Hospital data shows a sharp rise in liver injury post-pandemic. Is this lifestyle, immunity or something far deeper?
slide 2670
https://www.youtube.com/live/P9nSeUk-Puc?si=VE_WQTs3gtmjDAwM

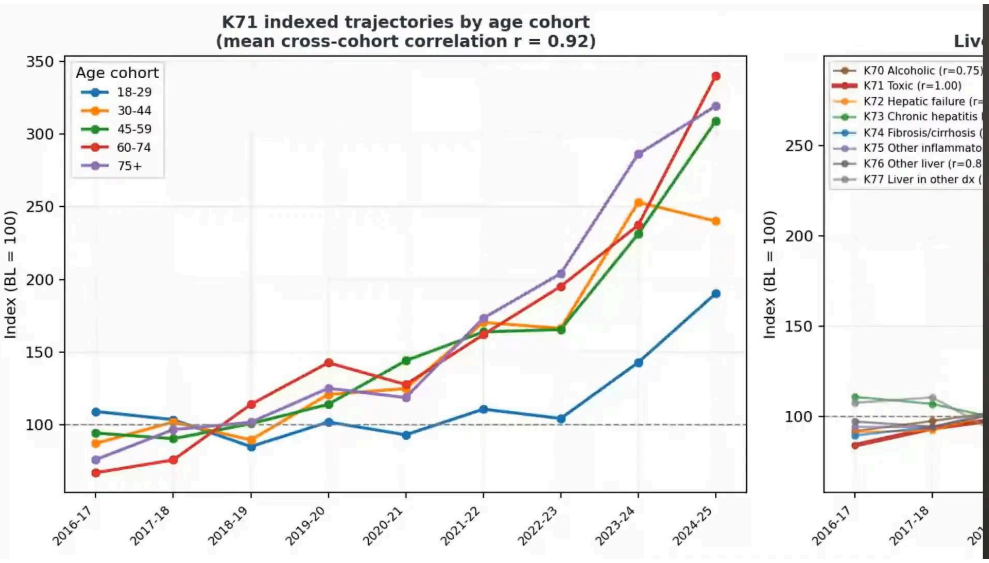
Key Learning Objectives

- Overview of the three primary drivers for increase in toxic liver disease
- Analysis of gut-immune, metabolic and hepatotoxic exposure
- How liver injury translates into the symptoms patients feel
- Broad practical strategies to mitigate these patterns

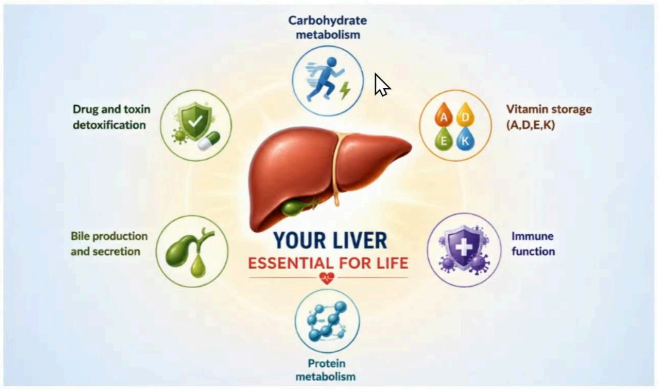
Toxic Liver Disease

Three Drivers. Five Pillars.

- Hospital admissions up 189% from 2016-19 baseline to 2024-25 – a pattern unlike any other liver code
- Three converging drivers: gut-immune activation, metabolic vulnerability, hepatotoxic exposures
- Most patients sit in the overlap zones – not in single-cause buckets
- A five-pillar resolution framework, mapped to the underlying drivers

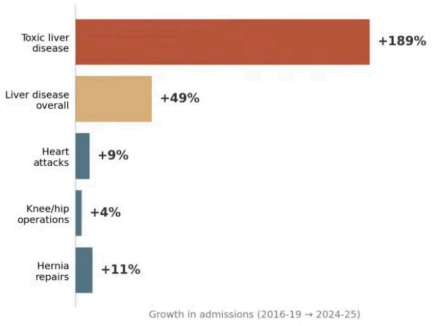


Functions of the Liver – Essential for Life

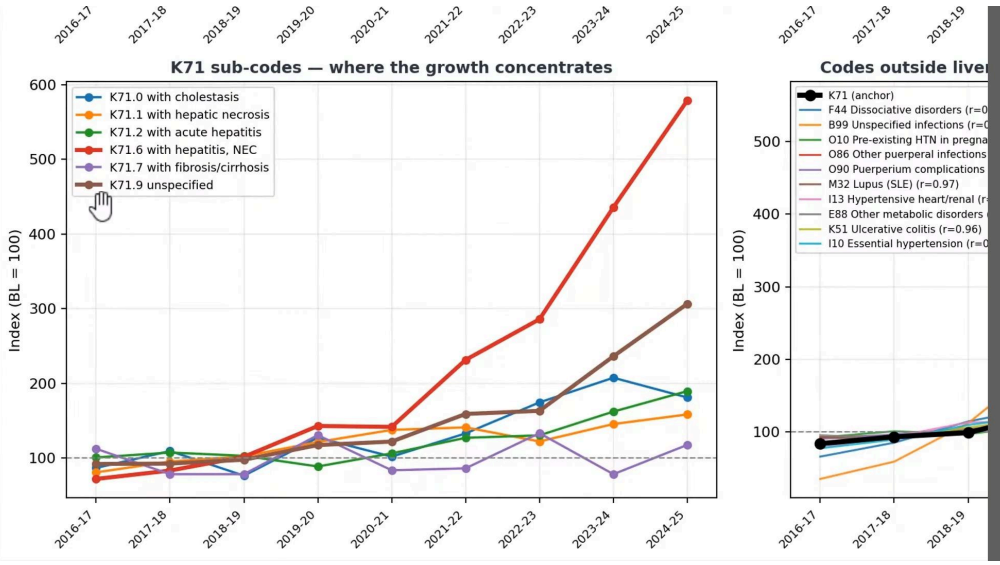


A liver pattern unlike the others

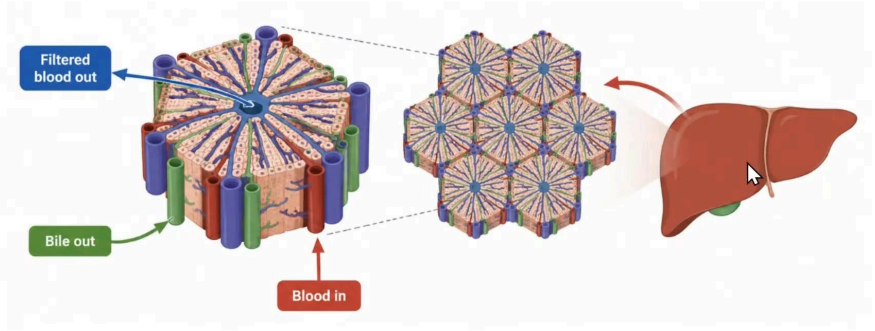
- Most NHS conditions move slowly – single or low-double digit changes
- Toxic liver disease admissions have risen +189% in nine years
- Almost three times faster than overall liver disease
- Among the ~1,200 ICD-3 codes with sufficient case volume, K71 ranks in the top 1% for post-pandemic growth



Topic: Why Is Toxic Liver Disease Rising Across Every Age Group?

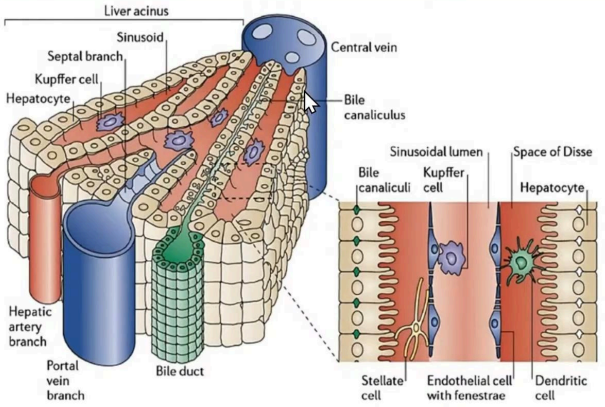


Structure of the Liver Lobule

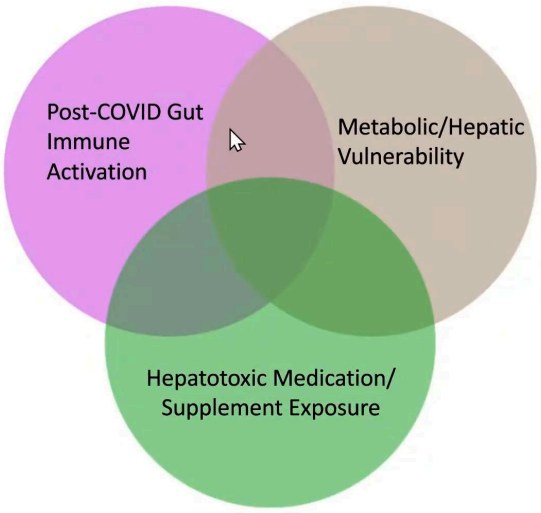


Created with BioRender.com

Liver Sinusoids



Panwar, Amit, Prativa Das, and Lay Poh Tan. "3D hepatic organoid-based advancements in liver tissue engineering." Bioengineering 8.11 (2021): 185.

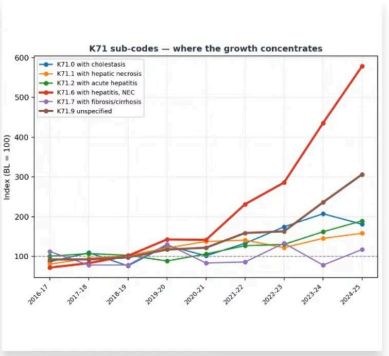


Overlapping Liver Clinical Pictures

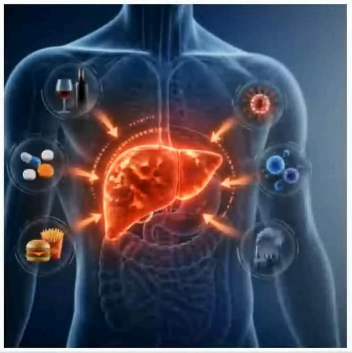
Most patients sit in the overlap zones, not in the single-cause circles.

The Signal in the Data

- K71 toxic liver disease has risen substantially post-2020
- Both **K71.6** and **K71.9** are rising
- K71 is increasingly appearing as the main reason the patient was admitted, not a secondary finding
- The pattern is broad, coherent and not easily explained by one narrow toxin



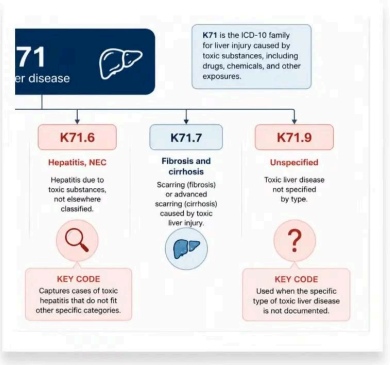
The Central Hypothesis



- Repeated SARS-CoV-2 exposure may have created a **gut-liver immune-inflammatory shift**
- This may lower the threshold for clinically significant liver injury
- Pre-existing metabolic/hepatic vulnerability then magnifies risk
- Common medications and supplements become the **proximate trigger** for admission

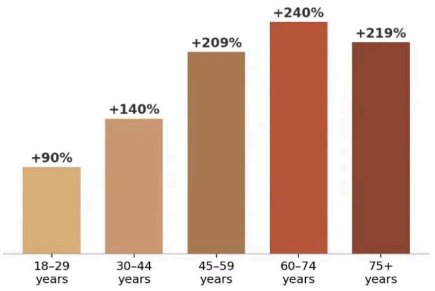
This Framing is Important to Understand

- This is a **working explanatory model**
- K71 remains a **toxic/drug-related code family**
- COVID is proposed as an **upstream susceptibility shift**, not necessarily the direct coded cause
- The aim is to explain the rise more coherently than a single-toxin explanation



Rising in Every Adult Age Group

- Up +90% in 18- to 29-year-olds and over +200% in every older cohort
- A single age-specific cause cannot produce coherent growth across all ages
- The pattern points to a shared upstream pressure
- This pattern is exactly what you would expect from a shared upstream pressure – and not from a niche exposure



Presenter: Dr Philip McMillan

Draft Agenda:

Presentation
Q&A