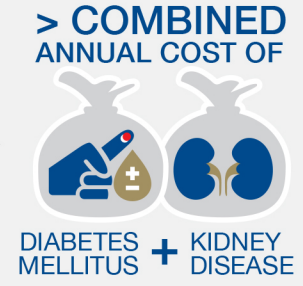
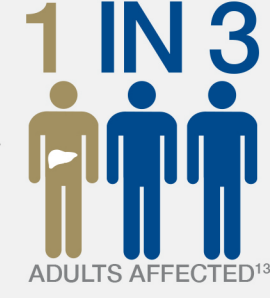


Non-alcoholic fatty liver disease (NAFLD)

CHRONIC LIVER DISEASE AFFECTS ⁶



NAFLD IS THE MOST PREVALENT FORM OF LIVER DISEASE



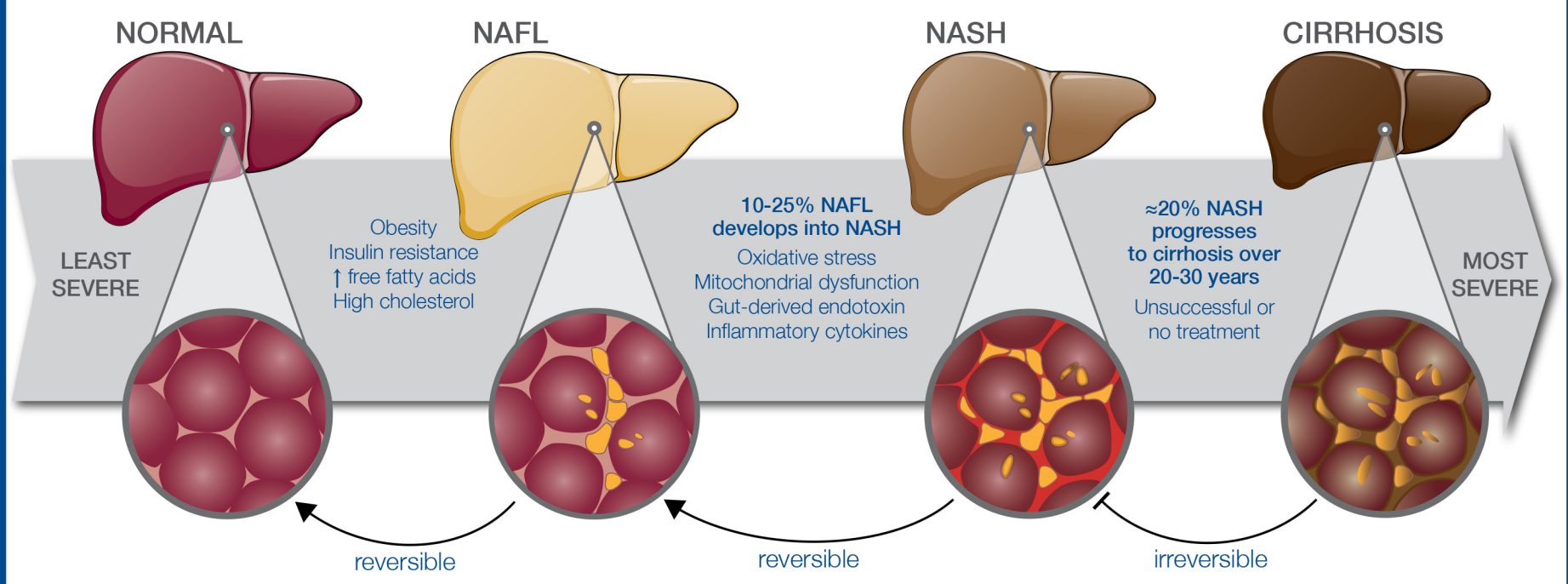
WHAT IS NAFLD?⁷

- Non-alcoholic fatty liver disease.
- Presence of hepatic fat in people who do not consume excessive alcohol.
- Most common reason for mildly abnormal liver test results.

SUBCLASSIFICATIONS:

- NAFL (non-alcoholic fatty liver)**
- Fat in liver >5% by weight
 - Hepatomegaly
 - Minimal inflammation
 - Minimal cell death
- NASH (non-alcoholic steatohepatitis)**
- Excessive hepatic fat accumulation
 - Some scarring may be present
 - Inflammatory state
 - Increased cell death
- CIRRHOSIS**
- Significant scarring
 - Advanced liver damage
 - Compromised structure and function

PROGRESSION OF NAFLD¹³



CAUSES

Although the exact cause of NAFLD remains unknown, growing evidence suggests excessive consumption of sugars (sucrose and fructose) may act as a major contributor in the development and severity of NAFLD.

- Risk factors include:⁸⁻¹²
- Obesity
 - High cholesterol
 - High triglycerides
 - Type 2 diabetes
 - Insulin resistance
 - Leptin resistance
 - Hepatic iron
 - Metabolic syndrome
 - Polycystic ovary syndrome
 - Hypothyroidism
 - Hypopituitarism
 - Antioxidant deficiencies
 - Bacterial translocation from gut to liver

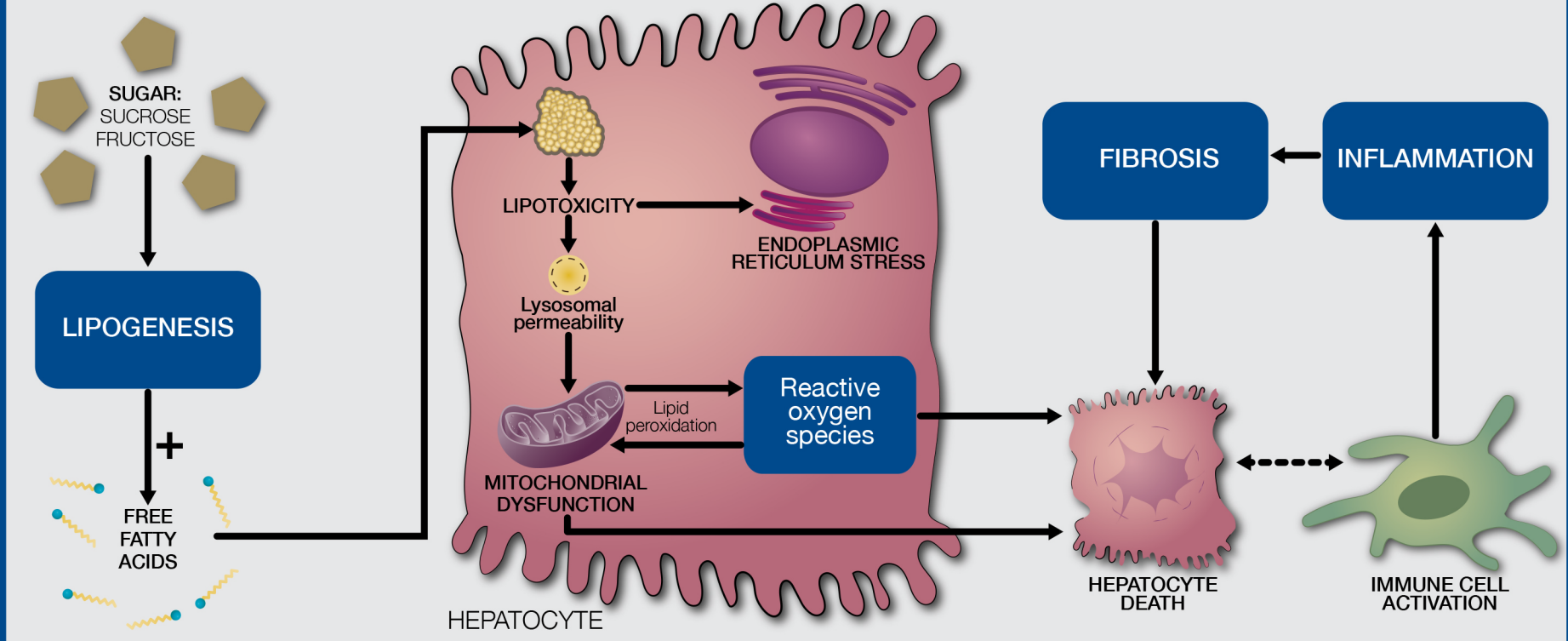
SYMPTOMS^{7,8}

- Usually ASYMPTOMATIC. However, symptoms may include:
- Fatigue
 - Weight gain
 - Pain in upper right abdomen

DIAGNOSTIC CRITERIA

- A definitive diagnosis of NAFLD depends on three factors:
1. Evidence of fatty infiltration (imaging or biopsy).
 2. Exclusion of significant alcohol consumption.
 3. Exclusion of other causes of hepatic steatosis (e.g. medications, surgery, metabolic disorders).

WHAT HAPPENS INSIDE THE LIVER?¹⁴



EVIDENCE-BASED SOLUTIONS¹⁵

Milk thistle
Silybum marianum

HEPATOPROTECTIVE, STABILISES CELL AND LYSOSOMAL MEMBRANES, ANTIOXIDANT, CHELATES IRON, ACCELERATES REGENERATION OF HEPATOCYTES, ANTI-INFLAMMATORY, ANTIFIBROTIC

Coffee
Coffea arabica

HEPATOPROTECTIVE, ANTIOXIDANT, ANTI-INFLAMMATORY, ANTIFIBROTIC, IMPROVES INSULIN SENSITIVITY

Zinc

ANTIOXIDANT, ANTI-INFLAMMATORY, ANTIFIBROTIC, DEFICIENCY LINKED TO INSULIN RESISTANCE, INVOLVED IN CELL PROLIFERATION, MAINTAINS CELL MEMBRANE INTEGRITY

Vitamin E
Alpha-tocopherol

ANTIOXIDANT, ANTI-INFLAMMATORY, ANTIFIBROTIC

Gamma-tocotrienol

REGULATES FATTY ACID METABOLISM, REDUCES ENDOPLASMIC RETICULUM STRESS, ANTIOXIDANT, ANTI-INFLAMMATORY