Food, Obesity and Non-Alcoholic Fatty Liver Disease (NAFLD)

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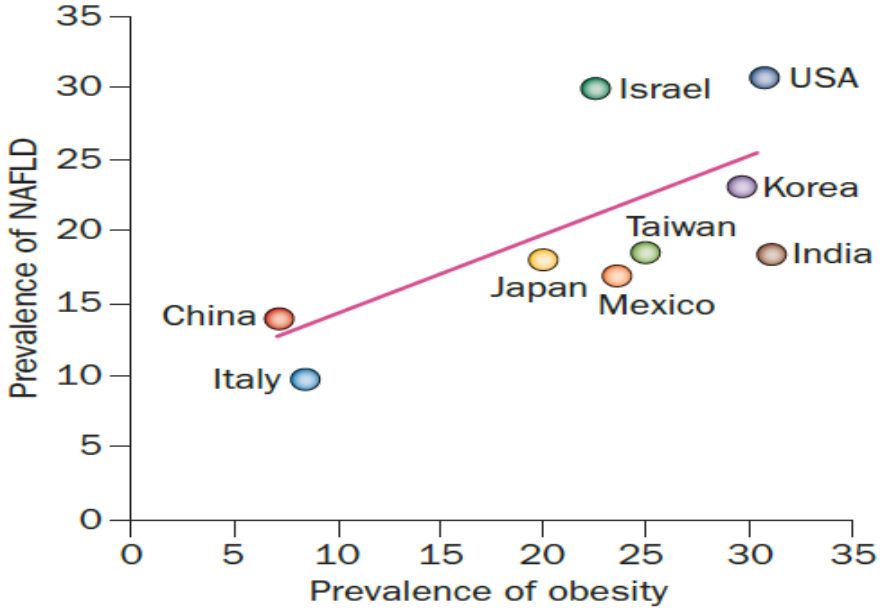
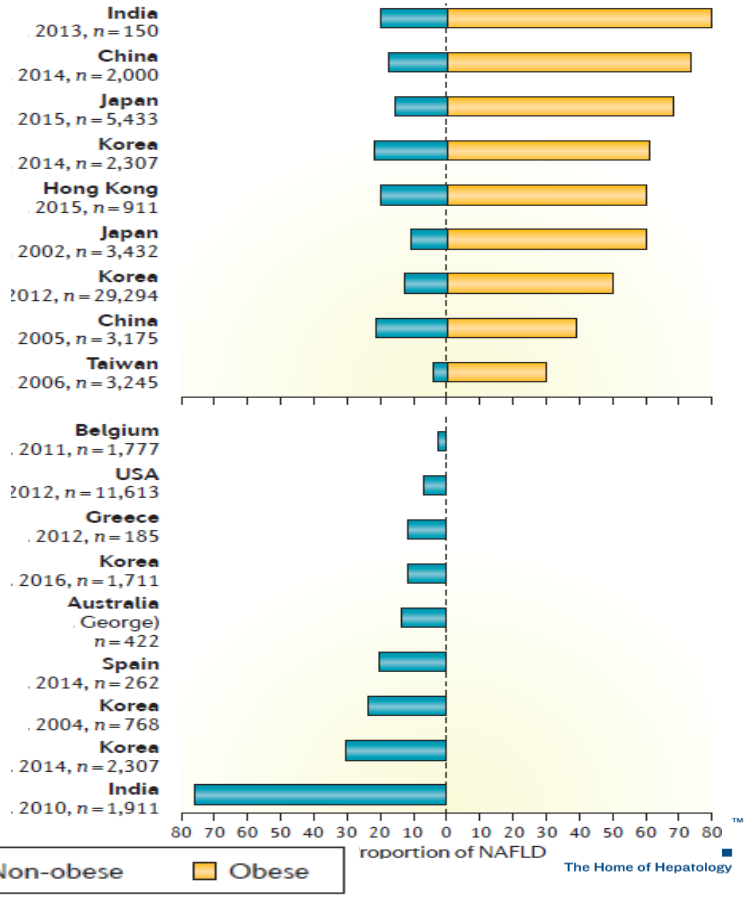
The prevalence of NAFLD as a function of the prevalence of obesity in various countries

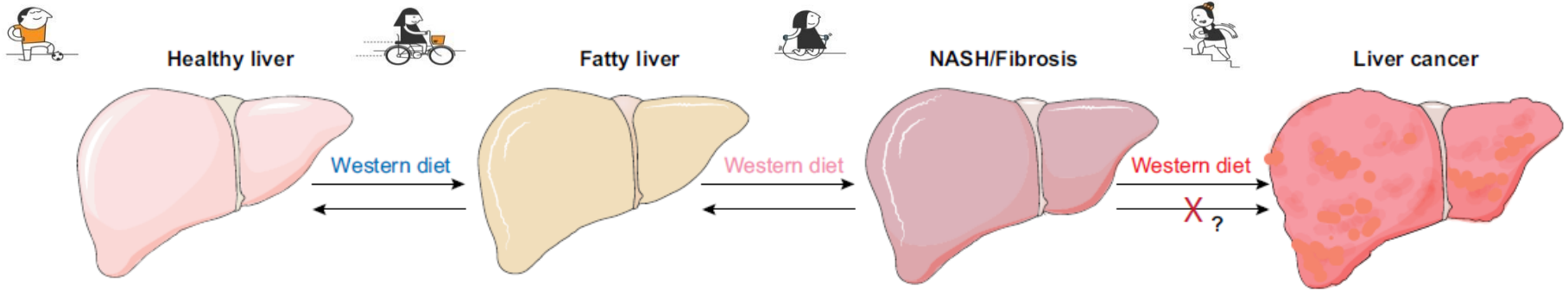




Younossi Z., Nat. Rev. Gastroenterol. Hepatol 2018

Loomba R., Nat. Rev. Gastroenterol. Hepatol 2013

NAFLD is a lifestyle oriented and treated disease



Hypocaloric or isocaloric - Mediterranean diet

Aerobic or resistance excercise
(Clinical trials)

≥7-10% Weight reduction
by energy deficit of 500-750 kcal/day through either diet:
- low fat
- low carb
- Mediterranean

(Clinical trials)

Dietary composition modification
Reduced fructose
Mediterranean diet
(Observational studies)

Mediterranean diet
- High fibres
- High fish
- High vegetables
- Low cholesterol
- Low sugar

Drinks
- Coffee ≥2-3 cups/day
- No alcohol in cirrhotics

(Observational studies)

Romero-Gómez M., Zelber-Sagi S., Trenell M., Journal of Hepatology 2017

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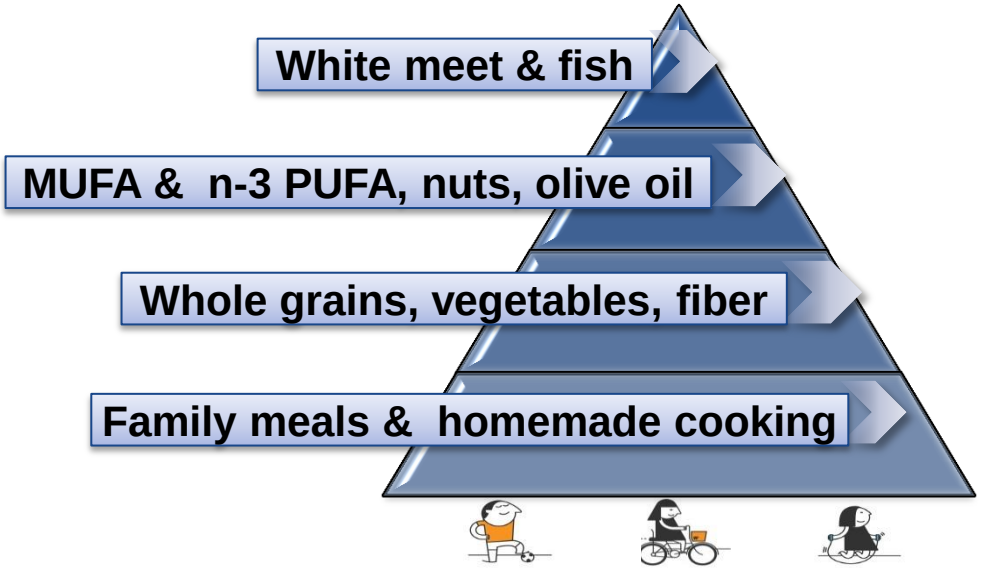
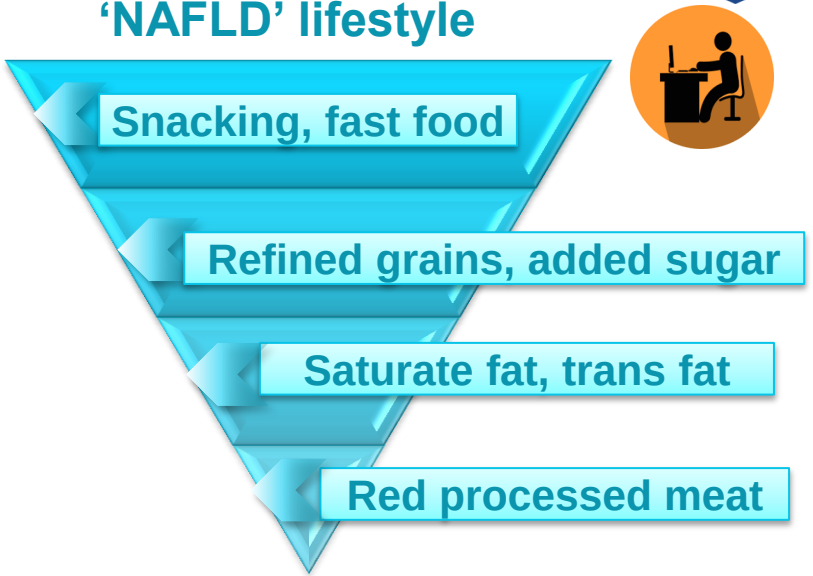
The challenge of maintaining a healthy diet in face of a toxic environment

Mediterranean lifestyle



'NAFLD' lifestyle



- **Sicily 2009**- moving away from traditional patterns observed in younger and low educated people
  Grosso G., Public Health Nutrition 2013

- **Spain**- drifting away from the MD, mostly among the socially disadvantaged
  Leon-Munoz LM., J Nutr 2012

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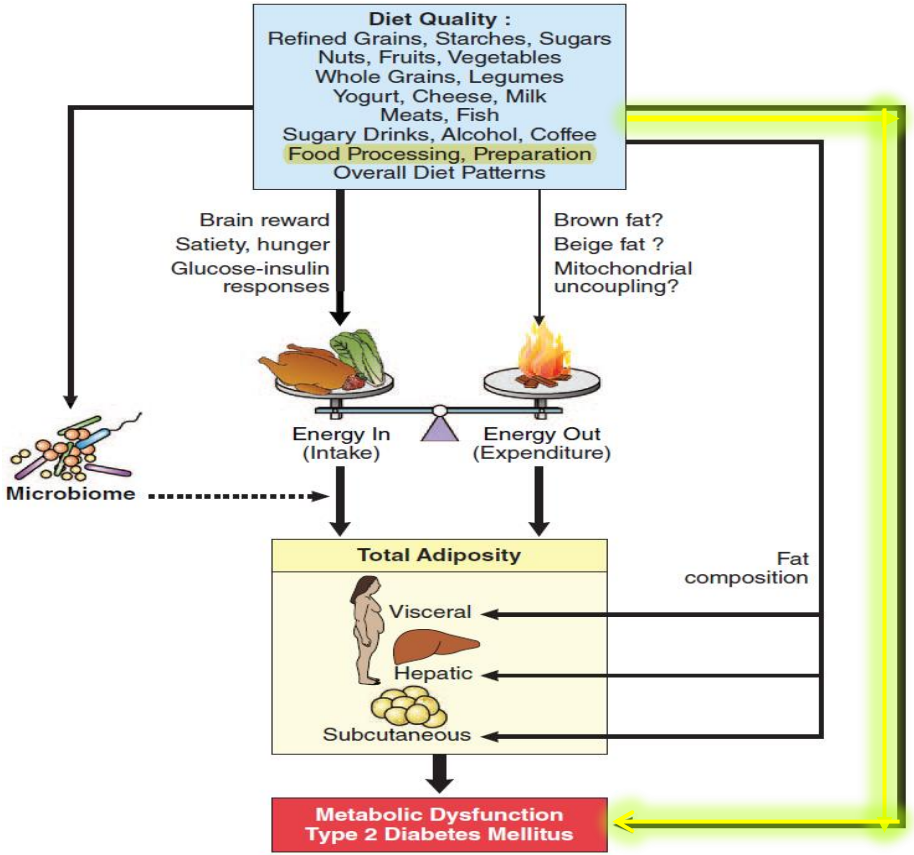
Diet and metabolic risk

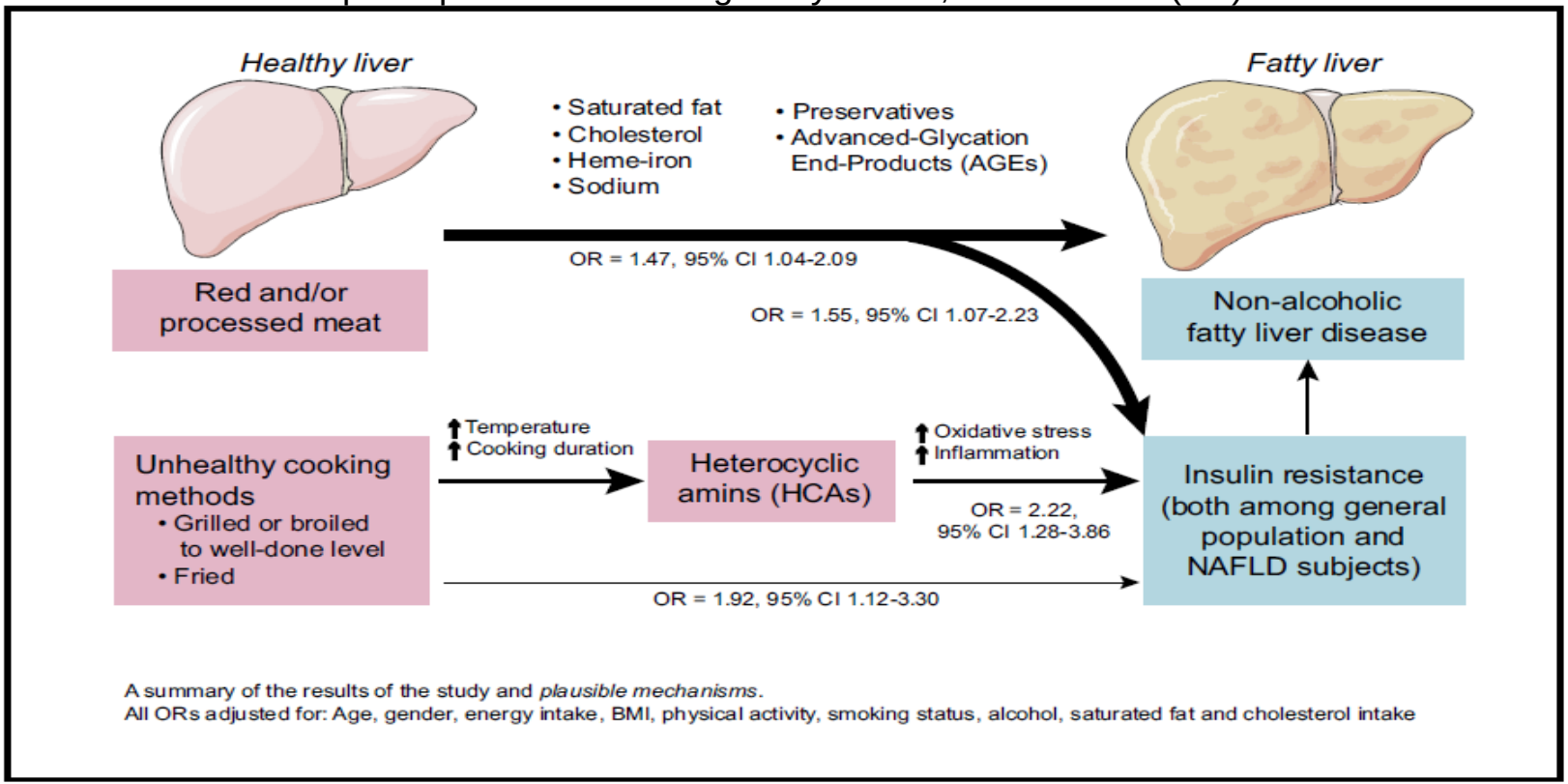


- Obesity
- Blood pressure
- Glucose-insulin homeostasis
- Liver fat & fibrosis
- Blood lipids
- Endothelial function
- Inflammation
- Adipocyte function
- Thrombosis

Mozaffarian D., Circulation 2016

High red and processed meat consumption is associated with NAFLD and insulin resistance

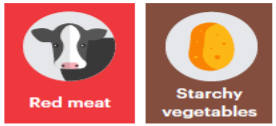
- Volunteers who participated in screening study n=789, 39% NAFLD (US)



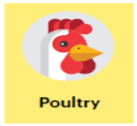
Zelber-Sagi S., Journal of Hepatology 2018

A human & planetary healthy plate

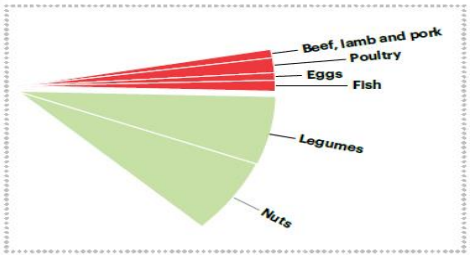
Limited intake



Optional foods



Emphasized foods



EAT-Lancet Commission on Healthy Diets From Sustainable Food Systems 2019

Fructose consumption independently associated with NASH

- 271 children with NAFLD
- Liver biopsy

Adjusted association between fructose consumption and NASH

	Odds ratio (95% CI)	p
Fructose, g/day	**1.6 (1.3,1.9)**	**0.001**
Uric acid, mg/dl	2.5 (1.9,2.8)	0.004
WC, cm	1.8 (1.1,1.9)	0.03
HOMA-IR	3.2 (1.9, 5.7)	0.024
Triglyceride, mg/dl	1.2 (1.1,1.6)	0.048

Mosca A., & Nobili V., Journal of Hepatology 2017

EASL policy statement
Food, obesity and Non-Alcoholic Fatty Liver Disease

- **The aim is to inform politicians, policy-makers and the general population across Europe about NAFLD and the measures required for prevention and treatment**

- Addressing obesity in Europe which will then impact on the levels of NAFLD

Measures include

  - Infrastructure changes that encourage physical activity
  - Water consumption instead of SSBs
  - Restrict advertising and marketing of SSBs and industrially processed foods
  - Fiscal measures to improve the composition (reformulation) of processed foods
  - Nutritional labeling

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Targets for NAFLD

- **Educating** the **public** & **policymakers and politicians**
- **Educating primary care practitioners** on the high prevalence of NAFLD and the potential liver-related morbidities
- **Expanding the knowledge and skills of medical care providers** about nutrition screening and counseling
- **Establishing clinical networks** between general practitioners, endocrinologists, cardiologists, nutritionists and hepatologists in order to provide a comprehensive management of cardio-metabolic and hepatic comorbidities
- **Engaging patients** in appropriate strategies for behavioral modification

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