INTERNATIONAL NASH DAY

JUNE 12, 2022

- အသည်းအဆီဖုံးNAFLD အသည်းရောင်NASHရောဂါဟာ လူမသိပဲ တစ်ကမ္ဘာလုံးမှာ ကပ်ရောဂါအသွင်ဖြင့် **၁၁၅**သန်းခန့်မှာဖြစ်ပွားနေပါတယ်။
- ၂၀၃၀ခုနှစ်မှာ **၃၅၃**သန်းခန့်ဖြစ်မယ်လို့ခန့်မှန်းရပါတယ်။
- အသည်းအဆီဖုံးNAFLDကနေ အသည်းရောင်NASHအဆင့် ရောက်တဲ့အထိ ရောဂါလက္ခဏာမပေါ်ပါ။ ဒါကြောင့် ရောဂါဖြစ်မှန်းမသိပဲ ဖြစ်နေပါတယ်။
- အသည်းအဆီဖုံးရောဂါ ရှိသူတွေရဲ့ ၇၀%ဟာ အဝလွန်တဲ့ လူတွေဖြစ်ပြီး ၇၅% ဟာ ဆီးချိုရောဂါသည်တွေဖြစ်ပါတယ်။
- စနစ်တကျ မကုသဘူးဆိုရင် အသည်းခြောက်၊ အသည်းကင်ဆာ ဖြစ်နိုင်ပါတယ်။ အသည်းအစားထိုး ကုသရတဲ့ အဆင့်အထိ ရောက်သွားနိုင်ပါတယ်။
- ဒါကြောင့်မို့လို့ အသည်းအဆီဖုံးရောဂါရဲ့ အန္တရာယ်တွေကို ပြည်သူတွေ အသိရှိ သတိပြုလာစေရန် အပြည်ပြည်ဆိုင်ရာ အသည်းရောဂါအဖွဲ့မှ ဦးစီးပြီး အပြည်ပြည်ဆိုင်ရာ အသည်းအဆီဖုံး အသည်းရောင်ရောဂါနေ့ကို ၂၀၁၈ခုနှစ် ဇွန်လ ၁၂ရက်နေ့မှာ တစ်ကမ္ဘာလုံးအတိုင်းအတာနဲ့ ကျင်းပခဲ့ပါတယ်။

Current Treatment of Non-Alcoholic Liver Disease (NAFLD) and Obesity

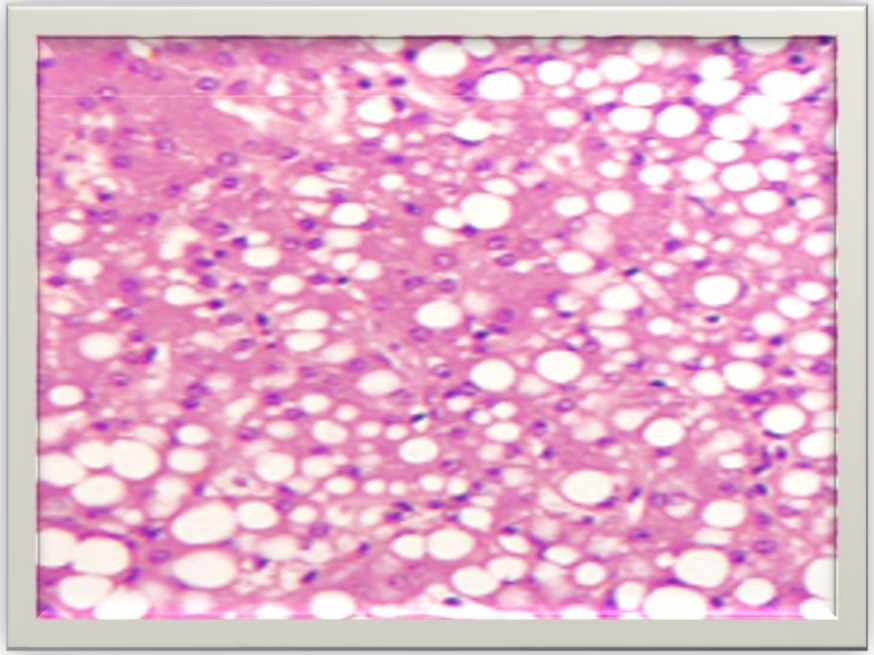
Prof. Khin Maung Win

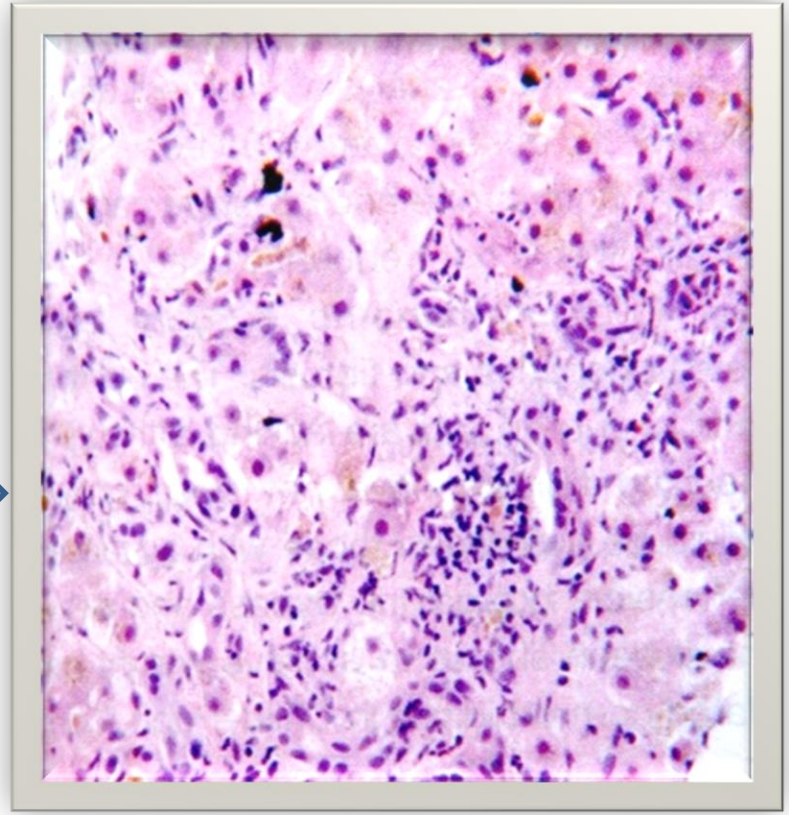
FRCP (E), FRCP (Glasgow), FRCP (London), FAASLD

Dr. Aung Hlaing Bwa

FRCP (E), FRCP (Glasgow), FRCP (London),

NAFLD and NASH





အသည်းအဆီဖုံး(ဗြိုဏ်)

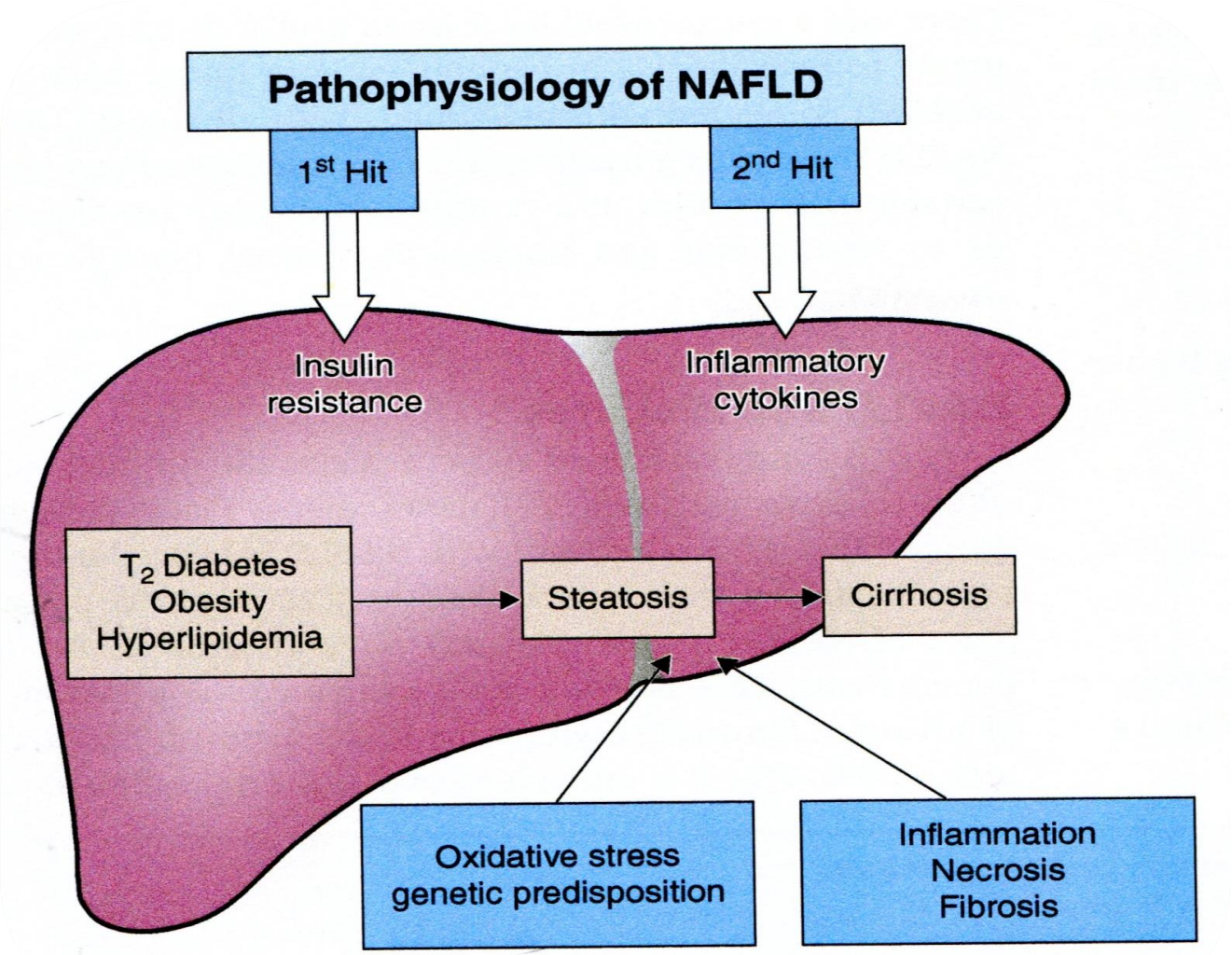
အဆီအသည်းရောင်ရောဂါ (NASH)

အသည်းအဆီဖုံးရောဂါဆိုတာဘာလဲ

- Definition
  - NAFLD is present when >5% of hepatocytes are steatotic according to histological analysis or by proton density fat fraction in patients who do not consume excessive alcohol consumption (>20g/day for women and >30g/day for men) and with no secondary cause for steatosis.

ဘာကြောင့်ဖြစ်တာလဲ

Multiple hit model in the pathogenesis of NAFLD, NASH and Cirrhosis.



ဖြစ်နိုင်စေတဲ့ အကြောင်းအရာတွေ

- Risk factors for NAFLD
  - Type 2 diabetes mellitus
  1. Age-higher risk with increasing age
  2. Gender-commoner in men but women are at a higher risk of advanced fibrosis
  3. Metabolic syndrome
  4. Obesity
  5. Ethnicity-higher risk in hispanics and South Asians Lower risk in blacks
  6. Physical inactivity
  7. A high-calorie diet, excess saturated fats, refined carbohydrates, sugar-sweetened beverages, a high fructose intake
  8. Obstructive sleep apnea.

ခါးအတိုင်းနဲ့ အဆီဖုံးရောဂါ

The World Health Organization assessment of sex-specific waist circumference and risk of metabolic obesity-related complications in people of White European ancestry.		
	Waist circumference in centimetres	
Risk of metabolic complications	Men	Women
Increased	≥ 94	≥ 80
Substantially increased	≥ 102	≥ 88

These figures were defined using studies of people of White European ancestry.
The National Institute for Health and Care Excellence (NICE) recommends lower cut-offs of 90cm for men and 80 cm for women of other ethnicities.

ကိုယ်ထဲမှာရှိသင့်တဲ့ အဆီရာခိုင်နှုန်း

- Percentage body fat in men and women
  - In adult men of average weight, the expected percentage body fat is 15 to 20%
  - In women of average weight, the expected percentage body fat is 25 to 30%

အသည်းမာ၊ မမာ တွက်နည်းတွေ
Simple non-invasive tests for fibrosis.

Score	Indices	Calculation	Interpretation
BARD score	BMI AST/ALT ratio T2DM	Weighted sum: 1.BMI ≥28=1 point 2. AAR ≥0.8=2 points 3.T2DM=1 point	Score ≥2: Sensitivity 0.91, Specificity 0.66, for stage 3–4 fibrosis
NAFLD fibrosis score	Age Hyperglycaemia BMI Platelet count Albumin AST/ALT ratio	−1.675+0.037×age (years)+0.094×BMI (kg/m^2)+1.13×IFG or diabetes (yes=1, no=0)+0.99×AST/ALT ratio—0.013×platelet (×109/L)—0.66×albumin (g/dL)	(<−1.455) canreliably exclude liver fibrosis (NPV 93%). A score >0.676 diagnosed with high accuracy (PPV 90%).
FIB-4 score	Age AST ALT platelet	Age×AST (IU/L)/platelet count (×109/L)×√ALT (IU/L)	<1.45 has a negative predictive value of over 90% for advanced liver fibrosis. A score of >2.67 has a positive predictive value of 80% for advanced fibrosis.

အသည်းအဆီဖုံးရောဂါ အမျိုးအစား

TERM	DESCRIPTION
“Primary” NAFLD	Occasionally used in the literature but not uniformly accepted Indicates typical disease associated with features of metabolic syndrome but without a specific, additional cause
“Secondary” NAFLD	NAFLD associated with a specific cause Implies the absence of insulin resistance May represent exacerbation of underlying primary NAFLD Distinction not very useful

အသည်းအဆီဖုံးရောဂါအဆင့်ဆင့်
Terminology for Nonalcoholic Fatty Liver Disease

TERM	DESCRIPTION
NAFLD	Indicates the presence of fatty infiltration of the liver Defined as fat >5%-10% of liver weight Hepatic steatosis >5% in biopsy specimens
Simple steatosis	Fatty infiltration with no minimal inflammation and no fibrosis
NASH	Hepatic steatosis with inflammation, balloned hepatocytes, and/or fibrosis, which may progress to cirrhosis

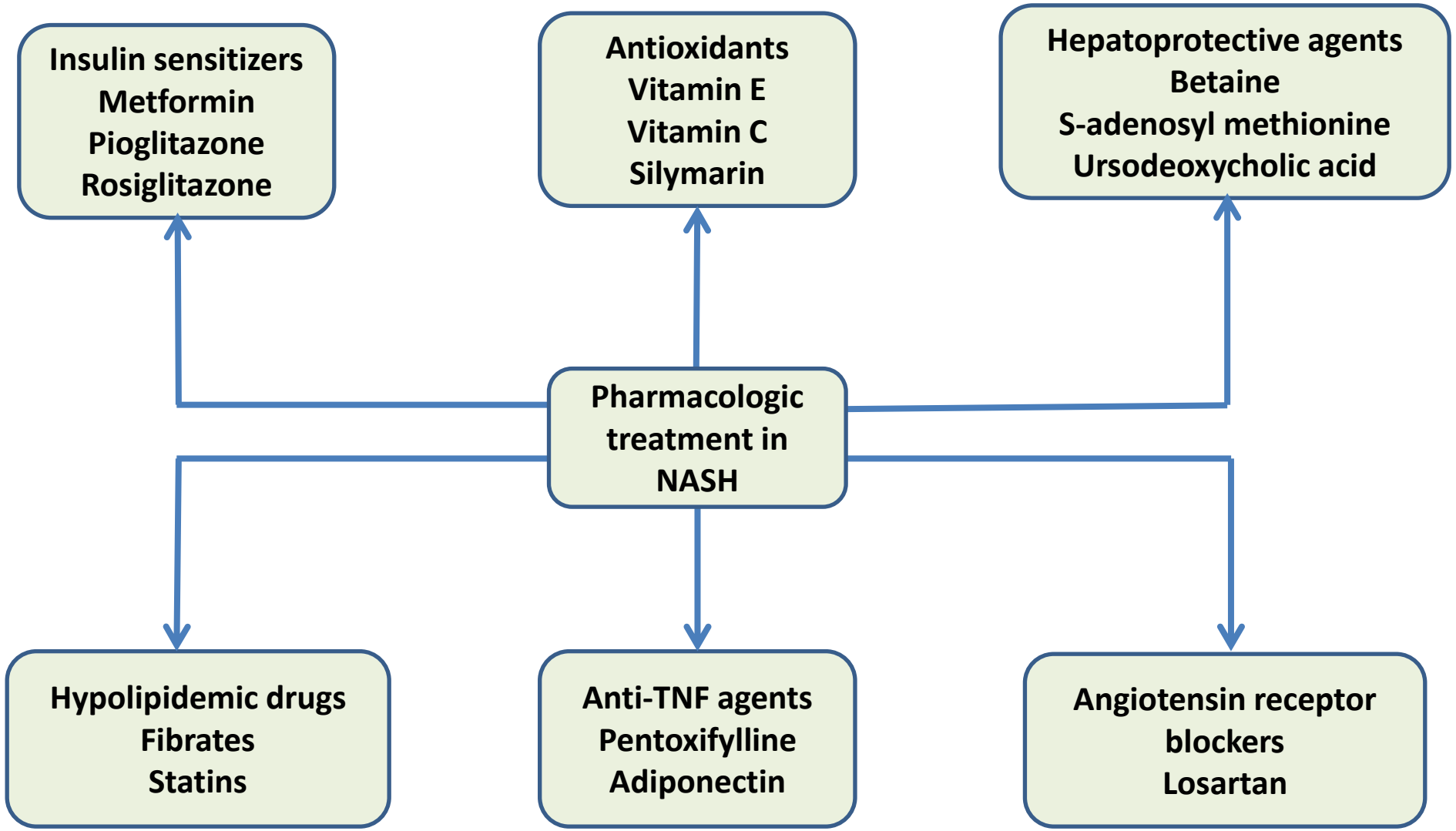
အသည်းအဆီဖုံးရောဂါအဆင့်ဆင့်
Terminology for Nonalcoholic Fatty Liver Disease

TERM	DESCRIPTION
Types of NAFLD (Matteoni et. al.)	Type 1: Simple steatosis (no inflammation or fibrosis) Type 2: Steatosis with lobular inflammation but absent fibrosis or ballon cells Type 3: Steatosis inflammation, and fibrosis of varying degrees (NASH) Type 4: Steatosis, inflammation, ballooned cells, and Mallory hyaline or fibrosis (NASH)
NAFLD, Nonalcoholic fatty liver disease; NASH, nonalcoholic steatohepatitis.	

ဘယ်လိုစစ်မလဲ၊ ဘယ်လိုကုမလဲ

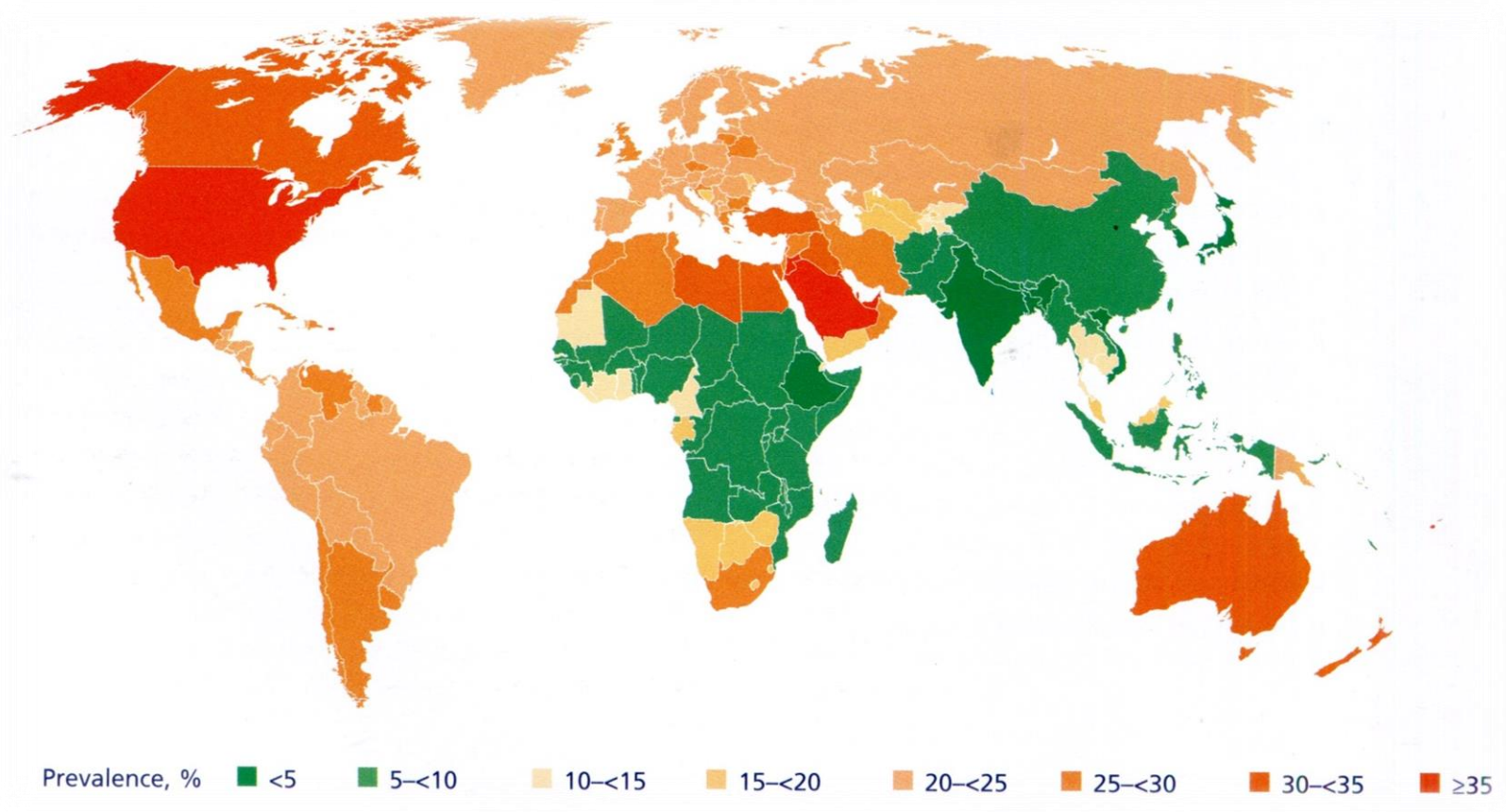
- Screening
  - Liver Enzymes
  - Non-invasive fibrosis score
  - Commercial non-invasive fibrosis tests
  - Non-invasive imaging test
- Management
  - Lifestyle modification
  - Thiazolidinediones
  - Glucagon-like peptide-1 analogs and DPP-4 inhibitors
  - Sodium Glucose cotransporter 2 inhibitors
  - Vitamin E
  - Bariatric Surgery
  - Statins

အသည်းအဆီဖုံး အသည်းရောင်ရောဂါကို ဆေးနဲ့ ဘယ်လိုကုမှာလဲ
Pharmacologic approach to the management of nonalcoholic steatohepatitis (NASH)



Obesity

အဝလွန်ရောဂါ



The global prevalence of obesity in 2016. Source: Adapted from NCD risk Factor Collaboration (NCD-RisC). Lancet 2017:39:2627-2642.
Available here: (http://ncdrisc. Org/data-visualisations. Html (accessed January 2020)

ကမ္ဘာ့အဝလွန်ရောဂါဖြစ်နှုန်း

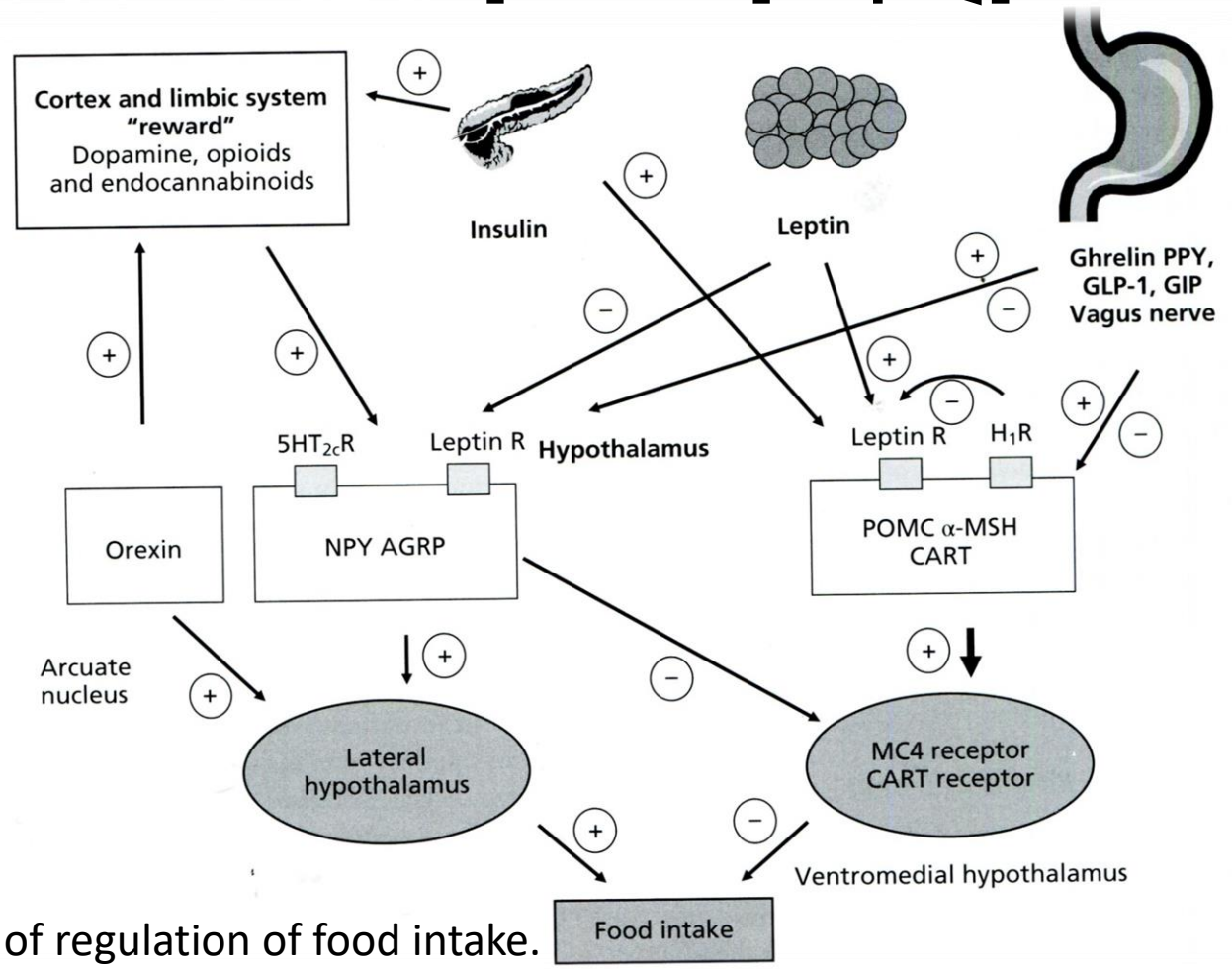
အဝလွန်၊ မလွန်စစ်တဲ့BMI

- How to calculate body mass index?
  - Body mass index is calculated according to the following formula:
  - Weight in kllograms/(Height in metres)

ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့ရဲ့ အဝလွန်ရောဂါသတ်မှတ်ချက်

- The World Health Organization definitions of underweight, overweight and obesity in adults
  - Underweight BMI <18.5 kg/m2
  - Normal weight BMI 18.5-24.9 kg/m2
  - Overweight BMI 25.0-29.9 kg/m2
  - Obesity BMI >30.0 kg/m2
  - Extreme obesity BMI >40.0 kg/m2
    - These figures were defined using studies of people of White European ancestry.
    - The WHO international obesity task force recommends lower cut-offs of BMI of ≥23 kg/m2 for overweight, and ≥25.0 kg/m2 for obesity for Asian people in children, overweight is defined by a BMI between the 85-95th percentile for children of the same age and sex.
    - Obesity is defined by a BMI ≥95th percentile for children of the same age and sex.

အစာစားတာကို ဘယ်လိုထိန်းချုပ်ထားလဲ



- Model of regulation of food intake.
- Appelite is stimulated by neurones containing NPY and AGRP in the lateral hypothalamic area.
- Food intake is inhibited by αMSH and CART. Regulation of this final pathway is affected by signals from gut and adipose tissue as well as being influenced by the hednistic control of food intake.

ဝစေတဲ့ အကြောင်းအရာတွေ

- The causes of obesity
  - Genetic factors
  - Environmental changes
  - Dietary intake
  - Total energy intake
  - Changes in eating behaviour
  - Dietary macronutrients
  - Energy expenditure

စက်မှုပညာတိုးတက်လာလို့ ဝစေတာ

Examples of technological advances that have reduced physical activity

- Transport
  - Motorized transport
  - Increased car ownership
- Labour saving devices with the home
  - Vacuum cleaners
  - Washing machines
  - Dishwashers
- Shopping
  - Use of internet shopping
  - Shopping malls designed with escalators rather than stairs
- Entertainment
  - Televisions
  - Computer gaming
- Work
  - Increased use of machinery

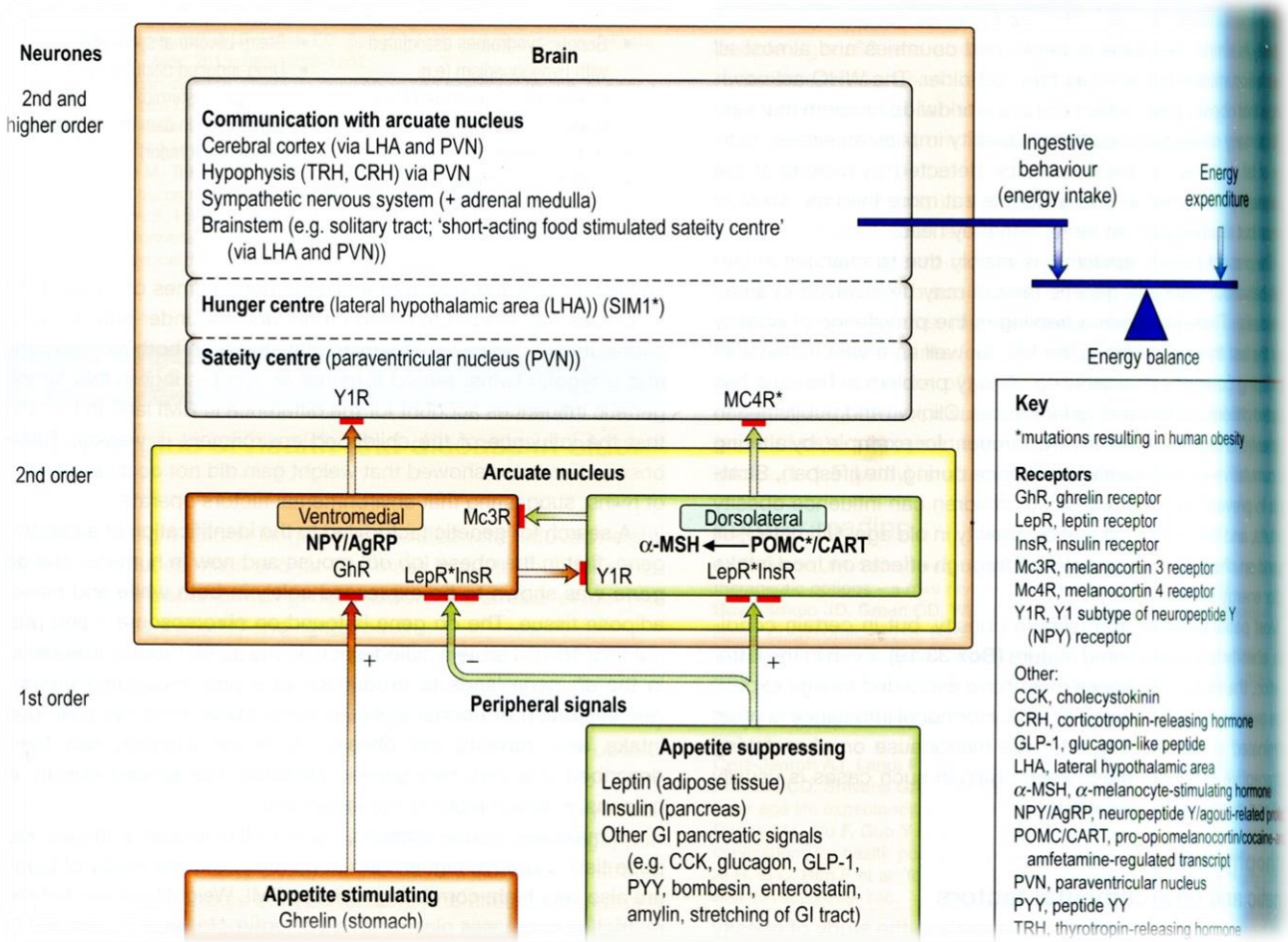
ဝိတ်လျော့ခြင်းရဲ့ အကျိုးကျေးဇူးတွေ

Health benefits associated with 10% weight loss	
Death	↓ 20-25% in premature mortality
Diabetes	↓ 50% in type 2 diabetes ↓ 30-50% in blood glucose Improved insulin sensitivity Improved β-cell function
Lipids	↓ 10% in total cholesterol ↓ 30% in triglycerides Decreased intra-hepatic triglyceride content
Blood pressure	↓ 10 mmHg in systolic BP ↓ 20 mmHg in diastolic BP
Inflammation	↓ Inflammatory markers • TNF • IL6 • MCP1

အဝလွန်တာကို ဘယ်လိုကုမှာလဲ

စားတာကို ထိန်းချုပ်တဲ့ လမ်းကြောင်းတွေ

Peripheral signals and central pathways involved in the control of food intake.



The stimulatory (organge) and suppressive (green) signals and pathways are shown. In the arcuate nucles, POMC is converted to metanocortins, including αMSH, through the action of prohomone convertase. The solid red areas represent receptors for a variety of signals (see list in the key).

ပိန်အောင်လုပ်တဲ့နည်းတွေ

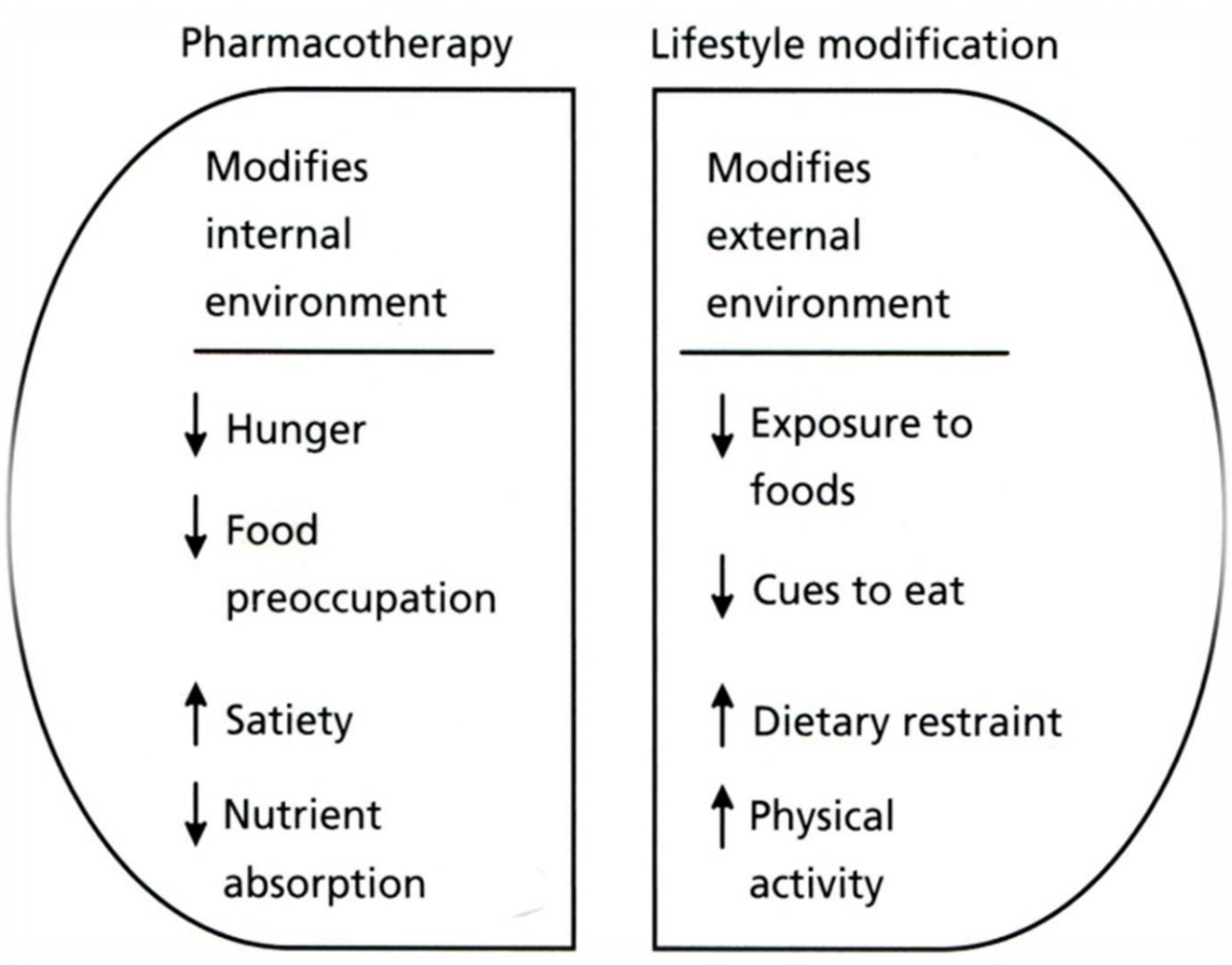
- Dietary control
- Behavioural modification
- Drug therapy
- Surgical management (bariatric Surgery, metabolic surgery)
  - Restrictive procedures
  - Malabsorptive procedures
  - Restrictive plus malabsorptive procedures

Choice of treatment modality for obesity according to body mass index, waist circumference and obesity-related co-morbidity

BMI (kg/m²)	Waist circumference			Presence of co-morbidities
	Men: <94 cm	Men: 94–102 cm	Men: >102 cm	
	Women: <80 cm	Women: 80–88 cm	Women: >88 cm	
25.0–29.9	General advice on healthy weight and lifestyle	Diet and physical activity	Diet and physical activity	Diet and physical activity; consider drugs
30–34.9	Diet and physical activity	Diet and physical activity	Diet and physical activity	Diet and physical activity; consider drugs
35–39.9	Diet and physical activity; consider drugs	Diet and physical activity; consider drugs	Diet and physical activity; consider drugs	Diet and physical activity; consider drugs; consider surgery
≥40	Diet and physical activity; consider drugs; consider surgery	Diet and physical activity; consider drugs; consider surgery	Diet and physical activity; consider drugs; consider surgery	Diet and physical activity; consider drugs; consider surgery

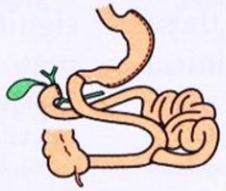
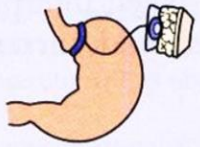
Green: low risk of obesity-related complications; yellow: medium risk of obesity-related complications; red: high risk of obesity-related complications.

အစားအသောက်ဆင်ခြင်တာနဲ့ ဆေးပူးတွဲကုသ
Additive effects of diet and drugs.



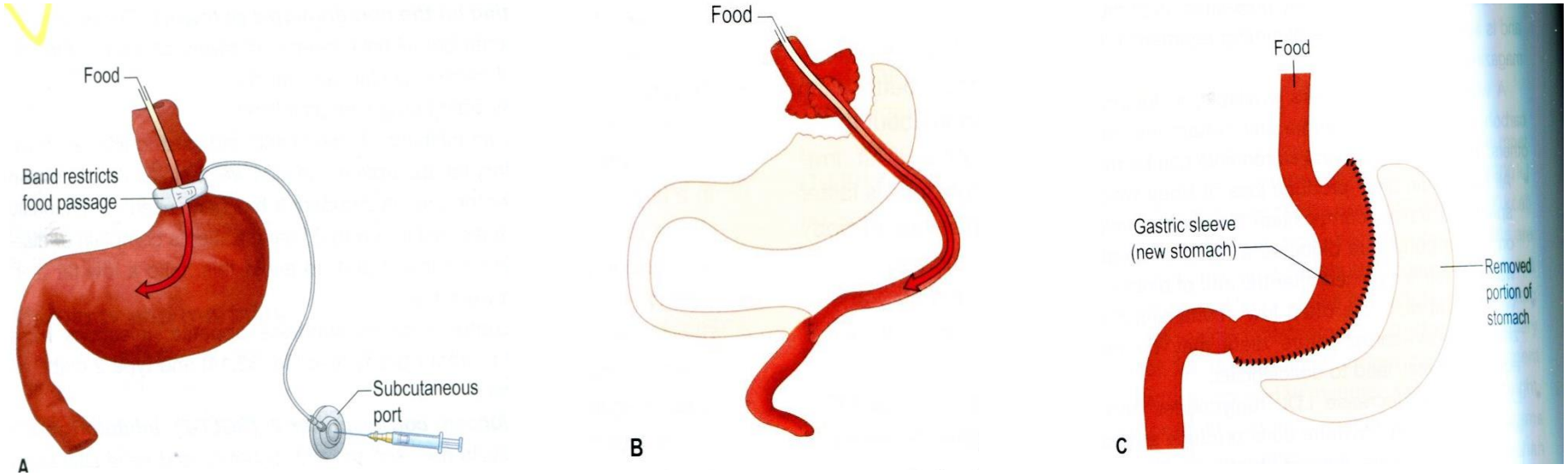
အဝလွန်ရောဂါခွဲစိပ်ကုနည်းတွေ

Surgical Weight Loss

Parameter	RYGBP	BPD-DS	VBG	LAGB
				
Weight loss % EBW % BMI	65–70 35	~70 ~35	50–60 25–30	50 25
NAFLD	SI	SI	SI except fibrosis, may get worse	SI
Diabetes	SI or R 65–95%	SI or R 65–95%	SI or R	I or R 40–65%
Operative Mortality Morbidity Complication	0.5–1% 5% Stomach dilation, ventral hernia	1% 5% Malabsorption Increased AST/ALT, resolve after 6 mos	0.1% 5% Food/pill impaction Outlet obstruction	0.1% 5% Gastric prolapse stomal obstructio pouch dilation
Type	Restrictive/ malabsorptive	Malabsorptive/ restrictive	Restrictive	Restrictive
Use in the United States	87%	2%	1.4%	9%

ပိန်အောင်ခွဲစိပ်ကုသနည်းတွေ

Examples of surgical procedures to treat morbid obesity



(A) Restrictive procedure gastric banding with a subcutaneous port attached to the anterior abdominal wall so that fluid can be injected into the adjustable band around the upper stomach.

(B) Restrictive plus malabsorptive procedure: Roux-en-Y gastric bypass, in which food passes through a small stomach pouch and bypasses the proximal small bowel.

(C) Gastric sleeve

ဝိတ်10Kg ကျသွားရင် ရမဲ့ အကျိုးကျေးဇူးတွေ

Potential benefits from loss of 10kg in 100-kg patients with co-morbidities	
Mortality • 20-25% fall in total mortality • 30-40% fall in diabetes-related deaths • 40-50% fall in obesity-related cancer deaths	**Diabetes** • Reduction in risk of developing diabetes by >50% • 30-50% fall in fasting blood glucose • 15% fall in HbA1C
Blood pressure • Fall of about 10mmHg (systolic and diastolic)	**Serum lipids** • 10% fall in total cholesterol • 15% fall in LDL cholesterol • 30% fall in triglycerides • 8% increase in HDL cholesterol

Thank You