am. Then I went to the BIRDEM General Hospital on her recommendation to understand about the joining process. After that, I talked there with the Principal Research Officer Quamrun Nahar Ma'am and she told me that I need an application letter for my internship to the Director Sir. Then I told it to my supervisor Ma'am and she wrote an application letter to the Director Sir concerning my internship. After the next day, I went to the institution and delivered the letter to the Director Sir's PS. Then after some days letter Director Sir confirm my application letter and I went to the hospital to receive my ID card from Quamrun Nahar Ma'am. I worked in indoor sector where I met every type of patients. Quamrun Nahar Ma'am is also very professional nutritionist and principal research officer in this field. She helped me very much in my internship and very friendly with me.

## Chapter Three

### **3.1 Activities:**

In my internship, I worked in the indoor section. In the indoor section every types of patient I met. My internship supervisor Quamrun Nahar Ma'am always directed me how to handle the patients, their problems, their needs and so on. As my topic is diabetic patient with complications with electrolyte imbalance, CKD and stroke. So, I met mostly these types of patient.

### **3.2 Daily ward round and observation:**

I started my daily ward round at 2 pm and round in the entire unit. It is mandatory for every intern to visit all the units. When rounding the wards I met the patients and interacted with them to know their current situations, their nutritional needs, complications and took those data. And also monitor their diet chart from their files. After monitoring their diet chat and their current condition I took note to discuss with the problems with my supervisor.





### **3.3 Management of the Patients:**

In BIRDEM General Hospital, every types of patient are visit to take the treatment. When I visited the wards there every nurses are so mush cooperative to give their supports for the patients. I observed diabetic patients with chronic illnesses like CKD, CVD, foot infections, and eye infections. So according to their complications nutritionists give them diet chart, advise them to proper nutritional plan. Every hours they monitoring their patients and give them proper medications in time. Nurses give them foods according to their diet charts and the foods are always given in time. Every 3 hours apart doctors and nutritionists are visited their patients and follow up them.

### **3.4 Particular objectives of my Internship:**

- To learn more about the operational activities of the health sector.
- To enhance the limited knowledge knowing more about the health system.
- To understand more about the diabetes and their chronic complications.
- To know more about the nutritional diet chat according to their compilations.
- To learn about patients handling and their observation techniques.

## Chapter Four

### **4.1 Diabetes:**

Diabetes is non-communicable and long term illness. Due to diabetes my complications may arise. Here are some complications according to my intern topic.

### **4.2 Diabetes Complications:**

#### **I. Electrolyte imbalance in Diabetes:**

Electrolyte imbalance is very common for the type 2 diabetic patients and it can be induced by a shift in electrolyte distribution generated by hyperglycemia-induced osmotic fluid shifts or total-body deficiencies generated by osmotic diuresis. Electrolyte abnormalities may also be induced by complications from terminal injury and diabetes-management treatments. Increasing blood glucose is the major reason of electrolyte imbalance in diabetes. Due to hyperglycemia, body tries to get rid of the excess blood glucose by boosting up urinary urination. Increased urination causes in water and electrolyte loss, altering the body's electrolyte balance. Especially the imbalance occurs in between sodium and potassium. So, due to this reason patients can feel some symptoms. Like-

- They can feel nausea
- Fatigue
- Muscle pain
- Headache

#### **II. CKD:**

Due to uncontrolled diabetes the functions of kidney may slowly decreased. And the damaged kidney cannot hold albumin which is important element for kidney. In micturition this albumin protein comes out. And also, kidney cannot properly extract the wasted products from the body. Millions of small blood vessel clusters may contain kidney which can help waste filtration from the blood. This essential filtration system can be destroyed by diabetes. So, kidney failure or irreversible end-stage kidney disease can result from severe damage, requiring dialysis or a kidney transplant. There are different types of symptom may occurs like-



- Oedema in hands in legs and face and Anemia
- Appetite loss
- Vomiting
- High blood pressure and tiredness

### **III. Stroke:**

Diabetes significantly raises the risk of various types of heart problems. Stroke is one of them. Diabetes inhibits the body's capability to produce or use insulin appropriately. People with diabetes typically have too much sugar in their blood because insulin plays quite a vital part in transporting glucose into cells from the bloodstream. Excess sugar can affect the formation of clots or fat deposits inside capillaries carrying blood to the neck and brain over time and this medical condition is called Atherosclerosis. These deposits can induce a thinning of the blood vessel wall or even a severe blockage if they become large enough. A stroke happens when blood flow to the brain is disrupted for any reason. When stroke occurs some symptoms may notice, like-

- Muscle weakness
- Blurry vision
- Slurring speech
- Mentally unstable
- Dizziness

## Chapter Five

### **Conclusion:**

The entire period of this internship program at BIRDEM General Hospital was very fantastic and extremely beneficial for my future career. This internship program was full of challenges for me. By the help of this internship I learnt how to handle the indoor patients, their nutritional needs according to their complications of electrolyte imbalance, CKD and stroke, their nutritional diet chart. Through this program I can help me to broaden my knowledge and also helps to learn the observation techniques of the indoor patients.

I had a wonderful experience throughout my internship and now I can confidently state that my understanding of this profession has improved significantly.

- ❖ Throughout the internship program I handled 50 patients those who have diabetes with the complications of electrolyte imbalance, CKD and stroke. So here the 6 diet charts with their history which I made for them is given below-

**DAFFODIL INTERNATIONAL UNIVERSITY**  
**DHANMONDI, DHAKA**  
**DEPARTMENT OF NUTRITION AND FOOD ENGINEERING**

Year: 2021

Case Study No: 01

Date: 12.06.21

**Information about Patient**

- a) Name : Rownok Alam
- b) Address : Mohammadpur, Dhaka
- c) Name of the Hospital : Birdem
- d) Admission Date : 07.06.21
- e) Reason of admission : DM, Electrolysis imbalance
- f) Word No : 131
- g) Bed No : 1321
- h) Health Condition : Weakness, vomiting for 3days
- i) Mental status : Stable

**Anthropometric parameters**

**Age:** 67 years **Sex:** Male **Weight:** 66 kg **Height:** 168 cm **BMI:** 23.4 kg/m<sup>2</sup>

**IBW:** 52 kg

Underweight  Normal  Over weight  Obesity

**Nutritional Status**

< 17  17-18.5  > 18.5 – 23  23 – 25  25.1 – 29.9  30 – 9.9  ≥ 40

## Activity Level

Very active  Active  Moderate worker  Sedentary worker  Ambulatory bed rest

Lab / Biochemical Test (Blood)	Result	Lab / Biochemical Test ( Blood)	Result
<input type="checkbox"/> Blood Glucose (F)	5.69 mmol/dl	<input type="checkbox"/> SBP	160 mmHg
<input type="checkbox"/> Blood Glucose (ABF)	mmol/dl	<input type="checkbox"/> DBP	90 mmHg
<input type="checkbox"/> HbA1c	7.2 %	<input type="checkbox"/> Magnesium	0.6 mmol/l
<input type="checkbox"/> Albumin	g/dl	<input type="checkbox"/> Phosphate	3.9 mmol/l
<input type="checkbox"/> Total Protein	g/dl	<input type="checkbox"/> Calcium	7.9 mmol/l
<input type="checkbox"/> TG	60 mg/dl	<input type="checkbox"/> Potassium	4.1 mmol/l
<input type="checkbox"/> HDL	39 mg/dl	<input type="checkbox"/> Sodium	106 mmol/l
<input type="checkbox"/> LDL	75 mg/dl	<input type="checkbox"/> Serum Chloride	79 mmol/l
<input type="checkbox"/> Total Cholesterol	126 mg/dl	<input type="checkbox"/> Hb	11.7 g/dl
<input type="checkbox"/> BUN	mg/dl	<input type="checkbox"/> Hematocrit	%
<input type="checkbox"/> Creatinine	1.38 mg/dl	<input type="checkbox"/> ESR	mm
<input type="checkbox"/> Urea	39 mg/dl	<input type="checkbox"/> SGOT	IU/I
<input type="checkbox"/> Bilirubin	mmol/dl	<input type="checkbox"/> SGPT	U/I
<input type="checkbox"/> S.TCO2	16 mmol/L	<input type="checkbox"/> Alk.Phos.	SomU/I
<input type="checkbox"/> Amylase	IU/I	<input type="checkbox"/> Others	
<input type="checkbox"/> Bicarbonate	mmol/l	<input type="checkbox"/> Others	
<input type="checkbox"/> Uric Acid	mg/dl	<input type="checkbox"/> Others	

**Supplements:**  Yes  No

If yes, Type  Vitamins and Minerals  Vitamins  Minerals

**Appetite:**  Excellent  Good  Fair  Poor

## Socioeconomic & Cultural factor:

- Monthly family income : BDT 30,000 /=
- Religion : Islam
- Education : Inter
- Occupation : Own business
- Living status : Middle class

○ Rural/Urban : Urban

### DIET PLAN (for present condition)

Nutritional status: Normal weight

▫ Estimated Energy needs: 1800 kcal	▫ Carbohydrate: 240 gm
▫ Protein: 60 gm	▫ Fat: 32 gm

Restrictions:  Yes  No

If Yes,

<input type="checkbox"/> Calorie	<input checked="" type="checkbox"/> Fat	<input type="checkbox"/> K
<input checked="" type="checkbox"/> Protein	<input checked="" type="checkbox"/> Cholesterol	<input type="checkbox"/> Mg
<input checked="" type="checkbox"/> Free sugar	<input type="checkbox"/> Na	<input type="checkbox"/> Other

### Food List

Food group	Serving	Amount gm	Kcal	Carbohydrate gm	Protein gm	Fat gm
Cereals	10	600	750	150	24	-
Pulses	0	0	0	-	-	-
Fish/Meat/ Egg	3	90	120	-	18	6
Vegetables	8	240	225	40	9.2	-
Milk & Milk product	2	240	200	15	8	16
Fruits	7	210	175	35	2.45	-
Oil	2	30	270	-	-	10
Total	32	1410	1740	240	60.65	32

## Menu Planning

Meal	Food	Serving	Amount	
			Household	gm
Breakfast	Ruti	3	3 small&	90
	Mixed vegetable	3	thin	
	Egg ( boiled )	1	3 cup	90
	Fruits	2	1 medium	45
			2 medium	60
Snacks (Mid-morning)	Milk	1	1 cup	125
	Bread	2	2 piece	60
Lunch	Rice	3	3 cup	120
	Fish/Meat	2	2 piece	60
	Vegetable (mixed)	2	2 cup	60
	Fruits (apple/banana)	1	1 medium	30
Snacks (Afternoon)	Sugar-free yogurt	1	1 cup	90
	Fruits ( banana)	2	2 medium	50
	Soup	2	1,1/2 cup	120
Dinner	Ruti	3	3 small	90
	Meat/Egg/Fish	1	1 piece	30
	Vegetables	3	3 cup	90
	Fruits (apple)	2	2 small	60
Bed-time	Milk	1	1 cup	125
	Bread	1	1 piece	30

Total cooking oil: 2 Table spoon

### Advice /Recommendation for Patients

Foods to be avoided	Moderate to eat	Foods permitted
Any kinds of beans are avoided.	Fried items, tea, coffee, extra sugars	Vegetables, fruits, milk, cereals

### Other Dietary Guidelines

1. Always follow the diet chart and take food in time.
2. Don't exclude or include any of the foods items from the diet chart.
3. Don't take any types of extra sugars, molasses in making of juices or any other foods. Like-jam, pastry, soft-drinks, sweets.
4. Whole grain rice, wheat, brown rice, fruits with peel can help to increase the blood glucose level slowly. So, these food items must have to be consumed in daily basis.  
During fever, appetite is loss. So, foods can be consumes 5-6 times little by little.

**DAFFODIL INTERNATIONAL UNIVERSITY**  
**DHANMONDI, DHAKA**  
**DEPARTMENT OF NUTRITION AND FOOD ENGINEERING**

Year: 2021

Case Study No: 02

Date: 12.06.21

**Information about Patient**

- a) Name : Nizam-uddin Faruqi
- b) Address : Hiramombazar, Lakshmipur
- c) Name of the Hospital : Birdem
- d) Admission Date : 01.06.21
- e) Reason of admission : Uncontrolled blood sugar, Electrolysis imbalance
- f) Ward No : DB-cabin
- g) Bed No : 1399
- h) Health Condition : Weakness, right shoulder pain
- i) Mental status : Stable

**Anthropometric parameters**

**Age:** 64 years **Sex:** Male **Weight:** 66 kg **Height:** 165 cm **BMI:** 24.2 kg/m<sup>2</sup>

**IBW:** 63 kg

Underweight  Normal  Over weight  Obesity

**Nutritional Status**

< 17  17-18.5  > 18.5 – 23  23 – 25  25.1 – 29.9  30 – 39.9  ≥ 40

**Activity Level**

Very active  Active  Moderate worker  Sedentary worker  Ambulatory bed rest



Lab / Biochemical Test (Blood)	Result	Lab / Biochemical Test ( Blood)	Result
□ Blood Glucose (F)	mmol/dl	□ SBP	120 mmHg
□ Blood Glucose (ABF)	mmol/dl	□ DBP	70 mmHg
□ HbA1c	%	□ Magnesium	mmol/l
□ Albumin	g/dl	□ Phosphate	39 mmol/l
□ Total Protein	g/dl	□ Calcium	7.9 mmol/l
□ TG	mg/dl	□ Potassium	3.5 mmol/l
□ HDL	mg/dl	□ Sodium	135 mmol/l
□ LDL	mg/dl	□ Serum Chloride	104 mmol/l
□ Total Cholesterol	mg/dl	□ Hb	7.6 g/dl
□ BUN	mg/dl	□ Hematocrit	23.5 %
□ Creatinine	1.2 mg/dl	□ ESR	mm
□ Urea	mg/dl	□ SGOT	IU/I
□ Bilirubin	mmol/dl	□ SGPT	U/I
□ S.TCO2	20 mmol/L	□ Alk.Phos.	SomU/I
□ Amylase	IU/I	□ Others	
□ Bicarbonate	mmol/l	□ Others	
□ Uric Acid	mg/dl	□ Others	

**Supplements:**  Yes  No

If yes, Type  Vitamins and Minerals  Vitamins  Minerals

**Appetite:**  Excellent  Good  Fair  Poor

### Socioeconomic & Cultural factor:

- Monthly family income : BDT 38,000 /=
- Religion : Islam
- Education : Class 10
- Occupation : Family business
- Living status : Middle class
- Rural/Urban : Rural

### DIET PLAN (for present condition)

Nutritional status: Normal

□ Estimated Energy needs: 1800 kcal	□ Carbohydrate: 300 gm
□ Protein: 100 gm	□ Fat: 32 gm

Restrictions:  Yes  No

If Yes,

<input type="checkbox"/> Calorie	<input type="checkbox"/> Fat	<input type="checkbox"/> K
<input type="checkbox"/> Protein	<input type="checkbox"/> Cholesterol	<input type="checkbox"/> Mg
<input checked="" type="checkbox"/> Free sugar	<input type="checkbox"/> Na	<input type="checkbox"/> Other

### Food List

Food group	Serving	Amount gm	Kcal	Carbohydrate gm	Protein gm	Fat gm
Cereals	8	210	600	120	24	-
Pulses	4	120	500	60	28	4
Fish/Meat/ Egg	3	90	120	-	18	7.5
Vegetables	3	90	75	15	9	-
Milk & Milk product	2.5	292	250	37.5	20	4
Fruits	4	200	240	60	-	-
Oil	3	45	135	-	-	15
Total	26.17	1027	1920	292.5	100	30.5

## Menu Planning

Meal	Food	Serving	Amount	
			Household	gm
Breakfast	Thin wheat flour ruti	3	3 Thin & small	90
	Egg	2	2 Medium sized	100
	Mixed vegetables	1	1 cup	90
Snacks (Mid-morning)	Milk (skim milk)	1	1 cup	250
	Chira	1	½ cup	22
	Ripe banana	1	1 small	25
Lunch	Rice	2	1 ½ cup	120
	Meat/fish	1.5	3 small sized	60
	Lentils	2	1 cup	30
	Mixed vegetables	1	1cup	30
Snacks (Afternoon)	Milk	1.5	1 ½ cup	275
	Sugar-free biscuits	2	2 piece	50
Dinner	Rice/ruti	1	1 medium	60
	Meat/fish/egg	1.5	2 medium piece	60
	Lentils	2	2 cup	60
	vegetables	1	1 cup	30
Bed-time	Bread	1	1 piece	25

Total cooking oil: 3 serving cooking oil

### Advice /Recommendation for Patients

Foods to be avoided	Moderate to eat	Foods permitted
High sugar contain foods like- soft drinks, juices, jelly must be avoided.	Parata, oil based products	All seasonal vegetables, eggs, meat, lentils, whole wheat flour

### Other Dietary Guidelines

- |   |
|---|
| <ol style="list-style-type: none"> <li>1. High protein contain foods like- meat, lentils can increase the protein in the body. So, eat these items for increase the body's desired protein in prescribed amount.</li> <li>2. Always drink plenty of water and water contains foods. Like- coconut water, soup etc.</li> </ol> |
|---|

- which can help to hydrate the body all day long
3. Cheese, butter, fatty meat, deep fry fast-food must have to avoided.
  4. Fish, fish oil, plant-based oil like- soybean oil, sesame oil, sunflower oil can have polyunsaturated fatty acid which is good for health. So, these included for good diet.

**DAFFODIL INTERNATIONAL UNIVERSITY**  
**DHANMONDI, DHAKA**  
**DEPARTMENT OF NUTRITION AND FOOD ENGINEERING**

Year: 2021

Case Study No: 03

Date: 13.06.19

**Information about Patient**

- a) Name : Emmamul Haque
- b) Address : Shibchar, Madaripur
- c) Name of the Hospital : Birdem
- d) Admission Date : 06.06.21
- e) Reason of admission : DM, CKD
- f) Word No : CabinB1
- g) Bed No : 1006
- h) Health Condition : pain in right knee, weakness, right leg swelling
- i) Mental status : Stable

**Anthropometric parameters**

**Age:** 65 years **Sex:** Male **Weight:** 68 kg **Height:** 160 cm **BMI:** 26.6 kg/m<sup>2</sup>

**IBW:** 60 kg

Underweight  Normal  Over weight  Obesity

**Nutritional Status**

< 17  17-18.5  > 18.5 – 23  23 – 25  25.1 – 29.9  30 – 39.9  ≥ 40

## Activity Level

Very active  Active  Moderate worker  Sedentary worker  Ambulatory bed rest

Lab / Biochemical Test (Blood)	Result	Lab / Biochemical Test ( Blood)	Result
<input type="checkbox"/> Blood Glucose (F)	7.4 mmol/L	<input type="checkbox"/> SBP	mmHg
<input type="checkbox"/> Blood Glucose (ABF)	mmol/dl	<input type="checkbox"/> DBP	mmHg
<input type="checkbox"/> HbA1c	%	<input type="checkbox"/> Magnesium	0.9 mmol/l
<input type="checkbox"/> Albumin	31.9 g/dl	<input type="checkbox"/> Phosphate	mmol/l
<input type="checkbox"/> Total Protein	73.5 g/dl	<input type="checkbox"/> Calcium	8.3 mmol/l
<input type="checkbox"/> TG	mg/dl	<input type="checkbox"/> Potassium	4.3 mmol/l
<input type="checkbox"/> HDL	mg/dl	<input type="checkbox"/> Sodium	135 mmol/l
<input type="checkbox"/> LDL	mg/dl	<input type="checkbox"/> Serum Chloride	96 mmol/l
<input type="checkbox"/> Total Cholesterol	mg/dl	<input type="checkbox"/> Hb	10.1 g/dl
<input type="checkbox"/> BUN	mg/dl	<input type="checkbox"/> Hematocrit	32.1 %
<input type="checkbox"/> Creatinine	2.6 mg/dl	<input type="checkbox"/> ESR	mm
<input type="checkbox"/> Urea	98 mg/dl	<input type="checkbox"/> SGOT	27 IU/l
<input type="checkbox"/> Bilirubin	0.4 mmol/dl	<input type="checkbox"/> SGPT	21 U/l
<input type="checkbox"/> S.TCO2	28 mmol/L	<input type="checkbox"/> Alk.Phos.	200 SomU/l
<input type="checkbox"/> Amylase	IU/l	<input type="checkbox"/> Others	
<input type="checkbox"/> Bicarbonate	mmol/l	<input type="checkbox"/> Others	
<input type="checkbox"/> Uric Acid	4.3 mg/dl	<input type="checkbox"/> Others	

**Supplements:**  Yes  No

If yes, Type  Vitamins and Minerals  Vitamins  Minerals

**Appetite:**  Excellent  Good  Fair  Poor

## Socioeconomic & Cultural factor:

- Monthly family income : BDT 28,000/=
- Religion : Islam
- Education : Uneducated
- Occupation : Small shop
- Living status : Middle class
- Rural/Urban : Rural

## DIET PLAN (for present condition)

Nutritional status: Over weight

▫ Estimated Energy needs: 1600 kcal	▫ Carbohydrate: 245 gm
▫ Protein: 86 gm	▫ Fat: 32 gm

Restrictions:  Yes  No

If Yes,

<input type="checkbox"/> Calorie	<input type="checkbox"/> Fat	<input type="checkbox"/> K
<input checked="" type="checkbox"/> Protein	<input type="checkbox"/> Cholesterol	<input type="checkbox"/> Mg
<input checked="" type="checkbox"/> Free sugar	<input type="checkbox"/> Na	<input type="checkbox"/> Other

### Food List

Food group	Serving	Amount gm	Kcal	Carbohydrate gm	Protein gm	Fat gm
Cereals	9	540	675	135	27	-
Pulses	0	0	0	-	-	-
Fish/Meat/ Egg	5	150	165	-	35	2
Vegetables	4	400	320	20	8	-
Milk & Milk product	2	250	200	30	16	-
Fruits	3	120	180	45	-	-
Oil	2	30	270	-	-	30
<b>Total</b>	<b>25</b>	<b>1490</b>	<b>1810</b>	<b>230</b>	<b>86</b>	<b>32</b>

## Menu Planning

Meal	Food	Serving	Amount	
			Household	gm
Breakfast	Whole wheat flour	3	3 medium	90
	Egg	1	1 medium	50
	Vegetable	2	2cup	200
Snacks (Mid-morning)	Milk(low fat)	1	1 cup	60
	Toast biscuit	1	1 medium	30
Lunch	Rice	2.5	2 cup	360
	Fish/chicken	2	2 piece	60
	Vegetable	1	1 cup	100
Snacks (Afternoon)	fat-free yogurt	1	½ cup	30
	fruits(seasonal)	3	3 small sized	60
Dinner	Rice/ ruti	2.5	2 cup	90
	Meat/egg/fish	2	2 piece	60
	vegetable	1	1 cup	100
Bed-time	Sugar-free biscuits	1	1 medium size or 2 small sized	30

Total cooking oil: 30 gm of cooking oil

### Advice /Recommendation for Patients

Foods to be avoided	Moderate to eat	Foods permitted
All types of beans, lentils, seeds are must be avoided	Extra sugar, salt, oily foods have to be eaten in a limited way.	Whole grains, fruits, vegetables, fish, lean meat.

### Other Dietary Guidelines

- |   |
|---|
| <ol style="list-style-type: none"> <li>1. Lean meat, low fat milk or skim milk has to be consumed for better health.</li> <li>2. Sea fishes have contained lots of PUFA that can increase the good cholesterol in the body. So, these can be included in diet.</li> <li>3. Always drink plenty of water for hydration of the body.</li> </ol> |
|---|

**DAFFODIL INTERNATIONAL UNIVERSITY**  
**DHANMONDI, DHAKA**  
**DEPARTMENT OF NUTRITION AND FOOD ENGINEERING**

Year: 2021

Case Study No: 04

Date: 13.06.21

**Information about Patient**

- a) Name : Maya Rahman
- b) Address : Lalbag, Dhaka
- c) Name of the Hospital : Birdem
- d) Admission Date : 10.06.21
- e) Reason of admission : DM, CKD
- f) Word No : 133
- g) Bed No : 1350
- h) Health Condition : burning sensation during micturition, weakness, leg swelling
- i) Mental status : Normal

**Anthropometric parameters**

**Age:** 32 years **Sex:** Female **Weight:** 60 kg **Height:** 146 cm **BMI:** 28.1 kg/m<sup>2</sup> **IBW:** 47 kg

Underweight  Normal  Over weight  Obesity

**Nutritional Status**

< 17  17-18.5  > 18.5 – 23  23 – 25  25.1 – 29.9  30 – 39.9  ≥ 40

**Activity Level**

Very active  Active  Moderate worker  Sedentary worker  Ambulatory bed rest



Lab / Biochemical Test (Blood)	Result	Lab / Biochemical Test ( Blood)	Result
□ Blood Glucose (F)	7.2 mmol/l	□ SBP	140 mmHg
□ Blood Glucose (ABF)	9.7 mmol/l	□ DBP	90 mmHg
□ HbA1c	%	□ Magnesium	0.6 mmol/l
□ Albumin	32.6 g/dl	□ Phosphate	mmol/l
□ Total Protein	69 g/dl	□ Calcium	7.5 mmol/l
□ TG	mg/dl	□ Potassium	4.8 mmol/l
□ HDL	mg/dl	□ Sodium	133 mmol/l
□ LDL	mg/dl	□ Serum Chloride	103 mmol/l
□ Total Cholesterol	mg/dl	□ Hb	7.6 g/dl
□ BUN	mg/dl	□ Hematocrit	24.1 %
□ Creatinine	8 mg/dl	□ ESR	mm
□ Urea	128 mg/dl	□ SGOT	IU/I
□ Bilirubin	mmol/dl	□ SGPT	U/I
□ S.TCO2	20 mmol/l	□ Alk.Phos.	5 SomU/I
□ Amylase	IU/I	□ Others	
□ Bicarbonate	mmol/l	□ Others	
□ Uric Acid	mg/dl	□ Others	

**Supplements:**  Yes  No

If yes, Type  Vitamins and Minerals  Vitamins  Minerals

**Appetite:**  Excellent  Good  Fair  Poor

### Socioeconomic & Cultural factor:

- Monthly family income : BDT 32,000/=
- Religion : Islam
- Education : SSC
- Occupation : Housewife
- Living status : Middle class
- Rural/Urban : Urban

### DIET PLAN (for present condition)

Nutritional status: Over weight

□ Estimated Energy needs: 1200 kcal	□ Carbohydrate: 180 gm
□ Protein: 50	□ Fat: 30

Restrictions:  Yes  No

If Yes,

<input checked="" type="checkbox"/> Calorie	<input checked="" type="checkbox"/> Fat	<input type="checkbox"/> K
<input checked="" type="checkbox"/> Protein	<input checked="" type="checkbox"/> Cholesterol	<input type="checkbox"/> Mg
<input checked="" type="checkbox"/> Free sugar	<input type="checkbox"/> Na	<input type="checkbox"/> Other

### Food List

Food group	Serving	Amount gm	Kcal	Carbohydrate gm	Protein gm	Fat gm
Cereals	7	260	525	105	16.8	-
Pulses	0	0	0	-	-	-
Fish/Meat/ Egg	3	90	120	-	18	7.5
Vegetables	6	180	150	30	6	-
Milk & Milk product	2	250	100	12	8	4
Fruits	4	100	100	20	1.4	-
Oil	1	15	135	-	-	15
Total	23	895	1130	167	50.2	26.5

## Menu Planning

Meal	Food	Serving	Amount	
			Household	gm
Breakfast	Whole grain ruti	2	2 small	60
	Egg	1	1 medium	50
	Vegetable	2	1 cup	60
Snacks (Mid-morning)	Milk(skim)	1	1 cup	125
	Biscuits	2	2 small	20
	Fruits(apple)	2	2 small	90
Lunch	Rice	2	1 ½ cup	60
	Fish/chicken	2	2 small	60
	Mixed vegetables	1	pieces 1 cup	60
Snacks (Afternoon)	Milk(skim)	1	1 cup	125
	Puffed rice	1	1 cup	22
	Fruits (sour)	2	8-10 piece	100
Dinner	Ruti	1	1 small	30
	Fish	1	1 piece	30
	Mixed vegetables	1	1 cup	60
Bed-time	Bread (sugar free)	1	1 slice	30

Total cooking oil: 3 tea-spoons

## Advice /Recommendation for Patients

Foods to be avoided	Moderate to eat	Foods permitted
Beans, seeds, lentils, extra sugar, soft drinks, oily foods, fast-foods.	Egg, meat, oil, milk	Green vegetables, fruits, whole grain rice, flour

### Other Dietary Guidelines

<ol style="list-style-type: none"><li>1. Regular eat in a recommended amount in a diet chart</li><li>2. Always do exercise or walk at least 30-45 minutes.</li><li>3. Always check-up the blood glucose level.</li><li>4. Never stop insulin or diabetic oral medicine without doctor's consult.</li></ol>
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## DAFFODIL INTERNATIONAL UNIVERSITY

### DHANMONDI, DHAKA

### DEPARTMENT OF NUTRITION AND FOOD ENGINEERING

Year: 2021

Case Study No: 05

Date: 12.06.21

### Information about Patient

- a) Name : Momtaz Begum
- b) Address : Hazigang, Chandpur
- c) Name of the Hospital : Birdem
- d) Admission Date : 09.06.21
- e) Reason of admission : DM, Stroke
- f) Word No : 143
- g) Bed No : 1457
- h) Health Condition : right side weakness, vomiting, nausea
- i) Mental status : Normal

### Anthropometric parameters

Age: 53 years Sex: Female Weight: 64 kg Height: 162 cm BMI: 24.4 kg/m<sup>2</sup> IBW: 60 kg

Underweight  Normal  Over weight  Obesity

### Nutritional Status

< 17    17-18.5    > 18.5 – 23    23 – 25    25.1 – 29.9    30 – 9.9    ≥ 40

### Activity Level

Very active    Active    Moderate worker    Sedentary worker    Ambulatory bed rest

Lab / Biochemical Test (Blood)	Result	Lab / Biochemical Test ( Blood)	Result
<input type="checkbox"/> Blood Glucose (F)	8.1 mmol/dl	<input type="checkbox"/> SBP	150 mmHg
<input type="checkbox"/> Blood Glucose (ABF)	10.6 mmol/dl	<input type="checkbox"/> DBP	80 mmHg
<input type="checkbox"/> HbA1c	7.3 %	<input type="checkbox"/> Magnesium	mmol/l
<input type="checkbox"/> Albumin	1 g/dl	<input type="checkbox"/> Phosphate	mmol/l
<input type="checkbox"/> Total Protein	142 g/dl	<input type="checkbox"/> Calcium	mmol/l
<input type="checkbox"/> TG	mg/dl	<input type="checkbox"/> Potassium	5.1 mmol/l
<input type="checkbox"/> HDL	mg/dl	<input type="checkbox"/> Sodium	131 mmol/l
<input type="checkbox"/> LDL	mg/dl	<input type="checkbox"/> Serum Chloride	100 mmol/l
<input type="checkbox"/> Total Cholesterol	135 mg/dl	<input type="checkbox"/> Hb	10.7 g/dl
<input type="checkbox"/> BUN	mg/dl	<input type="checkbox"/> Hematocrit	34 %
<input type="checkbox"/> Creatinine	2.1 mg/dl	<input type="checkbox"/> ESR	mm
<input type="checkbox"/> Urea	3.1 mg/dl	<input type="checkbox"/> SGOT	IU/I
<input type="checkbox"/> Bilirubin	mmol/dl	<input type="checkbox"/> SGPT	U/I
<input type="checkbox"/> S.TCO2	21 mmol/L	<input type="checkbox"/> Alk.Phos.	SomU/I
<input type="checkbox"/> Amylase	IU/I	<input type="checkbox"/> Others	
<input type="checkbox"/> Bicarbonate	mmol/l	<input type="checkbox"/> Others	
<input type="checkbox"/> Uric Acid	mg/dl	<input type="checkbox"/> Others	

**Supplements:**  Yes    No

If yes, Type  Vitamins and Minerals    Vitamins    Minerals

**Appetite:**  Excellent    Good    Fair    Poor

### Socioeconomic & Cultural factor:

- Monthly family income : BDT 35,000 /=
- Religion : Islam
- Education : Illiterate
- Occupation : housewife
- Living status : Middle class
- Rural/Urban : Urban

## DIET PLAN (for present condition)

Nutritional status: Normal

▫ Estimated Energy needs: 1540 kcal	▫ Carbohydrate: 230 gm
▫ Protein: 70 gm	▫ Fat: 38 gm

Restrictions:  Yes  No

If Yes,

<input type="checkbox"/> Calorie	<input checked="" type="checkbox"/> Fat	<input type="checkbox"/> K
<input type="checkbox"/> Protein	<input checked="" type="checkbox"/> Cholesterol	<input type="checkbox"/> Mg
<input checked="" type="checkbox"/> Free sugar	<input checked="" type="checkbox"/> Na	<input type="checkbox"/> Other

### Food List

Food group	Serving	Amount gm	Kcal	Carbohydrate gm	Protein gm	Fat gm
Cereals	9	270	675	150	24	-
Pulses	1	30	100	17	8	0.35
Fish/Meat/ Egg	3	90	120	-	18	3
Vegetables	6	180	150	30	6	-
Milk & Milk product	2	250	100	8	8	4
Fruits	5	150	125	24	3.6	-
Oil	2	30	270	-	-	30
<b>Total</b>	<b>28</b>	<b>1420</b>	<b>1540</b>	<b>229</b>	<b>67.6</b>	<b>37.35</b>

## Menu Planning

Meal	Food	Serving	Amount	
			Household	gm
Breakfast	Whole grain ruti	3	3 small	90
	vegetable	1	1 cup	100
	Egg	1	1 medium	50
Snacks (Mid-morning)	Sugar free biscuits/	2	2 medium/	60
	Puffed rice		1cup	60
	Ripe banana	2	1 medium	25
Lunch	Rice	2	1 ½ cup	120
	Mixed vegetable	1	1 cup	30
	Lentils	1	1 cup	30
	Fish/chicken	1	1 piece	30
Snacks (Afternoon)	Seasonal sour fruits	3	1 cup or 8-10 piece	60
Dinner	Rice	2	1 ½ cup	120
	Mixed vegetable	2	1 cup	100
	Chicken/fish	1	1 piece	30
Bed-time	Milk (skim)	1	½ cup	125

Total cooking oil: 6 tea-spoon

## Advice /Recommendation for Patients

Foods to be avoided	Moderate to eat	Foods permitted
Butter, cheese, ghee, prawn, cream, soft drinks, pastry, sugar	Oil, spices, salt, egg	Seasonal fruits, chicken, fish, whole grain rice/ flour, skim milk

### Other Dietary Guidelines

<ol style="list-style-type: none"><li>1. Eating excess sugary foods can increase the level of blood sugar. So, avoid all types of extra sugar and sugary foods for maintain the blood sugar level.</li><li>2. Drink plenty of water regularly.</li><li>3. Eat lots green vegetables, fruits with peels, because these can help to maintain the blood sugar level.</li><li>4. Always do exercise or walk minimum 30-45 minutes.</li></ol>
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## DAFFODIL INTERNATIONAL UNIVERSITY

### DHANMONDI, DHAKA

### DEPARTMENT OF NUTRITION AND FOOD ENGINEERING

Year: 2021

Case Study No: 06

Date: 13.06.21

### Information about Patient

- a) Name : Safia Khatun
- b) Address : Mirpur, Dhaka
- c) Name of the Hospital : Birdem
- d) Admission Date : 07.06.21
- e) Reason of admission : Uncontrolled DM, Stroke
- f) Word No : 143
- g) Bed No : 1460
- h) Health Condition : slurring of speech, weakness
- i) Mental status : Stable

### Anthropometric parameters

**Age:** 60 years **Sex:** Female **Weight:** 52 kg **Height:** 137 cm **BMI:** 27.7 kg/m<sup>2</sup>

**IBW:** 47 kg



Underweight  Normal  Over weight  Obesity

### Nutritional Status

< 17  17-18.5  > 18.5 – 23  23 – 25  25.1 – 29.9  30 – 39.9  ≥ 40

### Activity Level

Very active  Active  Moderate worker  Sedentary worker  Ambulatory bed rest

Lab / Biochemical Test (Blood)	Result	Lab / Biochemical Test ( Blood)	Result
<input type="checkbox"/> Blood Glucose (F)	7.7 mmol/dl	<input type="checkbox"/> SBP	140 mmHg
<input type="checkbox"/> Blood Glucose (ABF)	12.4 mmol/dl	<input type="checkbox"/> DBP	70 mmHg
<input type="checkbox"/> HbA1c	%	<input type="checkbox"/> Magnesium	1 mmol/l
<input type="checkbox"/> Albumin	42.5 g/dl	<input type="checkbox"/> Phosphate	mmol/l
<input type="checkbox"/> Total Protein	87.5 g/dl	<input type="checkbox"/> Calcium	8.9 mmol/l
<input type="checkbox"/> TG	mg/dl	<input type="checkbox"/> Potassium	4.9 mmol/l
<input type="checkbox"/> HDL	mg/dl	<input type="checkbox"/> Sodium	135 mmol/l
<input type="checkbox"/> LDL	mg/dl	<input type="checkbox"/> Serum Chloride	99 mmol/l
<input type="checkbox"/> Total Cholesterol	mg/dl	<input type="checkbox"/> Hb	9.9 g/dl
<input type="checkbox"/> BUN	mg/dl	<input type="checkbox"/> Hematocrit	28.1 %
<input type="checkbox"/> Creatinine	1.1 mg/dl	<input type="checkbox"/> ESR	mm
<input type="checkbox"/> Urea	41 mg/dl	<input type="checkbox"/> SGOT	42 IU/I
<input type="checkbox"/> Bilirubin	0.3 mmol/dl	<input type="checkbox"/> SGPT	19 U/I
<input type="checkbox"/> S.TCO2	27 mmol/L	<input type="checkbox"/> Alk.Phos.	77 SomU/I
<input type="checkbox"/> Amylase	IU/I	<input type="checkbox"/> Others	
<input type="checkbox"/> Bicarbonate	mmol/l	<input type="checkbox"/> Others	
<input type="checkbox"/> Uric Acid	mg/dl	<input type="checkbox"/> Others	

**Supplements:**  Yes  No

If yes, Type  Vitamins and Minerals  Vitamins  Minerals

**Appetite:**  Excellent  Good  Fair  Poor

### Socioeconomic & Cultural factor:

- Monthly family income : BDT 40,000/=
- Religion : Islam
- Education : Illiterate
- Occupation : Housewife
- Living status : Middle Class
- Rural/Urban : Urban

### DIET PLAN (for present condition)

Nutritional status: Over weight

▫ Estimated Energy needs: 1200 kcal	▫ Carbohydrate: 185 gm
▫ Protein: 80 gm	▫ Fat: 30 gm

Restrictions:  Yes  No

If Yes,

<input type="checkbox"/> Calorie	<input checked="" type="checkbox"/> Fat	<input type="checkbox"/> K
<input type="checkbox"/> Protein	<input checked="" type="checkbox"/> Cholesterol	<input type="checkbox"/> Mg
<input checked="" type="checkbox"/> Free sugar	<input type="checkbox"/> Na	<input type="checkbox"/> Other

### Food List

Food group	Serving	Amount gm	Kcal	Carbohydrate gm	Protein gm	Fat gm
Cereals	7	420	525	105	21	4
Pulses	2	60	200	30	14	3
Fish/Meat/ Egg	3	90	120	-	21	6
Vegetables	4	120	50	20	5	2
Milk & Milk product	2	185	110	-	16	-
Fruits	4	120	60	30	-	-
Oil	3	45	135	-	-	15
Total	25	1040	1200	185	77	30

## Menu Planning

Meal	Food	Serving	Amount	
			Household	gm
Breakfast	Small ruti	2	2 small	30
	Egg	1	1 medium	50
	Mixed vegetables	2	1 cup	200
Snacks (Mid-morning)	Biscuit (sugar free)	1	2 piece	30
	Milk(skim)	1	1 cup	15
	Fruits ( ripe papaya)	2	1 cup cubed	200
Lunch	Rice	2	2/3 cup	60
	Fish/chicken	1	1 piece	60
	Lentils	1	1 cup	30
	Vegetables/spinach	1	1 cup	100
Snacks (Afternoon)	Sour curd	1	½ cup	60
	Fruits (unripe guava)	2	2 small	60
Dinner	Ruti	1	1 medium	30
	Fish/ chicken	1	1piece	30
	Lentils	1	1cup	30
	Mixed vegetables	1	1cup	30
Bed-time	Bread (sugar-free)	1	1 slice	30

Total cooking oil: 3 tea-spoons

### Advice /Recommendation for Patients

Foods to be avoided	Moderate to eat	Foods permitted
Extra sugar, soft drinks, honey, juice, chocolates, butter, fatty meat, oily food	Nuts, salts, tea, coffee, spices	Whole grain flour/rice, lean meat, sour fruits, vegetables, skim milk

### Other Dietary Guidelines

1. Regular follow the recommended foods on the diet chat and eat them in time.
2. Do not skip the foods or don't eat the food in excess way.
3. Don't drink any types of juices with white sugar or molasses. It can help to increase the blood glucose level.
4. Try to eat whole grain rice/ flour every day. It can help to increase the blood glucose level slowly.
5. During fever, appetite is loss. So, have to eat gradually about 5-6 times.