



FOREWORD



Among persons with epilepsy, most of them respond to anti-seizure medications (ASMs), however, drug resistant epilepsy (DRE) constitutes around 30%. People with DRE have the greatest burden of epilepsy-related disabilities including poor academic achievement, unemployment, and social isolation. With the first antiseizure medication trial upto 49% become seizure free. A second medication trial produced remission in an additional 13%, while only a further 4% became seizure-free on a third medication regimen. Individuals with DRE have an increased mortality rate, estimated at 1.37 per 100 person-years. The standardized mortality ratio for patients with recurrent seizures is 4.69. The development of newer effective ASMs have slowed down compared to the early 1940s. So, it is imperative to search for other modalities to control seizures. Epilepsy surgery is an option for those who have a definite structural focus. But in many cases like developmental epileptic encephalopathy and those with diffuse structural insult surgery will not be an option. Other invasive options like vagal nerve stimulation and non-invasive options like transcranial magnetic stimulation have their own limitations and side-effects.

Ketogenic diet (KD) is an enticing option for people with DRE especially in children where it is most effective in controlling seizure. Ketogenic diet had been in use since the early 1920s for treating epilepsy, but their popularity declined with the discoveries of new ASMs. Now since late 2000s, there has been a renewed interest in treating not only epilepsy but also other metabolic conditions like GLUT-1 deficiency, pyruvate dehydrogenase deficiency, etc and neurodegenerative conditions like Rett syndrome, Neuronal Ceroid_Lipofuscinosis, Sub-acute Sclerosing Pan-Encephalitis, etc. The traditional methods of KD used calorie restriction and fasting to induce ketosis which had untoward complications and required admission. With increasing research, it has been observed that the current KD methods do not require intensive fasting or calorie restriction. Even less restrictive diet therapies like Modified Atkins Diet, Low Glycemic Index Diet are available further improving compatibility and compliance, ultimately



resulting in improved overall efficacy.

Our division has been doing active research and has experience of more than 15 years with these forms of dietary therapies. We have formulated a dietary network for professionals which includes dietitians, pediatricians and pediatric neurologists from all over the country. In this book, we provide the readers with basic details regarding the various diet therapies, their indications, contraindications, precautions, preliminary investigations, follow-up and more importantly diets which can be made from native recipes. The diet plans have evolved with the experience over last 17 years. The dietary services were started by Prof. VeenaKalra and Prof. SheffaliGulati along with our nutritionist MsAnujaAgarwala. This is a second revision of the dietary therapy resource. We have introduced special diets based on millets for the first time. As earlier we are developing it in English as well as Hindi. This book will be a useful resource for professionals and parents across India and SAARC countries.

I would like to acknowledge my students over one and half decades, who have been a part of research studies in dietary therapies (Suvasini Sharma, KN VykuntaRaju, Lakshmi Narayanan, Manoj, Vishal Sondhi, Prateek Kumar Panda, VaishakAnand and AakashMaheshan).

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1. Introduction to Ketogenic diet (KD)
2. Mechanism of action of Ketogenic diet
3. Indications and contraindications
4. Preparation before initiating Ketogenic diet
5. Comparison of nutrient composition of different Dietary therapies
6. Going even more liberal in diet therapy: Intermittent LGIT
7. Step by step calculation of Ketogenic diet, modified Atkin's diet (MAD) and low glycemic index diet (LGIT)
8. Management of diet related side-effects and sick day Management
9. Baseline evaluation and monitoring charts
 - Blood parameters
 - Seizure log
 - Monitoring chart
 - Check list for follow up
10. Use of KD in Neonates
11. Use of KD in Status Epilepticus
12. KD calculation and recipe formulation with changing ratios
 - 1:1 Ketogenic diets
 - 2:1 Ketogenic diets
 - 2.5:1 Ketogenic diets
 - 3:1 Ketogenic diets
 - 4:1 Ketogenic diets
13. Inclusion of millets in diet therapies in epilepsy
14. Add variety in recipes
 - Ketogenic diet recipes of all ratios
 - Millet based ketogenic diet recipes
 - Modified Atkin's diet recipes
 - Millet based modified Atkin's diet recipes
 - Millet based Low glycemic index recipes
15. Psychological Support



16. Annexures

- 1a) Daily energy requirement of Indian infants during first year of life NIN, 2020
- 1b) Daily energy requirement of Indian children and adolescents, NIN, 2020
- 2) Protein requirements of infants and children, WHO, 2007
- 3) Do's and Don'ts of KD, MAD and LGIT
- 4) Exchange list of modified Atkin's diet
- 5) List of low glycemic index foods
- 6) List of vegetable A and vegetable B
- 7) List of fruit A, B, C and D

Declaration

All recipes are original and have been formulated by the **Center of Excellence and Advanced Research for Childhood Neurodevelopmental Disorders**, Child Neurology Division, Department of Pediatrics, AIIMS, New Delhi along with parents and care givers of our patients.

These recipes have been developed for patient [care.Wecare. We](#) request that these recipes should not be used for any publication without prior permission.

What is a normal diet?

Food has a variety of nutrients like protein, fat, carbohydrates (sugars and starches), fiber,



~~vitamins, and vitamins, and~~ minerals. Carbohydrates, fat, and protein are the sources of energy in our body, with the former being the major ~~source. An~~ source. An Indian diet is normally composed of 60 - 65% carbohydrate, 10–15 % protein and 25–30 % fat.

What is a Ketogenic diet (KD)?

Ketogenic diet reverses the normal composition of diet. It contains very high amount of fat and low carbohydrate content while protein allowance remain normal for ~~age or~~ vary depending on the type of therapy ~~prescribed. Fat prescribed.~~ Fat has high ketogenic potential and glucose has anti-ketogenic effect. This diet is individually designed for childhood epilepsy which is not controlled with medicines.

Some of these diet therapies can be prescribed in three major meals and one snack per day, while others, may follow different modes of delivery depending on the age, ~~condition, and condition, and~~ sustainability concerns. This diet can be easily prepared at home using commonly available but specific and limited food stuffs. These diet therapies need to be strictly followed to be effective.

What are the benefits expected of KD?

Half of the patients respond to the diet to a great extent (seizure reduction by more than half) and one third respond very well (near to complete seizure reduction). Once seizures are controlled, drugs may be tapered gradually and stopped on a case-to-case basis in consultation with the treating doctor. Most children are more alert and active on dietary therapy.

When is the benefit expected?

KD should be given for at least three months to know whether KD is effective for your child or not.

How long KD will have to be continued, if successful?

If found successful, KD should be continued for at least two to three years. After this period KD will be slowly tapered off to normal diet. These decisions are taken in consultation with the treating physician and dietician.

What are the problems with ketogenic diet?

Short term: Nausea, vomiting, lethargy and behavioral outbursts.

Long term: Renal stones, weight loss(reversible)

On KD, the treating physician routinely monitors the patient for these side effects.

Mechanism of action of KD:



Ketogenic diets act through a combination of mechanisms, which are linked to the effects of ketones and glucose restriction, and their interactions with receptors, channels, and metabolic enzymes. Ketone bodies, such as BHB, and their derivatives have received most attention as mediators of the antiseizure, neuroprotective, and anti-inflammatory effects of ketogenic diet therapy. Ketogenic diets can thereby shunt ketones into oxidative metabolism in the brain, which also enhances the capacity to produce amino acids such as gamma-aminobutyric acid. BHB was shown to support synaptic vesicle recycling with a net effect of endocytosis exceeding exocytosis, a mechanism with possible anticonvulsant outcome. Classic ketogenic diet consists mostly of long chain saturated triglycerides; however, polyunsaturated fatty acids (PUFAs) may also decrease neuronal excitation and provide neuroprotection by inducing the opening of voltage-gated potassium channels through binding to a newly identified PUFA binding site in the open state of the channel. Decanoic acid, a component of medium-chain triglycerides, contributes to seizure control through direct α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) receptor inhibition, whereas drugs targeting lactate dehydrogenase reduce seizures through inhibition of a metabolic pathway. Ketogenic diet therapy exerts a major inherent anti-inflammatory activity, which appears to be independent of PUFAs via PPAR-Gamma. Ketogenic diet leads to a circadian shift in the expression of brain and liver BDNF. Ketogenic diet therapy is known to improve mitochondrial function. Oxidative stress leads to the formation of reactive lipid fragments that can further aggravate tissue damage. Ketogenic diet therapy also affects DNA methylation, a novel epigenetic mechanism of the diet.

Indications of KD

Definitive benefits:

- Angelman syndrome
- Complex 1 mitochondrial disorder
- Dravet syndrome
- Epilepsy with myoclonic–atonic seizures (Doose syndrome)
- Glucose transporter protein 1 (Glut-1) deficiency syndrome (Glut1DS)
- Febrile infection–related epilepsy syndrome (FIRES)
- Formula-fed (solely) children or infants
- Infantile spasms
- Ohtahara syndrome
- Pyruvate dehydrogenase deficiency (PDHD)
- Super-refractory status epilepticus

- Tuberos sclerosis complex

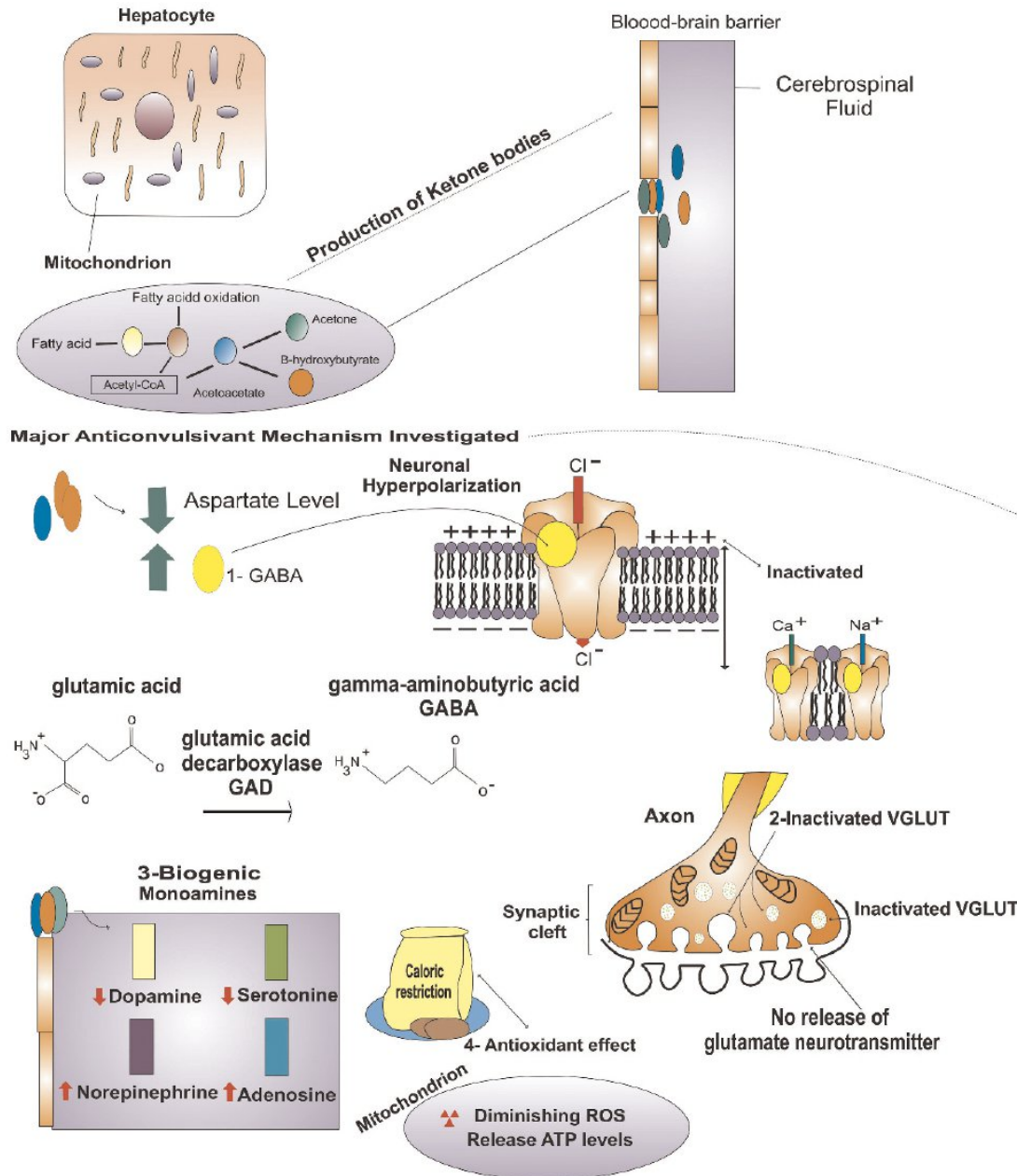


Image Reference: Lima PA, Sampaio LP, Damasceno NR. Neurobiochemical mechanisms of a ketogenic diet in refractory epilepsy. *Clinics (Sao Paulo)*. 2014 Dec;69(10):699-705

Putative conditions with reported benefits

- Adenylosuccinatelyase deficiency



- CDKL5 encephalopathy
- Childhood absence epilepsy
- Cortical malformations
- Epilepsy of infancy with migrating focal seizures
- Epileptic encephalopathy with continuous spike-and-wave during sleep
- Glycogenesis type V
- Juvenile myoclonic epilepsy
- Lafora body disease
- Landau-Kleffner syndrome
- Lennox-Gastaut syndrome
- Phosphofructokinase deficiency
- Rett syndrome
- Subacute sclerosing panencephalitis (SSPE)

Absolute and Relative contraindications

Absolute Contraindications:

- Primary carnitine deficiency
- Carnitine palmitoyl transferase I or II deficiency
- Carnitine translocase deficiency
- B-oxidation defects
- Medium-chain acyl dehydrogenase deficiency
- Long-chain acyl dehydrogenase deficiency
- Short-chain acyl dehydrogenase deficiency
- Pyruvate carboxylase deficiency
- Porphyria
- Medium/long chain 3-hydroxyacyl- CoA deficiency

Relative Contraindications:

- Inability to maintain adequate nutrition
- Surgical focus identified by neuroimaging and video-EEG monitoring
- Parent or caregiver noncompliance
- Propofol concurrent use (risk of propofol infusion syndrome may be higher)

PREPARATION BEFORE INITIATING DIET THERAPY

- Procure digital weighing scale with accuracy of 0.1 g



- Gather several small bowls or containers for weighing ingredients.
- Teach carers to calibrate the digital weighing machine.
- Procure Keto-stix and teach carers/ parents how to measure ketones using Keto-Stix
- Teach carers/ parents how to record ketones, food consumed, seizures etc on Monitoring Record form
- Demonstrate – weighing of dry ingredients before preparing recipe.
- Important food related instructs to be taught to carers
 - Weigh all dry ingredients before preparing recipe.
 - After weighing a dry ingredient, you may ‘zero’ the scale.
 - Carefully, add another dry ingredient to the same container
 - Fish and poultry should be weighed skinless and boneless.
 - Egg should be first beaten uniformly and then weighed.
 - Weight the higher volume ingredients last.
 - Aluminum foil to be used for baking containers – this will keep the fat from seeping away from product. Paper foil will absorb the fat and therefore, should not be used.
 - Maintain approximately the same meal timings daily.
 - Explain ~~not~~ not to store leftovers.
- **Explain Precautions**
 - All medicines should be given in tablet form (not in liquid form). Liquid form of medicines may contain small sugar content which may decrease the efficacy of the diet.
 - Vitamin and mineral supplements are mandatory as prescribed by your treating doctor.
 - Non-sugar toothpaste should be used
- **Teach Home monitoring**
 - Test the urine each morning before breakfast and each evening.
 - Urine ketones should be 2+ or 3+.
 - Weekly weight record
- **Follow-up: Instruct that** Follow up is must on appointed date. Weighing scale, ketone sticks, ketone charts to be brought on each visit.
- **Prescribe medicines for common illnesses**
 - Vomiting—Domperidone tablet 5mg
 - Fever- Tablet Paracetamol 500mg



- Cold and cough- Tablet formulations in consultation with the treating doctor

- In addition, also give, if advised
 1. Tab. Calcium 500mg 1 tab OD
 2. Cap Multivitamin 1 cap OD
- Counsel and warn regarding strictness of diet - Nothing apart from the diet prescribed by the dietician should be given. In case of any doubts, contact the dietician.

Comparison of Nutrient composition

	Standard Indian diet	Ketogenic diet (4:1)	MAD	LGIT
Carbohydrate	60 – 65 %	4 %	10g in children 20g in adults (5 – 10 %)	10 %
Protein	10 – 15%	6 %	1 g/kg/day (15 - 20 %)	30%
Fat	25 – 30%	90 %	Remaining (70 - 80 %)	60 %
Ratios		4:1	1.7:1	0.66:1

Ketogenic diet calculation

The following steps are used in the calculation of ketogenic diet.

1. Calculate Energy and protein intake required per day according to child's age and weight using EAR.
2. **Eg: A 3-year-old boy weighting 13.4kg (IBW):** Caloric requirement- 1360 kcal/day; protein: (according to WHO recommendation) 1.2g/kg/day_IBW=17g/day.
3. **Dietary Unit calculation** Ketogenic ratio to be given is 4:1. Dietary units are the building blocks of the ketogenic diet. A 4:1 diet has dietary units made up of four grams of fat to each one gram of protein + carbohydrate. Because fat has nine calories per gram ($9 \times 4 = 36$), and protein and carbohydrate each have four calories per gram ($4 \times 1 = 4$), a dietary unit at a 4:1 ratio will have $36 + 4 = 40$ calories. The caloric value and breakdown of dietary units vary with the ketogenic ratio.
- 4.



Ratio	Fat (g)	Energy (kcal)	CHO +protein (g)	Energy (kcal)	Energy per dietary unit
1:1	1g	9	1g	4	9+4= 13
2:1	2g	18	1g	4	18+4=22
2.5:1	2.5g	26.5	1g	4	22.5+4= 26.5
3:1	3g	27	1g	4	27+4=31
4:1	4g	36	1g	4	36+4=40
5:1	5g	45	1g	4	45+4=49

*CHO (Carbohydrate)

*EAR (Estimated Average Requirements)

*IBW (Ideal Body Weight)

- Dietary unit quantity:** Divide the total number of calories allotted by the number of calories in each dietary unit to determine the number of dietary units to be allotted daily. In the above-mentioned example: no. of dietary units/day= 1360/40=34 dietary units per day.
- Fat allowance:** Multiply the number of dietary units with the units of fat in the prescribed ketogenic ratio to determine the grams of fat permitted daily. In the patient mentioned above; for 4:1 diet: 34 x4=136g of fat will be allotted per day
- Protein + Carbohydrate allowance:** Multiply the number of dietary units with the number of units of protein + carbohydrate in the prescribed ketogenic ratio, usually one, to determine the combined daily protein + carbohydrate allotment. In the example mentioned above, for 4:1 diet, 34 x1=34 g of protein + carbohydrate per day will be needed.
- Protein allowance of 17 grams per day has already been decided (Step 1). Determine the carbohydrate allowance by subtracting protein from the total the total carbohydrate + protein allowance. In the example: carbohydrate allowance=34-17=17 grams/day
- Divide the daily fat, protein and carbohydrate allotments into four equal meals. It is essential that the proper ratio of fat to protein + carbohydrate be maintained at each meal.
- The basic principle of Diet therapy is that we increase the minimum Ketogenic ratio to achieve Ketosis and thereafter to maintain on that ratio.*



Modified Atkins Diet (MAD)

As per protocol, a total of 10 grams of carbohydrates/ [day for day](#) for a child between 0-5 years of age and 15 grams of carbohydrates/ [day for day](#) for children above 5 years is prescribed.

MAD with 10 g carbohydrate can be divided into 4 meals containing each recipe providing 2.5g carbohydrate.

Additionally, there are some free food items which do not contain any carbohydrate (0 carb food items) which are allowed liberally in unlimited amount as per the child's preference and tolerance. These free food items are - ghee, oil, butter, vegetable oils, MCT oil, eggs, fish, meat, mutton, chicken, soya milk, soya flour.

Encourage as much fat intake (ghee, butter, oil) as possible to keep the fat proportion higher than protein foods. Carefully monitor the tolerance of children while increasing fat content.

Pure vanilla flavoring up to 15 drops a meal has no food value and can be considered free of calories.

For example

Method of Soya milk preparation - Soak 75g of soya bean overnight. Boil this for 15-20 minutes till 8 to 10 whistles. Grind this to a paste using mixer. Add 500ml of water. Strain this using chalni. This can be given as milk, or mixed with normal milk and given.

Soya flour: Roast soya beans for 20 minutes then grind. This can be used to make rotis, upma, porridge etc.

Commercially available soya milk can also be used in consultation with the treating team.

Avoid flavored varieties. Use only sugarless variant.

Other instructions

- Measure urine ketones once a day and note it down in the chart provided.
- Count number of seizures per day and type of seizures and record.
- Continue anti-seizure medications as prescribed.
- Keep food diary to record daily diet consumed by the child - This is to keep a track of nutrient adequacy and prevent any nutrient deficiencies which may develop on the diet.
- Use combination of fats (PUFA and MUFA) in each meal rather than using one type of fat. To ensure this, use Ghee/Butter, rice bran oil, corn oil, [soyabean/soybean](#) oil etc. in divided amounts in a meal or in a day to get the benefit of essential fatty acids.

Low Glycemic Index Diet

LGIT initiation:



- Document 3-days food intake by recall method
- Energy requirement is ascertained as per the Estimated Average Requirement (EAR) for the ideal weight for the age.
- Calculate diet as per LGIT nutrient composition
- Diet regime is explained to the parents.

- At initiation, patients (wherever applicable) and their parents receive diet counselling.
- Sample menu is discussed with parents.
- LGIT can be easily initiated on outpatient basis.

Other points to remember

Free food list is similar to Atkin's diet

- Fats (eg. Cream, butter, oil, ghee) encouraged as much as possible.
- Protein (cheese, fish, eggs, chicken, soya products)- restricted to 20 - 30% of caloric intake.
- Total daily carbohydrate intake is limited to 10% of total daily caloric intake i.e maximum 40-60g/day.
- Medium and high-Glycemic Index carbohydrates (GI>55) should be eliminated from the diet.
- Only food items with low glycemic index (GI<55) will be allowed.
- List of food items to be avoided and those allowed is given to the patient based on the international tables of GI values.
- Pure vanilla flavoring up to 15 drops a meal has no food value and can be considered free of calories.

Follow up visits

- Follow-up visits at 2 weekly for 1 month and then monthly.
- 3 day diet recall history is taken during every follow-up visit to check for compliance with prescribed diet.
- Calorie and carbohydrate intake are adjusted during the treatment period to optimize seizure control, growth and tolerability.
- Written checklist for adverse events/effects is used at every contact and document.

LGIT - Calculation of a sample diet and menu



A 7 year old child weighing 25kg

Daily energy requirement- 1600Kcal

30% of energy from proteins, 510 Kcal=127.5g proteins/day

Max. 10% energy should be from carbohydrates, 170Kcal = 42.5g carbohydrate/day (max 40-60g/day)

Remaining 60% calories are provided in the form of fats

	Food Item
Breakfast	Soya milk (no added sugar) 200ml, Soyabean porridge 1 katori
Snack	Egg omlette with cheese lassi
Lunch	Special chapattis (as mentioned below) Soya palak/palak soya paneer/shahi soya paneer/ Egg bhurji with vegetables
Snack	Soya Paneer tikka (4 small pieces)/paneer pakoda(4)/porridge
Dinner	Special chapattis (as mentioned below), vegetables , chicken
Bed Time	Soya milk 200ml, Egg

List of food items with low Glycemic Index	Foot Items: Strict No list
Soyabean milk and its products	Wheat chapatti
Egg, fish, chicken, mutton, pork	Poori
Fruits(Papaya)	Rice
Vegetables (except tubers)	Dosa, Idli
Cereals (with husk)	Breakfast items
All bran	Corn flakes
Frosted flakes	Raisin Bran
Oat meal	Bread
Barley	Sandwich
Rye	Fruits
Dhokla	Raisins
Upma	Broad beans



Buckwheat (Kottu)	Beet root
Jawar	Baked potato
	Instant mashed potato
	Sweet potato
	White bread/brown bread
	Snacks
	Aerated beverages, Fruity, Juices
	Sugar, Jaggery, Honey

Going even more liberal in diet therapy: Intermittent LGIT

In a randomized, controlled, non-inferiority trial conducted by us to compare the effectiveness of a daily LGIT regimen versus an intermittent LGIT regimen in pediatric patients (2 days of liberalized diet per week, which included both low and medium glycemic index foods and carbohydrate calories up to 20% of the total calorie requirement) involving around 60 children in both arms for a period of 24 weeks we found out mean reduction of weekly seizure frequency, intermittent LGIT was found to be non-inferior to daily LGIT with a margin of 15% (47.16% vs 50.95%; $P = .34$). In addition, no significant difference was observed in terms of percent of patients with >50% seizure reduction in the intermittent versus daily LGIT arms (50% vs 54%; $P = .73$). There were no significant differences between the 2 treatment arms in terms of adverse events and effects on behavior and cognition. Overall, the results demonstrated that intermittent LGIT was as effective as daily LGIT, and may be a useful alternative in patient who has difficulty adhering to a daily diet regimen.

Check list for dietary therapy initiation:

- No contra indication to KD
- Willingness of parents
- Family/social support
- Ensure switching over to tablet formulations.
- Baseline nutritional assessment
- Procurement of functional digital weighing machine.
- Check that all the above instructions for initiation of diet are taken care of and carers/ parents adequately taught and instructed.

Constipation management in ketogenic diet:

Carbohydrates like fruits, vegetables, nuts and whole grains are some of the most common sources of fiber in the diet, inclusion of which is essential for maintaining healthy bowel movements. Unfortunately, these foods rich in fiber cannot be used liberally while the child is on KD. Low carbohydrate content in KD can lead to digestive issues like constipation enough fiber from keto-



friendly foods like non starchy vegetables are not included while designing these diets.

Long-term constipation can lead to complications, including anal fissures, hemorrhoids, and abdominal pain.

Some of these methods can be used to reduce constipation while on KD

- Drinking plenty of water
- Increasing physical activity
- Including MCT oil in diet in combination with other oils of PUFA and MUFA family.
- Add non starchy green vegetables.
- Add commercial synthetic fiber supplements in consultation with the treating doctor
- Enemas and Laxatives in consultation with the treating doctor.
- If constipation persists, step down on KD ratio or continue with less intensive dietary therapies.

Diarrhea management in ketogenic diet:

Lack of fiber and high fat in KD may lead to change in gut microbiome leading to diarrhea or steatorrhea. It is advisable to eat fiber rich diet and drink plenty of water to maintain hydration. Reduce dairy and avoid artificial sweeteners. It may be beneficial to include probiotics and fermented foods.

Vomiting management in Ketogenic Diet:

Tab. Domperidone 0.1mg/kg/dose@ 8hourly can be given.

Vomiting is usually associated with more intense classical KD (ratio as high as 3:1 and 4:1). If vomiting is persistent on medication, KD needs to be discontinued and the child needs to be shifted to normal feeds. Wait for vomiting to settle on normal feeds, then reintroduce KD gradually. If still not tolerating, shift to lower KD ratio.

Sick day management in Ketogenic Diet:

Child should be immediately taken to nearby hospital if child presents with any 2 or all of the following complaints –

- High grade fever
- Not accepting orally/ refusal to eat
- Persistent vomiting and loose stools for >24 hours with dehydration
- Fast breathing, fruity odor and increased heart rate

If child is accepting feeds orally with mild to moderate dehydration but there is no ketosis, one can try



giving the KD liquid feeds more frequently.

On the other hand, if the child is ketotic with severe dehydration and hypoglycemia (RBS<40mg/dl), immediate management can be done using 30ml orange juice/lemonade and additional maintenance rehydration can be done with ORS via NG tube.

If ketosis persists with severe dehydration, child will require IV fluids.

If child is in shock, he/she has to be managed by IV bolus with normal saline and maintenance fluid with Dextrose containing fluids.

Baseline Evaluation

Parameter	Baseline measure
Body weight/BMI	
Height	
CBC	
VBG	
Urea/Creatinine	
AST/ALT/ALP	
Total protein/albumin	
Total cholesterol	
Triglycerides	
VLDL	
HDL	
LDL:HDL	
Urine Spot Ca/Cr	
ECG	
Ultrasound KUB	
Metabolic workup (individualized)	

Baseline Seizure Log

Date	Type of seizure	No. of events



Diet therapy planned: KD/MAD/LGIT

Date of starting diet:

Special precautions and follow-up advice:

Monitoring chart for patients on dietary therapy for refractory epilepsy

Parameter							
Weekly seizure frequency							
% change in seizure Frequency							
Compliance							
ASM(current)							
Body weight/BMI							
Any problems							
Urinary Ketones							
AST/ALT/ALP							
Total protein/Albumin							
Fasting lipid profile T. Cholesterol Triglycerides VLDL							



HDL							
Urine spot Ca/Cr							

Check list for each follow-up visit:

Check List	Date						
Compliance							
MVI/Calcium supplements							
S u g a r - f r e e medications/toothpaste							
Accuracy of weighing scale and ketone sticks							
Sick day management							
Antiseizure medication status							
Seizure diary maintenance							
Record of urine ketones							

USE OF KD IN NEONATES

Infantile epileptic encephalopathy have seizure onset starting even from few days of life. These are difficult to control with ASM alone in most of the cases. Exclusive Breast Feeding though being universally recommended in children before 6 months of age, seizure control is imperative for overall neurodevelopment also. Keeping in line with this our experience with Ketogenic diet in infancy exists



in a child who presented at 2 months of age to us with seizures, occasional spasticity, failure to thrive with lactic acidosis and MRI showing T2 hyperintensities, periventricular cysts without any adverse perinatal events or active infection and Genomic study revealed a pathogenic mutation in *PDHA1* gene suggestive of pyruvate dehydrogenase deficiency which is an absolute indication for Ketogenic diet. The child was started on KD and subsequently showed good seizure control with improvement in development.

1:1 KETOGENIC DIET CALCULATION FOR NEONATES

Nutrients	Per day requirement	Per meal requirement Total 8 meals
Fat	42.3 g	5.28 g
Protein	4 g	0.5 g
Carbohydrate	38.3 g	4.78 g
Energy	550 kcal	68.75 kcal

MILK FEED

Ingredients	Amount	Kcal	Protein	CHO	Fat
Lactogen 1	4.6 g	22.2	0.49	2.72	1
Corn flour	2.5 g	8.87	-	2.210.2	-
Refined Oil	2.4 ml	21.6	-	-	2.2
Coconut oil	1 ml	7.8	-	-	1
Ghee	1 g	7.28	-	-	0.82
Total		67.7	0.49	4.932.92	5.02

2:1 KETOGENIC DIET CALCULATION FOR NEONATES

Nutrients	Per day requirement	Per meal requirement Total 8 meals
Fat	50 g	6.25 g
Protein	4 g	0.5 g
Carbohydrate	21 g	2.62 g
Energy	550 kcal	68.75 kcal

1) MILK FEED

Ingredients	Amount	Kcal	Protein	CHO	Fat
Lactogen 1	4.6 g	22.2	0.49	2.72	1
Corn flour	0.5 g	1.77	-	0.2	-
Refined Oil	3.4 ml	30.6	-	-	3.4
Coconut oil	1 ml	7.8	-	-	1
Ghee	1 g	7.28	-	-	0.82



Total		67.869.6	0.49	2.72.92	6.2
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USE OF KD IN STATUS EPILEPTICUS

Status epilepticus is associated with significant mortality and morbidity. Aggressive management is imperative. Refractory and Super refractory status epilepticus management will require even anesthetic medication and mechanical ventilation. The last decade has seen Ketogenic diet being used for management of status epilepticus. In our clinical experience we have had patients with Refractory status epilepticus with etiologies ranging from structural to autoimmune responding to KD. We prioritise early starting of KD in these patients who had failed pharmacotherapy via even NG feeds. Evidences are there for even KD being initiated via TPN.

1:1 KETOGENIC DIET CALCULATION IN STATUS

Nutrients	Per day requirement	Per meal requirement Total 84 meals
Fat	77.69 g	9.7 g
Protein	15 g	1.87 g
Carbohydrate	62.6 g	7.8 g
Energy	1010 kcal	126.2 kcal

KETO FEED

Ingredients	Amount	Kcal	Protein	CHO	Fat
Metanutrition Keto	12 g	86.64	1.8	0.96	8.4
Corn flour	7.8 g	27.69	-	6.91	-
Refined Oil	1.3 ml	11.7	-	-	1.3
Total		126	1.8	7.8	9.7

2:1 KETOGENIC DIET CALCULATION IN STATUS

Nutrients	Per day requirement	Per meal requirement Total 84 meals
Fat	98.8 g	11.4 g
Protein	15 g	1.87 g
Carbohydrate	34.9 g	4.3 g
Energy	1010 kcal	126 kcal

KETO FEED

Ingredients	Amount	Kcal	Protein	CHO	Fat
Metanutrition Keto	12 g	86.64	1.8	0.96	8.4
Corn flour	3.8 g	13.49	-	3.36	-



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Refined Oil	3 ml	27	-	-	3
Total		127	1.8	4.3	11.4

KETOGENIC DIET CALCULATION AND DESIGNING RECIPES

3 years old boy, IBW 13.4 kg.

Energy requirements = 1360 Kcal/day (EAR)

Protein requirements = 17 g (1.2g/kg IBW)

1:1 KETOGENIC DIET CALCULATION

Nutrients	Per day requirement	Per meal requirement Total 4 meals
Fat	104.6 g	26.1 g
Protein	17 g	4.25 g
Carbohydrate	87.6 g	21.9 g
Energy	1360 kcal	340 kcal

Recipes 1:1 Ketogenic diets

1) **Banana Shake**

Ingredients	Amount	Kcal	Protein	CHO	Fat
Toned milk	100 ml	58	3.2	4.5	3.0
Banana	70 g	77	1.05	17.5	0.35
Refined oil	11.6 ml	104.4	-	-	11.6
Coconut oil	5.0 ml	42	-	-	5
Butter	7.5 g	54.6	-	-	6.15
Total		336	4.25	22	26.1

2) **Milk Custard**

Ingredients	Amount	Kcal	Protein	CHO	Fat
Full Cream	120 ml	108	4.2	6	7.44
Custard	16 g	64	-	16	-
Refined oil	9.6 ml	86.4	-	-	9.6
Coconut oil	5 ml	42	-	-	5



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Butter	5 g	36.4	-	-	4.1
Total		336.8	4.2	22	26.1

3) Suji Upma

Ingredients	Amount	Kcal	Protein	CHO	Fat
Suji	25g	80	2.5	16	0.3
Capsicum/Beans	25 g	6	0.5	0.62	0.15
Tomato	25 g	4.9	0.22	0.67	0.11
Soya Atta	2.5 g	9.5	1	-	0.5
Corn flour	5 g	17.75	-	4.43	-
Refined oil	11.6 ml	104.4	-	-	11.4
Coconut oil	5 ml	42	-	-	5
Butter	10 g	72.8	-	-	8.1
Total		337.3	4.22	21.7	26

4) Puri-Sabji / Parantha-Sabji Tomato Soup

Ingredients	Amount	Kcal	Protein	CHO	Fat
<u>Cauliflower+Tomato+Onion</u>	160 g	31.36	1.44	4.3	0.75
<u>Soybean AttaSoya ehunk/Atta/Granules</u>	7 g	26.6	2.8	-	1.4
<u>Corn flour</u>	<u>20 g</u>	<u>71</u>	<u>-</u>	<u>17.7</u>	<u>-</u>
Refined oil	<u>10.8+6.6</u> ml	<u>97.2+49.4</u>	-	-	<u>10.8+6.6</u>
Coconut oil	5.0 ml	42	-	-	5
Butter	<u>10+2.5</u> g	<u>72.8+1</u>	-	-	<u>8.2+0.25</u>
Total		<u>340.9+340.3</u>	4.24	224.3	<u>26.134</u>

2:1 KETOGENIC DIET CALCULATIONS

Nutrients	Per day requirement	Per meal requirement
		Total 4 meals



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Fat	123.6 g	30.9
Protein	17 g	4.25 g
Carbohydrate	44.81 g	11.2 g
Energy	1360 kcal	340 kcal

Recipes 2:1 ketogenic diet

1) Milk smoothie

Ingredients	Amount	Kcal	Protein	CHO	Fat
Toned milk	150 ml	87	4.8	6.75	4.5
Corn flour	5 g	17.75	-	4.43	-
Refined oil	13.2 ml	118.8	-	-	13.2
Coconut oil	5.0 ml	42	-	-	5
Butter	10 g	72.8	-	-	8.2
Total		338.3	4.8	11.18	30.9

2) Papaya Shake

Ingredients	Amount	Kcal	Protein	CHO	Fat
Toned milk	100 ml	58	3.2	4.5	3.0
Papaya	135 g	32.4	0.65	6.75	0.27
Soya atta	1 g	3.8	0.4	-	0.2
Refined oil	14.2 ml	127.8	-	-	14.2+6.7
Coconut oil	5 ml	42	-	-	5
Butter	10 g	72.8	-	-	8.2+0.25
Total		336.8	4.25	11.15	30.9

3) Pumpkin/Ghiya Halwa or Namkeen

Ingredients	Amount	Kcal	Protein	CHO	Fat
Pumpkin	150 ml	16.1	0.79	2.52	0.19
Corn flour	102 g	35.57+1	-	8.86+1.79	-
Soya Atta	8.5 g	32.3	3.4	-	1.7
Refined oil	13.8+6.8 ml	124.2+51.2	-	-	13.8+6.8
Coconut oil	5 ml	42	-	-	5



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Butter	12.5 g	91	-	-	10.25
Total		<u>341.1340.1</u>	4.19	<u>113.34.3</u>	<u>30.934</u>

4) Lassi

Ingredients	Amount	Kcal	Protein	CHO	Fat
Curd (cow's milk)	135 g	83.7	4.3	4.3	5.4
corn flour	8 g	28.4	-	7	-
Refined oil	<u>12.3+1.5</u> ml	<u>110.7+103.5</u>	-	-	<u>12.3+1.5</u>
Coconut oil	5.0 ml	42	-	-	5
Butter	10 g	72.8	-	-	8.2
Total		<u>337.6354.3</u>	4.24	11.3	30.9

2.5:1 KETOGENIC DIET CALCULATION

Nutrients	Per day requirement	Per meal requirement Total 4 meals
Fat	128 g	32 g
Protein	17 g	4.25 g
Carbohydrate	34.3 g	8.57 g
Energy	1360 kcal	340 kcal

Recipes – 2.5:1 Ketogenic diets

1) Milk smoothie

Ingredients	Amount	Kcal	Protein	CHO	Fat
Toned milk	135 ml	78.3	4.3	6.07	<u>4.053+0</u>
Corn flour	<u>2.83</u> g	<u>9.94+10.65</u>	-	<u>2.282+65</u>	-
Refined oil	12.7 ml	114.3	-	-	12.7
Coconut oil	5.0 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		<u>335.5337.2</u>	4.3	<u>8.558+7</u>	32

2) Papaya Shake

Ingredients	Amount	Kcal	Protein	CHO	Fat
Toned milk	100 ml	58	3.2	4.5	3.0
Papaya	80 g	19.2	0.4	4.0	0.16
Soya atta	1.5 g	5.7	0.6	-	0.3
Refined oil	13.3 ml	119.7	-	-	13.3+6.7
Coconut oil	5 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		335.6	4.3	8.5	32

3) Pumpkin/Ghiya Halwa or Namkeen

Ingredients	Amount	Kcal	Protein	CHO	Fat
Pumpkin	150 ml	16.5+9.2	0.79	2.52	0.19
Soya Atta	8.5 g	32.3	3.4	-	1.7
Corn Atta	6.87 g	24.1485	-	6.02	-
Refined oil	14.9 ml	134.1	-	-	14.9
Coconut oil	5 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		340+1	4.19	8.548.7	32

4) Tomato Soup

Ingredients	Amount	Kcal	Protein	CHO	Fat
Tomato	150 g	29.4	1.35	4.05	0.7
Soya chunk/Atta/Granules	7.5 g	28.5	3	-	1.5
Corn flour	5 g	17.75	-	4.43	-
Refined oil	14.6+14.5 ml	131.5+130.5	-	-	14.6+14.5
Coconut oil	5.0 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		340.1339.1	4.35	8.43	32

3:1 KETOGENIC DIET CALCULATION



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Nutrients	Per day requirement	Per meal requirement Total 4 meals
Fat	131.6 g	32.9 g
Protein	17 g	4.25 g
Carbohydrate	26.87 g	6.7 g
Energy	1360 kcal	340 kcal

Recipes – 3:1 Ketogenic diets

1) Milk smoothie

Ingredients	Amount	Kcal	Protein	CHO	Fat
Toned milk	135 ml	78.3	43	6.0	4.05
Soyabean flour	1 g	3.55	-	0.8	-
Refined oil	<u>13.6</u> +3.9 ml	<u>122.4</u> +25.1	-	-	13. <u>69</u>
Coconut oil	5.0 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		340	4.3	6.8	32.9

2) Papaya Shake

Ingredients	Amount	Kcal	Protein	CHO	Fat
Soya milk	110 ml	37.84	3.52	-	1.76
Papaya	135 g	32.4	0.67	6.75	0.27
Refined oil	15.6 ml	<u>140.4</u> +50.3	-	-	15.6
Coconut oil	5 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		<u>343.6</u> +44	4.18	6.7	32.9

3) Pumpkin/Ghiya Halwa or Namkeen

Ingredients	Amount	Kcal	Protein	CHO	Fat
Pumpkin	150 ml	16.1	0.79	2.52	0.19
Corn flour	<u>4.82</u> g	<u>17.04</u> +7.1	-	<u>4.25</u> +1.79	-
Soya Atta	8.5 g	32.3	3.4	-	1.7
Refined oil	<u>15.8</u> +6.8 ml	<u>142.2</u> +51.2	-	-	<u>15.8</u> +6.8



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Coconut oil	5 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		<u>341340.1</u>	4.19	<u>6.74.3</u>	<u>32.934</u>

4) Tomato Soup

Ingredients	Amount	Kcal	Protein	CHO	Fat
Tomato	150 g	29.4	1.35	4.05	0.7
Soya chunk/Atta/Granules	7.5 g	28.5	3	-	1.5
Corn flour	3 g	10.65	-	2.65	-
Refined oil	15.52 ml	<u>139.5+136.8</u>	-	-	<u>15.5+15.2</u>
Coconut oil	5.0 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		<u>341338.4</u>	4.24	<u>6.74.3</u>	32.9

4:1 KETOGENIC DIET CALCULATION

Nutrients	Per day requirement	Per meal requirement Total 4 meals
Fat	136 g	34 g
Protein	17 g	4.25 g
Carbohydrate	17 g	4.25 g
Energy	1360 kcal	340 kcal

Recipes – 4:1 Ketogenic diets

1) Milk smoothie

Ingredients	Amount	Kcal	Protein	CHO	Fat
Toned milk	95 ml	55.1	3.04	4.27	2.85
Soyabean flour	3 g	11.4	1.2	-	0.6
Refined oil	15.3 ml	137.7	-	-	15.3
Coconut oil	5.0 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		337.2	4.24	4.27	34

2) Papaya Shake

Ingredients	Amount	Kcal	Protein	CHO	Fat
Soya milk	120 ml	41.28	3.84	-	1.92
Papaya	85 g	20.4	0.42	4.25	0.17
Refined oil	16.7 ml	150.3	-	-	16.7
Coconut oil	5 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		344	4.26	4.25	34

3) Pumpkin/Ghiya Halwa or Namkeen

Ingredients	Amount	Kcal	Protein	CHO	Fat
Pumpkin	150 ml	16.1	0.79	2.52	0.19
Corn flour	2 g	7.1	-	1.79	-
Soya Atta	8.5 g	32.3	3.4	-	1.7
Refined oil	16.8 ml	151.2	-	-	16.8
Coconut oil	5 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		339.7340.1	4.19	4.3	34

4) Tomato Soup

Ingredients	Amount	Kcal	Protein	CHO	Fat
Tomato	160 g	31.36	1.44	4.3	0.75
Soya chunk/Atta/Granules	7 g	26.6	2.8	-	1.4
Refined oil	16.6 ml	149.4	-	-	16.6
Coconut oil	5.0 ml	42	-	-	5
Butter	12.5 g	91	-	-	10.25
Total		340.3	4.24	4.3	34



INCLUSION OF MILLETS IN MANAGEMENT OF EPILEPSY

SHREE ANN (Millets) – “Vocal for Local”

Introduction to millets

Millets are one of the oldest cereal grain for humans and a group of highly variable small-seeded hardy grasses.

Millets available in India - Sorghum (Jowar), Pearl Millet (Bajra), Finger Millet (Ragi), Little Millet (Kutki), Foxtail Millet (Kakun), Proso Millet (Cheena), Barnyard Millet (Sawa), Kodo Millet (Kodu), Brown top, Amaranth, Buckwheat and other millets.

Why inclusion of millets in diet therapies for treating epilepsy

Millets are superior in many aspects compared to commonly used staples - wheat and rice. Some of the nutrient qualities of millets which are specifically important and useful for dietary management of epileptic patients are -

1. Millets are rich in vitamins such as folic acid, vitamin B6, β - Carotene, and niacin.
2. Rich in dietary minerals specifically in phosphorus, calcium, iron, zinc, magnesium and potassium content. Finger millet and ragi contains nine- to tenfold higher calcium than others but both are also high in glycemic index.

Diet therapies practiced for epilepsy are deficient in micronutrients due to their reverse macronutrient ratios – incorporating millets in the diet therapy will enhance micronutrient status of children, overcome malnutrition and boost growth rate in children

3. Rich in anti-oxidants, polyphenols and phytosterols.
4. Good source of all essential amino acids except lysine and threonine.
5. Contain high amounts of lecithin

Useful for strengthening the nervous system and improving mental health.

6. Alkaline nature of millets-based foods leads to healthy digestive system.

Helps resolve gastrointestinal issues which are major side effects of diet therapies in epilepsy experienced by patients.



7. High fibre content and lower Glycaemic Index which facilitates delaying the next meal. Barnyard millet has the highest amount of crude fiber among cereals.

High fiber content is good for resolving constipation. High fiber and low Glycemic Index allows glucose to be released slowly in the blood stream. This property is helpful in low glucose generation and efficient ketone formation and it's quick action on brain.

Nutritional challenges - Caution about millets

Despite millets' multiple health benefits, they also contain antinutrients compounds – phytates, oxalates, tannins and trypsin inhibitors that block or reduce body's absorption and digestibility of nutrients. Many millets contain goiterogenic substances that limit uptake of iodine to the thyroid.

Points to remember while using millets

- Do not make millets as a main grain food.
- Limit eating millets once a day when introducing in diet and continue doing this until body gets used to them. Then increase the frequency to twice or thrice a day.
- It is preferable to combine millet and non-millet recipes daily eg;
 - Choose 2 millet recipes and 2 non-millet recipes when prescribing total of 4 recipes per day in ketogenic diet;
 - Not more than 2 millet recipe per day in Atkin's diet;
 - Not more than 2 meals with inclusion of millets along with other food items in low glycemic index diets.
- Drink plenty of water throughout the day with millet diet.

Millets are healthy but do not possess medicine-like values and their excess use should be avoided.

In this book, millets have been used in the recipes in measured, calculated and safe amounts to render benefits and prevent their harmful effects.

RECIPE OPTIONS– lot of recipes with different ratios can be designed to ensure variety in the diet therapy.

KETOGENIC DIET RECIPES

1:1 Ketogenic Diet Recipes

1. Banana Shake

Ingredients	Amount
Banana	70g
Toned <u>m</u> ilk	100 ml
Refined <u>o</u> il	11.6 ml
Coconut <u>o</u> il	5 ml
Butter/Ghee	7.5 g



Steps:

- Take 70g of peeled banana.
- Add 100 ml single toned milk, 11.6 ml refined oil, 5 ml coconut oil and 7.5 g butter/ghee.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

2. Custard

Ingredients	Amount
Custard	16g
Full cream <u>m</u> ilk	120 ml
Refined <u>o</u> il	9.6 ml
Coconut <u>o</u> il	5 ml
Butter/Ghee	5 g



Steps:

- Take 120 ml full cream milk and heat for 2 minutes.
- Add 16 g custard powder, 9.6 ml refined oil, 5 ml coconut oil and 5 g butter/ghee.
- Mix well.
- Cook for 4-5 minutes on medium flame.



- Sprinkle cardamom powder and serve at room temperature.

3. Puri + Sabji

Ingredients	Amount
Wheat flour	32 g
Soybean flour	1.5
Pumpkin/bottle gourd	100 g
Refined oil	12.1 ml
Coconut oil	5 ml
Butter/Ghee	10 g



Steps:

- Take 32 g wheat flour + 1.5 g soybean flour.
- Add salt according to taste and 1 teaspoon ghee in it.
- Mix and knead well.
- Make out 3 balls into it for puri.
- Chop 100 g pumpkin vegetable.
- Heat oil in a frying pan and add chilly, pepper, ginger + garlic paste.
- Add chopped vegetable, salt, and masala according to taste.
- Cook for 10-15 minutes on low flame.
- Garnish with coriander leaves and serve hot.

4. Pancake

Ingredients	Amount
Wheat flour	34.5 g
Egg	1
Baking powder	1/4 th tsp
Non sugar sweetener	1/4 th tsp
Salt	1/4 th tsp
Refined oil	6.5 ml



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Coconut Oil	5 ml
Butter/Ghee	10 g



Steps:

- Take 34.5 g wheat flour in a bowl.
- Beat 1 egg well.
- Add salt, baking powder, salt, non-sugarsweetener, and oil/ghee
- Mix all ingredients well and add ½ cup water for flowing consistency.
- keep it for ½ an hr.
- ~~Chop 100 g vegetable.~~
- Heat a dosa pan with oil.
- Spread batter on pan. ~~Using by using~~ the back of the spoon very well.
- Cook for ~~5-10~~ 2 minutes on low flame, until the surface of pancake has some bubbles.
- Serve with butter.

5. Lassi

Ingredients	Amount
Curd (cow's milk)	135 g
Corn flour	20 g
Refined Oil	7.5 ml
Coconut Oil	5 ml
Butter/Ghee	10 g

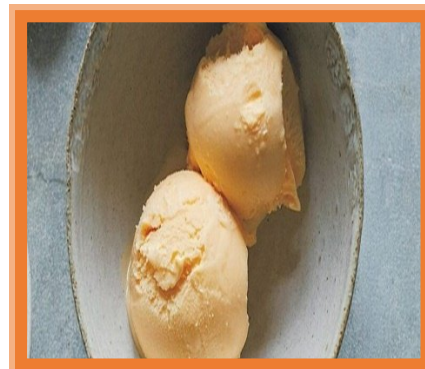


Steps:

- Take 135 g curd (made from cow's milk).
- Add 20 g roasted corn flour, 7.5 ml refined oil, 5 ml coconut oil and 10 g butter/ghee.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

6. Fruit Ice Cream

Ingredients	Amount
Egg	1
Amul milk cream	10 ml
Custard	20 g
Watermelon/Papaya	25 g
Refined oil	7.5 ml
Coconut oil	5 ml
Butter/Ghee	10 g
Non sugar Natural sweetener	1 pinch



Steps:

- Beat egg well.
- Dry roast 20 g custard powder.
- Take 1 teaspoon water and dissolve non sugar sweetener in it.
- Add papaya, roasted custard, 6.4 ml refined oil, 5 ml coconut oil, and 7.5 g butter/ghee.
- Mix all ingredients well.
- Churn it for 30 seconds in mixer/hand blender.
- Keep it in deep freezer for 2 hrs.
- Sprinkle cardamom powder and serve cold.

7. Suji Upma

Ingredients	Amount
Suji	25 g
Soyabeans/Soybeans	2.5 g

attaAtta	
Capsicum/beans	25 g
Tomato	25 g
Refined oil	6.5 ml
Coconut oil	5 ml
Butter/Ghee	10 g



Steps:

- Chop the capsicum, beans, and tomato.
- Add permitted oil in a hot pan and add chilly+ mustard seed into it.
- Fry/Sauté the chopped vegetables for 2 minutes.
- Add suji+ soyabean atta in it and sauté-fry for 2 minutes.
- Pour 1 cups_ of water into ~~to~~ it cook for 3-4 minutes on slow to medium flame.
- Serve hot with coriander chutney.

8. Suji Idli

Ingredients	Amount
Suji	25 g
Corn flour	5 g
Curd (cow's milk)	50 g
Refined oil	10.7 ml
Coconut oil	5 ml
Butter/Ghee	10 g



Steps:

- Take suji, corn flour, curd, and salt in bowl.
- Mix all the ingredients well and keep it for ½ an hr.
- Heat little oil in a frying pan,
- Put mustard seed and curry leaf in oil and add it into the batter.
- Add suji + soyabean atta in it and fry for 2 minutes.
- Make 4-5 idli from this batter.

- Serve with coriander chutney

9. Egg Roll

Ingredients	Amount
Egg	1
Wheat flour	20 g
Corn flour	10 g
Refined <u>o</u> Oil	6.7 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	10 g



Steps:

- Mix wheat flour and corn flour in bowl
- Add some oil, salt andajwaininto it.
- Knead well
- Roll out into paratha. spreadSpread raw egg over it and cook on tava with oil.
- Serve with butter.

10. Egg Pulao

Ingredients	Amount
Egg boiled	½
Soya Granules	10 g
Corn flour	24 g
Cauliflower	15 g
Tomato	15 g
Refined <u>o</u> Oil	7.8 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	10 g



Steps:

- Boil the soya granules, drain the excess water

- Heat oil in a pan.
- Add black pepper, ginger-garlic paste, and green chilly.
- Add soya granules, boiled egg, masala, vegetables and salt & Cook for 10-12-4 minutes
- Serve with butter and coriander leaves at room temperature.

2. MILLETS BASED KETOGENIC DIET (1:1 ratio)

1. Sama millet Kheer

Ingredients	Amount
Sama millet	10 g
Rice	5 g
Corn flour	5 g
Toned milk	125 ml
Refined oil	9.1 ml
Coconut oil	5 ml
Butter/Ghee	10 g



Steps:

- Wash Sama millet and rice.
- Take 125 ml toned milk in a pan.
- Add 100 ml water in it.
- Take 1 tsp water for dissolve non sugar sweetener and add into milk.
- Boiled for 1 minute.
- Add sama millets, rice, and permitted oil/ghee in it.
- Cook for 5-7-10 minutes on low flame.
- Serve it at room temperature.

2. Ragi Uttapam

Ingredients	Amount
Ragi millet	10 g
Suji	15 g

Corn flour	4 g
Tomato	25 g
Curd (cow's milk)	50 mlg
Refined oil	9.8 ml
Coconut oil	5 ml
Butter/Ghee	10 g



Steps:

- Take ragi, suji, corn flour, curd, and salt in a bowl.
- Mix all the ingredients with water and keep it for ½ an hr.
- Heat oil in a dosa pan and make uttapam from the batter.
- Serve with coriander chutney.

3. Bajra Millets Khichri

Ingredients	Amount
Bajra	10 g
Rice	5 g
Moong dal	5 g
Corn flour	5 g
Carrot/Beans	30 g
Tomato	20 g
Refined oil	12.3 ml
Coconut oil	5 ml
Butter/Ghee	10 g



Steps:

- Wash the moong dal + bajra and soak for 10 minutes.
- Wash bajra and soak for 12-16 hours
- Chop all vegetables.
- Heat oil in pressure cooker.

- Add chilly, garlic, ginger and pepper in the oil.
- Add chopped vegetables, moong dal, bajra and salt into it.
- Close the pressure and cook for 8-10-5 minutes till 4 whistle.
- Serve it at room temperature with butter.

2:1 KETOGENIC DIET RECIPES

1. Fruit Shake

Ingredients	Amount
Papaya/Watermelon	135 g
Toned Milk	100 ml
Soya Atta	1 g
Refined ω Oil	11.6 ml
Coconut ω Oil	5 ml
Butter/Ghee	7.5 g



Steps:

- Take 135 g of peeled papaya.
- Add 100 ml single toned milk, 1 g soybean atta, and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

2. Milk Smoothie

Ingredients	Amount
Toned Milk	150 ml
Corn flour	5 g
Refined ω Oil	13.2 ml
Coconut ω Oil	5 ml
Butter/Ghee	10 g



Steps:

- Take 150ml single toned milk.



- Add corn flour, and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

3. Egg Parantha

Ingredients	Amount
Egg	1
Wheat flour	17.5 g
Refined <u>o</u> Oil	11.5 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	10 g



Steps:

- Mix wheat flour and beaten egg in a bowl
- Add some oil, salt and ajwain into it.
- Knead well
- Roll out into paratha and cook on tava with oil.
- Serve with butter.

4. Lassi

Ingredients	Amount
Curd (cow's milk)	135 g
Corn flour	8 g
Refined <u>o</u> Oil	12.3 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	10 g



Steps:

- Take 135 g curd (made from cow's milk).
- Add 8 g roasted corn flour, permitted oil/ghee/butter, and non sugarnatura sweetener.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

5. Namkeen Dalia

Ingredients	Amount
Dalia	15 g
Soya Granules /Dal	5.5 g
Ghiya/Pumpkin	100 g
Refined o Oil	16.3 ml
Coconut o Oil	5 ml
Butter/Ghee	10 g



Steps:

- Soak soya **dalgranules** for 2 hrs.
- Wash the dalia **and** Chop the vegetable.
- Heat oil in pressure cooker.
- Add chilly, garlic, ginger and pepper in the oil.
- Add chopped **vegetablevegetables**, dalia, soya **dalgranules**, and salt into it.
- Close the pressure and cook for **5-10+5** minutes till 4 whistle.
- Serve it at room temperature with butter and mint leaves.

6. Fruit Ice Cream

Ingredients	Amount
Egg	1
Amul milk cream	10 ml
Custard	9.5 g
Watermelon/Papaya	25 g
Refined o Oil	9 ml
Coconut o Oil	5 ml
Butter/Ghee	10 g
Non sugar sweetener	1 pinch





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Steps:

- **Take 1 egg & bBeat egg well.**
- Dry roast 9.5 g custard powder.
- Take 1 teaspoon water and dissolve non sugar_sweetener in it.
- Add permitted oil/ghee.
- Mix all ingredients.
- Churn it for 30 seconds in mixer/hand blender.
- Keep it in deep freezer for 2 hrs.
- Sprinkle cardamom powder and serve cold.

7. Suji Halwa

Ingredients	Amount
Suji	17.5 g
Soya Atta	6.5 g
Refined o Oil	16.2 ml
Coconut o Oil	5 ml
Butter/Ghee	10 g



Steps:

- Take a frying pan and add permitted oil into it.
- Add suji + **soyabeansoybean** atta in it and **sautéfry** for 2 minutes.
- Take 1 tsp water for dissolve non sugar_sweetener and add **in suji-with-water**.
- Pour 1 cups of water to it cook for **5-63-4** minutes on slow to medium flame.
- Serve hot.

8. Dahi Alu

Ingredients	Amount
Alu	65 g
Curd (cow's milk)	100 g
Refined o Oil	9.8 ml
Coconut o Oil	5 ml
Butter/Ghee	10 g





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Steps:

- Heat oil/ghee in a pan and cumin.
- Add boiled potato and salt in it and sauté for 2 minutes and off the flame.
- Take curd and churn for 10 seconds.
- Add potato in the curd.
- Garnish with coriander leaves and serve.

8. Egg Pulao

Ingredients	Amount
Egg boiled	½
Soya Granules	10 g
Corn flour	12 g
Tomato	30 g
Refined <u>o</u> il	12.5 ml
Coconut <u>o</u> il	5 ml
Butter/Ghee	10 g



Steps:

- Boil the soya granules, drain the excess water.
- Heat oil in a pan.
- Add black pepper, ginger-garlic paste, and green chilly.
- Add soya granules, boiled egg, masala, vegetables, and salt.
- Cook for 5-10-4 minutes.
- Serve with butter and coriander leaves at room temperature.

9. Gobhi Masala

Ingredients	Amount
Cauliflower	100 g
Soya Granules	5 g
Corn flour	8.5 g
Tomato+ <u>onion</u>	50 g
Refined <u>o</u> il	16.9 ml
Coconut <u>o</u> il	5 ml

Butter/Ghee

10 g



Steps:

- Wash all vegetables and chop finely.
- Soak soya chunks for 15 minutes.
- Heat oil in a pan.
- Add black pepper, ginger-garlic paste, and green chilly.
- Add soya chunks/granules, vegetables, masala, and salt.
- Cook for 10-15-7 minutes.
- Serve with butter at room temperature.

MILLETS BASED KETOGENIC DIET RECIPES (2:1 RATIO)

1. Sama Millet Kheer

Ingredients	Amount
Samamillet (Sanwa)	10 g
Soya Atta	1.5 g
Toned milk	100 ml
Refined <u>o</u> Oil	14 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	10 g



Steps:

- Wash the sama millets and soak for 10 minutes.rice.
- Take 100 ml toned milk in a pan.
- Take 1 tsp water for dissolve non sugar sweetener and add into milk.



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- Boiled for 1 minute.
- Add sama and permitted oil/ghee in it.
- Cook for 105-7 minutes on low flame.s-
- Serve it at room temperature.



2. Rajgeera Atta_Chilla (Millets)

Ingredients	Amount
Amaranth flour (Rajgeera)	10 g
Suji	8 g
Soya atta	6 g
Refined <u>o</u> Oil	15.9 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	10 g



Steps:

- Take a frying pan and add permitted oil into it.
- Add amaranth flour +_suji + soybean atta in it and roast for 2 minutes.
- Pour 1 cup water and 1 pinch non sugar_sweetener in roasted amaranth flour.
- Cook for 5-7 minutes and serve hot.

3. Bajra Khichri

Ingredients	Amount
Bajra	10 g
Rice	5 g
Soyabean dal	6 g
Carrot/Beans	15 g
Tomato+_onion	30 g

Refined Oil	15.9 ml
Coconut Oil	5 ml
Butter/Ghee	10 g



Steps:

- Wash the [soyabeansoybean dal](#) ,+~~bajra~~, rice and soak for 10 minutes.¶
- [Soak bajra for 6-8 hours before cooking.](#)
- Chop all vegetables.
- Heat oil in pressure cooker.
- Add chilly, garlic, ginger, and pepper in the oil.
- Add chopped vegetables, soya dal, bajra and salt into it.
- Close the pressure and cook for ~~4-5-7 minutes~~[7 minutes](#) till 4 whistles.
- Serve it at room temperature with butter.

2.5:1 KETOGENIC DIET RECIPES

1. Fruit Shake

Ingredients	Amount
Chiku_/Apple	65 g
Soya Milk	120 ml
Refined o Oil	15.8 ml
Coconut o Oil	5 ml
Butter/Ghee	10 g



Steps:

- Take 65 g of peeled chiku/_apple.
- Add 120 ml [soyamilksoya milk](#) and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

2. Papaya Shake

Ingredients	Amount
Papaya/Watermelon	80 g
Toned Milk	100 ml
Soya Atta	1.5 g
Refined ω Oil	13.3 ml
Coconut ω Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 80 g of peeled papaya.
- Add 100 ml single toned milk, 1.5 g soybean atta, and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

3. Milk Smoothie

Ingredients	Amount
Toned Milk	135 ml
Corn flour	3 g
Refined ω Oil	12.7 ml
Coconut ω Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 135ml single toned milk.
- Add corn flour and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

4. Coconut milk

Ingredients	Amount
coconut Milk	225 ml
Soya atta	6 g
Refined <u>o</u> Oil	3 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	2.5 g



Steps:

- Take 225ml packed coconut milk.
- Add soya flour and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

5. Egg Chilla

Ingredients	Amount
Egg	1
Tomato+ <u>o</u> nion	50 g
Corn flour	8 g
Refined <u>o</u> Oil	10.5 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 1 beatened egg in a bowl.
- Add corn flour, chopped tomato, and oil/ghee into it.
- Take a frying pan and put some oil in pan.
- Serve with butter.

6. Cauliflower Delight

Ingredients	Amount
Cauliflower	100 g
Soya Granules	5 g

Corn flour	5.5 g
Tomato+ onion	50 g
Refined Oil	15.9 ml
Coconut Oil	5 ml
Butter/Ghee	12.5 g



Steps

- Wash all vegetables and chop finely.
- Heat oil in a pan.
- Add black pepper, ginger-garlic paste, and green chilly in heated oil.
- Add soya granules, vegetables, masala, and salt.
- Cook for 10-15 5-7 minutes on slow to medium flame.
- Serve with butter at room temperature.

7. Tomato soup

Ingredients	Amount
Tomato	150 g
Soya atta/ <u>chunk</u>	7.5 g
Corn flour	5 g
Tomato	50 g
Refined <u>o</u> Oil	14.5 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Wash the tomato.
- Take pressure cooker and cook tomatoes for 4-5 minutes till 4 whistles.
- Peel the skin of tomatoes and make puree.

- Heat oil in a frying pan and add puree in it.
- Add soya atta/chunk, pepper, and salt into it.
- Cook for 4-5-7-minutes on medium flame:-
- Garnish with butter and mint leaves and serve at room temperature.

8. Pumpkin/Ghiya Halwa

Ingredients	Amount
Pumpkin	150g
Soya Atta	8.5 g
Corn flour	7 g
Refined <u>o</u> Oil	14.9 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Peel off the pumpkin and finely chop it.
- Take a frying pan and add permitted oil/ghee into it.
- Add chopped pumpkin in it.
- Take 1 tsp water for dissolve non sugar_sweetener and add in pumpkin.
- Cook for 15-20 minutes on low flame.
- Sprinkle cardamom and serve at room temperature.

9. Capsicum Cheesy Delight

Ingredients	Amount
Capsicum	50 g
Paneer	20 g
Corn flour	5.5 g
Refined <u>o</u> Oil	13.5 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	12.5 g



Steps:



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- Chop the capsicum and paneer.
- Take a frying pan and add permitted oil/ghee into it.
- Add garlic-ginger paste, chilly, masala, and salt.
- Add chopped vegetable and paneer.
- Cook for 7-10 minutes on low flame.
- Garnish with butter and coriander leaves and serve at room temperature.

10. Egg Pulao

Ingredients	Amount
Egg boiled	1/2
Soya Granules	10 g
Corn flour	9.5 g
Tomato	15 g
Refined oil	11.7 ml
Coconut oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Boil the soya granules, drain the excess water.
- Heat oil in a pan.
- Add black pepper, ginger-garlic paste, and green chilli.
- Add soya granules, boiled egg, masala, vegetables, and salt.
- Cook for 5-7-4 minutes.
- Serve with butter and coriander leaves at room temperature.

11. Soyabean Atta Halwa

Ingredients	Amount
Soyabean Soybean Atta	10.5 g
Corn flour	9.5 g
Refined oil	14.6 ml
Coconut oil	5 ml
Butter/Ghee	12.5 g



Steps:



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- Take a frying pan and add permitted oil/ghee.
- Add [soyabeansoybean](#) atta and corn flour into it and roast for 1-2 minutes on low flame.
- Take 1 tsp water for dissolve [non sugar natura](#)-sweetener and add [in roasted flours](#):-
- Add 1 cup water.
- Cook for 5-7 minutes on low flame.
- Sprinkle cardamom and serve at room temperature.

12. Kheera Raita

Ingredients	Amount
Kheera	100 g
Curd(cow,s milk)	120 g
Corn flour	3.5 g
Refined oOil	11.8 ml
Coconut oOil	5 ml
Butter/Ghee	12.5 g



Steps:

- Peel off the cucumber and [grategrind it,the cucumber](#):-
- Take curd in [a bowl](#) and [add permitted oil and ghee .Churn it for 30 seconds.grind](#):-
- ~~Add salt~~ [Add salt](#) and chat masala and [grated](#) cucumber into it.
- Serve it [with coriander leaves](#):-

MILLETS BASED KETOGENIC DIET RECIPES (2.5:1 RATIO)

1. Ragi Halwa

Ingredients	Amount
Ragi	13 g
Soya atta	9.5 g
Refined oOil	14.6 ml
Coconut oOil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take a frying pan and add permitted oil into it.
- Add ragi atta+_soybean atta in it and roast for 2 minutes.
- Pour 1 cup water and 1 pinch non sugar sweetener in roasted amaranth flour.
- Cook for 5-7 minutes.
- Serve hot.

2. Bajra Khichri

Ingredients	Amount
Bajra	10 g
Moong dal	5 g
Ghiya	15 g
Refined <u>o</u> Oil	15.6 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	10 g



Steps:

- Wash the moong dal and bajrasoak for 10 minutes.¶
- Wash the bajra and soakfor 6-8 hour before cooking.
- Chop vegetable.
- Heat oil in pressure cooker.
- Add chilly, garlic, ginger, and pepper in the oil.
- Add chopped vegetable, moong dal, bajra and salt into it.
- Close the pressure and cook for 4-5 minutes till 4 whistles.

- Serve it at room temperature with butter.

3:1 KETOGENIC DIET RECIPES

1. Watermelon Shake

Ingredients	Amount
Papaya/Watermelon	135g
Soya Milk	110 ml
Refined <u>o</u> Oil	15.6 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 135 g of peeled ~~papaya~~ Water melon/musk melon.
- Add 110 ml ~~soyamilk~~ soya milk and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom ~~powder~~ almond powder, almond and serve.

2. Milk Smoothie

Ingredients	Amount
Toned Milk	135 ml
Corn flour	1 g
Refined <u>o</u> Oil	13.9 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 135ml single toned milk.
- Add corn flour and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder, almond and serve.

3. Coconut milk

Ingredients	Amount
coconut Milk	175 ml
Soya atta	7 g
Refined <u>o</u> il	7 ml
Coconut <u>o</u> il	6.4 ml
Butter/Ghee	5 g



Steps:

- Take 175ml packed coconut milk/[homemade](#).
- Add soya flour and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom [powder](#), [almond powder](#), [almond](#) and serve.

4. Egg Fry

Ingredients	Amount
Egg boiled	1
Corn flour	7.5 g
Refined <u>o</u> il	11.6 ml
Coconut <u>o</u> il	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 1 boiled egg cut from [the](#) center.
- Take a frying pan and put some oil in pan.
- Add egg in frying pan and sprinkle corn flour on egg.
- Serve with butter.

5. Cauliflower Delight

Ingredients	Amount
Cauliflower	100 g

Soya Granules	5 g
Corn flour	3 g
Tomato+ onion	50 g
Refined oil	16.8 ml
Coconut oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Wash all vegetables and chop finely.
- Heat oil in a pan.
- Add black pepper, ginger-garlic paste, and green chilli.
- Add soya granules, vegetables, masala, and salt.
- Cook for 10-15-7 minutes on low to medium flame.
- Serve with butter at room temperature.

6. Tomato soup

Ingredients	Amount
Tomato	150 g
Soya atta/chunk ³	7.5 g
Corn flour	5 g
Refined Oil	15.2 ml
Coconut Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Wash the tomatoes.
- Take pressure cooker and cook tomatoes for 4-5 minutes till 4 whistles.
- Peel the skin of tomatoes and make puree.
- Heat oil in a frying pan and add puree in it.
- Add soya atta/chunk, pepper, and salt into it.



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- Cook for 5-7-4-5 minutes on medium flame.-
- Garnish with butter and coriander leaves and serve at room temperature.

7. Pumpkin/Ghiya Halwa

Ingredients	Amount
Pumpkin	150 g
Soya <u>bean</u> Atta	8.5 g
Corn flour	4.5 g
Refined <u>o</u> Oil	15.8 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Peel off the pumpkin and finely chop it.
- Take a frying pan and add permitted oil/ghee into it.
- Add chopped pumpkin in it.
- Take 1 tsp water for dissolve non sugar natura sweetener and add in pumpkin.
- Cook for 15-20 minutes on low flame.
- Sprinkle cardamom, -almond and serve at room temperature.

8. Capsicum Cheesy Delight

Ingredients	Amount
Capsicum	50 g
Tomato + <u>onion</u>	50 g
Paneer	15 g
Corn flour	2 g
Refined <u>o</u> Oil	14.5 ml
Coconut <u>o</u> Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Chop the capsicum, tomato, and paneer.



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- Take a frying pan and add permitted oil/ghee into it.
- Add garlic-ginger paste, chilli, masala, and salt.
- Add chopped vegetable and paneer.
- Cook for **7-10** minutes on low flame.
- Garnish with butter and coriander leaves and serve at room temperature.

9. Soya Egg Pulao

Ingredients	Amount
Egg boiled	1/2
Soya Granules	10 g
Corn flour	7 g
Tomato	15 g
Refined o Oil	12.6 ml
Coconut o Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Boil the soya granules, **and** -drain **the** excess water.
- Heat oil in a pan.
- Add black pepper, ginger-garlic paste, and green chilli.
- Add soya granules, boiled egg, masala, vegetables, and salt.
- Cook for **5-7-4** minutes.
- Serve with butter and coriander leaves at room temperature.

10. Soyabean Atta Halwa

Ingredients	Amount
Soyabean Atta	10.5 g
Corn flour	7.5 g
Refined o Oil	15.2 ml
Coconut o Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take a frying pan and add permitted oil/ghee.
- Add soybean atta and corn flour into it and roast for 1-2 minutes on low flame.
- Take 1 tsp water for dissolve non sugar sweetener and add- [in roasted flour](#):-
- Add 1 cup water.
- Cook for 5-7 minutes on low flame.
- Sprinkle cardamom, [almond](#) and serve at room temperature.

11. Kheera Raita

Ingredients	Amount
Kheera	100 g
Curd	120 g
Corn flour	1.5 g
Refined oil	12.7 ml
Coconut oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Peel off the cucumber and [grate/grind it the cucumber](#):-
- Take curd in a bowl and [permitted oil/butter](#):-
- [Churn it for 30 seconds](#):-
- Add salt and chat masala and [grated](#) cucumber into it.
- Serve it [with coriander leaves](#):-

12. Lassi

Ingredients	Amount
Curd (cow's milk)	135 g
Corn flour	3 g
Refined oil	12.3 ml
Coconut oil	5 ml
Butter/Ghee	12.5 g





Steps:

- Take 135 g curd (made from cow's milk).
- Add roasted corn flour and oil/ghee [into curd](#).
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder, [almond](#) and serve.

MILLETS BASED KETOGENIC DIET RECIPES (3:1 RATIO)

1. Jowar Smoothie

Ingredients	Amount
Jawar atta	10 g
Soya milk	120ml
Refined oil	15.5 ml
Coconut oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 120 ml soya milk ([sugar free packed offit plain](#) or homemade).
- Add roasted jawar aata and permitted amount of oil/ghee.
- Add 1 pinch non sugar sweetener in it.
- [Sprinkle almond and](#) Serve it.

2. Bajra Khichri

Ingredients	Amount
Bajra	10 g
Soya bean dal	7.5 g
Ghiya	50 g
Refined Oil	15.6 ml
Coconut Oil	5 ml
Butter/Ghee	10 g



Steps:

1. Wash the moong dal and **bajra** soak for 10 minutes.
2. Wash bajra and soak for 6-8 hrs.
3. Chop vegetable.
4. Heat oil in pressure cooker.
5. Add chilly, garlic, ginger, and pepper in the oil.
6. Add chopped vegetable, moong dal, bajra and salt into it.
7. Close the pressure and cook for 4-5-10 -minutes till 4 whistles.
8. Serve it at room temperature with butter.

4:1 KETOGENIC DIET RECIPES

1. Papaya Shake

Ingredients	Amount
Papaya/Watermelon	85 g
Soya Milk	120 ml
Refined o Oil	16.5 ml
Coconut o Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 135 g of peeled papaya.
- Add 110 ml soy**a**bean milk and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder, **a**lmond and serve.

2. Milk Smoothie

Ingredients	Amount
Toned Milk	95 ml
Soya atta	2.5 g
Refined o Oil	15.2 ml

Coconut oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 95ml single toned milk.
- Add corn flour and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

3. Coconut milk

Ingredients	Amount
coconut Milk	115 ml
Soya atta	8.5 g
Refined oil	9.8 ml
Butter/Ghee	10 g



Steps:

- Take 115ml packed-coconut milk.
- Add soya flour and permitted oil/ghee/butter into it.
- Churn it for 30 seconds in mixer/hand blender.
- Sprinkle cardamom powder and serve.

4. Egg bhurji

Ingredients	Amount
Egg boiled	1
Tomato + onion	50 g
Corn flour	3.5 g

Refined o Oil	12.5 ml
Coconut o Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 1 egg.
- Chop the tomato [and onion](#).
- Take a frying pan and put some oil in pan.
- Add tomato and egg in frying pan.
- Cook for [5-7-2-3](#) minutes.
- Serve with butter [at room temperature](#).

5. Cauliflower Delight

Ingredients	Amount
Cauliflower	120 g
Soya Granules	3.5 g
Tomato	50 g
Refined o Oil	17.1 ml
Coconut o Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Wash all vegetables and chop finely.
- Heat oil in a pan.
- Add black pepper, ginger-garlic paste, and green chilly.
- Add soya granules, vegetables, masala, and salt.

- Cook for 7-10 minutes.
- Serve with butter at room temperature.

6. Tomato soup

Ingredients	Amount
Tomato	160 g
Soya atta/chunk	7 g
Refined Oil	16.6 ml
Coconut Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Wash the tomato.
- Take pressure cooker and cook tomatoes for 4-5 minutes till 4 whistles.
- Peel the skin of tomatoes and make puree.
- Heat oil in a frying pan and add puree in it.
- Add soya atta/chunk, pepper, and salt into it.
- Cook for 4-5-7 minutes on low to medium flame.
- Garnish with butter and coriander leaves and serve at room temperature.

7. Pumpkin/Ghiya Halwa

Ingredients	Amount
Pumpkin	150 g
Soya Atta	8.5 g
Corn flour	2 g
Refined Oil	16.8 ml
Coconut Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Peel off the pumpkin and ~~finely chop it.~~ ~~finely chop it.~~
- Take a frying pan and add permitted oil/ghee into it.
- Add chopped pumpkin in it.
- Take 1 tsp water to dissolve non sugar sweetener and add in pumpkin.
- Cook for 15-20 minutes on low flame.
- Sprinkle cardamom and serve at room temperature.

8. Kheera Raita

Ingredients	Amount
Kheera	80 g
Curd	100 g
Soya atta	1.5 g
Refined Oil	14.4 ml
Coconut Oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Peel off the cucumber and ~~grate it.~~ ~~grate it.~~ ~~the cucumber.~~
- Take curd in bowl and grind ~~for 30 seconds.~~
- Add salt and chat masala and cucumber into it.
- Serve it.

9. Lassi

Ingredients	Amount
Curd (cow's milk)	135 g
Refined Oil	13.3 ml
Coconut Oil	5 ml
Butter/Ghee	12.5 g



Steps:

3. Take 135 g curd (made from cow's milk).
4. Add roasted corn flour and oil/ghee.
5. Churn it for 30 seconds in mixer/hand blender.
6. Sprinkle cardamom powder and serve.

MILLETS BASED KETOGENIC DIET RECIPES (4:1 ratio)

1. Rajgeera Smoothie Millets (Amaranth)

Ingredients	Amount
Rajgeera Atta (Amaranth)	7 g
Soya milk	110 ml
Refined oil	16.6 ml
Coconut oil	5 ml
Butter/Ghee	12.5 g



Steps:

- Take 120 ml soya milk (~~-sugar free~~ [soffit plain](#) or homemade).
- Add roasted rajgeera atta (amaranth) and permitted amount of oil/ghee.
- Add 1 pinch non sugar sweetener in it.
- Serve it at room temperature.

MODIFIED ATKINS DIET RECIPES (15 GRAMS CHO)

1. Soya Upma

Ingredients	Amount
Soya Atta	25 g
Vegetable A	50 g
Vegetable B	100 g



Steps:

- Chop the permitted amount of vegetables.
- Heat the oil in a pan.

- Add the chopped green [chillychili](#), garlic, ginger and vegetables to it.
- [SauteSauté](#) it for [5+0](#) minutes.
- Pour 1 cups of water to it cook for [5-73-4](#) minutes on slow to medium flame.
- Serve hot with coriander chutney.

2. Ghiya_Halwa

Ingredients	Amount
Ghaiya	225 g
Non sugar sweetener	1 pinch
Cardamom	1-2
Coconut oil /refined oil/ghee	No restriction
Non sugar sweetner	1 pinch



Steps:

- Peel the ghiya and grate it.
- Heat the ghee in a pan.
- Add grated ghiya into it and cook it.
- Add soya [bean attapowder](#) and mix well.
- Remove from fire.
- Add non sugar sweetener to it.
- [Garnish with cardamom powder and almond serve.](#)
- [Serve it.](#)

3. Chicken Biryani

Ingredients	Amount
Tomato	130 g
Onion	
Capsicum	30 g
Soya chunks	30g

<u>Chicken</u>	100g
----------------	------



Steps:

- Boil the soya chunks/granules and remove the water.
- Heat the oil in a pan.
- Add whole masala ginger-garlic-green chilly paste.
- Add permitted amount of vegetables.
- Wash the chickenmeat and mix in the above gravy.
- Cook for 30 minutes.
- Garnish with coriander leaves and serve at room temperature.

4. Egg with Vegetables

Ingredients	Amount
Vegetable A	50
Vegetable B	115 g
<u>Egg</u>	<u>2 nos</u>



Steps:

- Break the egg into a bowl and beat it well till egg white and yolk are thoroughly combined.
- Heat the ghee in a pan.
- Add vegetables, salt, green chilly and, pepper to it.

- Add egg mixture and cook for 5-10 minutes.
- Garnish with coriander leaves and serve.

5. Cheese Egg Omlett



Steps:

- Break the egg into a bowl and beat it well till egg white and yolk are thoroughly combined.
- Wash the tomatoes and chop them finely.
- Heat the ghee in a pan and black pepper, tomato bay leaf and cardamom.
- Add the ginger-garlic and green chilly paste into it.
- Add egg mixture and cook for 5-10 minutes.
- Garnish with butter and grated cheese and serve at room temperature.

6. Egg Pulao

Ingredients	Amount
Vegetable A	50
Vegetable B	115 g
<u>Soya granules</u>	<u>20gm</u>
<u>Egg</u>	<u>-</u>



Steps:

- Boil the soya granules and drain the water.
- Wash the vegetables and chop finely.

- Heat the ghee in a pan.
- Add whole masala ginger-garlic-green chilly paste
- Add soya granules, boiled egg, vegetables, masalas, and salt.
- Cook for 5-10 minutes.
- Garnish with coriander leaves and serve.

7. Shahi TofuSoya-Paneer

Ingredients	Amount
Vegetable A	50
Vegetable B	115 g
<u>Tofu</u>	<u>50 g</u>

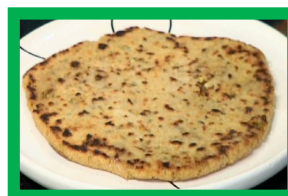


Steps:

- Was and c Chop the vegetables.
- Heat the ghee in a pan.
- Add whole masala ginger-garlic-green chilly paste.
- Add vegetables, salt, green chilly, pepper and pepper to it.
- Cut the Tofu in small pieces and add in vegetables.
- Cook for 105 minutes.
- Garnish with coriander leaves and serve.

8. Soya parantha

Ingredients	Amount
Wheat flour	5.8 g
<u>Soya bean atta</u>	<u>25 g</u>



Steps:

- Take soya bean atta and 5.8 g wheat flour.
- Add ghee for moyan.

- Knead well.
- Make chapatis.
- Serve with any vegetables or meat dish mentioned above.

9. Tomato Soup

Ingredients	Amount
Tomato	120 g
Amul cream	20 ml



Steps:

- [Pressure cook](#) ~~Cook~~ 150 g tomato for 5-7 minutes.¶
- [Remove the skin of tomatoes and make puree of it.](#)
- Add salt and black pepper to taste [and cook for for 5-7 minutes.-](#)
- Add butter and cream.
- Garnish with mint leaves and serve.

10. Lassi

Ingredients	Amount
Curd (cow's milk)	100 g
Cream	15 ml



Steps:

- Mix curd, cream, soya milk, non sugar sweetener together.
- Garnish with [almond-, walnuts dry fruits](#) and serve it.



2. Jawar Smoothie

Ingredients	Amount
Jawar	5.7 g
Soyabean milk	200 ml



Steps:

- Take soya milk ([sugar free packed](#) ([soffit plain](#) or homemade).
- Add jawar atta.
- Add 1 pinch non sugar sweetener in it.
- Serve it.

LGIT DIET RECIPES

1. Soya Chapati

Ingredients	Amount
Soya bean flour	40 g
Wheat flour	10 g
Desi ghee	15 g



Steps:

- Take 40 gm soya Atta.
- Add 15 g of oil/ghee into it and mix [well](#).
- Knead well and make one chapati from it.
- Serve with [soya bean dal](#).

2. Soya bean Dal

Ingredients	Amount
-------------	--------

Soybean dal	20 g
Tomato	50 g
Salt	1 pinch
Garlic ginger paste	1 g
Refined oil	5 ml



Steps:

- Take 20 g soya bean dal and soak for 1 hr.
- Add 50 g of tomato.
- Take a pressure cooker and add all ingredients.
- Cook for 10-12 minutes in medium flame till 6-7 whistles.
- Serve hot with soyabean chapati and better.

3. Egg Mayonnaise

Ingredients	Amount
Egg	2
Oil	400 ml
Non sugar sweetener	1 g
Salt	0.5 g
Half lemon juice	½
Garlic ginger paste	1 g



Steps:

- Take egg, non sugar sweetener, and salt in a bowl and churn it in mixer for 10 second.
- Add 50ml oil and again grind for 10-15 second,
- Repeat this process until 200 ml consumed in it.
- ~~Add~~ Add lemon juice and mix -well for 10 seconds.
- Repeat this oil process till 400 ~~ml~~ oil consumed -and & the mMayonnaise is ready now.

4. Soya bean Dal Pakauda

Ingredients	Amount
Soybean flour	40 g
Wheat flour	10 g
<u>Refined oil</u>	<u>300 ml</u>
Egg	1
Ginger garlic paste	1 g
For flavored water	
Water	300 ml
Lemon	1
Black salt	1 g
Mint and coriander chutney	2 tsp
Salt.	1 pinch
Garlic ginger paste	1 g



Steps:

- Mix all the ingredients well until the batter will be fluffy.
- Deep fry them until they are golden brown. Follow the same procedure for the remaining pakaudas.
- Dip the pakauda in the flavored water.
- Serve them with mint leaves. Remove on a waterso that the pakoras soak in all the chatpata water and get even softer.

5. Pancake

Ingredients	Amount
Soybean flour	40 g
Wheat flour	10 g
Water	50 ml
Egg	1
Ghee	20 g

Non sugar sweetener	2 g
lemon zest	1
Salt	1 pinch
Ingredients Butter Cream	
Unsalted butter	200 g
Non sugar sweetener	2 g



Steps:

For butter cream

- Mix both ingredients and beat them till become fluffy.

Syrup ingredients:

- Take 200ml water and add $\frac{1}{2}$ lemon juices and half cinnamon stick.
- Mix all the ingredients in a pan and cook for on low flame.
- Keep it separately.

Pancake

- Separate the egg white from -yolk.
- Take a bowl and add soya flour, wheat flour, ghee, salt, -and non sugar sweetener.
- Mix well and add egg yolk and add water gradually and make lumps free batter.
- Beat the egg white till become foamy and add into batter.
- Heat the pan and grease it with oil.
- Spread the batter in -a pan and cover it for 13-15 minutes on low flame.
- Pan cake is ready now.
- Add syrup to moist cake.
- Cut the pancake in desirable shape and layer it with butter cream.



- Serve it.

6. Mutton Curry

Ingredients	Amount
Mutton	100 g
Tomato	100 g
Ginger garlic paste	2 g
Mustard oil	60 ml
Coconut oil	10 ml
Butter	20 g



Steps:

- Take a pressure cooker and **add** mutton, oils, ginger garlic paste and salt **on high flame**.
- Keep it on high flame till the water dry.
- Add turmeric powder, red chilli, coriander powder, green chilli and chopped tomato.
- Now add 250 ml water and cover it.
- After one whistle turn the gas on low flame for 15-20 minutes.
- Out the cover of cooker and turn **on** the gas on high flame.
- Till get dry and oil came out on the surface then add little water according to the consistency.
- Again boil it for 5 minutes.
- Garnish with butter and coriander leaves.
- Serve it at room temperature.

7. Fish Curry

Ingredients	Amount
Fish	100 g
Tomato	50 g
Mustard oil	40 ml



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Coconut oil

10 ml



Steps:

- Wash and clean -the fish.
- Heat the oil in a pan.
- Fry the fish on -in-medium flame and keep it.
- Add turmeric powder, red chilli, coriander powder, green chilli and grinded tomato.
- Fry it for 5 minutes.
- Now add 150 ml water and cover it.
- After 5 minutes add fried fish in it and again keep it for 5 minutes on medium flame.
- Serve it with soya chappati.
- Garnish with coriander leaf.
- ~~After the oil comes out on the surface and the preparation is dry, add little water according to ¶~~
- ~~the consistency.¶~~
- ~~Again, boil it for 5 minutes.¶~~
- ~~Garnish with butter and coriander leaves and serve it at room temperature. ¶~~

8. Soya Momos

Ingredients	Amount
Soya bean flour	40 g
Wheat flour	10 g
Tofu	50 g
Butter	5 g



Steps:

- Take soya bean flour and wheat flour.
- Knead well.

- Chop the tofu.
- Add ½ teaspoon chopped garlic-ginger-green chilly paste and salt [in chopped tofu.](#)
- Make 7-8 momos from [kneaded flour.](#)
- Steam for 5 minutes on high flame.
- Serve with tomato chutney and egg mayonnaise.

9. Egg Omlette

Ingredients	Amount
Tomato	30 g
Onion	30 g
Ginger garlic paste	2
Ghee/Butter	10 g



Steps:

- Break the egg into a bowl and beat it well till egg white and yolk are thoroughly combined.
- Heat the ghee in a pan and add black pepper, bay leaf and cardamom.
- Add permitted vegetables, ginger-garlic and green chilly, paste into it.
- Add egg mixture and cook for 5-10 minutes.
- Garnish with butter and serve at room temperature.

10. ¶

10.11. Lassi

Ingredients	Amount
Curd	100 gml
Cream	30 ml
<u>Almond Dry</u> fruits-as per taste	2 -3 no.
<u>Non sugar sweetener</u>	2 no. 1 pinch



Steps:



- Mix curd, cream, soya milk and non sugar sweetener ~~together~~together and churn for 30 seconds.-
- Garnish with chopped almond dry fruits—and serve it.

MILLETS BASED LGIT RECIPE

1. Bajra Khichri

Ingredients	Amount
Bajra	10 g
Vegetable A	30 g
Vegetable B	30 g
<u>Soyabean Dal</u>	<u>5 g</u>



Steps:

- Wash the soya bean dal and soak it for 30 seconds.
- Wash the bajra and soak for 6-8 hours before cooking.~~s dal and bajra soak for 10 minutes.~~
- Heat oil in pressure cooker.
- Add chilly, garlic, ginger, and pepper in the oil.
- Add chopped vegetable, soya -bean dal, bajra and salt into it.



- Close the pressure and cook for 4-5 minutes till 4 whistles.
- Serve it at room temperature with butter.

PSYCHOLOGICAL SUPPORT

Psycho_education:

It is crucial to explain to the patient the nature of the illness, any risks or complications that may be present, and how dietary therapy is essential to managing the illness' symptoms. Things to keep in mind when psycho_education:

- Avoid using medical terminology
- Emphasize the good

Counseling the child:

In order for dietary therapy to be effective, it is absolutely essential to counsel the child first. It entails:

- Encouraging the child to take their medicines at the same time each day
- Enabling the child to manage their own medications.
- Ensure that the child receives enough rest or sleep
- Establish a regular schedule and routines.



- Promoting modification of eating habits

Parental guidance and counseling:

Providing the parents or caregivers, the required guidance and counselling is crucial. For a counselling to be effective it is important:

- Setting realistic and attainable objectives
- Planning ahead and reviewing all medical documents
- Providing a comfortable environment where patients can pose questions without worrying about being judged
- Listening to parents' worries and inquiries without criticizing them

Psycho social Support:

Parents or caregivers are in complete need of support and care; therefore, it is essential to:

- Identify the available family or societal support system
- Get the whole family involved to lighten the load on parents or carers
- Encouraging parents or caregivers to adopt a constructive and positive attitude towards therapy

Associated stress and anxiety with the disease could be reduced in both parents and kids with the help of appropriate guidance, counseling, and psychosocial support. As a result, it somewhat lessens the severity of the illness and enhances the quality of life for both parents and children. Additionally, it motivates parents to finish the entire dietetics program or course for follow-up.



ANNEXURE 1

Table 1 : Daily energy requirement of Indian infants during first year of life

Age (months)	BOYS			GIRLS		
	Weight (kg)	Total energy requirement		Weight (kg)	Total energy requirement	
		kcal/d	kcal/kg/d		kcal/d	kcal/kg/d
0 - 1	3.90	490	125	3.70	440	120
1 - 2	5.05	580	115	4.65	510	110
2 - 3	6.00	620	105	5.45	550	100
3 - 4	6.70	560	85	6.10	520	85
4 - 5	7.25	590	80	6.65	560	85
5 - 6	7.70	620	80	7.10	590	80
6 - 7	8.10	640	80	7.45	580	80
7 - 8	8.45	670	80	7.75	610	80
8 - 9	8.75	690	80	8.05	630	80
9 - 10	9.05	730	80	8.35	670	80



10 – 11	9.30	750	80	8.60	680	80
11 – 12	9.50	760	80	8.80	700	80

Note: Total daily energy requirement (kcal/d) = total energy expenditure (TEE) on weight gain + allowance for energy deposition in tissues during growth.

Table 2: Daily energy requirement of Indian children and adolescents

Age (yr)	BOYS			GIRLS		
	Weight	Total energy requirement		Weight	Total energy requirement	
		kcal/d	kcal/kg/d		kcal/d	kcal/kg/d
z	9.9	857	85	8.9	761	85
2-3	12.2	1056	87	11.5	969	84
3-4	14.3	1173	82	13.9	1097	79
4-5	16.3	1283	79	16.1	1209	75
5-6	18.5	1403	76	18.3	1318	72
6-7	20.5	1508	74	20.2	1408	70
7-8	22.9	1635	71	22.4	1510	67
8-9	25.4	1762	69	25.0	1626	65
9-10	28.1	1896	67	28.2	1761	62
10-11	31.2	2046	66	31.9	1905	60
11-12	34.6	2205	64	36.2	2054	57
12-13	38.9	2398	62	41.2	2209	54
13-14	44.3	2627	59	46.0	2333	51
14-15	50.6	2875	57	50.1	2417	48
15-16	56.6	3081	54	52.8	2461	47
16-17	61.3	3228	53	54.7	2486	45
17-18	64.8	3326	51	55.7	2498	45
18-19	67.3	3393	50	56.7	2511	44

Note: This table reflects the gender specific energy requirement of healthy and moderately active children and adolescents. Requirement = TEE + energy cost of growth (TEE = BMR × PAL)

ANNEXURE 2

WHO RECOMMENDED PROTEIN ALLOWANCE, 2007 & Pellock



AGE (YEARS)	PROTEIN ALLOWANCE (g/Kg IBW/d)
<1	1.3
1-3	1.2
4-6	1.1
7-14	1
15-18	0.9

ANNEXURE 3

DO'S AND DON'TS – Classical Ketogenic diet

- Child must be fed only 4 times per day.
- Nothing except the recipes written above can be offered to the child.
- If a particular recipe is not liked by the child, any one recipe out of the other three can be repeated to make a total of 4 recipes.
- You can choose any two recipes from the above four and offer both the recipes two times each.
- All ingredients must be weighed accurately.
- Any specific likes and dislikes of the child can be listed, and recipes may be suggested by dietician using the food items liked by the child.
- **Non-sugar** in powdered form or drops can be used to make anything sweet from the recipes above.
- Salt and dry masalas such as haldi, amchoor, dhanian, jeera, ajwain are not restricted and can be used for taste as desired.

Avoid completely-

- Sugar, glucose, honey, gur, mithai, cake, pastry, jam, jelly, syrups, squashes, soft drinks, fruit juices.
- Any cereals, pulses, vegetables, fruits which are not prescribed in the recipes above.
- Milk and milk products – use only in the quantity prescribed.

Note:

- Ketogenic diets are strict, and no free foods are recommended.
- Learn to test Ketones and record.
- Learn to weigh food items.

DO'S AND DON'TS - MAD and LGIT

Avoid Completely



- Sugars: Sugar, Glucose, honey, gur, jam, jelly, sauces, toffees, methai, cakes, pastries, chocolate, ice-creams.
- Refined carbohydrates (made of maida, rice and potato) : Bread, rice and rice products like poha, chirwa, Buns, biscuits, Pizza, Burgers, noodles, sweet potatoes, yam, sabutdana, arrowroot, corn flour etc.
- Fruits and beverages: Fruit juices (fresh as well as packed), syrups, sherberts, shakes, sugared drinks, soft drinks etc.
- Medicines and supplements: All syrups and sugar coated medicines, other commercial flavored products added to milk which are sugar/carbohydrate based.
- Miscellaneous: All sugar containing toothpastes, thickeners, curry masalas, ready to eat meals etc.

Can eat in restricted amount: only if recommended in the diet

- Low GI cereal and pulses
- Low GI fruits and vegetables or from vegetable A and B list as per advice.
- Milk and milk products – curd, lassi, khoya
- Almond, walnuts and other nuts
- Coconut milks, coconut powders, fresh coconut, dry coconut
- Cheese / Full fat cottage cheese
- Homemade cream from full fat milk

Can eat liberally – (even more than recommended)

- Non vegetarian food: Egg, meat , fish , chicken
- Fats: Butter, coconut oil, refined oil
- Drinks: Water, plain soda, soda, water mixed with essence
- Sugar substitutes(powder, drops, sachets)
- Jelly, sugar free gelatin, china grass powder with essence, edible food color, food flouring's and essences (vanilla, rose, almond, mango etc)
- Condiments, masalas, and salt
- 100% Soyabean products– Flour, dal, nuggets and soy granules, soy rice, soy rawa, Plain soy powders, Soya milk,

Note of caution

- Products like soy sev, sambhar, kheema, chat, makhani are not pure soy products and have high carbohydrate content. They cannot be eaten freely. If included in diet, they need to be calculated into the carbohydrate allowance.



- Use exchange list for deciding on the amounts of food that contain carbohydrate
- Use a combination of oils & ghee: Different oils contain different types of fatty acids and therefore a combination of these is beneficial to health. An ideal combination would be groundnut oil/ rice bran oil & ghee/ butter in equal amounts.



ANNEXURE - 4

MODIFIED ATKINS DIET EXCHANGE LIST

MODIFIED ATKINS DIET MADE EASY	
COMMON FOOD STUFFS	CARBOHYDRATES



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	5 g	3.75 g	2.5 g
BUFFALO MILK	61 ml	45 ml	32 ml
FULL CREAM MILK	100 ml	75 ml	50ml
COW'S MILK	103 ml	77 ml	52 ml
TONED MILK	112 ml	84 ml	57 ml
PANEER	28 g	20 g	18 g
CURD (cow's milk)	157 g	117 g	79 g
VEGETABLE 'A'	300 g	225 g	150 g
VEGETABLE 'B'	200 g	150 g	100 g
MUSHROOM	255 g	190 g	130 g
FRUIT 'A'	39 g	29 g	20 g
FRUIT 'B'	72 g	55 g	36 g
FRUIT 'C'	100 g	75 g	50 g
FRUIT 'D'	168 g	125 g	84 g
AMUL CREAM	157 g	118 g	79 g
ALMONDS	14 g	10.4 g	7 g
WALNUTS	39 g	29 g	19.5 g
COCONUT FRESH	20 g	15 g	10 g
DRY COCONUT	63 g	45 g	32 g
DALS (Moong, Urad, rajmah, Channe, besan)	9 g	6.7 g	2.5 g
WHEAT / MAIZE FLOUR	7.9 g	5.8 g	4 g
SAMA	7.7 g	5.7 g	3.8 g
JAWAR	8 g	5.7 g	4 g
BAJRA/AMARANTHA	8.2 g	6.1 g	4.1 g
BARLEY	7.5 g	5.5 g	3.8 g



ANNEXURE 5

LIST OF LOW GLYCEMIC INDEX FOOD CHART (GI VALUES 55 OR LESS)



Milk and milk products	
Milk, whole	31
Milk, Fat-free	32
Milk ,skimmed	32
Low-fat yogurt, artificially sweetened	33
Soya milk	30
Cheese	Very low
Cream	Very low
Vegetables	
Avocados	< 20
Broccoli	15
Bhindi	< 20
Cauliflower	15
Celery (Ajwain)	15
Cucumber (Kheera)	15
Carrot	47
Cabbage	< 20
Capsicum	40
Eggplant (Brinjal)	15
Onion	Low
Spinach and other leafy vegetables	15
Tomatoes	15
Radish	32
Tomatoes	< 20
Fruits	
Cherries	22
Grapefruit (Chakotra)	25
Apples	38
Pears	38
Plums (ber)	39
Peaches (aaroo)	42



Oranges	44
Grapes	46
Fresh Juices	
Apple juice	41
Pineapple juice	46
Grapefruit juice	48
Carrot juice	45
Cereals	
Millets	
Pearl barley (Jowkadaliya)	22
Porridge, non instant	49
Whole grain – maize, oats, Wheat	50
Buckwheat (Kottu – it is a fruit seed)	Low
Rajgira or chaulai (amaranths)	53
Rice, parboiled	48
Vermicelli (Sevian)	35
Macaroni (whole wheat)	45
Spaghetti, whole wheat	37
Multi grain bread	48
Pulses	
Kidney beans, boiled (Rajma)	29
Chickpeas (Kabuli chana)	33
Lentils green, boiled	29
Soya beans, boiled	16
Green beans	15
Peas, dried	22
Miscellaneous	



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Apricots (dried) (Khubani)	31
Dates, raw (Khajur)	44
Peppers, all varieties (Mirch)	15
*Snickers bar	40
Nuts – Almonds, Walnuts, Cashews	14 - 21
Peanuts	14
Flax seeds	Very low
Sesame seeds	Very low
Pumpkin seeds	Very low



ANNEXURE 6

LIST OF VEGETABLE A AND VEGETABLE B



GROUP A	GROUP B
Amaranth leaves (Chaulai)	Onion (Pyaz)
Pumpkin (Petha /Sitafal/Kaddu)	Guar Fali
bottle gourd (Ghiya)	Cauliflower (Phulgobhi)
Bitter gourd (Karela)	Cabbage (PattaGobhi)
Brinjal (Baingan)	Carrot (Gaajar)
Capsicum (Shimla Mirch)	Fenugreen leaves (Methi)
Cucumber (Kheera)	Broad Beans(semkiphali)
Drumstick (kamalkakadi)	Bhindi
Green Papaya(hara papita)	Tomato (Tamator)
Rich gourd (Tori)	Spinach (Palak)
Knol knol (Gaanth Gobhi)	
Parwar	
French Beans	
Tinda	
Radish (Safed mooli)	

ANNEXURE 7

LIST OF FRUIT A, B, C, D (per 100g portion)			
FRUIT A (CHO 13 g)	FRUIT B (CHO 7 g)	FRUIT C (CHO 5 g)	FRUIT D (CHO 3 g)
Apple	Pears	Papaya	Watermelon
Mango	Guava	Musk melon	Tomato
Chiku	Orange		Avocado
Avocado	Peach		
Black berry			
Lichi			
Plum			
Pomegranate			

