

# Surgical treatment of MASLD (NAFLD)

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# Disclosures

Medtronic

Ethicon

Sanofi

Novo Nordisk

Vertex

Adocia

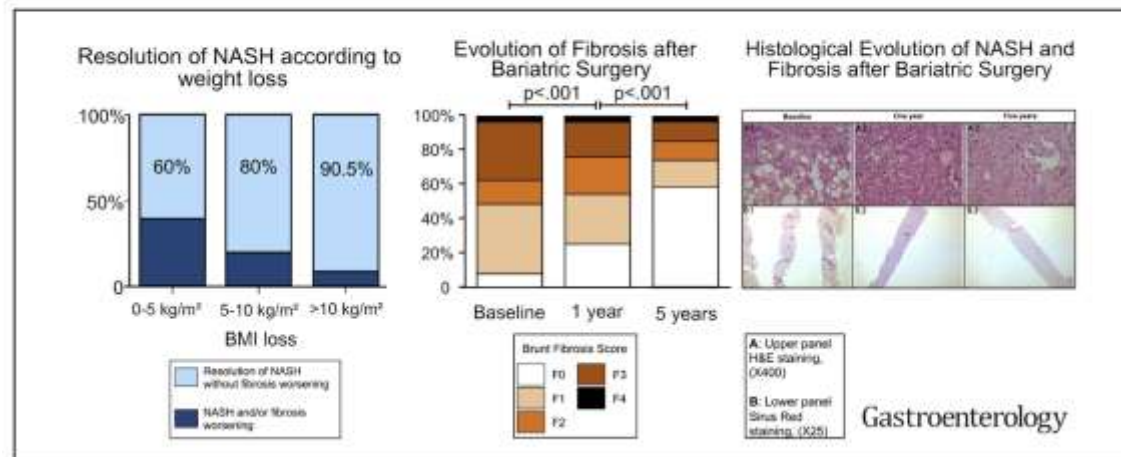
# Bariatric Surgery Provides Long-term Resolution of Nonalcoholic Steatohepatitis and Regression of Fibrosis



Highly Cited Paper

Guillaume Lassailly,<sup>1,2</sup> Robert Caiazzo,<sup>3,4</sup> Line-Carolle Ntandja-Wandji,<sup>1</sup> Viviane Gnemmi,<sup>5</sup> Gregory Baud,<sup>3,4</sup> Helene Verkindt,<sup>3</sup> Massih Ningarhari,<sup>1,2</sup> Alexandre Louvet,<sup>1,2</sup> Emmanuelle Leteurtre,<sup>5</sup> Violeta Raverdy,<sup>3,4</sup> Sébastien Dharancy,<sup>1,2</sup> François Pattou,<sup>3,4</sup> and Philippe Mathurin<sup>1,2</sup>

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# Team work

## Metabolic Surgery

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Gregory Baud  
Helene Verkindt  
Naima Oukhouia Daoud  
Clotilde Vincent

## Hepatology

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Guillaume Lassailly  
Alexandre Louvet  
Valerie Canva  
Sebastien Dharancy

## Pathology

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Viviane Gnemmi

## Bio statistics

Alain Duhamel  
Julien Labreuche

## Inria IA

Philippe Preux  
Patrick Saux  
Julien Teigne

## Labex EGID

Bart Staels  
Philippe Lefebvre  
Joel Hass  
Philippe Froguel  
Amelie Bonnefond



## RHU Precinash

## Inserm - UMR 1190

Julie Kerr-Conte  
Pierre Bauvin  
Caroline Bonner  
Chiara Saponaro  
Thomas Hubert

## Diabetology

Marie Christine Vantyghem  
Anne Vambergue

# Lille ABOS prospective cohort study

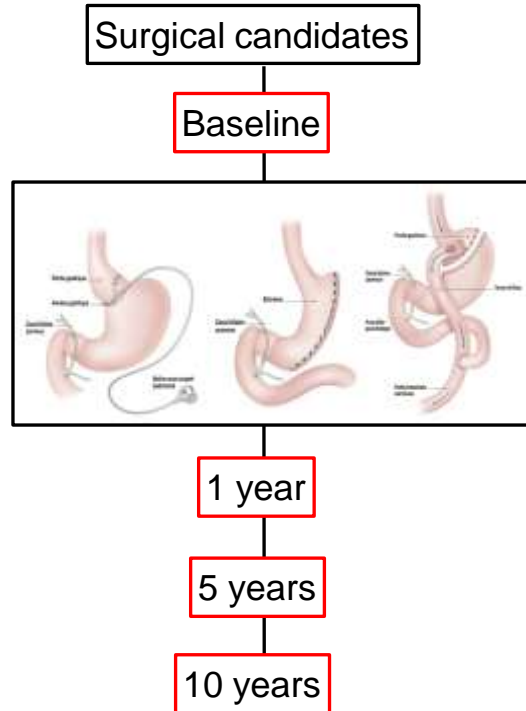
## ABOS study

ClinGov NCT  
01129297

## Phenotype

OGTT (MMT)  
Renal function  
Lipids  
Inflammation

Liver histology



## Tissues

Liver  
Fat (sc - visc)  
Muscle  
Intestine

## Omics dataset

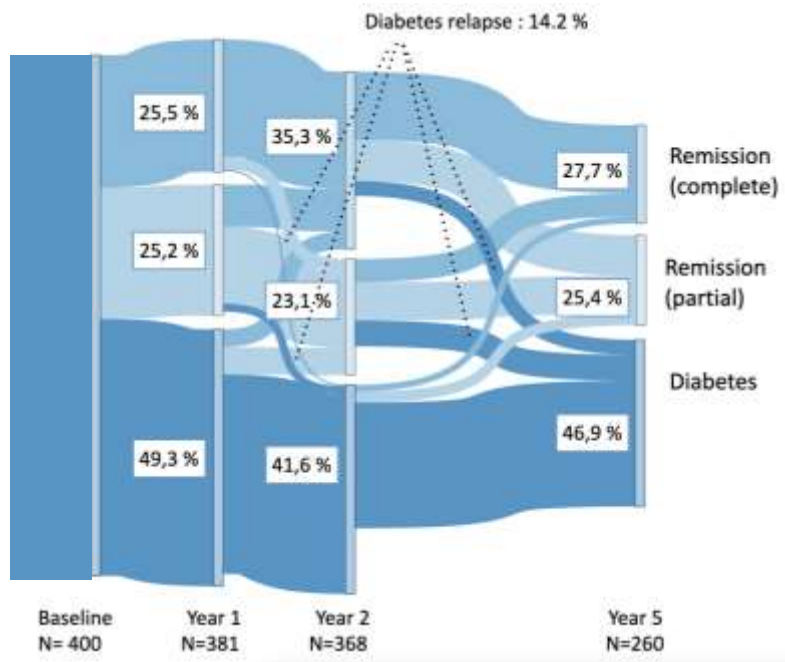
GWAS  
Proteomic  
Metabolomic  
Transcriptomic



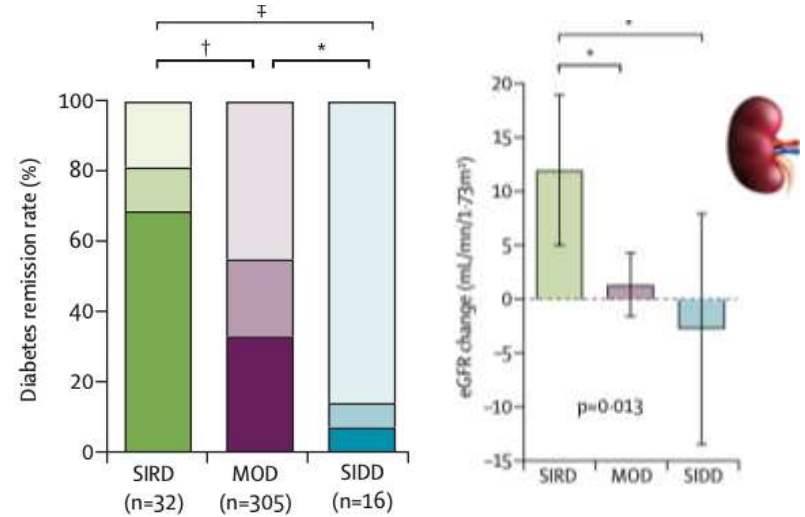
Ongoing prospective cohort study since 2006 ( >1800 patients enrolled)

# Heterogeneity of type 2 diabetes outcomes after BS

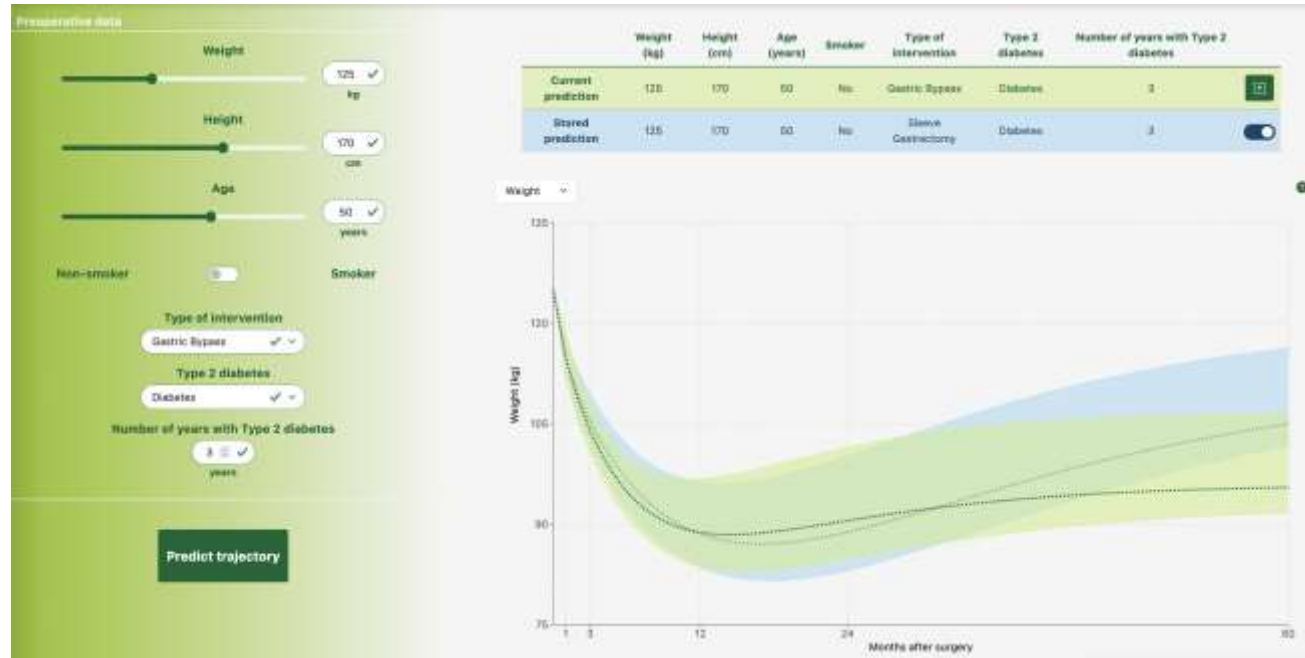
Diabetes



Best outcomes in patients with **severe insulin-resistant diabetes (SIRD)**



# Personalized prediction of 5-year weight loss trajectory



[bwtp@univ-lille.fr](mailto:bwtp@univ-lille.fr)

# External international validation

10 independent cohort studies in Europe, Asia, and America

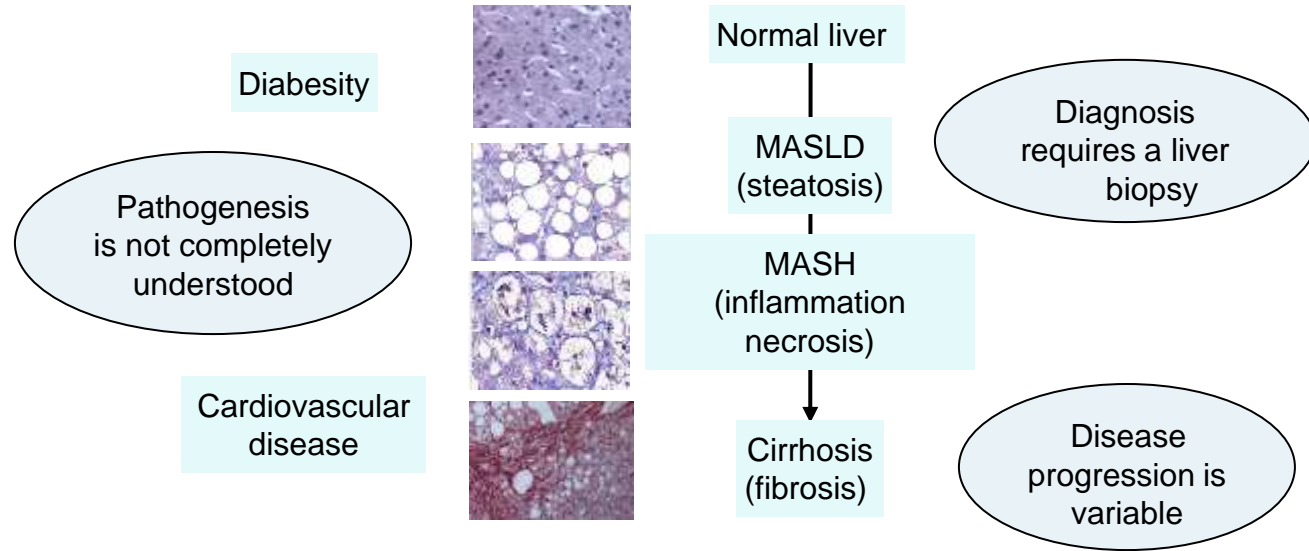


[bwtp@univ-lille.fr](mailto:bwtp@univ-lille.fr)



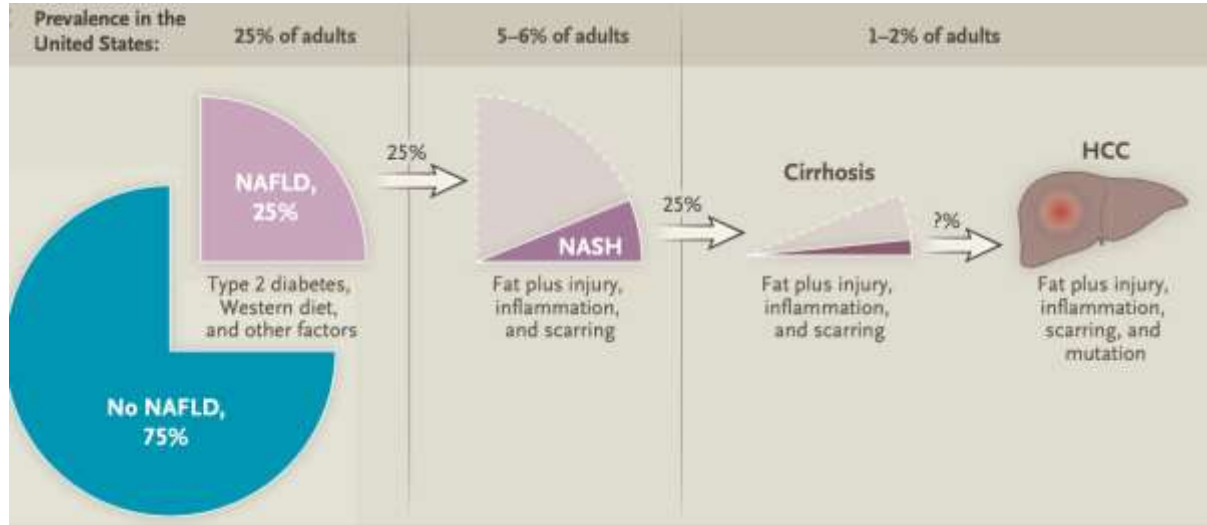
Patrick Saux et al. *Lancet Digital Health* 2023

# Metabolic associated steatotic liver disease

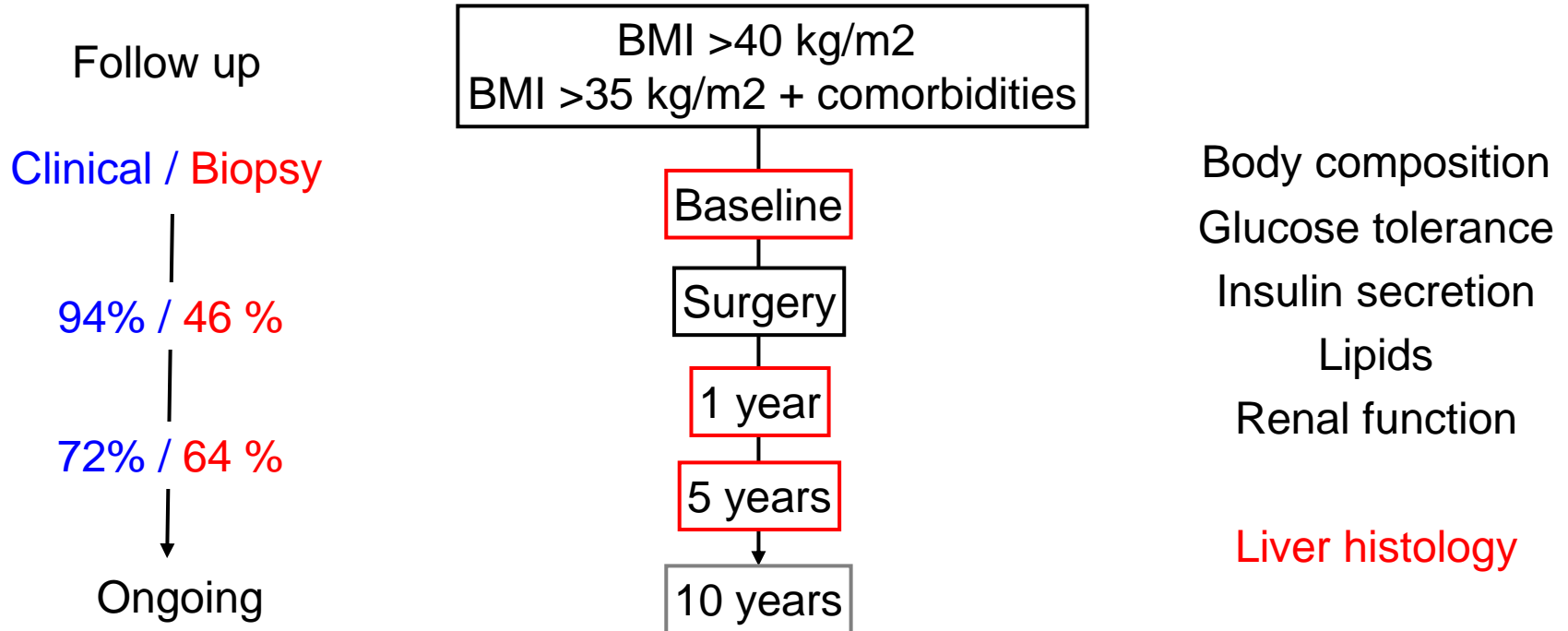


-> unmet medical need

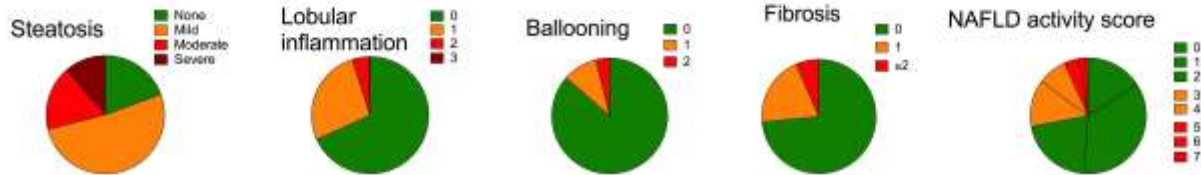
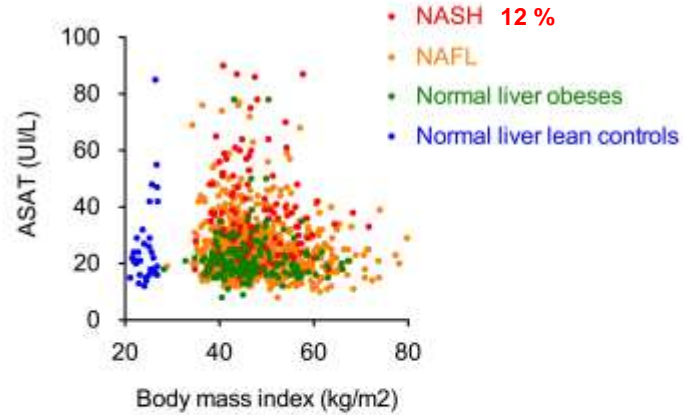
# Prevalence of MASLD / MASH / Fibrosis / Cirrhosis



# Lille bariatric liver cohort

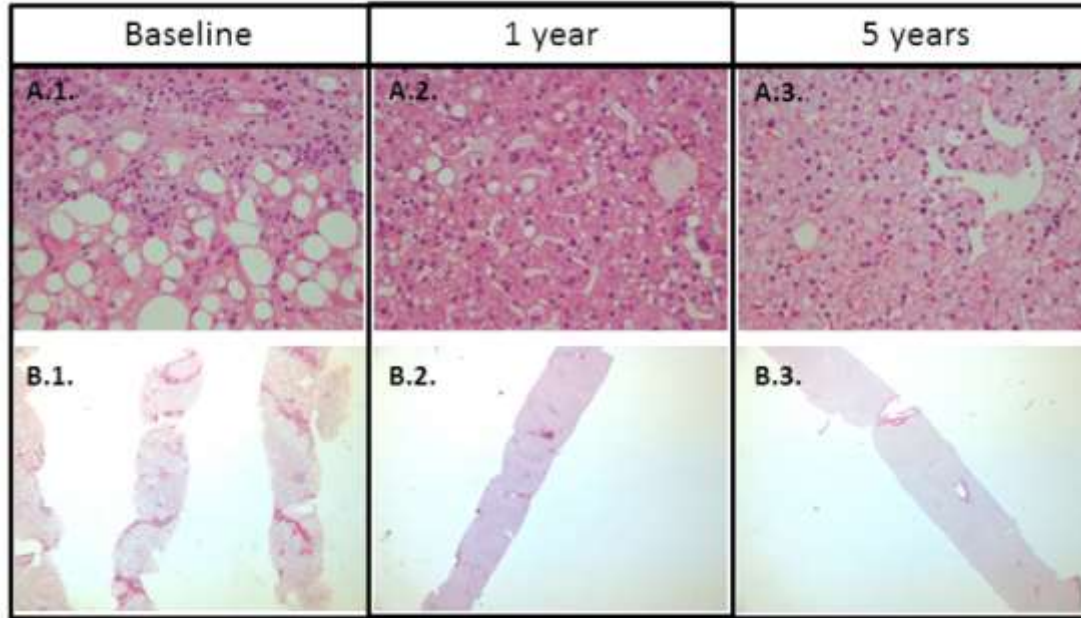


# MASLD in bariatric surgery



Histology NAFLD activity score (N > 1800)

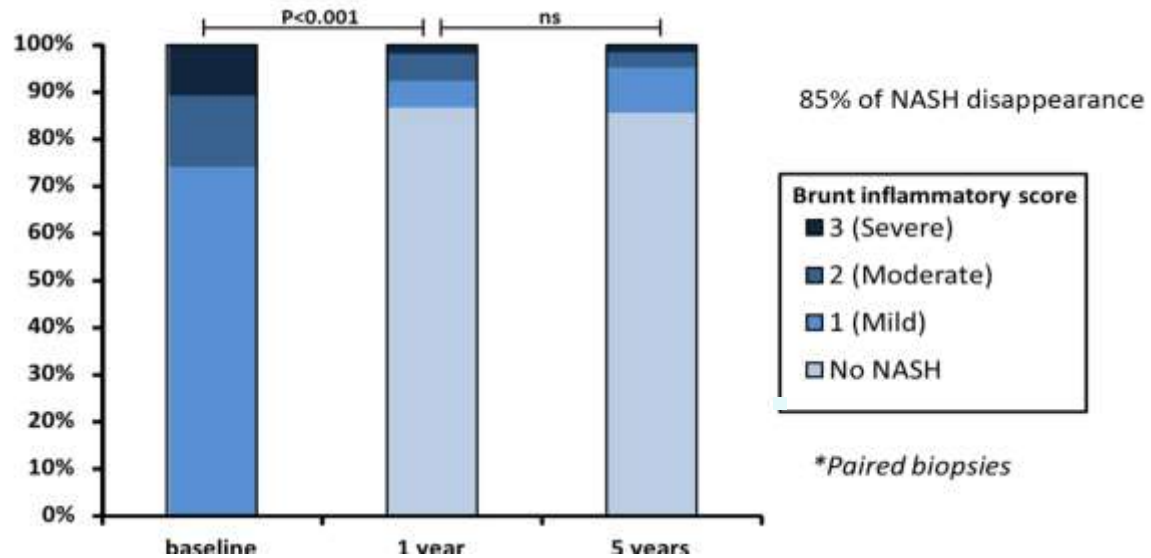
# Complete resolution of MASLD



Caiazzo et al. *Ann Surg* 2014

# Sustained NASH remission after one year

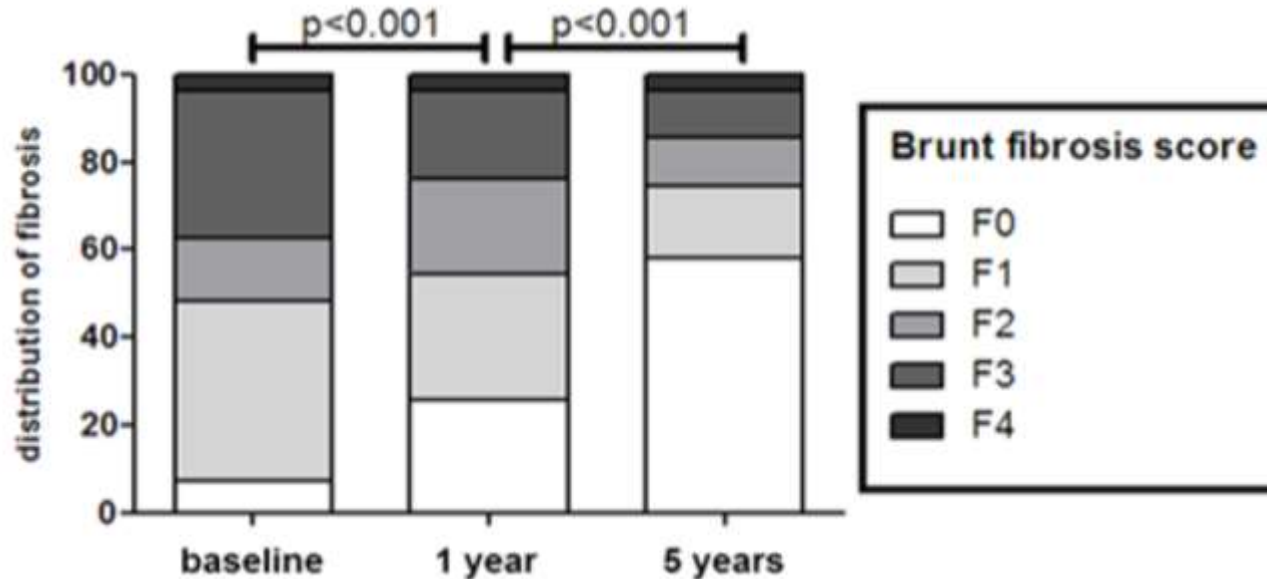
5-year prospective cohort study with longitudinal histological results in 180 patients with biopsy proven NASH



Lassailly et al. Gastroenterology 2020

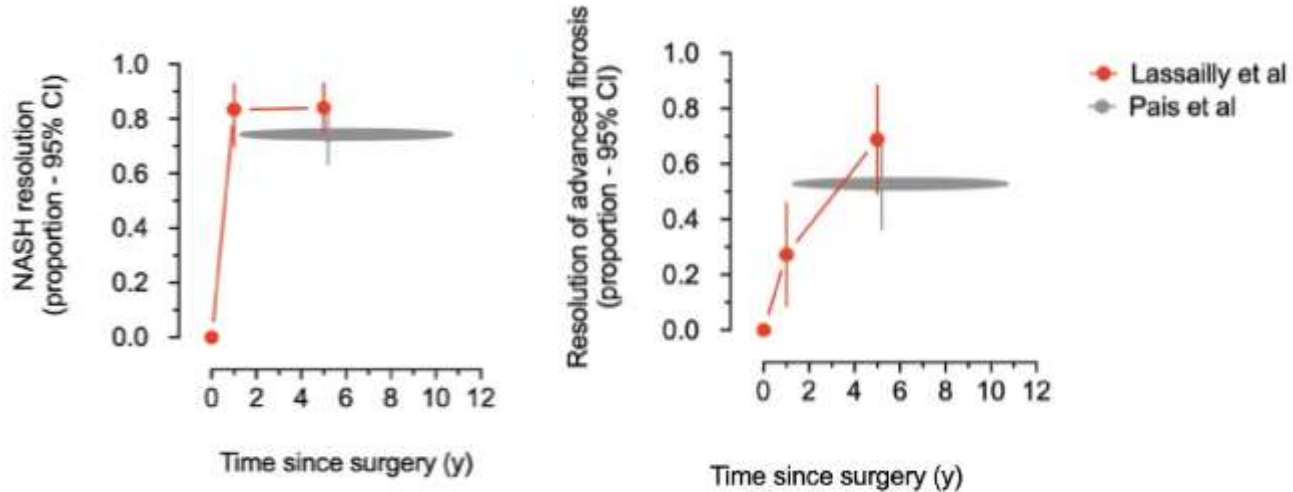
# Fibrosis regression

5-year prospective cohort study with longitudinal histological results in 180 patients with biopsy proven NASH



# Resolution of advanced liver disease

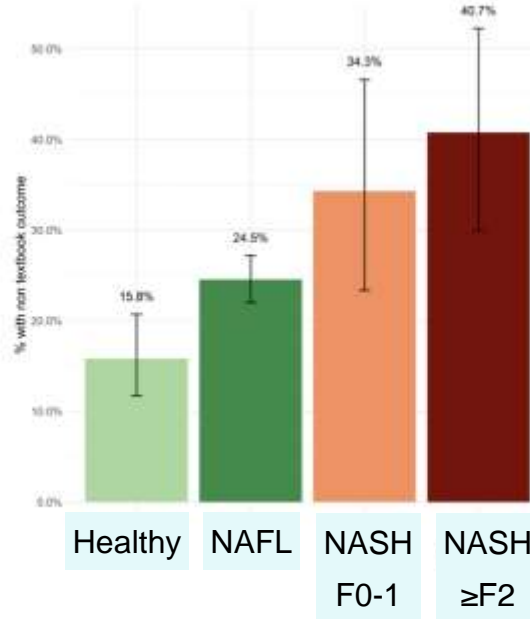
5-year prospective cohort study with longitudinal histological results  
in 180 patients with biopsy proven NASH





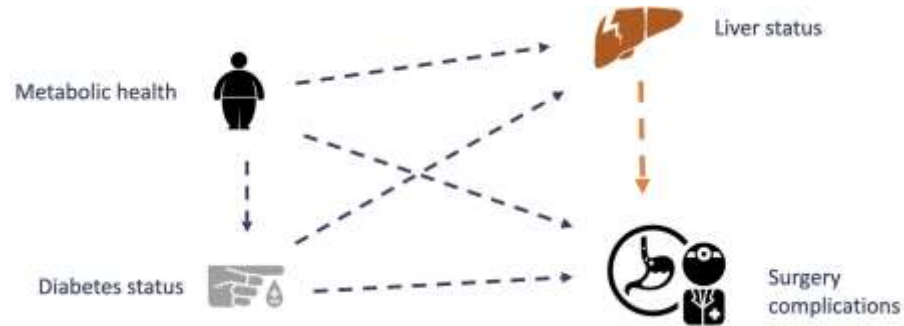
# MASLD and surgical risks

NAFLD and risk of non textbook outcome in 1800 participants  
in ABOS prospective study



Damien Bouriez et al. ( in preparation)

# MASH (not steatosis) is an independent risk factor



After full adjustment on sex, age, baseline BMI, year of surgery, tobacco exposure, diabetes, hypertension and sleep apnea syndrome by multivariable analysis

	Odd Ratio	95% CI	P-value
Healthy	1.00	Ref	Ref
NAFL	1.2	0.83-1.81	0.333
NASH without fibr.	<b>2.00</b>	1.03-3.83	0.038
NASH with fibr.	<b>2.18</b>	1.17-4.08	0.0014

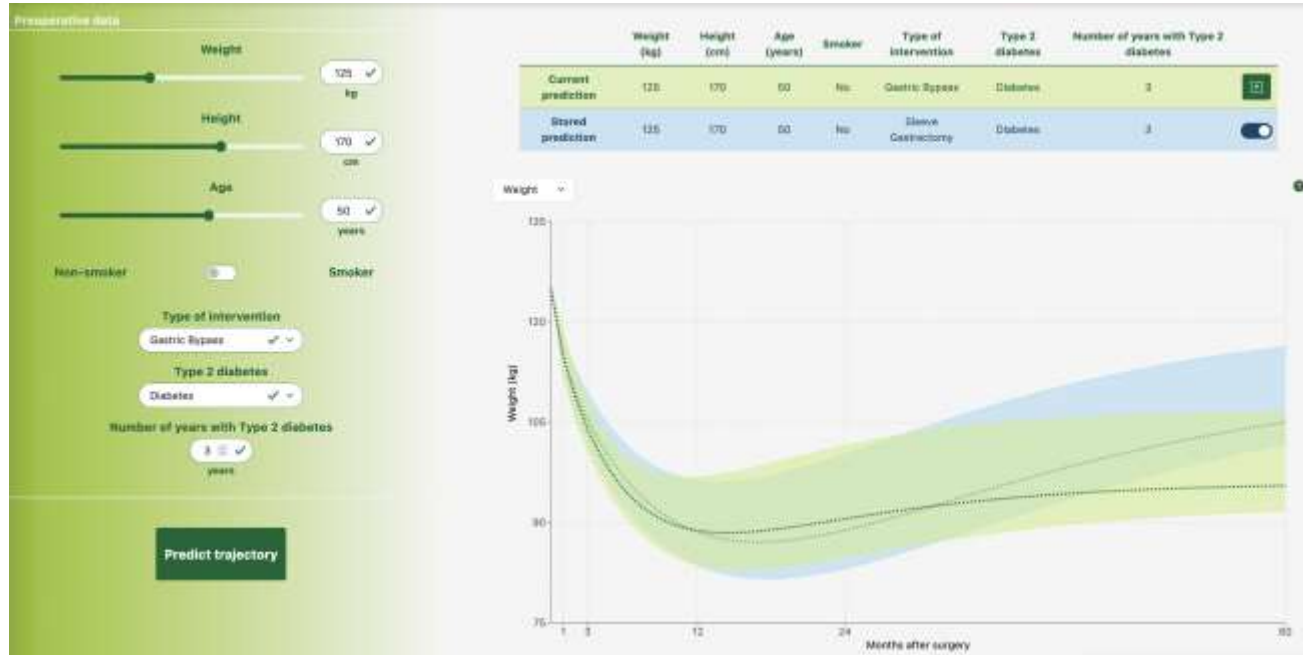
## Few bullet points

1. MASH disappears after bariatric surgery in > 80% of cases
2. Fibrosis can regress 5 years after surgery
3. Surgery in MASH is associated with more complications
4. Surgery for MASH ( $\pm$  compensated cirrhosis) : ongoing RCTs

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-> Routine needle biopsy during surgery

# Free and available on line -> just try it !



<https://bariatric-weight-trajectory-prediction@univ-lille.fr>

# Thank you !

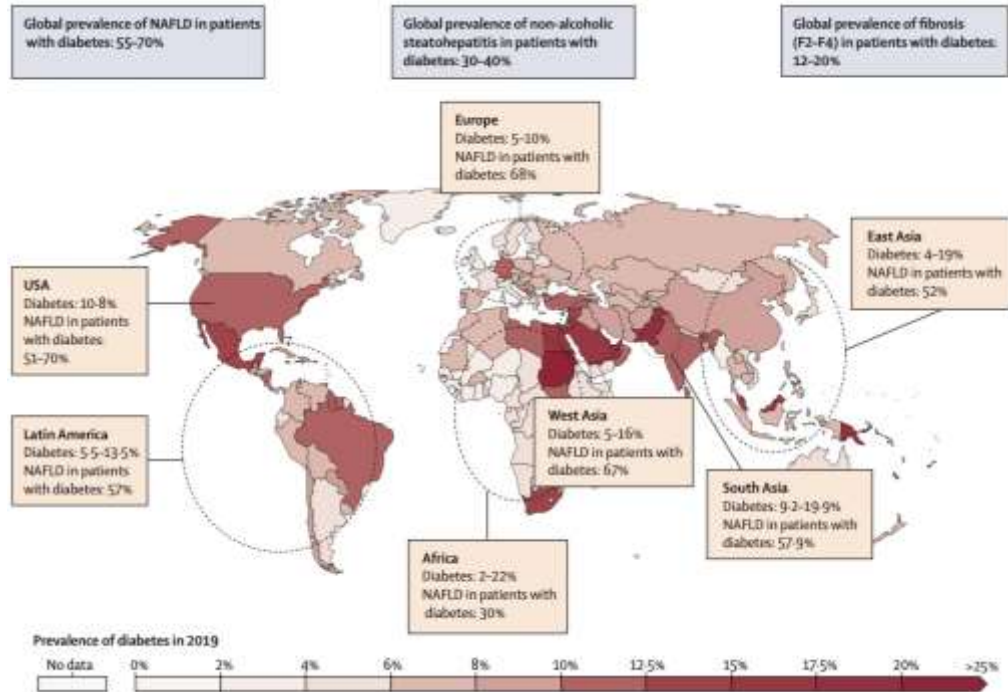
francois.pattou@univ-lille.fr



Participants and researchers at the Lille open day in February



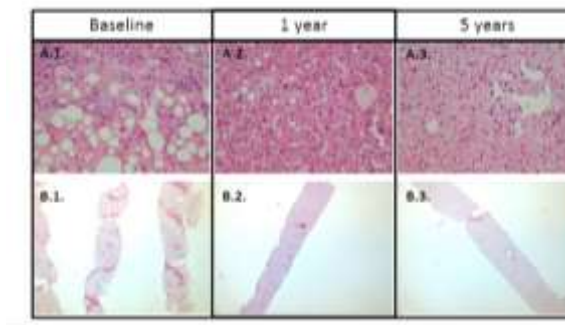
# Global pandemy of NAFLD -> MALSD



# Chirurgie métabolique

Diabète de type 2 / NASH

Robert Caiazzo



Violeta Raverdy



Thomas Hubert



Lassailly, Caiazzo et al. *Gastroenterology* 2015

Baud et al. *Cell Metabolism* 2016

Lassailly, Caiazzo et al. *Gastroenterology* 2020



RCT

Les Programmes Hospitaliers  
de Recherche Clinique  
(PHRC)

RHU



IMI

