

Gut Microbiome and MASH

Unraveling the Link Between Dysbiosis and Liver Inflammation

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Gastroenterologist, MD, PhD, MPH

35th Conference for Gastroenterology-Damascus – 28/11/2024

“Chronic liver diseases are a major cause of morbidity and mortality worldwide. Recently, gut dysbiosis was identified as an important factor in the pathogenesis of liver diseases.”



Konturek. P, et al. 2018

Ziad Al-Jarad



- **PhD in Gastroenterology from Aleppo University**
- **Master's Degree in Public Health from London School of Hygiene and Tropical Medicine**



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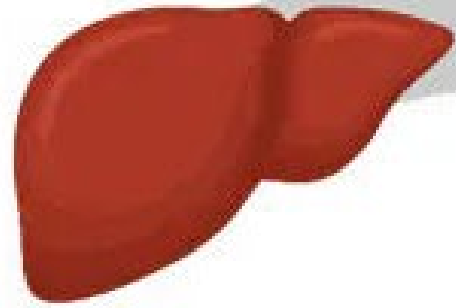


- **Teaching**
- **Clinical Work**
- **Public Health & Research**
- **Associate Editor at Oxford Journals**
- **Cochrane member**

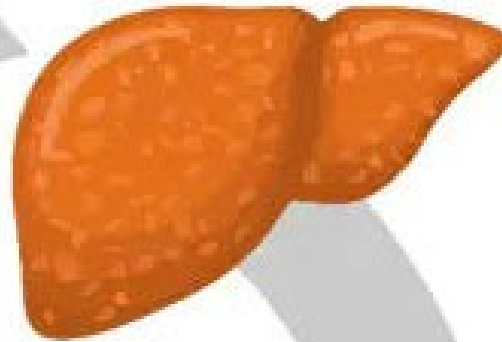


**Metabolic
Dysfunction-associated
Steatohepatitis**

NORMAL LIVER

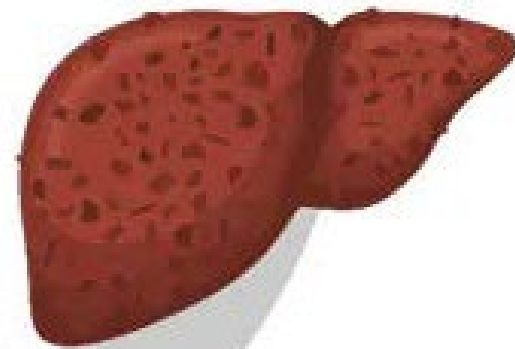


STEATOTIC LIVER

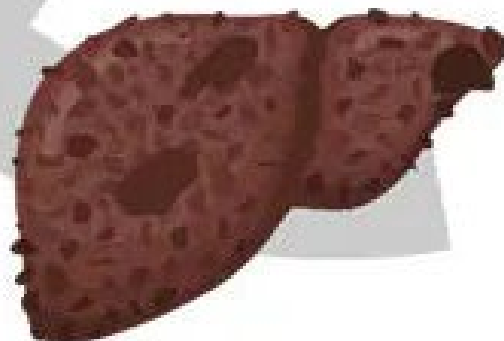


PROGRESSION OF MASLD

MASH



CIRRHOSIS



Metabolic
Dysfunction-associated
Steatohepatitis

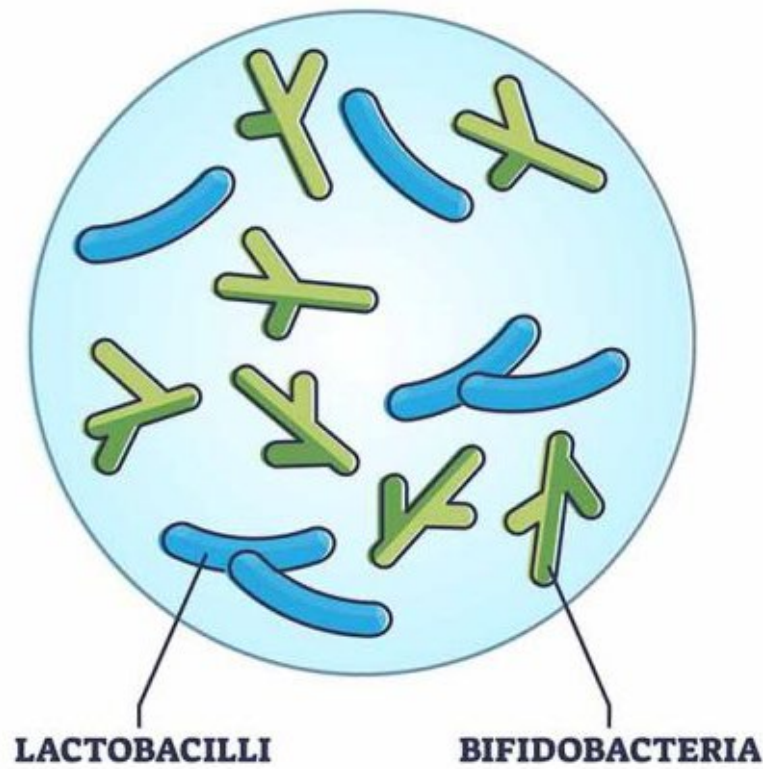
NASH

MASH

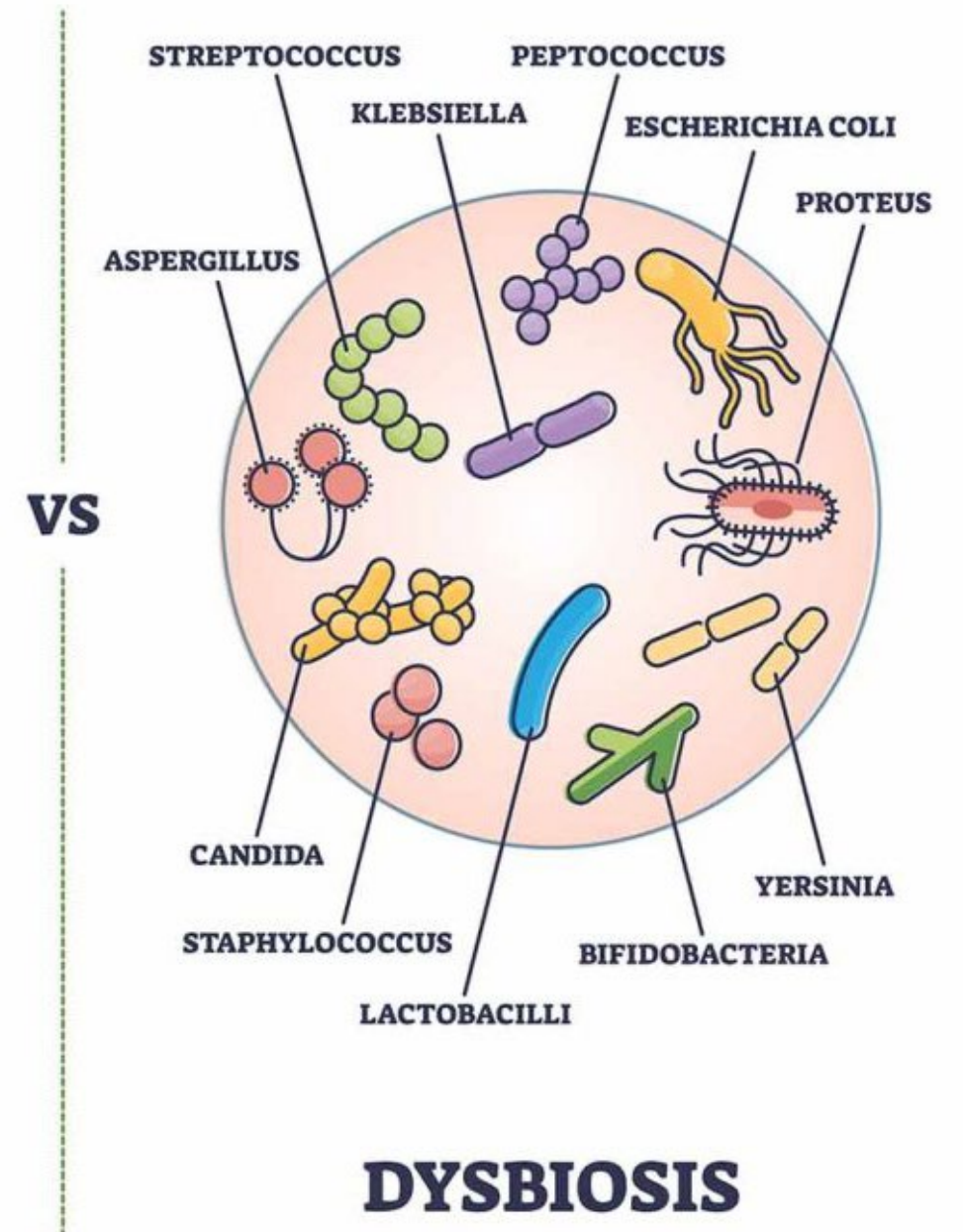
Dysbiosis

Dysbiosis

DYSBIOSIS



NORMAL

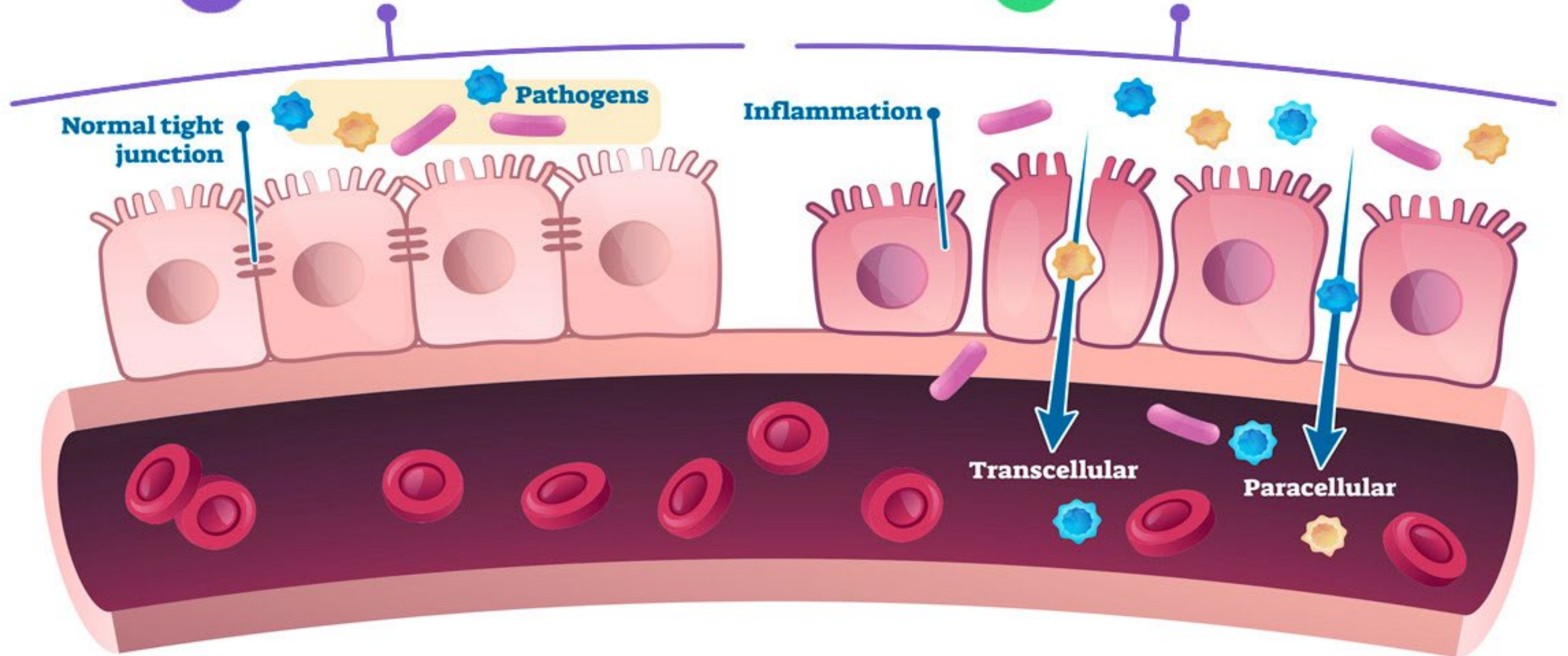


DYSBIOSIS

LEAKY GUT

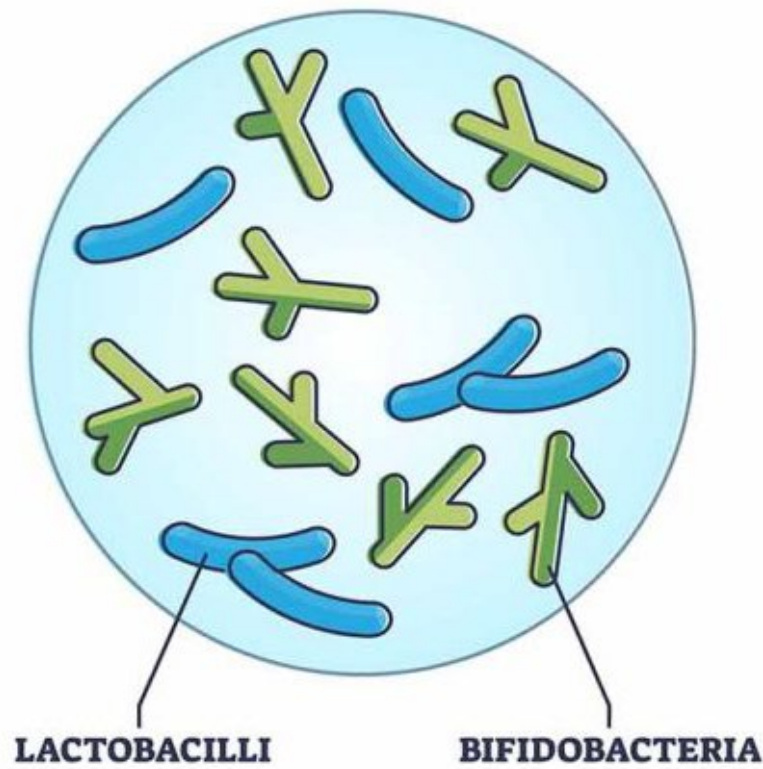
✓ **NORMAL GUT**

✗ **LEAKY GUT**



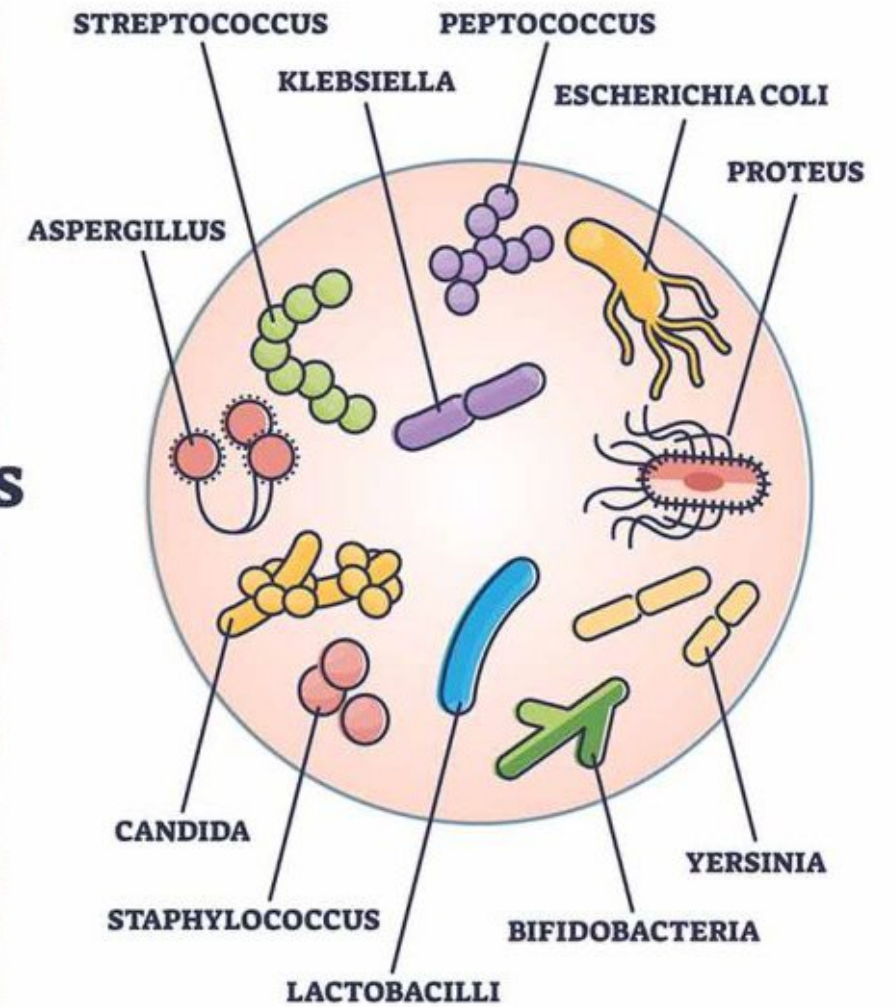
Dysbiosis

DYSBIOSIS



NORMAL

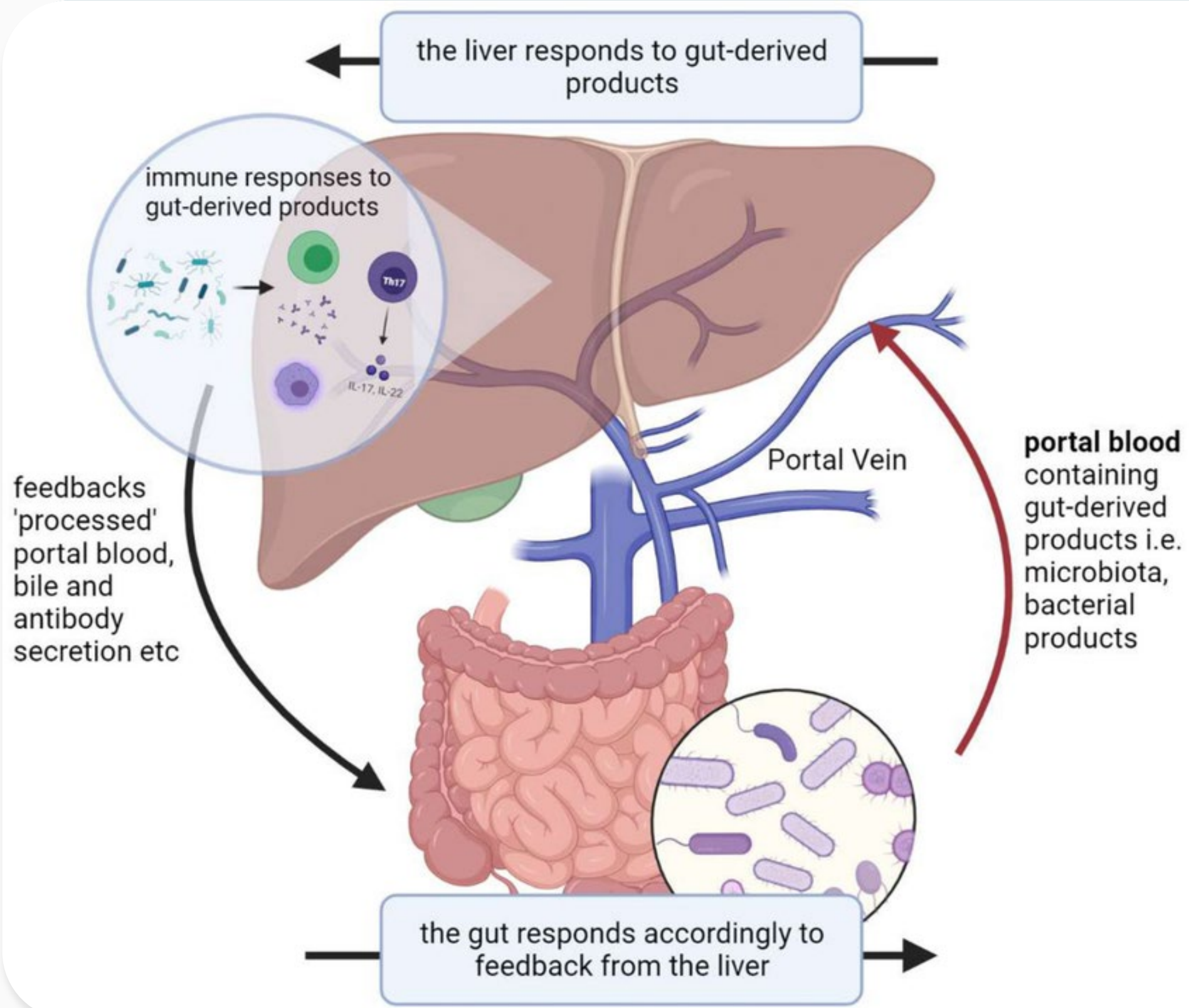
VS



DYSBIOSIS

Gut-Liver

Axis



Gut-Liver Axis

Microbial Products Involved in MASH

Microbial Products Involved in MASH

- 1. Lipopolysaccharides (LPS)**
- 2. Short-Chain Fatty Acids (SCFAs)**
- 3. Trimethylamine-N-Oxide (TMAO)**
- 4. Bile Acids**
- 5. Indole and Derivatives**

Microbial Products Involved in MASH

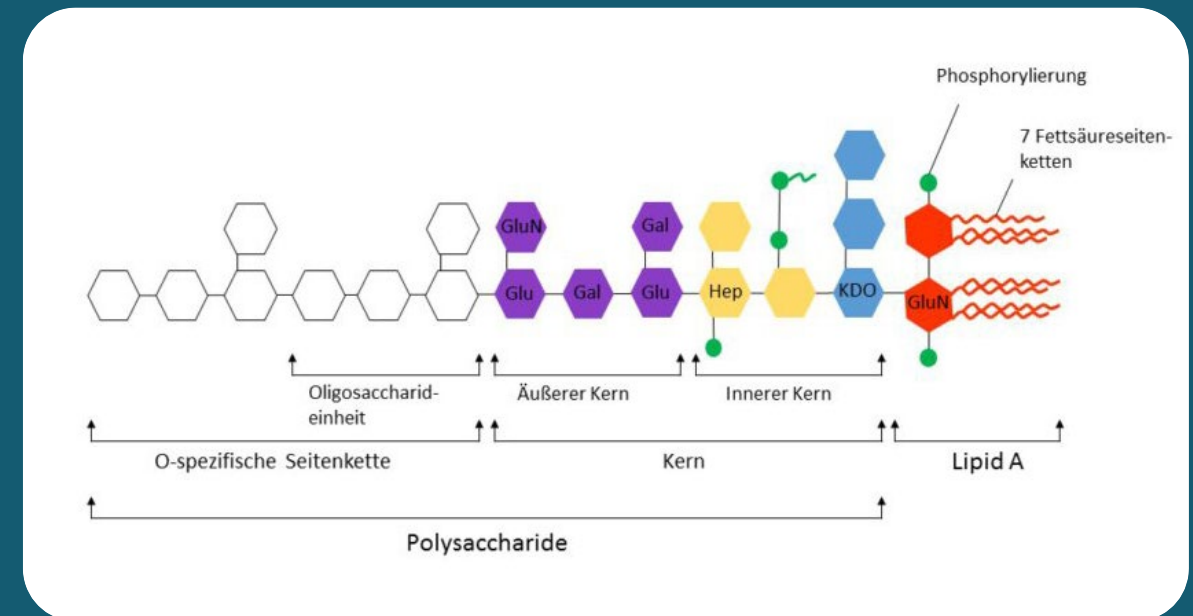
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Microbial Products Involved in MASH

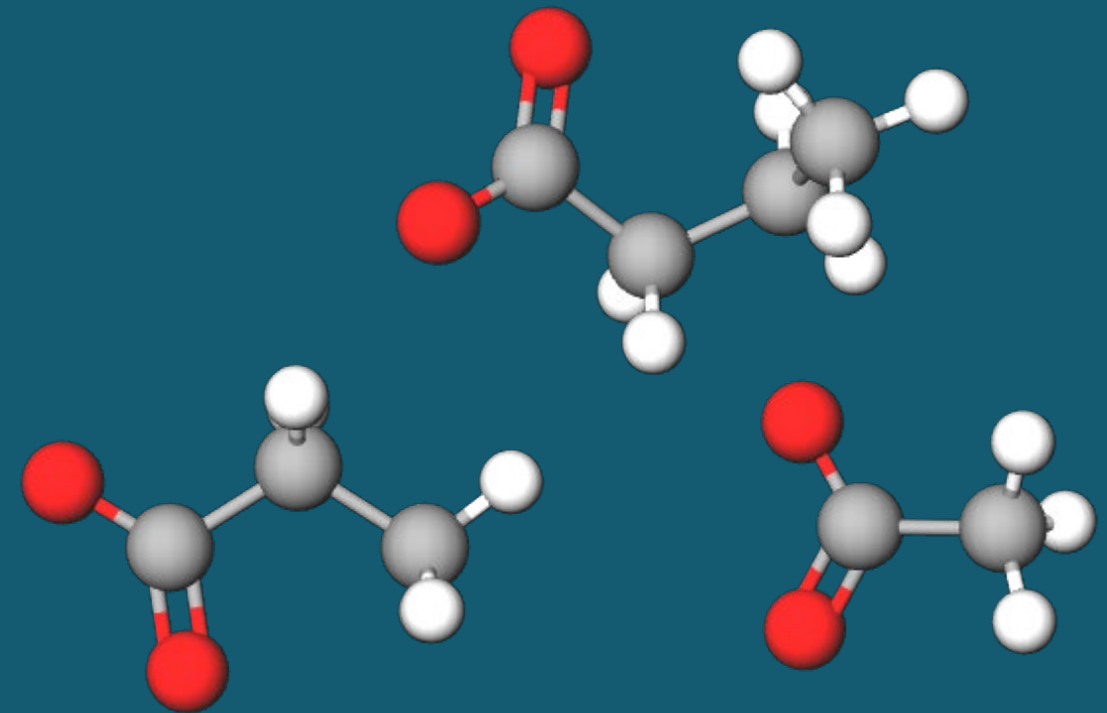
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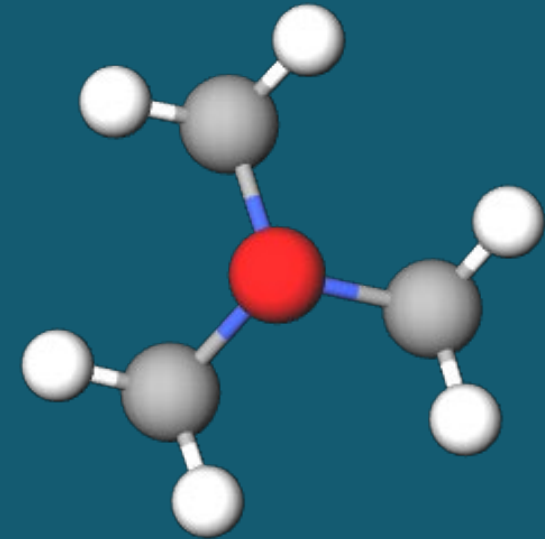
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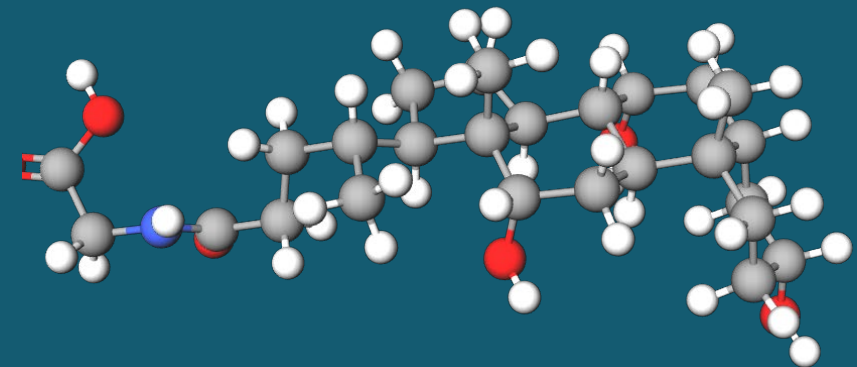
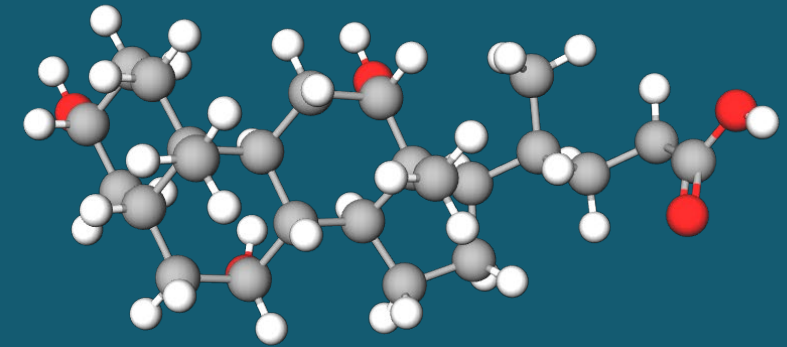
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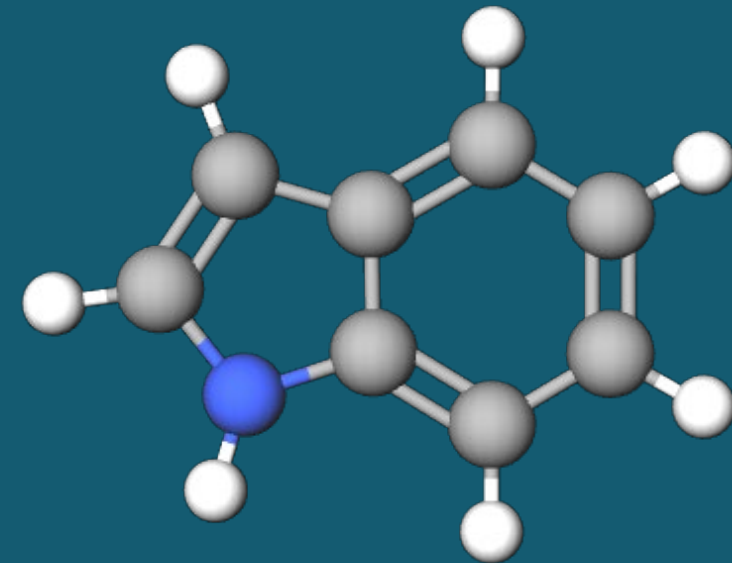
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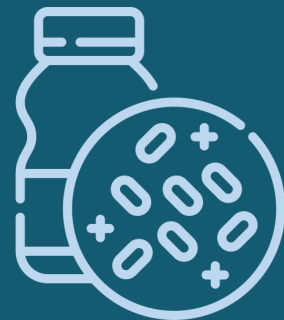


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Therapeutic Implications and Evidence-Based Interventions

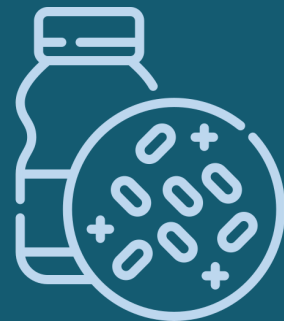
Therapeutic Implications and Evidence-Based Interventions



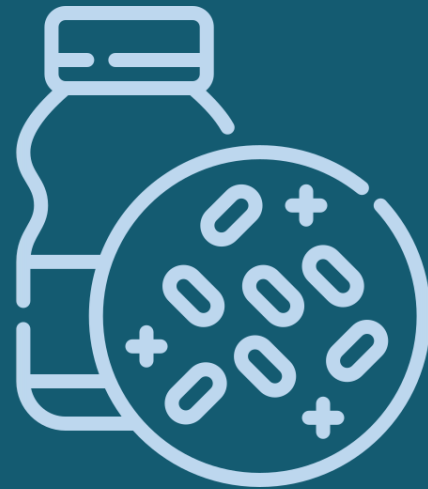
Therapeutic Implications and Evidence-Based Interventions



Lifestyle and Dietary Changes



Therapeutic Implications and Evidence-Based Interventions



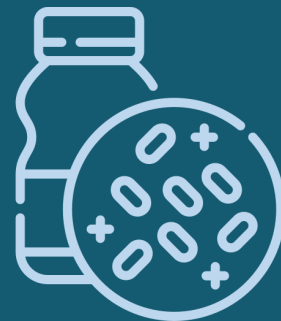
Probiotics and Prebiotics



Therapeutic Implications and Evidence-Based Interventions



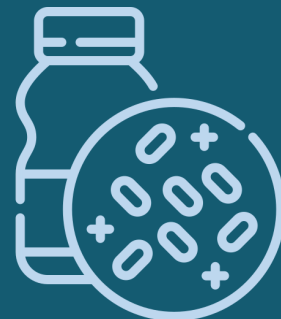
Fecal Microbiota Transplantation (FMT)



Therapeutic Implications and Evidence-Based Interventions



Targeted Pharmacological Interventions





Targeted Pharmacological Interventions

1. Farnesoid X Receptors (FXR):

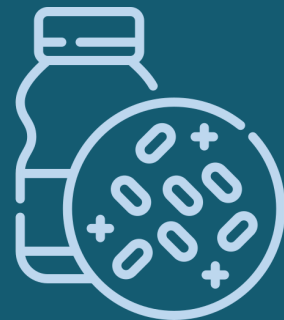
Obeticholic Acid (OCA)

Tropifexor

2. TGR5 (Takeda G-protein-coupled Receptor 5):

INT-767

Therapeutic Implications and Evidence-Based Interventions





Conclusion

Thank You!

References:

