

Diet **RECOMMENDATIONS**

FOR LIVER CIRRHOSIS PATIENTS



We would like to acknowledge the invaluable help of the **Clinical Nutrition Division, Dietary Department, and the Gastro-Intestinal Clinic** of UP-PGH in the development of this booklet.



This booklet is for the homecare of liver failure patients. For any questions, please consult / visit your physician (M.D.) or clinical nutritionist-dietician (R.N.D.)

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Introduction

The liver is the largest glandular organ of the body, located on the right side of the upper abdomen.

It plays a central role in the metabolism of carbohydrates, proteins, fats, vitamins and minerals. The liver also functions to eliminate toxins in the body.

Liver Failure

It is essential that the liver functions are maintained. However, the liver could be damaged because of the following:

- Viruses
- Toxic substances (alcohol, overdose of medicines like paracetamol and anti-TB drugs)
- Parasites(Schistosomajaponicum)
- Rare metabolic disorders

Hepatitis (inflammation of the liver) may be caused by viruses. Only the viral hepatitis B, C and D can lead to a more severe chronic disease which is cirrhosis, and can later progress to cancer of the liver. As the liver disease progresses, the liver function decreases. At a certain stage, the patient may suffer from signs and symptoms like:

- Ascites (accumulation of fluid in the abdominal cavity)
- Edema (condition in which the body tissues contain an excessive amount of fluid)
- Jaundice (yellow discoloration of skin and/or eyes)
- Encephalopathy (alterations in mental status and/or consciousness)

These patients need a high protein and a high calorie diet because of protein malnutrition and increased energy/calorie usage. However, in advanced liver diseases, high protein diet cannot be tolerated. One of the products when protein is broken down is a toxic substance called ammonia which can be detoxified by a healthy liver. However, in severe liver disease, ammonia is not eliminated; its concentration increases and eventually goes to the brain causing a symptom called hepatic encephalopathy.

This is a condition wherein the following behavioral changes are seen:

- Disturbance in sleeping pattern (sleeps mostly in the daytime and is awake at night time)
- Difficulty in speaking, remembering places, time and person
- Irritability
- Emotionally unstable

At the early stages of hepatic encephalopathy the patient does not recognize these signs and symptoms because they happen gradually. Usually, close family members notice the changes mentioned. The most severe stage is when the patient goes into semi or deep unconsciousness.

Guide to Good Nutrition for Liver Cirrhosis Patients

The daily diet should be planned to include the three food groups:

1. Energy Giving Foods - provide energy for growth and physical activities

1.a. Carbohydrate-rich foods

Sources:

Rice, cereals, noodles, oatmeal, rootcrops (potatoes and sweet potatoes) and corn.

Note: Amount to be taken depends on dietary requirements because of their **protein** content.



Other sources:

Sugars, sweets and other forms of sugar
(like candies, jams, preserves, honey)

1.b. Fat-rich foods

Sources:

Cooking oil, margarine, butter,
coconut milk (gata) and mayonnaise

2. Body Building Foods - provide proteins and amino acids for building and repair of tissues.



Sources:

Beef, pork, chicken, fish,
seafoods, dairy products (like
milk and cheese), eggs, nuts,
beans and bean products (like
tokwa, tofu and taho)

3. Body Regulating Foods - provide vitamins and minerals for important body processes, like metabolism, maintenance of blood volume body temperature; also provide dietary fiber to prevent constipation and to help control blood cholesterol, obesity, cardiovascular disease and diabetes mellitus



Sources:

Fruits and vegetables



Food Supplements

Patients with liver cirrhosis need a balanced diet high in calories, proteins and vitamins. However, chronic liver failure patients complicated with encephalopathy are often managed with conventional low protein diets for fear further progression into higher stages of the complications. In addition to the conventional protein diet, a food supplement which can provide the extra calorie and protein needs of the patient without aggravating complications is recommended. Food supplements are available in the market today. Please consult your physician/clinical nutritionist for the best supplement which is specifically indicated for liver failure patients.

Recommended diet for Patients with Advanced Stage of Liver Cirrhosis*

1. The meal should be well-balanced, with the energy giving, body building and body regulating foods in the recommended amounts.
2. The patient's protein requirement is 1.0 to 1.5g/kg. bodyweight/day, however for patients with advanced liver cirrhosis, 0.5 to 0.75g protein/kg bodyweight/day is generally tolerated. Food supplements therefore should be added to meet the dietary needs.

Sample Computation of Protein Requirement if Actual Body Weight is 54 kg.:

A. Protein from Diet	=	54 kg x 0.75g/kg body weight	=	40g protein/day
B. Protein from Supplement	=	54 kg x 0.75g/kg body weight	=	40g protein/day
Total Protein			=	80g protein/day
(at 1.5g protein/kg body weight/day)				

3. Sodium intake is limited to 2g sodium per day or lower as recommended by your physician. (EX: salt, bagoong, patis, soy sauce, vetsin, catsup, salted/preserved meat and fish)
4. Alcohol intake is prohibited.
5. Food rich in fibers like fruits and vegetables is encouraged.
6. Eat small frequent meals per day.

*Patients with behavioral changes as seen in page 2

Taking only the right amount of protein, and a balanced & tolerable food supplement prescribed by the physician.



+



AM
Snack

+



PM
Snack

+



Before
Bedtime

Food Supplement

Sample Meal Plan for Liver Cirrhosis Patients

Sample Diet + Food Supplement = TOTAL				
Energy	kcal	1,600	210/pack x 3 = 630	2,230 kcal
Protein	g	40	13.50/pack x 3 = 40.05	80.50 g
Carbohydrate	g	250	31.05/pack x 3 = 93.15	343.15 g
Fat	g	50	3.50/pack x 3 = 10.50	60.50 g

Sample Menu

	Sample Menu	Serving	Approximate Size	Weight (E.P) in grams
Breakfast	Ripe Papaya	1 slice	10x6x2 cm	85
	Fried Egg	1 piece		60
	Slice Bread	2 slices	9x8x1 cm	40
	Jam	3 tsp		15
	Coffee/Tea			
	Sugar	2tsp		10
AM Snack				
	Cinnamon roll	1 piece	9x6 cm	40
	Grapes	10 pieces	2 cm D each	55
	Food Supplement w/ orange flavor	1 pack 3 tsp		50 15
Lunch				
	Fried Bangus	1 piece	7x3x2 cm	35
	Adobong Kangkong	1/2 cup		45
PM Snack	Ripe Mango	1 slice	12x7 cm	60
	Sliced Bread	2 slices	9x8x1 cm	40
	Margarine	1 tsp		5
	Jam	2 tsp		10
	Fruit Cocktail	1/4cup		40
	Food Supplement w/ orange flavor	1 pack 3 tsp		50 15
Supper				
	Fried Chicken	1 small leg	131/2cmLx3cmD	30
	Buttered Vegetables	1/2 cup		45
	Rice	1 cup		160
Before Bedtime	Banana (Lakatan)	1 piece	9x3 cm	40
Before Bedtime	Food Supplement w/ orange flavor	1 pack 3 tsp		50 15

Note: **Energy giving Foods* **Body Building Foods* **Body Regulating Foods*

The sample menu in this booklet is for your guidance. A suitable menu can be chosen and rearranged to suit your personal taste and **present health condition**. Please see your physician or clinical nutritionist for appropriate instructions.

Food Alternatives

The following foods can be interchanged freely in the same category. Please use the specified servings so as not to exceed the allowable intake.

Example: In the Sample Meal Plan (page 6) Fried Bangus 1 pc. for lunch can be interchanged with any item found under Body Building Foods (page 8) like Chicken Leg, 1 small pc.

I. Energy-giving foods (100 calories; 2 g proteins)

Sliced bread, 2 slices (9x8x1 cm each) 40 g

- or ½ cup rice 80 g
- or 1 cup rice gruel (lugaw)
- or 3 pieces pandesal (5x5cm each) 40 g
- or 1 piece boiled corn (12x4cm) 65 g
- or 1⅓ cup Potatoes (2 ½ of 7cm Lx4 D each) 165 g
- or ½ cup sweet potatoes (½ of 11cm Lx4½ cm D) 80 g
- or 1 cup cooked noodles (75 g)
- or 1 cup oatmeal (5 tbsp raw oats + 1 c water) 185 g

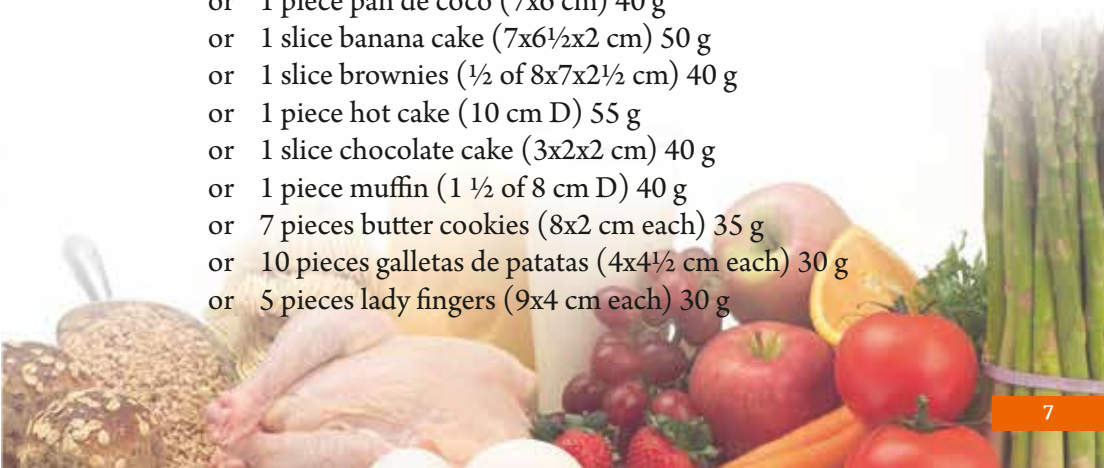
This is also equivalent to:

Rice products like 1 piece cassava cake (½ of 15x3x2 cm) 45g

- or 1 piece kutsinta (6cm Dx2 ½ cm) 60 g
- or 1 slice puto (puti) (9 ½ x3x3 ½ cm) 45 g
- or (1 ½ round of 5cm D x 3 cm thick)
- or 1 piece suman sa ibos (8x4x2 cm) 60g

Bakery Products like 1 piece ensaymada (8 ½ cm D x 2 cm thick) 35 g

- or 1 piece cinnamon roll (9x6 cm) 40 g
- or 1 piece pan de coco (7x6 cm) 40 g
- or 1 slice banana cake (7x6½x2 cm) 50 g
- or 1 slice brownies (½ of 8x7x2½ cm) 40 g
- or 1 piece hot cake (10 cm D) 55 g
- or 1 slice chocolate cake (3x2x2 cm) 40 g
- or 1 piece muffin (1 ½ of 8 cm D) 40 g
- or 7 pieces butter cookies (8x2 cm each) 35 g
- or 10 pieces galletas de patatas (4x4½ cm each) 30 g
- or 5 pieces lady fingers (9x4 cm each) 30 g



II. Body Building Foods (65 calories, 8 g proteins)

Chicken egg 1 piece 60 gm

- or 1 small chicken leg (13½ cm Lx3 cm D) 30 g
- or 1 piece Galunggong (14x3½ cm each) 35 g
- or 1 slice Labahita (7x3x2 cm) 35 g
- or 2 pieces Tilapia (12x5 cm each) 35 g
- or 1 slice Tuna (7x3 cm each) 25 g
- or ¼ cup or ½ piece medium Alimango/Alimasag laman 20 g
- or 3 pieces Pusit (7x3 cm each) 25 g
- or 5 pieces medium Shrimps 25 g
- or 1 slice beef (matchbox size, 5x3½ x 1½ cm) 30 g
- or 2 tablespoon (packed) ground beef 30 g
- or 1 slice pork (3 cm cube) 35 g
- or 2 tablespoon (packed) ground pork 35 g
- or ¼ chicken breast (6 cm L) 30 g
- or 1 slice chicken meat (matchbox size 5x3½ x 1½ cm) 30 g
- or 1 slice Bangus or Lapu-lapu (7x3x2 cm) 35 g E.P. Ckd.
- or 2 ½ slices Embutido (5x1½ cm each) 60 g
- or ¾ cup Munggo Beans 75 g
- or 2 ¾ cup Taho 275g
- or ½ cup Tofu 100 g
- or 1 piece Tokwa (6x6x2 cm) 60 g

III. Body Regulating Foods

A. Fruits (40 calories, negligible protein)

- ripe papaya 1 piece (10x6x2 cm) 85 g
- or 1 piece banana (Lakatan) (9x3 cm) 40 g E.P. (Saba) (10x4 cm) 40 g
- or 1 piece Atis (5 cm D Each) 45 g
- or 1 piece Chico (4 cm D) 45 g
- or 2 pieces Dalanghita (6 cm D each) 135 g
- or 10 pieces Grapes (2cm D each) 55 g
- or 7 pieces Lansones (4x2 cm each) 70 g
- or 1 slice ripe Mango (12x7 cm) or ½ cup cubed 60 g
- or 3 pieces Mangosteen (6 cm D each) 55 g
- or 1 slice Pineapple (10x6x2 cm) or ½ cup 75 g
- or 8 pieces Rambutan (3 cm D each) 50 g
- or ½ of 6cm D Starapple 65 g
- or 1¼ cups of Strawberries 165 g

- or 3 segments Suha (8x4x3 cm each) 90 g
- or 1 slice Watermelon (12x6x3 cm) or 1 cup 140 g
- or 1/4 cup fruit cocktail 40 g
- or 1¹/₃ each halves 65 g

or

B. Vegetables

1. Groups A Vegetables (Negligible calories Negligible protein)

1 cup raw or 1/2 cup cooked

Alugbati, Ampalaya, Baguio beans, Bamboo Shoot, Banana heart, Beets, Cabbage, Cauliflower, Camote leaves, Sayote, Cucumber, Eggplant, Gabi leaves, Kangkong, Katuray, Lettuce, Malunggay, Mushroom, Okra, Papaya (green), Patola, Petsay, Radish, Saluyot, Sigarilyas, Spinach, Squash (leaves and flowers), Sitsaro, Tomato, Upo

or

2. Groups B Vegetables (16 calories 1g protein)

1 cup, cooked or raw

Carrot, Coconut shoot (ubod), Kalamansi, Mungbean sprout (toge), Squash fruit, String beans

Legend:

- | | | |
|-------------|---|---------------------------------|
| 1. BW | - | body weight |
| 2. cm | - | centimeter |
| 3. D | - | diameter |
| 4. E.P. Ckd | - | edible portion, cooked |
| 5. g | - | grams |
| 6. kcal | - | kilocalorie (measure of energy) |
| 7. kg | - | kilogram |
| 8. L | - | length |
| 9. pc | - | piece |
| 10. tbspc | - | tablespoon |
| 11. tsp | - | teaspoon |

Liver Diet (One Week Cycle Menu)

	Breakfast	Lunch	Supper	AM Snack	PM Snack	Before Bedtime
Mon	Papaya Fried Egg Bread Butter Coffee/Tea	Garden Soup Stuffed Bangus Rice Pineapple	Noodle Soup Beef Caldereta Banana	Cinnamon Roll Food Supplement	Hotcake Food Supplement	Food Supplement
Tue	Mango Daing na Bangus With Tomatoes Rice Coffee/Tea	Onion Soup Pork Adobo Baguio Beans Salad Rice Peach Halves	Chicken Pastel Rice Orange	Ensaymada Food Supplement	Boiled Sweet Corn Food Supplement	Food Supplement
Wed	Pineapple Tocino Rice Coffee/Tea	Garlic Soup Pochero Rice Papaya	Asparagus Soup Embotido Chicharo-Young Corn Guisado Rice Grapes	Puto Food Supplement	Banana Cake Food Supplement	Food Supplement
Thurs	Banana Chicken Nuggets Bread Butter Coffee/Tea	Chicken Soup Crab Tortilla Lettuce Salad Rice Mango	Molo Soup Broil Tuna Steak Buttered Vegetables Rice Peach Halves	Oatmeal Cookies Food Supplement	Corn Muffin Food Supplement	Food Supplement
Fri	Orange Hamburger Bread Butter Coffee/Tea	Fish Pesa Rice Banana	Nido Soup Chicken Fritada Ampalaya Guisado Rice Papaya	Garlic Toast Food Supplement	Chocolate Cake Food Supplement	Food Supplement
Sat	Pineapple Sandwich with Tuna Filling Bread Coffee/Tea	Corn Soup Chicken Barbecue Rice Grapes	Noodle Soup Ginataang Labahita Inihaw na Talong with tomatoes Rice Mango	Butter Cookies Food supplement	Baked Potatoes Food Supplement	Food Supplement
Sun	Peach Halves Fried Chicken Rice Coffee/Tea	Mushroom Soup Rellenong Bangus Green Mango Salad Rice Chico	Pork Sinigang Rice Atis	Turon de Saba Food Supplement	Brownies Food Supplement	Food Supplement

**Energy giving Foods*

**Body Building Foods*

**Body Regulating Foods*

References:

1. Food Exchange List for Meal Planning, Food and Nutrition Research Institute (FNRI), 1994
2. Diet Instruction handout, Dietary Dept., UP-PGH, 1999

Patient's Name : _____
Date : _____
Prescribed Diet : _____

		<i>Diet</i>	<i>Supplement</i>	<i>Total</i>
<i>Energy</i>	<i>kcal</i>			
<i>Protein</i>	<i>g</i>			
<i>Carbohydrate</i>	<i>g</i>			
<i>Fate</i>	<i>g</i>			

Meal Plan

<i>Meal</i>	<i>Food Items</i>		<i>Serving Size</i>
Breakfast	Fruit		
	Protein		
	Carbohydrates		
	Fats		
Lunch	Fruit		
	Protein		
	Carbohydrates		
	Fats		
Supper	Fruit		
	Protein		
	Carbohydrates		
	Fats		
AM Snack			
PM Snack			
Before Bedtime			

Orange Flavored Powder 50g/Sachet

L-Isoleucine	1.9225	g	Riboflavin (B2)	0.115	mg
L- Leucine	2.037	g	Phytonadione (K1)	5.50	mcg
L-Valine	1.602	g	Nicotinic acid	1.40	mg
L-Lysine HCl	0.2425	g	Folic acid	0.50	mg
L-Threonine	0.133	g	Biotin	25.00	mcg
L-Tryptophan	73.5	mg	Choline bitartrate	10.60	mg
L-Arginine HCl	0.302	g	Magnesium sulfate	0.205	g
L-Histidine HCl	0.1875	g	Potassium dihydrogen phosphate	0.170	g
Sodium caseinate	0.520	g	Potassium chloride	0.125	g
Gelatin hydrolysate	6.500	g	Potassium iodide	12.5	mcg
Dextrin	24.775	g	Postassium sorbate	0.075	g
Disodium glycyrrhizinate	0.130	g	Sodium ferrous citrate	12.5	mg
Rice Oil	3.685	g	Copper sulfate	0.555	mg
Retinol (A)	2.33	mg	Potassium acetate	57.00	mg
Thiamine HCl (B1)	0.10	mg	Zinc sulfate	3.755	mg
Calcium panthothenate (B5)	1.19	mg	Manganese sulfate	0.54	mg
Pyridoxine HCl (B6)	0.245	mg	Cholecalciferol (D)	0.935	mg
Cyanocobalamin (B12)	0.50	mcg	Tocopherol (E)	9.86	mg
Sodium ascorbate (C)	8.15	mg	Purified sucrose	42.5	mg
Calcium glycerophosphate	0.305	g	Orange Flavor	6.35	g

Mga Gabay sa Pagtimpla ng Aminoleban[®] ORAL

Dosis at Paraan ng Pag-inom

Ang karaniwang dosis ay 50 g (1 pakete) ng Aminoleban[®] ORAL tatlong beses sa loob ng isang araw

Ang kainamang dosis na 150 g (3 pakete) ng Aminoleban[®] ORAL sa loob ng isang araw ay nagbibigay ng 40.5 g na protina at kabuuang 630 kcal.

Ang pang-araw-araw na inumin ay dapat naaayon sa kondisyon at edad ng pasyente. Kung kinakailangan ng mas maraming protina at enerhiya ang kakulangan ay magibigay sa tama at sapat na pagkain ng paseyente.

Mga dapat sundin sa Pag-inom ng Aminoleban[®] ORAL

- Tunawin sa maligamgam na tubig ang Aminoleban[®] ORAL bago inumin. Kung kinakailangan, ang tinunaw na Aminoleban[®] ORAL ay maaaring ilagay sa isang malamig na lugar na hindi lalabis sa sampung oras.
- Upang maiwasan ang pagbabago ng protina, iwasan ang paggamit ng kumukulung tubig sa pagtunaw ng Aminoleban[®] ORAL.
- Kung gagamit ng "mixer" sa pagtunaw, haluin ang solusyon ng marahan at ng hindi hihigit sa isang minuto.

Paano Palamigin ang Solusyon

Tunawin sa katamtamang dami ng maligamgam na tubig ang Aminoleban[®] ORAL at palamigin sa pamamagitan ng paglagay ng yelo.

Babala: Ang kakulangang pag-iingat ay dapat gawin upang maiwasan ang pagtatae matapos uminom ng malamig na Aminoleban[®] ORAL.

Paano Palabnawin and Solusyon

Ang 50 g (1 pakete) ng Aminoleban[®] ORAL ay maaaring tunawin sa 180 mL na maligamgam na tubig.

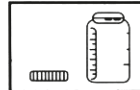
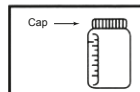
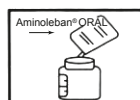
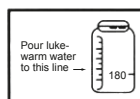
Babala: Obserbahan ang pagkakaroon ng "ascitis" sanhi ng pag-inom ng maraming tubig.

How to prepare Aminoleban[®] ORAL

1. Pour lukewarm water (about 50°C) until the 180 mL level (about 1 cupful)
Warm water can be easily obtained by mixing half boiling water and half cold water.
2. Pour 50 g (1 sachet) of Aminoleban[®] ORAL into the plastic container.
3. Tightly close the container cap. (If the cap loose. The solution can leak from the container).
4. Shake thoroughly.
5. Makes 200 mL of Aminoleban[®] ORAL solution (about 1 kcal/mL)

Paano Ihanda ang Aminoleban[®] ORAL

1. Sa isang plastic na lalagyan, lagyan ng maligamgam na tubig hanggang 180 mL lebel (isang tasang tubig).
2. Isalin ang 50 g (1 pakete) ng Aminoleban[®] ORAL
3. Higitan mabuti ang takip ng plastic na lalagyan upang maiwasan ang pagtagas o pagtapon ng solusyon
4. Kaluging mabuti (sa banayad na paraan) ang solusyon hanggang sa ganap na matunaw ang Aminoleban[®] ORAL.
5. Makagagawa ng 200 mL ng Aminoleban[®] ORAL solusyon (1 kcal/mL)



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Available at
Mercury Drug stores, Med Express Pharmacy
and Other drug stores Nationwide

