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College of General Practitioners

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Annual Conference of IMA College of General Practitioners

Organised by IMA Assam State Branch & IMA CGP Assam State Faculty



GPCON2024 Guwahati (Assam)

Know our Faculty



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Designation :PROFESSOR OF MEDICINE. AGMC

More than 45 publications in International and National Journals.

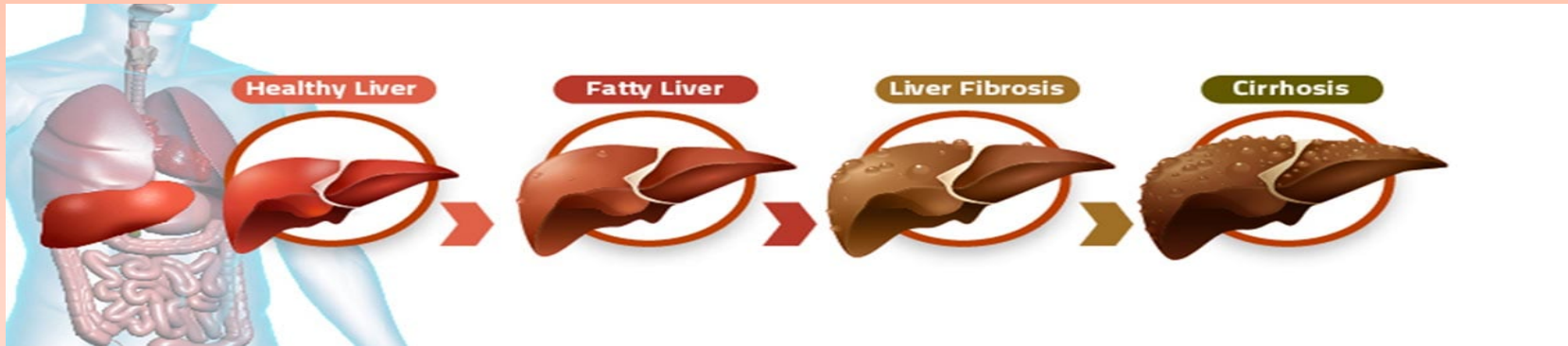
National Governing Body Member. Association of Physicians of India.2022 to25.

Sectional President. Indian Science Congress. Section of Medical Science (Including Physiology)2024.

Director and Founder President , Hepatitis Foundation Of Tripura,

Theme : Expanding horizons for today's GP: Local Healthcare Delivery with Global Expertise

NUTRITION IN LIVER DISEASES: CURRENT CONCEPT



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MYTHS ON LIVER NUTRITION



LIVER DISEASE

ACUTE LIVER DISEASE

- Acute Viral Hepatitis .
- Non Hepatotropic Viral Hepatitis.
- ALF/AFH.
- DILI.
- Toxic Hepatitis.

CHRONIC LIVER DISEASE

- Chronic Viral Hepatitis.
- Alcohol Related Liver Disease
- MASLD.
- Autoimmune Hepatitis.
- DILI.
- Wilsons Disease.

MODES OF NUTRITION

- Oral nutrition
- Enteral nutrition (EN)
- Parenteral nutrition (PN)
- Percutaneous endoscopic gastrostomy (PEG)
- Surgical gastrostomy/enterostomy

ACUTE VIRAL HEPATITIS

- Regular, balanced meals.
- Maintain healthy calorie intake.
- Eat whole-grain cereals and breads.
- Eat lots of fruits and vegetables.
- Get adequate protein.
- Go easy on fatty, salty, and sugary foods.
- Drink enough fluids.
- Reach and maintain a healthy weight.
- Avoid alcohol.
- Be careful with dietary supplements.

ACUTE LIVER FAILURE

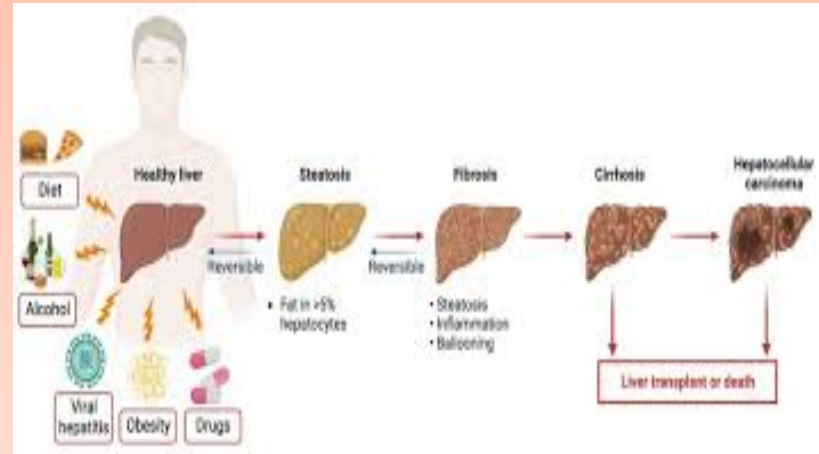
- Mild HE can be fed orally as long as cough and swallow reflexes are intact.
- ALF patients without malnutrition should be provided with
nutritional support (preferentially EN) .
- In malnourished ALF patients enteral nutrition (EN) and/or
parenteral nutrition (PN) should be initiated promptly.
- In patients with severe hyper-acute disease with hepatic encephalopathy and highly elevated arterial ammonia who are at risk of cerebral edema

CHRONIC LIVER DISEASE

WHAT IS CLD ?

CLD is a progressive condition that involves the destruction and regeneration of liver tissue over a period of at least six months. It can lead to fibrosis and cirrhosis, a stage where scar tissue replaces healthy liver tissue.

STAGES OF CHRONIC LIVER DISEASE



STAGES OF CIRRHOSIS

	Compensated Cirrhosis		Decompensated Cirrhosis	
Stage	Stage 1	Stage 2	Stage 3	Stage 4
Clinical	No Varices No Ascites	Varices No Ascites	Ascites +/- Varices	Bleeding +/- Ascites
Death (at 1 Year)	1%	3%	20%	57%

NUTRITION IN CLD

- **Malnutrition and Sarcopenia** are common in patients with chronic liver disease.
- Increased risk of decompensation, infections, wait-list mortality and poorer outcomes after liver transplantation.
- Assessment of nutritional status and management of malnutrition are essential.

MALNUTRITION

- “Malnutrition” refers both to deficiencies and to excesses in nutritional status.
- In addition to under nutrition, people who are overweight or obese can develop NASH related cirrhosis.

SARCOPENIA

- Muscle mass depletion may occur in liver disease patients known as Sarcopenia.
- Coexistence of obesity, sarcopenia might be overlooked.(Sarcopenic Obesity)
- Obesity and sarcopenic obesity may worsen the prognosis of patients with liver cirrhosis.
- Both adipose tissue and muscle tissue can be depleted; female patients more frequently develop a depletion in fat deposits while males more rapidly lose muscle tissue.

IMPLICATIONS OF MALNUTRITION AND SARCOPENIA

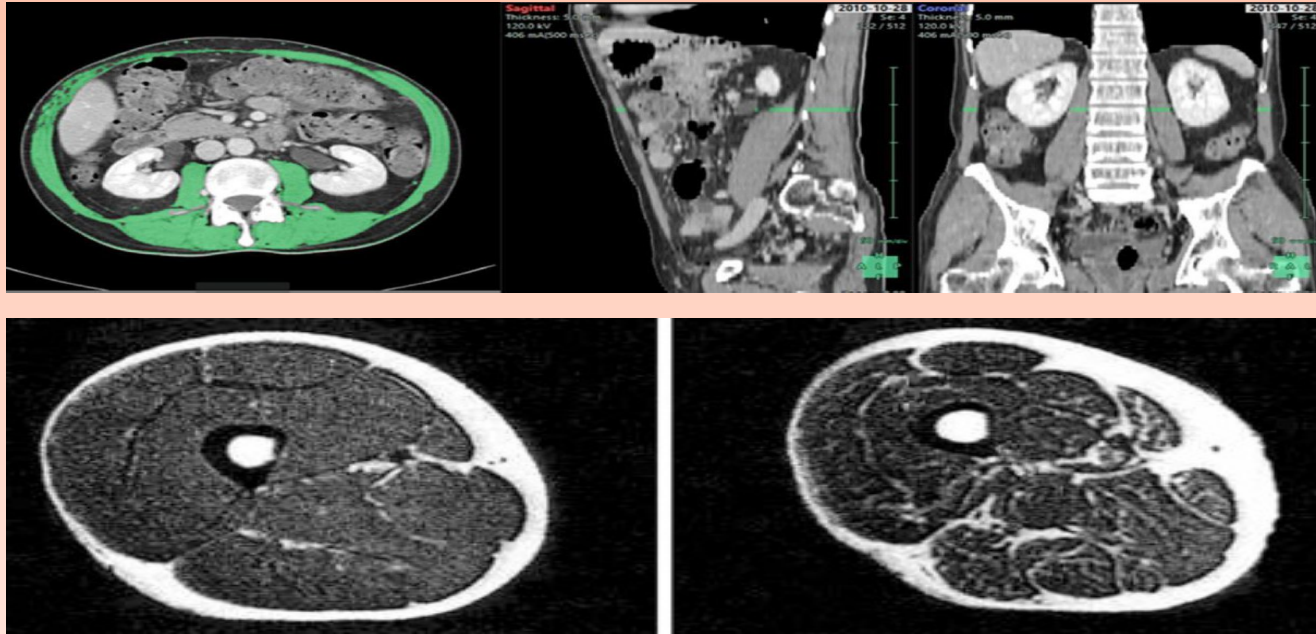
- Malnutrition and Sarcopenia should be recognized as a complication of cirrhosis:
- Major Implications:
 - *Susceptibility to infections*
 - *Hepatic encephalopathy*
 - *Ascites*
 - *Independent predictors of lower survival in cirrhosis and in patients undergoing liver transplantation.*

ASSESSMENT FOR SARCOPENIA

- **Muscle strength**
- Handgrip strength and chair stand test.
- **Physical performance**
- The Stair Climb Power Test (SCPT), Timed Get Up-and-Go (TGUG) test, and the Short Physical Performance Battery (SPPB)
- **Muscle mass**
- Dual energy X-ray absorptiometry (DEXA), anthropometry, and bioelectrical impedance analysis (BIA) Magnetic resonance imaging (MRI), computerized tomography (CT), and creatinine excretion are more specific methods for assessing muscle mass.
- **Screening** : The SARC-F questionnaire is a rapid screening test
- **Ultrasound** :Ultrasound can analyze skeletal muscle structure and texture.
- **The gold standard for assessing sarcopenia is a combination of LEAN BODY MASS (LBM) imaging, anthropometric measurement techniques, and muscle strength assessments**

ASSESSMENT FOR SARCOPENIA

Assess muscle mass by CT imaging at L3 level.



ASSES MUSCLE MASS BY HAND GRIP STRENGTH(HGS)



NUTRITION IN
SPECIFIC CONDITIONS

ALCOHOLIC STEATOHEPATITIS

- Nutrition therapy should be offered to all patients with severe ASH who cannot meet requirements by spontaneous food intake.
- Oral Nutritional Support should be used when patients with severe ASH cannot meet their caloric requirements through normal food .

ALCOHOLIC STEATOHEPATITIS...2

- EN can be used in severe ASH to ensure adequate energy and protein .
- PN shall be commenced immediately in moderately or severely malnourished patients.
- In patients with severe ASH trace element and vitamin deficiency should be anticipated.

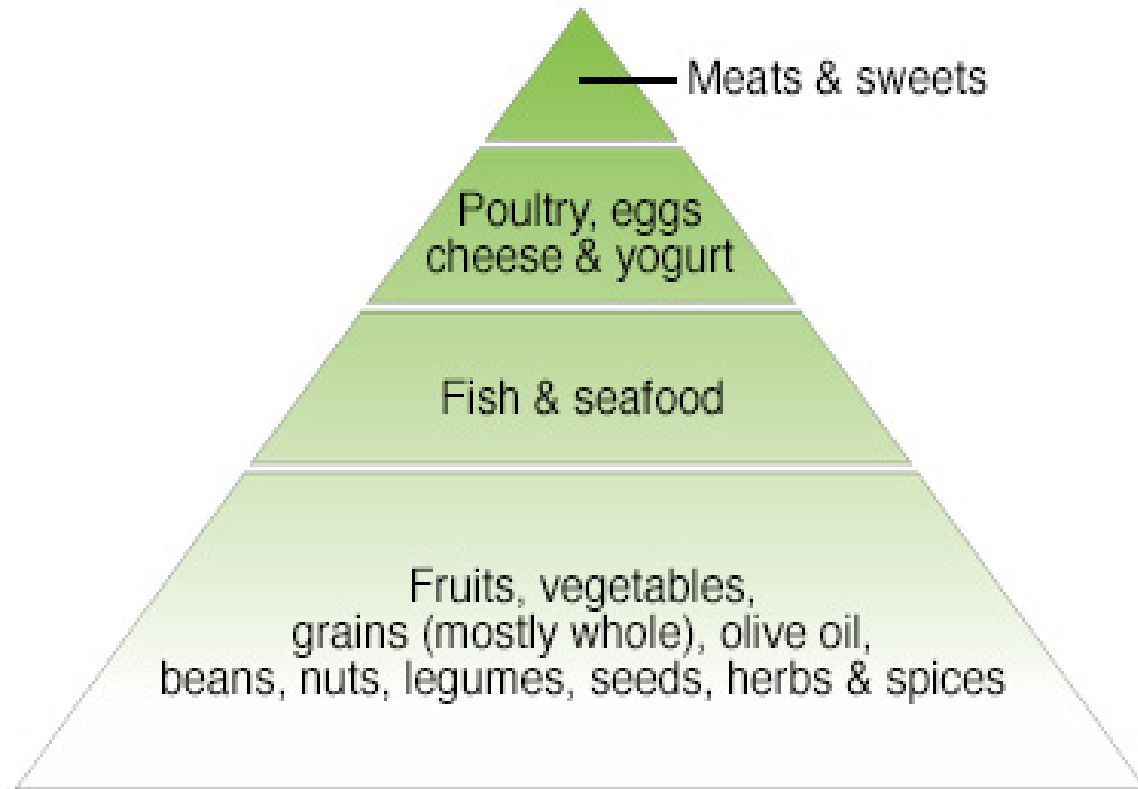
NASH/MSLD

- In overweight/obese NAFL/NASH patients a >10% weight loss shall be aimed to improve steatosis and fibrosis.
- weight loss with increased physical activity shall be used as first-line treatment.
- In normal weight NAFL/NASH patients, increased physical activity to improve insulin resistance and steatosis is recommended.

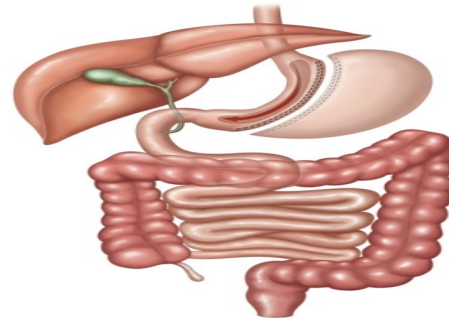
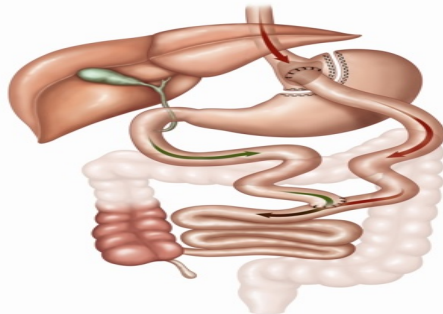
NASH.....2

- Mediterranean diet can improve steatosis and insulin sensitivity.
- NAFL/NASH patients shall abstain from alcohol.
- Vitamin E (800 IU daily) can be advised.
- Insufficient data regarding efficacy of antioxidants (e.g. vitamin C, resveratrol, anthocyanin, bayberries) and omega-3-fatty acids .
- Nutritional supplements containing selected probiotics or synbiotics can be used to improve liver enzymes in NAFL/NASH.
- Obese NAFL/NASH patients without cirrhosis, bariatric surgery may be proposed.

Mediterranean Diet Pyramid



BARIATRIC SURGERY(GASTRIC BYPASS)



LIVER CIRRHOSIS

- Optimal daily energy intake :35 kcal/kg actual body weigh.
- Optimal daily protein intake : 1.5 g/kg actual body weight

ACTUAL BODY WEIGHT/DRY WEIGHT

- In a case of fluid retention, body weight should be corrected by evaluating the patient's dry weight by post-paracentesis body weight.
- or weight recorded before fluid retention if available,
- or by subtracting a percentage of weight based upon severity of ascites (mild 5%; moderate 10%; severe 15%), with an additional 5% subtracted if bilateral pedal oedema is present

MALNOURISHED CIRRHOTICS

- Who are unable to achieve adequate dietary intake with the oral diet, a period of enteral nutrition is recommended.
- Include late evening oral nutritional supplementation (ONS) and breakfast containing some proteins in malnourished decompensated cirrhotic patients.
- BCAA supplements and leucine enriched amino acid supplements may be considered in decompensated cirrhotic patients.

OBESE CIRRHOTICS

- Mobility is required.
- Implement a nutritional and lifestyle program to achieve a progressive weight loss ($\geq 5-10\%$) in obese cirrhotic patients ($\text{BMI} > 30 \text{ kg/m}^2$)
- Adopt a moderately hypocaloric (500–800 kcal/day) diet, including an adequate amount of protein ($\geq 1.5 \text{ g protein/kg BW/day}$) to achieve weight .

HEPATIC ENCEPHALOPATHY

- Evaluate nutritional status and sarcopenia in patients with hepatic encephalopathy (HE)
- No protein restriction in patients with HE
- Optimal daily protein and energy intake .
- Encourage the consumption of vegetables and dairy protein .
- BCAA supplementation can be considered to improve neuropsychiatric performance .
- In patients with grade III–IV encephalopathy, who are unable to eat, provide nutrition by EN or PN.

MICRONUTRIENTS

- Administer micronutrients and vitamins.
- Supplement vitamin D orally in cirrhotic patients.
- In cirrhotic patients with ascites following sodium restriction take care to improve diet palatability as this regime may cause a reduction in calorie intake.

CLD WITH BONE DISEASES

- Evaluate by BMD.
- Utilize lumbar and femoral densitometry (DEXA) and Lateral X-rays of dorsal and lumbar spine .
- Include supplements of calcium (1,000–1,500 mg/day) and vitamin D (400–800 IU/day or 260 µg every 2 weeks) .
- Utilize bisphosphonates in cirrhotic patients .

MESSAGE

- In hepatic encephalopathy, animal proteins are less tolerated (meat) than vegetable proteins (beans, peas etc) and dairy proteins are better .
- Do not reduce total protein intake as it is not advisable in cirrhosis
- Dietary adjustments required for liver disease with other diseases, like diabetes or obesity.

MESSAGE TO PATIENTS

- Take three main meals (breakfast, lunch and dinner) and three snacks (mid-morning, mid-afternoon, late evening).
- The late-evening snack is the most important, as it covers the long interval between dinner and breakfast.
- Take many fruit and vegetables.
- Reduce Salt.
- *Eat a varied diet that's free of ultra-processed foods, sugar-sweetened beverages, and high-fat foods.*

CONCLUSION

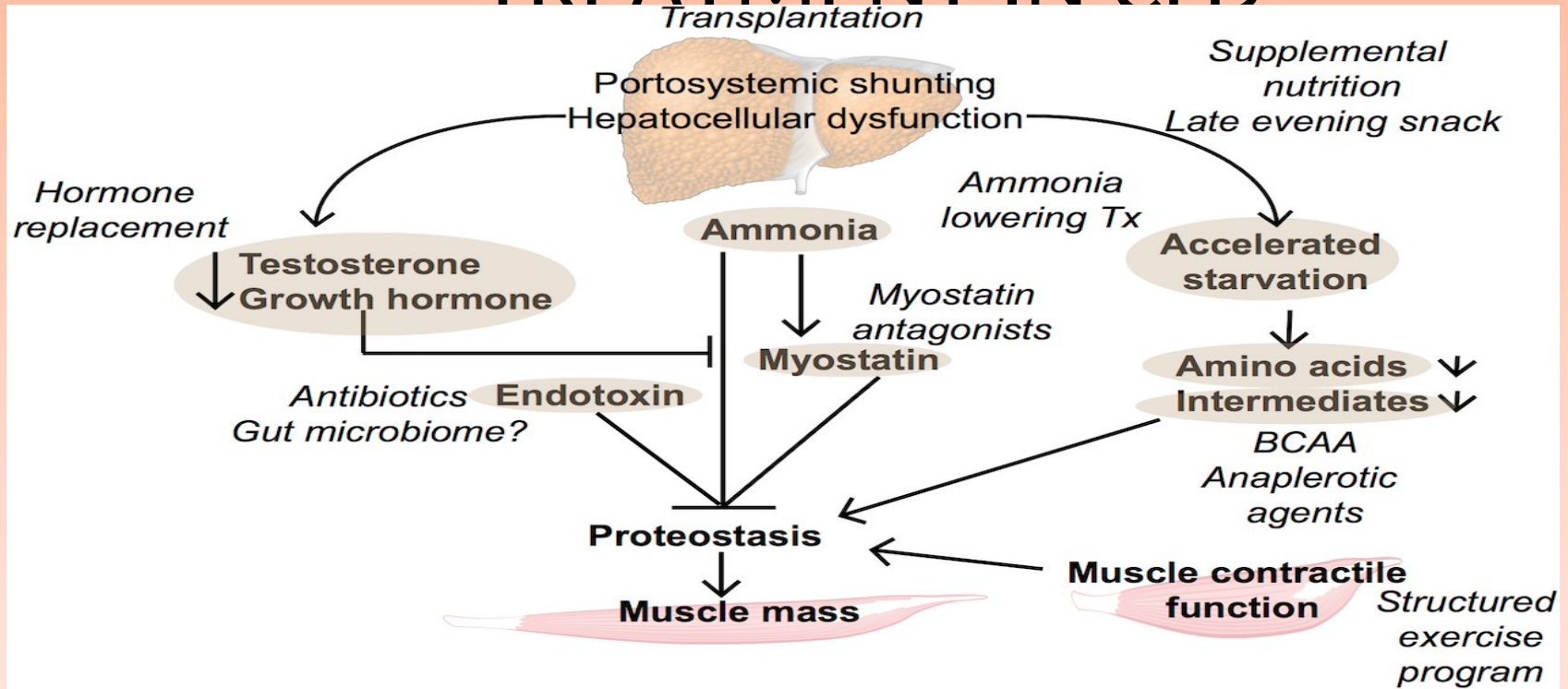
Nutritional assessment and nutritional therapy are the corner stone of management of Liver disease particularly CLD to reduce complications ,morbidity and mortality.

**NUTRITION CAN PROTECT LIVER
PROTECT LIFE.**

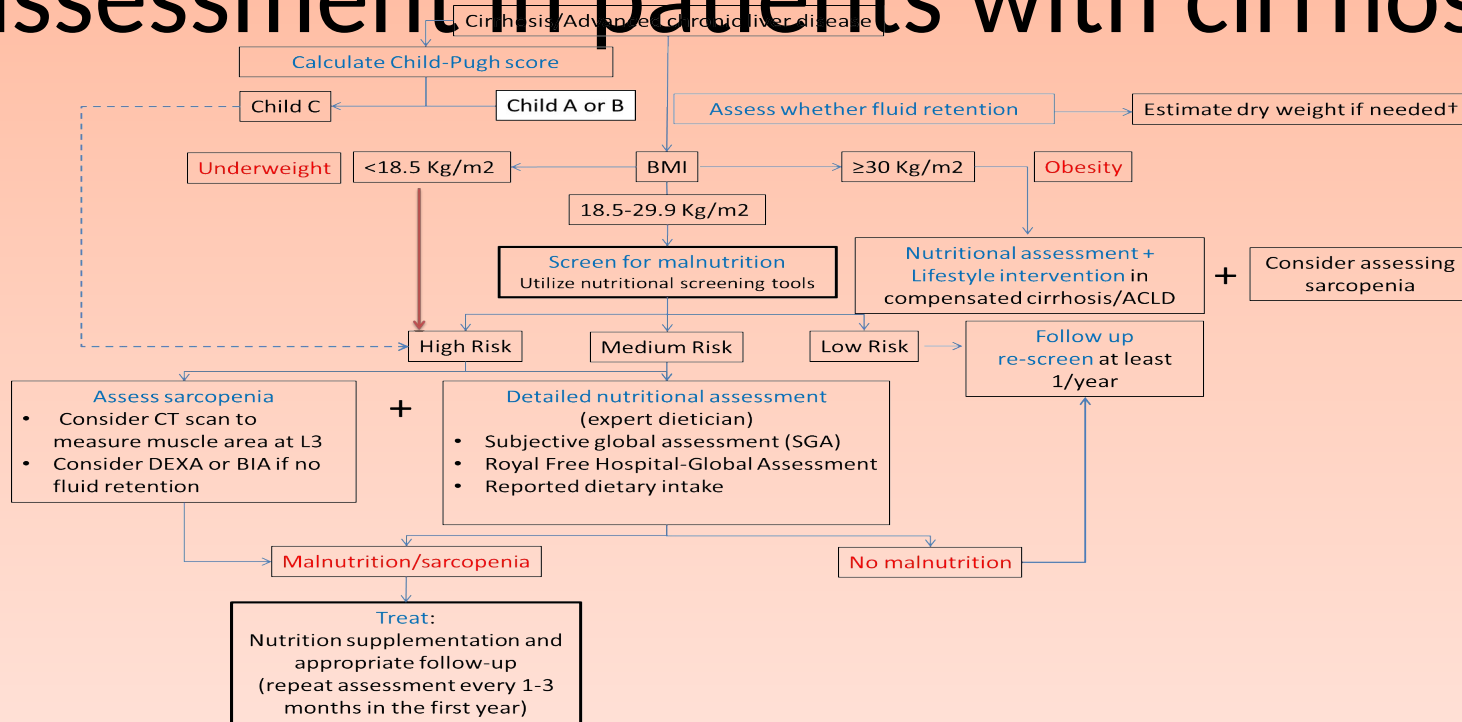
Thank You



SUMMARY OF NUTRITIONAL TREATMENT IN CID



Nutritional screening and assessment in patients with cirrhosis



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Mediterranean Diet Pyramid

In Moderation
Wine



Every Day
Water



Less Often
Meats and Sweets

Weekly: Moderate Portions
Poultry, Eggs, Cheese and Yogurt

Often: at least Twice
each Week
Fish and Seafood

Every Day: Base Each Meal
Around these Foods
Vegetables, Fruits, Whole
Wheat Grains, Olive Oil,
Beans, Nuts, Legumes
and Seeds, Herbs
and Spices

Every Day
Be Physically Active;
Enjoy Meals with
Others