



Daffodil
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University

AN INTERNSHIP REPORT ON

Studied on the type of diet in relation to the anthropometric and biochemical status of the chronic kidney disease female patient in Gonoshasthaya hospital.

Submitted To

Ms. Fouzia Akter

Assistant Professor

Department of Nutrition and Food Engineering (NFE)

Faculty of Allied Health Sciences (FAHS)

Daffodil International University

Submitted By

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Date of Submission: 24-12-2022

Letter of Transmittal

Date: 24-12-2022

Ms. Fouzia Akter

Assistant Professor

Department of Nutrition and Food Engineering (NFE)

Faculty of Allied Health Sciences (FAHS)

Daffodil International University

Dhaka, Bangladesh

Subject: Submission of internship report

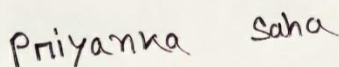
Respected Madam,

It has been both a pleasure and an honor to collaborate with you, and I would want to take this time to convey my appreciation for all of the assistance and guidance you have provided. This male patient with chronic renal illness from Gonoshasthaya Hospital was researched in relation to his anthropometric and biochemical status, and the report that results from that study is the subject of my internship.

Patients at the Gonoshasthaya Hospital who were suffering from chronic kidney disease in addition to Anemia and Hypoglycemia. Over the course of three months, I had the opportunity to monitor the eating patterns of male renal disease patients who were suffering from a variety of diseases thanks to the indoor section of the hospital. My primary investigator was Farjan Sharmin Tanny, who has a doctoral degree (Principal research officer, Gonoshasthaya hospital). This internship at Gonoshasthaya Hospital in Thailand afforded me the opportunity to get practical experience as well as insight into the treatment of a male patient suffering from renal illness.

If you will be so kind as to review this report and offer me with your useful opinion, I would be quite appreciative. Again, I appreciate your kind support and patience.

Yours Sincerely



Priyanka Saha

Student ID: 172-34-649

Department of Nutrition and Food Engineering

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Letter of Authorization

Date: 24-12-2022

Ms. Fouzia Akter

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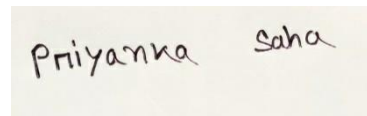
Daffodil International University

Subject: An announcement about the reliability of the internship report is being made.

Respected Madam,

This report that I have written for my internship is not a copy of any other student's report that they have previously produced for their internship, and I thus certify it to be the fact. Aside from that, I want to make it quite clear that this internship report has never been used by any other student, and it will never be used by any other student ever in the whole history of the world.

Yours Sincerely,

A rectangular box containing a handwritten signature in black ink that reads "Priyanka Saha".

Priyanka Saha

Student ID: 172-34-649

Department of Nutrition and Food Engineering

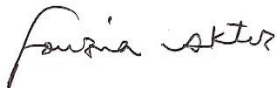
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Approval Certification

According to the certificate, a student from Daffodil International University in Dhaka, Bangladesh, with the ID number 172-34-649, successfully finished a three-month internship at Gonoshasthaya Hospital in Dhanmondi, Dhaka, while working under my direction. The emphasis of her internship was placed on both indoor and outdoor surroundings. It gives me great pleasure to say that she exemplified the ideal intern in terms of her genuineness and her timeliness. She put a lot of work into this report, and the content and numbers that are included inside it seem to be authentic.

She has my best wishes for the future.



Ms. Fouzia Akter

Assistant Professor

Department of Nutrition and Food Engineering

Faculty of Allied Health Sciences

Daffodil International University.

Acknowledgements

I would like to begin by expressing my gratitude to the Almighty God, who is my creator, for giving me with the fortitude to triumph over every challenge and the chance to successfully complete this report.

I am indebted to Professor Dr. Ahmed Ismail Mustafa sir for his unwavering support and encouragement since he has been there for me every step of the way.

I would like to express my gratitude to Professor Dr. Abu Naser Zafar Ullah, Dean of the Faculty of Allied Health Sciences, Professor Dr. Md. Bellal Hossain, Associate Dean of the Faculty of Allied Health Sciences, and Assistant Professor Ms. Fouzia Akter, Head of Department, for their unfailing generosity. I am truly appreciative of their thoughtfulness.

Please extend my sincere appreciation to my supervisor, Ms. Fouzia Akter of DIU's Department of Nutrition and Food Engineering's Faculty of Allied Health Sciences, for all of her support and guidance throughout the process of preparing my internship report. You can find her on the DIU website. I was able to make significant progress with the help of his direction, his contributions, and the ideas she inspired.

I am indebted to Farjan Sharmin Tanny, Ph.D., Principal Research Officer at Gonoshasthaya Hospital in Dhanmondi, Dhaka, Bangladesh, for granting me permission to finish my internship and for generously giving her time. I am thankful to her for the chance to do so.

My batch advisor, Ms. Tasnim, who holds the position of Lecturer, Senior Scale, along with the rest of the faculty members in our department of Nutrition and Food Engineering deserve praise for the direction and help they have provided me with.

Our Coordination Officer, Mr. Emran Hossain, has always made himself available to us whenever we have required his assistance.

Priyanka Saha
Student ID: 172-34-649

THE REPORT

TO MY LOVED PARENTS
THIS WORK IS DEDICATED.

Exclusive Summary

To become an intern at Gonoshasthaya Nogar Hospital, I had to go through a set of phases. The prime objective of this Internship was to obtain gloves exposure with patient care. Observe and learn from the patient's and nutritionist's dialogue. I worked approximately 50 patients suffering from CKD at Gonoshasthaya. During my internship, I found that a few of the patients did not fully follow their diet charts. As a result, even getting treatment, their disease does not improve as much as it might. If the patient follows their diet charts correctly, it will be easier for them to control their CKD issues. This internship program has provided me with an excellent opportunity to study and will greatly benefit my future career. I had to cope with a variety of new challenges, including learning how to bond honestly with people of diverse ages, anthropometric and physiological situations. Throughout my internship at Gonoshasthaya Nogar Hospital, I discovered about respiratory infections, their treatment and dietary restrictions, and their diet charts. I also understand about CKD with shredding and how they may improve by adjusting their dietary. My awareness of the workplace has suitable locations as an outcome of my internship.

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Chapter 1

Introduction

1.1 Overview of Gonoshasthaya Hospital

K-Force Major General Khaled Mosharraf, Sector 2's commanding officer, was operating in this region. Bangladesh Field Hospital was the name he gave it. Wounded independence fighters were treated in the hospital's 480 beds from the outset.

The government of Bangladesh, a newly independent nation, had taken issue with the moniker "Bangladesh Field Hospital." Bangabandhu Sheikh Mujibur Rahman advocated that the name and structure of the organization be changed in order to make it more accessible.

When the subject of Gonoshasthaya Kendra was brought up, Sheikh Mujibur Rahman said Zafrullah, "Ganasasthya Kendra would have to focus on health, agriculture, and education,"

Among the generous donations were land contributed by Zohra Begum, MA Rab, a joint secretary, and Lutfor Rahman from their Savar family lands; Sheikh Mujibur Rahman negotiated for an additional 23 acres of property. The Gonoshasthaya Kendra was founded in 1972 in this manner. In 2018, the hospital employs 2,500 workers, with 40% of those employees being female.

Dr. Zafrullah Chowdhury is a public health activist in Bangladesh who has improved rural people's access to medical treatment by establishing Gonoshasthaya Kendra (GK, The People's Health Centre). Since its start in 1972, when Chowdhury and his colleagues founded the center, it has emphasized autonomous, self-reliant, and people-oriented growth.

Gonoshasthaya Kendra is opening heart and transplant surgery facilities at its Nagar Hospital in Dhanmondi, the capital, in order to provide cheap healthcare to the general populace.



1.2 Facility of Gonoshasthaya hospital

The healthcare facility, which began its journey in 1971 during the War of Independence to treat wounded independence fighters, currently provides cheap healthcare services throughout the nation via seven hospitals and fifty sub-centers. As 67 percent of Bangladeshis died yearly from non-communicable illnesses, the founder of Gonoshasthaya, Zafrullah Chowdhury, said that the organization will soon launch its heart and transplant centers to offer excellent healthcare at reasonable costs.

A huge proportion of noncommunicable disease patients could not afford effective therapy due to the high cost. According to the World Health Organization, at least 5,72,600 Bangladeshis die prematurely from noncommunicable illnesses each year. In Bangladesh, cardiovascular illnesses are the leading cause of non-communicable disease mortality, accounting for 31% of all deaths.

Zafrullah Chowdhury, a freedom warrior, said that Gonoshasthaya, a public charity trust, was formed to provide healthcare for everybody, yet it still charges based on income.

Gonoshasthaya operates the nation's biggest renal dialysis facility at Nagar Hospital. People were exploited at every level of the healthcare system, according to Zafrullah, a leader in the healthcare industry, since there was no government oversight. "The market economy cannot determine the pricing of healthcare and education; government action is required," he stated, adding, "There is a massive lack of emphasis in monitoring, which costs individuals more money." Two of the seven big hospitals, Gonoshasthaya Nagar Hospital in Dhanmondi and Gonoshasthaya Kendra Hospital in Savar, provided advanced care, while the other five hospitals provided primary and secondary care, and the sub-centers provided basic services at a low cost.

Many private hospitals charge more over Tk 1 lakh per day for their intensive care units, while Gonoshasthaya costs Tk 20,000 per day, including all extra fees. Zafrullah, a cardiovascular surgeon, said that ICU charges should not exceed Tk 30,000 daily in any hospital. In July 1971, Zafrullah, with the assistance of the Bangladesh Medical Association in London and locals, erected a 480-bed "Bangladesh Field Hospital" on the battlefield in Melaghor, Tripura, in order to treat wounded liberation fighters. GK has introduced several advancements. It was the first location outside of China to provide rigorous paramedic training. From the GK centre and eleven sub-centres created around the nation, about 160 paramedics currently serve a population of 180,000.

They are educated in all types of preventative medicine and basic curative medicine. Additionally, GK offers a health insurance program depending on individuals' capacity to pay. Infant and maternal mortality rates in GK's operating region have reduced to almost half the national average in Bangladesh, thanks to their tireless efforts.



GK has also progressively expanded its field of action to include other crucial sectors that touch the majority of rural Bangladeshis: education, nutrition, agriculture, job creation, the manufacturing of essential medications, and women's empowerment. Dr. Zafrullah Chowdhury and many medical colleagues founded Gonoshasthaya Kendra (GK, The People's Health Centre) in 1972. GK has always emphasized autonomous, self-reliant, and people-focused growth. Working initially in the field of health, it has slowly extended its scope of activity to include other crucial areas that touch the majority of rural Bangladeshis: education, nutrition, agriculture, job creation, manufacture of essential medications, and women's empowerment.

In the health area, however, GK's work has been the most revolutionary. It was the first location outside of China to provide rigorous paramedic training. From the GK centre and eleven sub-centres created around the nation, about 160 paramedics currently serve a population of 180,000. They are educated in all types of preventive medicine and basic curative medicine and administer a health insurance plan depending on the capacity to pay. Infant and maternal mortality in the

operating region of GK have reduced to almost half of the national rate in Bangladesh due to their tireless efforts.

Improving access to crucial medications

In 1981, GK established the pharmaceutical firm and factory Gono Pharmaceuticals (GP) to produce high-quality, low-cost critical medications. It has been a tremendous success, supplying an average of 5% of Bangladesh's pharmaceuticals, but up to 60% in some categories. Importantly, the fact that its prices were up to 60 percent lower than those of the multinationals has resulted in a significant reduction in pricing overall. The factory employs around 400 individuals. Half of its revenues are reinvested, while the other half are allocated to GK's social programs. Chowdhury was a significant advisor to the Bangladeshi government in 1982 when it drafted its Essential Pharmaceuticals Act, prohibiting 1,700 harmful or ineffective drugs and providing a precedent for other nations on how to regulate their therapeutic drug markets.

Now, detailed plans have been formulated for the construction of an Institute of Health Science that would educate physicians in Bangladesh-specific community health and medicine. GK offers an intensive training and education program. It includes literacy for all age groups and a focus on women's economic empowerment via a variety of projects. GK is governed by a charity trust, one of whose four trustees is Chowdhury. The Trust today employs around 1,500 full-time and 1,000 part-time employees. Approximately fifty percent of its budget is self-generated. Importantly, GK never gives away its products and services for free, except to individuals in desperate need. They must be purchased, no matter how inexpensively. This explains the comparatively high rate of independence.

Two physicians, Zafrullah and MA Mobin, who had just returned from the United Kingdom were joined by Nazimuddin Ahmed in the hospital. 'As I was preoccupied with other activities during the war, Dr. Mobin was in charge of the hospital,' he said. Initially, the hospital had no nurses, but after weeks of training in refugee camps, young women were hired as nurses and nursed the wounded liberation fighters until the 16th of December, 1971, when they were relocated to Dhaka. According to Zafrullah, a large number of independence fighters were treated at the facility. After

the triumph, several wounded troops were sent to the Cumilla cantonment in the first part of January 1972, while others were sent to Dhaka as the hospital opened in a mansion in Eskaton, the capital. Zafrullah wanted to expand care to rural regions by building institutions under Bangladesh Field Hospital, but many objected the name since it suggested a government-run institution.

"Bangabandhu (Sheikh Mujibur Rahman) requested that I establish a hospital in Dhaka and name it after either Shaheed Fazle Rabbi or Abul Fayez Mohammad Abdul Ali Chowdhury. However, I contended that it is the government's duty to honor national heroes, while I wanted to assist the rural populace. Zafrullah stated. Later, they agreed to generate three names apiece, and a compromise was reached.

"When I asked Mujib bhai to recommend names, he replied I preferred Gonoshasthaya Kendra, therefore I won't suggest any other names," said Zafrullah, adding, "It was a testament of his grandeur that he did not even consider a name and opted to leave the decision to me." According to him, Bangabandhu proposed that it not only be a hospital, but also a rehabilitation center for the rural populace, with an emphasis on agriculture, etc. Dr. Mahmudur Rahman's family and relatives first donated 27 bighas of land in Savar to establish the hospital. Bangabandhu subsequently provided Gonoshasthaya 31 acres of land for expansion, he said. As there was no hospital in the region, locals contributed volunteer labor and donated bamboo, paddy straws, and bricks to construct the hospital, according to Zafrullah. Later, other local and international organizations, including Oxfam, sent money.

During the time when Gonoshasthaya functioned tax-free, Lalbagh Chemical gave Tk 10,000 twice, which was a substantial sum. He said, "It is now delivering healthcare in rural communities and chars, like Char Fashion." Over the years, it brought about significant changes in the concepts and practices of healthcare in Bangladesh and across the globe, he added. After the war, Zafrullah's idea that an effective healthcare delivery system can be developed at the grassroots level in rural Bangladesh by employing women as primary healthcare facilitators had an international impact, and the prestigious medical journal *The Lancet* hailed this as a breakthrough in 1975, in one of their issues, after Gonoshasthaya had begun employing young rural women for family planning,

vaccination, and other basic health services. Gonoshasthaya was the first to introduce the demystification of healthcare and integrated healthcare, which was well received by the international world.



Zafrullah noted that it became one of the fundamental foundations of the World Health Organization's Alma-Ata Declaration. In any Gonoshasthaya coverage region, infant and maternal mortality and normal birth rates are the lowest in the nation, he noted. By bringing health insurance to Bangladesh in 1973, Gonoshasthaya performed a pioneering role in the area.

"At the time, the unified health insurance premium was Tk 2 for everyone, but both the poor and the wealthy were upset with the cost," he said. Later, Gonoshasthaya split the insurance into five groups based on people's income and included a category for common smokers; these categories remain unchanged. 'Currently, the bundle of health care is available to the poor for Tk 2,000, while the privileged are charged Tk 20,000,' he added. Annually, Gonoshasthaya charges the poor Tk 200, the middle class Tk 2000, and the wealthy Tk 3,500 for family health insurance, which is Tk

100, Tk 1,000, and Tk 1,700 for the poor, middle class, and wealthy non-smokers, respectively. For smokers, the risk is 25% greater.

If around 75% of the population in the Gonoshasthaya coverage region purchases insurance policies, excellent service for everyone may be readily assured, according to Zafrullah, who noted that less than 40% purchased Gonoshasthaya insurance policies. If the government had adopted the Gonoshasthaya health insurance program, he argued, it would have supplied them with better and more affordable healthcare by now. Gonoshasthaya insurance policyholders are exempt from paying for routine necessary exams and get a discount on required testing. When Zafrullah saw that urban patients were being abused and that urban residents were uninformed of Gonoshasthaya's work in rural regions, the organization decided to establish a hospital in Dhaka.

The Gonoshasthaya Nagar Hospital in Dhanmondi was founded in 1984 on a 21-katha plot of land with a two-story structure, and operations began in 1994. The provision of low-cost healthcare, according to him, was still based on domestic rather than international funds. It operates the biggest dialysis center in Bangladesh, having the ability to treat 270 to 280 patients per day. "Needless examinations and C-sections, as well as the prescription of unnecessary medications, are strictly prohibited at our hospitals," he said. To prevent exploitation, according to the public health campaigner, the government should prohibit government hospital physicians from maintaining private practices and set maximum prices for medicines and diagnostic tests.

Chapter 2: Kidney transplant at Gonoshasthaya Hospital

2.1 Kidney transplant at Gonoshasthaya Hospital

Dr. ZafrullaDr. Zafrullah Chowdhury, founder and trustee of Gonoshasthaya Kendra, said that kidney transplants would cost about one and a half lakh taka. Thursday, on the occasion of World Kidney Day, he made this statement at a lecture held at the Guerrilla Commander Major ATM Haider Bir Uttam auditorium of the Gonoshasthaya Nagar Hospital in Dhanmondi. On this occasion, Dr. Mamun Mostafi, Head Professor of the Department of Kidney Diseases, Dr. Muhib Ullah Khandaker, Coordinator of the Gonoshasthaya Dialysis Center, and Dr. Manzur Kadir Ahmed, Chief Executive Officer of the Gonoshasthaya Kendra, also delivered speeches.

According to Dr. Zafrullah Chowdhury, renal patients are becoming penniless due to the high cost of medications. If they so want, the government may cut the cost of medications. He pleaded with the rich and benevolent groups in the community to assist with kidney transplantation. Dr. Zafrullah Chowdhury said, "While kidney transplants have been performed in a few private facilities in our nation, the government has halted the practice for different reasons." In his address, Prof. Dr. Mamun Mostafi explained in depth the quality of dialysis at Gonoshasthaya Kendra and the rationale for the low-cost improvement of services. He remarked, "The grade of dialysis at Gonoshasthaya Kendra is unparalleled in the globe. Gonoshasthaya Kendra is able to offer low-cost care for a variety of reasons, including contributions from the wealthy and the use of in-house pharmaceuticals."

The chief executive officer of Gonoshasthaya Kendra, Dr. Manzur Kadir Ahmed, compared helping others to an addiction. He urged the wealthy members of society to assist the disadvantaged. On this occasion, attorney Rasna Imam also talked online on the legal challenges of kidney transplants.h Chowdhury, founder and trustee of Gonoshasthaya Kendra, said that kidney transplants would cost about one and a half lakh taka. Thursday, on the occasion of World

Kidney Day, he made this statement at a lecture held at the Guerrilla Commander Major ATM Haider Bir Uttam auditorium of the Gonoshasthaya Nagar Hospital in Dhanmondi.

On this occasion, Dr. Mamun Mostafi, Head Professor of the Department of Kidney Diseases, Dr. Muhib Ullah Khandaker, Coordinator of the Gonoshasthaya Dialysis Center, and Dr. Manzur Kadir Ahmed, Chief Executive Officer of the Gonoshasthaya Kendra, also delivered speeches. According to Dr. Zafrullah Chowdhury, renal patients are becoming penniless due to the high cost of medications. If they so want, the government may cut the cost of medications. He pleaded with the rich and benevolent groups in the community to assist with kidney transplantation. Dr. Zafrullah Chowdhury said, "While kidney transplants have been performed in a few private facilities in our nation, the government has halted the practice for different reasons."



In his address, Prof. Dr. Mamun Mostafi explained in depth the quality of dialysis at Gonoshasthaya Kendra and the rationale for the low-cost improvement of services. He remarked, "The grade of dialysis at Gonoshasthaya Kendra is unparalleled in the globe. Gonoshasthaya Kendra is able to offer low-cost care for a variety of reasons, including contributions from the

wealthy and the use of in-house pharmaceuticals." The chief executive officer of Gonoshasthaya Kendra, Dr. Manzur Kadir Ahmed, compared helping others to an addiction.

He urged the wealthy members of society to assist the disadvantaged. On this occasion, attorney Rasna Imam also talked online on the legal challenges of kidney transplants. Dr. Zafrullah Chowdhury, the founder and trustee of Gonoshasthaya Kendra, said that a kidney transplant would cost about one and a half lakh taka. He made the remarks at a World Kidney Day lecture on Thursday at the Guerrilla Commander Major ATM Haider Bir Uttam auditorium at Gonoshasthaya Nagar Hospital in Dhanmondi. Dr. Mamun Mostafi, Head Professor of Kidney Diseases, Dr. Muhib Ullah Khandaker, Coordinator of Gonoshasthaya Dialysis Center, and Dr. Manzur Kadir Ahmed, Chief Executive Officer of Gonoshasthaya Kendra also addressed at the event.

According to Dr. Zafrullah Chowdhury, renal patients are becoming penniless due to the high cost of medications. If the government so desires, the price of drugs may be reduced. He called to the rich and benevolent institutions of society to come forward for kidney transplantation assistance. Dr. Zafrullah Chowdhury mentioned the necessity of more than a thousand kidney transplants per year, saying, "Although kidney transplants have been done in a few private facilities in our nation, the government has banned it with different justifications." Prof. Dr. Mamun Mostafi reviewed the quality of dialysis at Gonoshasthaya Kendra and the motivation for the better services at a reasonable cost in his lecture. He remarked, "The dialysis level at Gonoshasthaya Kendra is unparalleled in the world.

Gonoshasthaya Kendra is able to offer treatments at a cheap cost for a variety of reasons, including gifts from the wealthy and the usage of its own medicinal supplies." According to Dr. Manzur Kadir Ahmed, chief executive officer of Gonoshasthaya Kendra, helping people is similar to an addiction. He urged the society's wealthy members to step up to help the poor. On the occasion, Barrister Rasna Imam also talked online on overcoming the legal issues of kidney transplants. There is a steady decline of kidney function over a period of months to years in chronic kidney disease (CKD). Leg swelling, exhaustion, nausea, vomiting, and a lack of appetite are common early signs; subsequently, disorientation and drowsiness may appear. In order of

importance, complications include high blood pressure, bone disease, and anemia, all of which are linked to hormonal malfunction of the kidneys. In addition, cardiovascular problems in CKD patients are far more common, resulting in higher mortality and hospitalization rates. Diabetic nephropathy, hypertension, glomerulonephritis, and polycystic kidney disease are all contributing factors. A history of chronic renal disease runs in the family. Tests for eGFR and albumin in urine are used to determine whether a patient has kidney disease. The underlying reason may be discovered by the use of ultrasound or a kidney biopsy. There are a variety of staging methods depending on degree of severity.

People at high risk of developing cancer should be screened. Medications to decrease blood pressure, sugar, and cholesterol may be used as the first line of therapy. One of the most effective ways to lower blood pressure is by the use of anti-angiogenic drugs, which block the action of the enzyme that produces nephrotoxic angiotensin II (AN2) and block the angiotensin II receptor (ARB). Edema may be controlled using loop diuretics, which can also help reduce blood pressure if necessary. NSAIDs are to be avoided at all costs. Staying active and making dietary adjustments like cutting down on sodium and increasing protein intake are also encouraged. The patient may also need anemia and bone disease treatment. A kidney transplant or hemodialysis are the only options for those with severe illness. Globally, 753 million individuals had chronic kidney disease in 2016, with 417 million women and 336 million men suffering. 1.2 million people died from it in 2015, an increase from 409,000 in 1990. High blood pressure, diabetes, and glomerulonephritis are the three leading causes of mortality, accounting for a total of 550,000 fatalities each. An rise in serum creatinine or an increase in protein in the urine are the most common ways to diagnose the early stages of CKD.

A deterioration in kidney function might lead to additional unpleasant symptoms: Because of excess fluid in the body and the renin–angiotensin system, the risk of developing hypertension and heart failure is elevated because the kidney produces vasoactive hormones. Accumulation of urea may lead to azotemia and eventually to uremia (symptoms ranging from lethargy to pericarditis and encephalopathy). When perspiration evaporates, the urea that was discharged crystallizes on the skin due to the sweat's high systemic concentration ("uremic frost"). Potassium builds up in

the bloodstream (hyperkalemia with a range of symptoms including malaise and potentially fatal cardiac arrhythmias). Before hyperkalemia occurs, the kidneys' capacity to drain potassium must drop to less than 20–25 ml/1/73 m², which is frequently not the case. Acidosis and insulin deficiency may worsen hyperkalemia in patients with chronic kidney disease (CKD).

Fluid overflow symptoms may vary from minor edema to life-threatening pulmonary edema, depending on the severity of the overload.

The kidneys fail to remove phosphate from the bloodstream, resulting in hyperphosphatemia. Vascular calcification is a side effect of hyperphosphatemia, which raises cardiovascular risk. In persons with chronic kidney disease (CKD), circulating concentrations of fibroblast growth factor-23 (FGF-23), which may lead to left ventricular hypertrophy and increased mortality, rise with time. Deficiency in 1,25-dihydroxyvitamin D₃ (induced by elevated FGF-23 and decreased kidney mass) and resistance to parathyroid hormone action are the two main causes of hypocalcemia. Osteocytes are responsible for the increased synthesis of FGF-23, a powerful inhibitor of the enzyme 1-alpha-hydroxylase. hydroxylase in human cells (responsible for the conversion of 25-hydroxycholecalciferol into 1,25 dihydroxyvitamin D₃). Eventually, secondary hyperparathyroidism, renal osteodystrophy, and calcification of the coronary arteries further compromise heart function. Calciphylaxis, an uncommon but serious side effect, might arise as a result.

Kidney osteodystrophy and other soft-tissue calcification may be caused by changes in mineral and bone metabolism that affect calcium, phosphorus (phosphate), parathyroid hormone, or vitamin D metabolism; changes in bone turnover, mineralization, volume, linear growth, Premature death has been linked to kidney failure (CKD)-related mineral and bone problems.

The cells of the proximal tubule may not be able to produce enough ammonia to cause metabolic acidosis. Acidemia promotes hyperkalemia, which impairs enzyme performance and raises membrane excitability in the heart and brain. Those on dialysis are more likely to suffer from anemia than the general population. Inflammation, a decrease in erythropoietin, and hyperuricemia all contribute to bone marrow suppression, which is multifactorial in nature. The kidneys do not produce enough erythropoietin, which causes hypoproliferative anemia.

Cachexia may progress to the point of accidental weight loss, muscular atrophy, frailty, and anorexia in the final stages of the condition. Both men and women with CKD are susceptible to sexual dysfunction. Men's sexual desire diminishes as they age, making it more difficult to acquire an erection and have an orgasm. Persistent menstrual discomfort and difficulty having or enjoying sexual relations affect the majority of women. Uremic toxins may have a significant role in the increased risk of atherosclerosis and cardiovascular disease in those with chronic kidney disease.

Cardiovascular disease alone is associated with much poorer outcomes than CKD alone. Causes Since 2015, the three most prevalent causes of CKD have been diabetes mellitus, hypertension, and glomerulonephritis. Patients with hypertension and diabetes are more likely to suffer from CKD. Idiopathic refers to a condition for which the etiology is not known.

By way of the body's position Vascular disease may affect both big and small vessels, as in the case of bilateral renal artery stenosis, hemolytic-uremic syndrome, and vasculitis, for example. Primary glomerular disease, such as focal segmental glomerulosclerosis and IgA nephropathy, includes a wide range of glomerular diseases (or nephritis) diseases of the kidney secondary to the primary condition, such as diabetes and lupus nephritis

Drug- and toxin-induced chronic tubulointerstitial nephritis, as well as reflux nephropathy, are tubulointerstitial diseases. Bilateral kidney stones and benign prostate hyperplasia are symptoms of obstructive nephropathy. Obstructive nephropathy may be caused by pinworms invading the kidneys. 17q12 microdeletion syndrome, or polycystic kidney disease, among others.

It is a "new kind of kidney disease that may be referred to as agricultural nephropathy" in Mesoamerican nephropathy. The Mesoamerican nephropathy, or CKD, has been seen among male laborers in Central America, particularly in sugar cane fields in El Salvador and Nicaragua's lowlands. The use of agricultural pesticides, as well as high average temperatures of 36°C (96°F), may have contributed to the worker's symptoms of heat stress.

The history, examination, and urine dipstick, as well as the serum creatinine level, all play important roles in making the diagnosis of CKD (see above). Because AKI might be reversible, it is critical to distinguish between chronic kidney disease (CKD) and acute kidney damage (AKI). In order to distinguish between CKD and AKI, a progressive increase in serum creatinine (over

many months or years) is a diagnostic signal (several days to weeks). Many persons with chronic kidney disease (CKD) have a history of renal disease or another underlying condition. Many people have CKD for which the reason is unknown. Screening It is not suggested to do a CKD screening on persons who do not have any symptoms or risk factors. Individuals with high blood pressure, a family history of heart disease, diabetes, or obesity should be tested, as should those over 60, those with African American heritage, those who have had renal illness in the past, and those with dialysis-dependent relatives. Serum creatinine levels and urine albumin-to-creatinine ratio (ACR) in a first-morning specimen should be used to calculate the estimated GFR (eGFR), and urine dipstick screening for hematuria should also be performed.

An individual's serum creatinine levels are used to calculate their glomerular filtration rate (GFR), which is directly related to their GFR. The kidney's glomeruli - the filtration units - are reflected in this measurement. A GFR of 90-120 mLs/min is considered normal. The units used to measure creatinine in different countries are not the same. As glomeruli comprise less than 5% of the kidney's mass, GFR is not an accurate indicator of overall kidney health and function. It is possible to combine the GFR level with a clinical examination of the patient, including fluid status, and to measure hemoglobin, potassium, phosphate and parathyroid hormone levels (PTH).

Ultrasound In the case of chronic renal disease, kidney ultrasonography is a helpful diagnostic and prognostic tool. The increased echogenicity of the cortex may be caused by glomerular sclerosis, tubular atrophy, interstitial fibrosis, or inflammation. The kidney's echogenicity should be linked to either the liver or the spleen's echogenicity. Additionally, kidneys shrink in size and their cortical thinning occurs more often as the illness advances. There is a correlation between height and kidney size; thus, kidney size as a sole criterion is unreliable.



2.2 SOMETHING CAN BE DONE IF SOMEONE IS AWARENESS OF CKD

Symptomless CKD is most often discovered by abnormal lab testing. For example, a blood or urine test to determine kidney function or a scan of the kidneys may be required.

CREATES CKD

Diabetes, high blood pressure, and the aging of the kidneys are the most prevalent causes of chronic kidney disease (CKD). As long as blood tests demonstrate that kidney function is steady, it is not required to do thorough testing to discover the etiology of CKD. A kidney scan may be ordered if a patient has symptoms such as decreased kidney function, deteriorating renal function, or other disorders related to the kidneys, such as kidney discomfort. Cystoscopy (a flexible tube that may be used to examine within the bladder) and kidney biopsy may also be performed on certain patients (a small piece of kidney is removed with a needle and looked at under the microscope).

Measuring Kidney Function by EGFR Measurement of kidney function is done by the use of an assessment known as the estimated glomerular filtration rate (eGFR). Blood creatinine levels are used to compute eGFR, which is a measure of a person's overall health. See the GFR page for further information. EGFR is commonly referred to as the percentage of normal renal function since a normal eGFR in young persons is roughly 100 ml/min. Some healthy young individuals may have an eGFR as low as 75 ml/min, and this decreases by roughly 1 ml/year every year as people age, thus many healthy 75-year-olds will have an eGFR of 50-60 ml/min.

This is the most accurate technique to acquire an eGFR result, since most labs now provide it simultaneously with their assessments of blood creatinine levels. You may use an online calculator by entering your age, gender, creatinine level, and ethnicity. Serum creatinine may be measured in a variety of ways by various labs, and the results might vary somewhat. eGFR reported by laboratories accounts for these variations, but on-line calculators do not, hence the outcomes they provide are not as precise.

2.3 CKD STRATEGIES

The five phases of CKD are:

At this stage of kidney disease (CKD), an individual's eGFR is normal, but other tests show that their kidneys have begun to fail (eg. Blood or protein leak in urine, multiple cysts in the kidneys, single kidney). GFR is 60-90 in stage 2 of CKD. On other tests, there is some evidence of renal impairment. renal function declines from modest to moderate in stage 3a, with an EGF of 45-59 ml/min. The eGFR drops from 30 to 44 ml/min in CKD stage 3bis, indicating a moderate-to-severe decline in renal function.

This is the most severe stage of kidney disease, with an eGFR of 15 to 29 ml/min. If your kidneys start to fail, you may need to take extra drugs to help manage the symptoms. CKD stage 5 is

defined as a GFR of less than 15 ml/min, which means that the kidneys have already begun to fail. Dialysis or a kidney transplant may be required if the kidneys cease to function properly.

PROTEINURIA

Any kidney illness is made more likely by protein leakage into the urine. The quantity of protein in the urine should be tested in everyone with CKD, and if it is high, more cautious treatment and maybe more comprehensive examinations are given. This is further broken down into mildly increased, moderately increased, and significantly increased levels of severity.

As a result of poor blood pressure management, weight gain, and diabetes, protein leaks into the urine.

Chapter 3

Treatments

3.1 CKD STAGES 4 AND 5 TREATMENTS

Treatment is the same as for CKD stages 1-3. If you're taking medicine, be sure to check the dosage and see if there are any drugs that might further harm your kidneys. Complementary treatments, as well as prescription medications, should be included. As kidney disease progresses into stages 4 and 5, a renal expert should be consulted to determine what additional drugs may be required to compensate for the loss of kidney function.

I may also need to begin preparing for a kidney transplant, dialysis, or other forms of supportive care in the future.

3.2 CKD AND DIABETES: A CONNECTION AT RISK

Diabetes does not cause CKD, however CKD may be a consequence of diabetes. CKD does not cause diabetes. Managing blood pressure, blood sugar, and cholesterol levels is especially important for those with CKD who also have diabetes. Because diabetes may lead to kidney failure if it is not well treated, further urine tests will be conducted to screen for protein in the urine. As time goes on, the kidneys' ability to function worsens.

Patients with deteriorating kidney function should have a treatment strategy devised by a renal expert team well before they reach CKD stage 5. Some of these resources are accessible via the National Kidney Federation, such as the book *Help I've Got Kidney Failure* by Dr Rob Higgins. With CKD, it is possible to have a normal life. The majority of persons with CKD should be able to function normally. If just one member in a family has CKD, there is no need for regular family screening.

Although some types of kidney disease do run in families, people should check with their healthcare team to see if family members need to be tested for the same disease.

Pregnancy should be planned and if you get pregnant unexpectedly, call your GP/kidney doctor immediately. Pregnancy can put additional strain on the kidneys of some women, necessitating more frequent checkups. It's important to know whether or not a medicine is harmful to an unborn child or may be passed on to a nursing infant via breastmilk.

There is a very small percentage of women with CKD who may face additional pregnancy-related complications, such as a baby who is not growing properly or a premature birth. Aspirin may be prescribed,

I may need frequent prenatal scans, and you may be referred to a kidney and obstetrics specialist center. Many women with CKD are able to have healthy pregnancies if they plan ahead.

Chapter 4

Diet

4.1 Diet (nutrition)

Diet is the term used to describe the total quantity of food that an individual or other creature eats on a daily basis. In common parlance, a diet refers to the practice of restricting one's calorie and macronutrient consumption in order to improve one's health or achieve a (with the two often being related).

Despite the fact that humans are omnivores, every culture and individual has their own set of culinary tastes and taboos. It's possible that this is due to some kind of moral or ethical dilemma. The nutritional value of one diet choice compared to another varies greatly.

Ingestion and absorption of vitamins, minerals, essential amino acids derived from protein, essential fatty acids derived from meals containing fat, and dietary energy in the form of carbohydrates, protein, and fat are all required for complete nutrition.

The behaviors and decisions about one's diet may have an effect on one's life expectancy, health, and general quality of life. Food and drink are consumed on a regular basis, either by being provided or by being eaten. regular alimentation. The kind of food and the quantity of food that is recommended for a person or an animal that is suffering from a certain condition. moderation is the key to success while following this weight loss diet plan, which encourages moderate consumption of food and drink.

Focuses on grains, fruits, and vegetables that are good for you, as well as low-fat or non-fat milk and milk products. There are a wide variety of foods that are high in protein. Some examples of these foods are shellfish, lean meats and poultry, eggs, legumes (beans and peas), soy products, almonds, and seeds. has a little amount of cholesterol, sodium, saturated fat, and added sugars; it is a healthy option. low-carb diet that emphasizes the consumption of entire foods. A diet that is low in carbohydrates and high in whole foods is perfect for those who wish to cut down on their weight, enhance their health, and lower their chance of becoming sick.

Paleo diet, vegan diet, Mediterranean diet, etc. diet free of gluten. Because "Diet," the English name for the Japanese parliament, is derived from the Prussian word for "parliament," it symbolizes the historical development of the Japanese parliament during this time period as well as the influence of Prussia and other European nations on Japan. It is essential to have a diet rich in nutrients in order to achieve maximum levels of nutrition and health. You are protected against a wide range of chronic degenerative illnesses that are not spread via communication, such as cancer, diabetes, and heart disease.

It is essential for optimum health to consume a diet that is well-rounded and low in industrially produced sources of salt, sugar, saturated fats, and trans fats. Both good nutrition and good health demand that one eat in a way that is nutritionally balanced. You are protected against a wide range of chronic diseases that are not contagious, including cancer, diabetes, and cardiovascular disease.

A healthy diet should consist of a variety of foods and be low in salt, sugar, saturated fats, and trans fats that are manufactured in a factory.

4.2 Diet plan

On the other hand, a diet plan is tailored to the individual, taking into consideration their current health status, weight, and lifestyle, as well as their goals for weight loss and overall health. The diet plan acts as a customized guide that will assist you in managing your eating habits, exercise regimen, and lifestyle choices in order to achieve the highest possible level of health and wellbeing.

Step one is to stay away from any diets that include tracking calories. Diet plans will often contain a daily calorie goal for participants to strive toward.

In Step 2, you will calculate your macros.

In Stage Three, You Will Look for Foods That Fit.

In the fourth step, you will stock up on recipes.

In Step 5, you will establish a regular eating pattern.

The sixth phase is to track, evaluate, and make adjustments.

A person or other creature's diet is the total quantity of food that they consume on a daily basis. The term "diet" most often refers to the practice of adhering to a predetermined dietary regimen in order to improve one's health or achieve a certain body composition (with the two often being related). Diets that are heavy in protein are beneficial, and they are also faster and simpler to follow than other diets. According to research that was just published in The American Journal of Clinical Nutrition, consuming a greater amount of protein results in a greater sensation of fullness.

There is not actually a "diet" to follow during the season of Lent. According to what was presented before, practicing Catholics should abstain from eating meat on Fridays and observe days of fasting on Ash Wednesday and Good Friday. Other than the rules presented here, there is no conventional diet. In addition to abstaining from eating meat and fasting, many people choose to carry out a penance that may or may not include doing anything that involves food. A child's risk of getting chronic diseases is reduced, and their growth and development are supported by eating a diet that is nutritionally balanced. Adults who eat well have a lower chance of developing obesity, cardiovascular disease, type 2 diabetes, and numerous types of cancer, compared to those who do not. They also have a longer life span.

Maintaining a diet that is rich in wholesome foods, as recommended by Dr. Cora, will help you experience fewer mood swings, a more positive outlook on life in general, and improved attention. The consequences of anxiety and depression have been shown to be mitigated, according to a number of studies, by maintaining a healthy, well-balanced diet.

Chapter 5

5.1 Diabetes with CKD

You should discuss the possibility of renal illness with your doctor if you have the condition.

With chronic kidney disease (CKD), symptoms may appear gradually and without warning. Before they require dialysis or a transplant, many patients with chronic kidney disease (CKD) are unaware they have the disease and must rely on these lifesaving treatments. Get your kidneys evaluated routinely by your doctor using basic blood and urine tests.

If you have diabetes, this is important. Early detection of CKD is most likely by routine testing. To have the most impact on one's health, it is best to begin therapy as soon as possible. In diabetics, CKD is a prevalent complication. As much as one-third of people with diabetes have chronic kidney disease (CKD). In both type 1 and type 2 diabetes, renal failure may occur.

5.2 Diabetic Kidney Disease: A Diagnosis and Treatment Plan

Nephrons, a specialized kind of filter found in every kidney, are microscopic organs. The kidneys and nephrons may be damaged over time by high blood sugar from diabetes, causing them to function less effectively. As a result of their condition, many diabetics are also at risk for renal disease. Early on in the course of CKD development, there are generally no indications or symptoms. No one except a physician can detect chronic kidney disease (CKD) in you.

5.3 How to Maintain a Healthy Kidney System

Maintaining appropriate levels of blood sugar, blood pressure, and cholesterol may go a long way toward protecting your kidneys. High blood sugar levels, high blood pressure, and elevated cholesterol levels are all risk factors for heart disease or stroke. Taking care of your cardiovascular system is critical to your overall health. As much as possible, keep your blood sugar levels in your goal range. Get an A1C test at least twice a year, and more often if your medication changes or if you have additional health concerns that need frequent monitoring. Discuss the frequency of your doctor's checkups with him or her. Keep your blood pressure under 140/90 mm/Hg by routinely checking it (or the target your doctor sets).

Make an appointment with a doctor to discuss medications and other options for lowering your blood pressure. Maintain a cholesterol level that is within your predetermined range. Eat less salty meals. Eat more veggies and fruits. Get your heart rate up and your lungs moving. Medicines should be taken as prescribed.

Chapter 6

6.1 CKD associated with DM

Diabetes is the primary factor in the development of kidney disease. Diabetic kidney disease affects around one in every three people who have the condition. Damage to the kidneys caused by diabetes often occurs over a rather extended period of time. Chronic kidney disease (CKD), diabetic kidney disease (DKD), or diabetic renal disease Nephropathy refers to the progression of diabetic kidney disease through its various stages. A high level of blood glucose, often known as blood sugar, may cause the kidneys' blood supply to be compromised. vessels. Blood vessels that have been damaged do not function as efficiently as healthy blood vessels.

Hypertension People who have diabetes often have high blood pressure, which is dangerous because it may damage the kidneys. If a person has diabetes, they have a significantly increased risk of developing renal disease. The amount of glucose in the blood is much higher than usual. The patient's blood pressure is dangerously high.

Diabetes patients may suffer from chronic kidney disease (CKD). Diabetes is associated with chronic kidney disease in around one third of persons. Kidney disease is a potential complication of both type 1 and type 2 diabetes. In the United States, illnesses that affect the kidneys rank as the ninth largest cause of mortality. Diabetes patients may suffer from chronic kidney disease (CKD). Diabetes is associated with chronic kidney disease in around one third of persons. Kidney disease is a potential complication of both type 1 and type 2 diabetes.

In the United States, illnesses that affect the kidneys rank as the ninth largest cause of mortality. A physical injury or a condition such as diabetes mellitus (DM) or high blood pressure both have the potential to cause harm to the kidneys. When kidneys sustain injury, they lose their ability to filter blood and participate in other bodily functions. This is often accompanied with a decrease in glomerular filtration rate (GFR) as well as proteinuria (1,2). People who have diabetes are at risk for developing diabetic nephropathy, which is a chronic condition that affects the kidneys. The condition manifests itself when a person's kidneys get damaged as a result of excessive blood glucose levels. Nephropathy brought on by diabetes is a kind of chronic kidney disease (CKD)

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Diabetes mellitus is the most common reason for chronic kidney disease (CKD), making it a significant problem for public health all over the globe. Patients diagnosed with type 2 diabetes mellitus (T2DM) have a glomerular filtration rate (GFR) of less than 60 mL/min/1.73 m² on average, which places them in the category of having moderate-to-severe chronic kidney disease (CKD). 1.

Diabetes patients may suffer from chronic kidney disease (CKD). Diabetes is associated with chronic kidney disease in around one third of persons. Kidney disease is a potential complication of both type 1 and type 2 diabetes.

Diabetes may cause damage to the blood arteries that are found inside the kidneys, which can lead to kidney disease. There are several microscopic blood veins packed inside the filtering units of the kidney. The presence of high quantities of sugar in the blood may, over time, lead these blood vessels to become constricted and blocked.

Diabetes mellitus, a disease that is characterized by high blood glucose (sugar) levels, is one of the conditions that may lead to kidney failure. A high quantity of sugar in the blood may cause long-term harm to the millions of very small filtering units that are contained inside each kidney.

This will result in renal failure in the long run. The two most frequent risk factors for developing chronic kidney disease are diabetes and high blood pressure (CKD).

In order to determine the cause of your kidney illness, your doctor may review your medical history and may recommend that you undergo certain tests. Diabetes affects a significant number of patients who simultaneously have renal problems.

Hyperglycemia, often known as high blood sugar, is a common complication for those who have diabetes. You may take preventative measures against hyperglycemia if you are aware of its symptoms as well as the factors that might lead to it.

There are five phases of kidney disease that are chronic.

6.2 Stage

Stage 1 has a GFR that is either normal or high (more than 90 mL/min).

Stage 2 Mild CKD (GFR = 60-89 mL/min)

Stage 3A Moderate CKD (GFR = 45-59 mL/min)

Stage 3B Moderate CKD (GFR = 30-44 mL/min)

Stage 4 chronic kidney disease (GFR between 15 and 29 mL/min)

Stage 5 End Stage CKD (GFR <15 mL/min)

Tests of the patient's blood and urine may be used to identify chronic kidney disease (CKD). In many instances, chronic kidney disease is not identified until after a routine blood or urine test performed for the treatment of another condition reveals that the patient's kidneys may not be functioning correctly.

Chronic kidney disease (CKD) does not have a known cure; however, medication may help reduce symptoms and prevent the illness from progressing further. The stage of your CKD will determine the therapy that you get. Alterations to one's way of life, with the goal of maintaining the highest level of health attainable, are the primary forms of therapy.

Diabetes is the most common cause of chronic kidney disease (CKD), and it is responsible for 44 percent of all instances of CKD. In the United States, diabetes, and particularly type 2 diabetes, is also the leading cause of kidney failure. If you have diabetic kidney disease and want to be as healthy as possible, it is imperative that you maintain control of your diabetes and take care of your kidneys at the same time. Only then will you be at your best. A decline in kidney function may develop in certain patients who have diabetes; this condition is referred to as diabetic renal disease.

Diabetes is a contributory factor in the development of renal disease. When there is a high quantity of sugar in the blood, it may cause the small blood vessels of the kidney to become constricted and blocked over time. If there is not enough blood, the kidneys will deteriorate.

Diabetes may also cause damage to the nerves that are found throughout the body. If the nerves in the bladder are injured, you may not be able to feel when your bladder is full. This can be a serious problem. The pressure that results from having a full bladder might be harmful to your kidneys. Urinary tract infections may develop if urine is allowed to pool in the bladder for an extended period of time. This is due to bacteria, which have a quick growth rate in urine that has a high concentration of sugar. These infections have the potential to extend to the kidneys in certain cases.

High blood pressure is another complication that might affect diabetics. This is yet another significant cause of chronic kidney disease. If you have been diagnosed with kidney disease, it is essential to understand that there are things you can do to successfully manage chronic kidney disease (CKD) and continue to live a healthy life.

The prevalence of diabetes mellitus is increasing at an alarming rate and is the leading contributor to chronic kidney disease (CKD) and kidney failure. One of the most prevalent diabetic consequences, diabetic nephropathy affects roughly 20–40 percent of those who have diabetes [1, making it one of the most common problems associated with diabetes]. Screening for diabetic

nephropathy and beginning treatment at an early stage are both essential components in slowing the advancement of the disease in combination with maintaining an appropriate blood sugar level.

It is essential to have information about the safe use of different anti-hyperglycemic medications in patients who have nephropathy because of the expanding population that is currently impacted by diabetes and, as a result, nephropathy. In addition, it is vital to pay careful attention to the adjustment of risk factors for cardiovascular disease (CVD). Information about the prevention and treatment of diabetic nephropathy, in addition to knowledge regarding other elements of diabetes care, is an essential component of providing complete care to any patient who has diabetes. Controlling blood glucose levels is crucial for putting off the beginning of diabetes-related issues, but even for the most seasoned medical professionals, this may be a difficult task.

The management of blood sugar in those who have CKD adds an additional layer of complication. This needs in-depth understanding of which drugs may be taken safely and how the metabolism of these medications is affected by renal disease. In addition, the glycemic goal has to be personalized for each patient, taking into account the fact that renal illness might affect our capacity to correctly interpret the data. strategies for the management of diabetic kidney disease symptoms

It is essential that you manage your diabetes and renal disease in accordance with the specific recommendations provided by your doctor. In general, there are a number of actions that should be included into your daily routine in order to maintain control of your blood sugar.

Check and monitor your levels of blood sugar. Using a transportable piece of electronic equipment, you are able to conduct a blood sugar (blood glucose levels) test on your own at home. This device, which is known as a blood sugar meter, requires just a very little drop of blood from you. You may also use a gadget called a continuous glucose monitor (CGM). Take care of your blood pressure. People with diabetes and chronic kidney disease have a hypertension prevalence of above 80%. (high blood pressure). Have a discussion with your primary care physician about developing a treatment plan that will assist you in maintaining control of your blood pressure. A nutritious diet that is low in salt, engaging in regular physical activity, effectively managing stress, and giving up smoking are all steps that i may take.

Make sure you take your prescription exactly as directed. The renal drugs that your physician recommends for you may depend on a number of aspects of your individual health. Your degree of kidney function, the stage of renal disease that you are now in, and whether or not you are managing any other health concerns are some of these factors. In addition, your doctor may recommend some drugs designed specifically for the management of diabetes. Choose nutritious options while eating out.

Start by reading the nutrition labels on the food you want to buy so that you may choose selections that are healthy for you, such as having less sugar and salt. Foods that are high in fiber, such as fresh fruits and vegetables, as well as whole grains, have the potential to assist improve blood sugar levels. If you have diabetes and want to follow a diet that is easier on your kidneys, talk to your primary care physician or a nutritionist about what foods and beverages you should consume. What you should eat—and how much of it—during the management of renal disease is contingent on the degree to which your kidneys are functioning normally. When you are at stage 3 or stage 4 of chronic kidney disease (CKD), it is very important that you discuss what you should eat and drink as well as the suggested quantities with your doctor or dietitian.

Following a kidney-friendly diet may help keep your kidneys operating as long as possible.

6.3 Diet chart for CKD patients with Diabetes mellitus

❖ **Diet chart for CKD patients with Diabetes mellitus**

Age : 66 years
 Sex : Male
 Weight : 55 kg
 Height : 161 cm
 BMI : 19.7 kgm⁻²

Estimated Energy Need	2116.63 kcal/day	Carbohydrate	: 302.37 gm/day
Protein	: 100.79 gm/day	Fat	: 47 gm/day

Meal	Food	Serving
Breakfast	Roti Egg Mixed Vegetables	4 small sizes 1 boiled/pouched 1 cup or 200 gm
Snack (mid-morning)	Diabetic Milk Fruits Biscuit	1 cup 1 small size 2-3 pieces
Lunch	Rice Fish/Chicken Mixed vegetables Salad	3 cup or 420 gm 1 piece 1 cup 1 cup
Snacks (afternoon)	Diabetic Milk/Yogurt Tea, biscuit	1 cup 1 cup and 3-4 pieces
Dinner	Roti Fish/Chicken Mixed vegetables Salad	3 small pieces 1 piece 1 cup 1 cup
Bedtime	Bun	1 piece

Foods to be avoided	Foods permitted
<ul style="list-style-type: none"> • Sugar and sweet products • Protein-rich foods like lentils or pulses • Salty products • Deep fries • Canned products • Potassium-rich foods like orange, banana, potato, tomato, raw carrot, beans, whole wheat bread, and pasta etc. 	<ul style="list-style-type: none"> • Low potassium foods like apple, grape, pineapple, peach, green beans, cabbage, boiled cauliflower, celery, cucumber, white bread and pasta etc. • Eggplant • Lean meat

Diabetes & CKD Foods

Fruits: berries, grapes, cherries, apples, plums.

Cauliflower, onions, eggplant, and turnips are examples of vegetables.

Eggs, seafood without added salt, and lean cuts of meat (poultry and fish) are all good sources of protein. White bread, bagels, sandwich buns, unsalted crackers, and spaghetti are examples of carbohydrates. Drinks: water, clear diet sodas, unsweetened tea.

A diet that is high in fruits, vegetables, dairy products with a low fat content, whole grains, fish, poultry, beans, seeds, and nuts is called a "healthy diet." It has a reduced salt content, as well as a low sugar and sweet content, fat, and red meat content. If you have CKD, you should discuss this issue with your primary care physician. A few examples are apples, grapes, berries, pineapple, and

mangoes. Other examples include apples, grapes, and berries. Diabetics and those with renal illness should steer clear of fruits like bananas and avocados that are rich in potassium but low in sodium. These types of fruits may be harmful to blood sugar levels.

Instead, choose fruits like grapes, berries, and pineapple that have a lower potassium concentration and take them in moderation in order to avoid the side effects of too much potassium. Grapes have a very high potassium content compared to other fruits. After pointing out that coconut milk is the greatest choice for patients with CKD due to its low levels of potassium, sodium, and oxalate, the researchers suggested macadamia milk as a possible alternative. This came after they said that coconut milk is the best option for patients with CKD.

Despite the fact that it has a greater salt level than coconut milk, however, coconut milk is still the option that is advised. People who have chronic kidney disease (CKD) are needed to limit the quantity of dairy products they consume in their diet. Foods like low-fat milk, which includes large levels of phosphorus, potassium, and calcium, should be avoided by anybody who has to monitor their kidney health since these nutrients are found in high concentrations in these foods. The consumption of unsaturated or "good" fats, such as those found in olive oil, peanut oil, canola oil, safflower oil, sunflower oil, fish, and nuts, should be avoided in favor of the consumption of saturated or "bad" fats, such as those found in red meat, poultry, whole milk, butter, ghee, cheese, coconut, and lard. Saturated fats have been linked to an increased risk of heart disease, while unsaturated fats have Diet is one of the most important forms of treatment when it comes to the management of chronic conditions like diabetes and kidney disease.

If i have diabetes and have been told that you have kidney disease as a result of your diabetes, you will need the assistance of a dietician in order to devise a diet that is suitable for your condition. A dietician can help you determine what foods are best for you to eat in order to manage your diabetes and kidney disease. This strategy will be helpful to you in regulating your blood glucose levels and lowering the amount of waste and fluid that your kidneys are responsible for processing as a result of your body's metabolic processes. In addition to the maximum amounts of potassium, phosphorus, and sodium that you should consume, your dietician will provide you with dietary

recommendations that detail how much protein, fat, and carbohydrates you are permitted to consume on a daily basis. These recommendations will also include

how much sodium, potassium, and phosphorus you should consume. Because some minerals should make up a smaller percentage of your diet, you will need to reduce or remove the intake of certain foods when you are making your meals because you will need to do so in order to get the proper amount of those minerals. Controlling one's portions in an appropriate manner is also quite important.

Have a conversation with your dietitian about the most effective strategies that may be used to accurately determine the quantity that constitutes a portion. On the renal diet, the same quantity of food that would be considered one serving on a conventional diet would count as three portions instead. This is because the renal diet is designed for those who have kidney disease. It is very probable that both your primary care physician and dietitian would recommend that you have meals and snacks throughout the day that are the same size and contain the same number of calories and carbs. This will allow you to keep a constant level of glucose in your blood. It is very necessary to do routine checks on your blood glucose levels and consult with your primary care physician on the results of these tests. An instance of certain food choices that are often recommended as component of a renal diet for persons who suffer from diabetes is provided in the following paragraphs.

This ranking takes into account not only the high amounts of sodium, potassium, and phosphorus that are present in the meals in question, but also the quantity of sugar that is included in dishes of this kind. Have a discussion with a nutritionist to determine whether or not you are able to eat any of the things on this list, and double check that you are familiar with the right serving size for each item. It's possible that your dietitian may suggest that you include into your meal plan any of the foods that are recommended to be limited or avoided. If this is the case, i need to talk to them about the prospect of this happening.

Milk and nondairy

6.4 RECOMMENDED

RECOMMENDED LIMIT OR AVOID

Sugar-free pudding, sugar-free ice cream, sugar-free frozen desserts that don't include dairy, and sugar-free frozen desserts that don't contain dairy. Milk with little or no fat, non-dairy creamer, skim milk or fat-free milk, sugar-free yogurt, plain yogurt, sugar-free yogurt, sugar-free pudding, sugar-free yogurt, sugar-free yogurt. The standard serving size for dairy products is 4 ounces, which is usually determined by the high quantities of protein, potassium, or phosphorus that are included in these foods.

Examples of sugar-sweetened dairy and nondairy frozen drinks and desserts include chocolate milk, buttermilk, sweetened yogurt, sugar-sweetened pudding, sugar-sweetened ice cream, and sugar-sweetened nondairy frozen desserts. Chocolate milk and buttermilk are also included in this category.

Baguettes made with a variety of flours and starches White, wheat, rye, sourdough, whole wheat, and whole grain bread; unsweetened, refined dry cereals; cream of wheat; grits; malt-o-meal; oatmeal; noodles; white or whole wheat pasta; brown, white, or wild rice; small bagels; hamburger buns; unsalted crackers; cornbread; made from scratch; flour or corn tortillas; and wild rice are all examples of foods that are considered to be whole grains. Gingerbread, pancake mix, cornbread mix, biscuits, salty snacks such as potato chips, corn chips, and crackers, bran or granola, bran bread, frosted or sugar-coated cereals, instant cereals, bran or granola, and instant cereals. Gingerbread, pancake mix, cornbread mix, biscuits. Salty snacks such as potato chips, corn chips, and crackers. Even though they contain more phosphorus and potassium than refined products, whole wheat cereals like wheat flakes and raisin bran, as well as whole grain hot cereals, may still be consumed in moderate amounts without causing adverse health effects. Magnesium content is also higher in whole grain hot cereals as compared to refined varieties.

Fruits and juices

Apples, apple juice, applesauce, apricot halves, berries such as strawberries, raspberries, cranberries, blackberries, and blueberries, cranberry juice with a low amount of sugar, cherries, fruit cocktail, grapefruit, grapes, grape juice, kumquats, mandarin oranges, pears, pineapple, plums, tangerine, watermelon, and fruit canned in unsweetened juice are examples of foods that fit this category. Fruits include avocados, bananas, and cantaloupe; dry fruits like dates, raisins, and prunes; and berries like blueberries, blackberries, and strawberries. Honeydew fruits such as melon, kiwis, kumquats, star fruit, papaya, nectarines, pomegranate, oranges and orange juice, and canned fruit in syrup.

Avocados, bananas, and cantaloupe Dates, raisins, and prunes are some examples of dried fruits. Honeydew melon, kiwis, kumquat Starchy vegetables and other vegetables. Because of the high phosphorus content of corn, peas, and vegetables paired with corn and peas, these meals should be consumed less often than other similar foods. Potatoes are another another kind of food that need to be eaten on a less regular basis (soaked to reduce potassium, if needed) Your nutritionist may have recommended that you consume tiny amounts of dry beans and peas as part of your diet. This was done so that you may get the most nutritional benefit from them. Pumpkin, winter squash, potatoes, sweet potatoes, and yams are roasted in the oven, and then baked beans and succotash are added before everything is combined and baked. vegetables that do not contain any carbohydrate at all Iceberg lettuce, green beans, kale, leeks, mustard greens, okra, onions, red and green peppers, radishes, raw spinach (1/2 cup), snow peas, summer squash, turnips, asparagus, beets, broccoli, Brussels sprouts, carrots, cabbage, cauliflower, celery, cucumber, eggplant, frozen broccoli cuts, green beans, leeks, okra, raw spinach (1/2 cup), snow peas, summer squash, turnips, asparagus, Artichoke, fresh bamboo shoots, beet greens, cactus, cooked Chinese cabbage, kohlrabi, rutabagas, sauerkraut, cooked spinach, tomatoes, tomato sauce or paste, tomato juice, vegetable juice Artichoke, fresh bamboo shoots, beet greens, cactus, cooked Chinese cabbage, kohlrabi, rutabagas, sauerkraut, vegetable juice Artichoke, fresh bamboo shoots, beet greens, cactus, cooked Chinese cabbage, kohlrabi, rutabagas, sauerkraut, cooked spinach, and sauerkraut are some of the vegetables that are used in this dish. foods that have a greater amount of protein On the menu, you'll find a variety of meats, cheeses, and eggs. Natural cheeses; lean cuts of meat, poultry, fish, and shellfish; eggs and egg replacements with a lower cholesterol level; and (limited

amounts) cottage cheese (limited due to high sodium content) To name a few examples: bacon, luncheon meats and canned meats, processed cheeses, hot dogs, organ meats, nuts, pepperoni, salami, sausage, and salami luncheon meats; however, this list is not exhaustive. Foods that have a greater percentage of fat

The amount of calories as well as the flavoring Mayonnaise, sour cream, cream cheese, mayonnaise with less fat, sour cream with less fat, and cream cheese with less fat are examples of low-fat dairy products that may be found in tubs or in soft margarine forms.

Trans fatty acids are found in high concentrations in whipped cream, lard, bacon fat, back fat, butter, Crisco, and other types of shortening, as well as margarines. It is recommended to consume beverages such as water, diet clear sodas, homemade tea, or lemonade that has been sweetened with a low-calorie sweetener. All of these are healthy alternatives. Dark colas, including normal and diet variations, beer, fruit juices, fruit-flavored drinks, bottled or canned iced tea or lemonade that contains sugar, syrup, or phosphoric acid; tea or lemonade that is sweetened with sugar.

I could also be told to cut down on your intake of the following high-sugar and high-sodium meals altogether, or at the the least, to avoid them entirely:

Candy

Chocolate Regular sugar

Syrup

Honey

Molasses

Baked treats

Ice cream

canned foods and beverages

Condiments

In addition to garlic and onion, you may also use plain table salt.

TV dinners

Meat tenderizer

Marinades

Nuts

Pizza

snacks such as crisps and nibbles that have a salty taste.

After you and your dietitian have worked together to develop a meal plan, you are welcome to utilize the diet and nutrition resources that are made accessible on DaVita.com in order to get support with the maintenance of your diabetic renal diet. You have the option of searching through more than 1,200 recipes that are safe for kidneys, and you can even filter the results of your search by the kind of diet, such as "dialysis and diabetes" or "chronic kidney disease (CKD) non-dialysis and diabetes." To increase the likelihood that you will find more meals that are suitable for your diet, you may also classify recipes according to the nutritional content they contain (for instance, from low to high levels of potassium or protein, etc.). This will allow you to find more meals that are suitable for your diet.

Chapter 7

7.1 Diet chart for hypoglycemia patients with Diabetes mellitus

❖ Diet chart for hypoglycemia patients with Diabetes mellitus

Age : 58 years
 Sex : Female
 Weight : 75 kg
 Height : 163 cm
 BMI : 28.2 kgm⁻²

Estimated Energy Need	1998 kcal/day	Carbohydrate	: 295 gm/day
Protein	: 109.7 gm/day	Fat	: 52 gm/day

7.2 Meal

Meal	Food	Serving
Breakfast (6.30am-7.00am)	Diabetic Milk Egg	1 cup 1 (without yolk)
Breakfast (8.15am-8.30am)	Roti Egg Mixed Vegetables	2 1 (without yolk) 1 cup
Breakfast (10.15am-10.30am)	Roti Mixed vegetables	2 1 cup
Snack (mid-morning) (12.00pm-12.30pm)	Diabetic Milk Fruits	1 cup 1 small size
Lunch (1.30pm-2.00pm)	Rice Fish/Chicken Lentil Mixed vegetables Salad	½ cup 1 piece 1 cup 1 cup 1 cup
Lunch (3.30pm-4.00pm)	Rice Fish Veg + Salad	½ cup 1 piece 1 cup
Snacks (5.30pm-6.00pm)	Soup or Fruits Nuts	1/2 cup or 1 small 1 handful
Dinner (7.30pm-8.00pm)	Roti Fish/Chicken Lentil Mixed vegetables Salad	1-2 1 piece 1 cup 1 cup 1 cup
Dinner (10.00pm-10.30pm)	Roti Fish Veg + Salad	1-2 1 piece 1 cup
Bedtime	Boiled egg	1 (without yolk)
Midnight (if stay awake)	Diabetic Milk	1 cup

Foods to be avoided	Foods permitted
<ul style="list-style-type: none"> • Sugar and sweet products and sweet fruits • Calorie rich foods restricted • Cholesterol foods • Soft drinks • Muri, chira, popcorn 	<ul style="list-style-type: none"> • Lower complex carbohydrate and higher protein foods • Brown wheat roti, boiled rice • Lactose free or diabetic milk • Eating should be segmented into 10-11 sections. A small size amount should be taken 2-3 hours later

Chapter 8

8.1

Since I had no prior experience working in the medical sector, the time that I spent completing my internship served in a manner as a kind of education for me. This was because I had no prior experience working in the medical industry. This was due to the fact that I lacked any previous experience working in the medical field. When I first started working in the medical field, I had absolutely no previous experience, and I was completely unprepared. During the time that I committed to increasing my knowledge of the nutrition management system, I also worked to develop my hands-on understanding of how to connect with patients in healthcare settings. This was done via a combination of reading and actual patient interaction. This insight came to the others and I at the same time as it did to the others. During the time that I spend doing my internship, I am subject to a number of restrictions, the most significant of which are that we are not authorized to have direct contact with the dietitians at the hospital and that we are not permitted to prescribe a diet to any of the patients who are being treated at the hospital. In addition, we are not authorized to provide dietary recommendations to any of the patients who are currently receiving treatment at the medical center. During this time period, I am also restricted due to a number of other constraints. The meal plan was basically the same for all of the patients, with the exception of a select few, and the diabetic diet was given the most thought since this is a facility for diabetics. As a result, the diabetic diet was given the greatest care. Patients with diabetes who did not follow the diabetic diet as prescribed were given their own personalized meal plan. We were given a diabetic handbook, which assisted us in obtaining

knowledge on the several types of meals that diabetics are permitted to consume. The information that we obtained from the diabetic handbook was really helpful. This is how I feel about it. At this point in the report, I would like to emphasize that the internship not only helps us broaden our professional abilities, but it also helps us develop our communication skills. Because I consider this topic to be of such vital importance, I feel compelled to emphasize this specific aspect of the discussion. It will be essential, in order to achieve this objective, to focus an emphasis on the fact that the internship offers both of these advantages, since they are mutually supportive of one another. Because the internship broadens our practical knowledge, which in turn helps us enhance our professional talents, this is the result. As a direct result of this, everyone of us has the ability to further our careers in the sector that we have chosen. Because it is a new experience, it will make the information that we currently possess more relevant, and it will be very constructive for the vocations and professions that we will pursue in the future.

Chapter 9

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