### EASY-TO-USE AI CALCULATOR PREDICTING 5Y WEIGHT TRAJECTORIES AFTER BARIATRIC SURGERY: A SOPHIA STUDY



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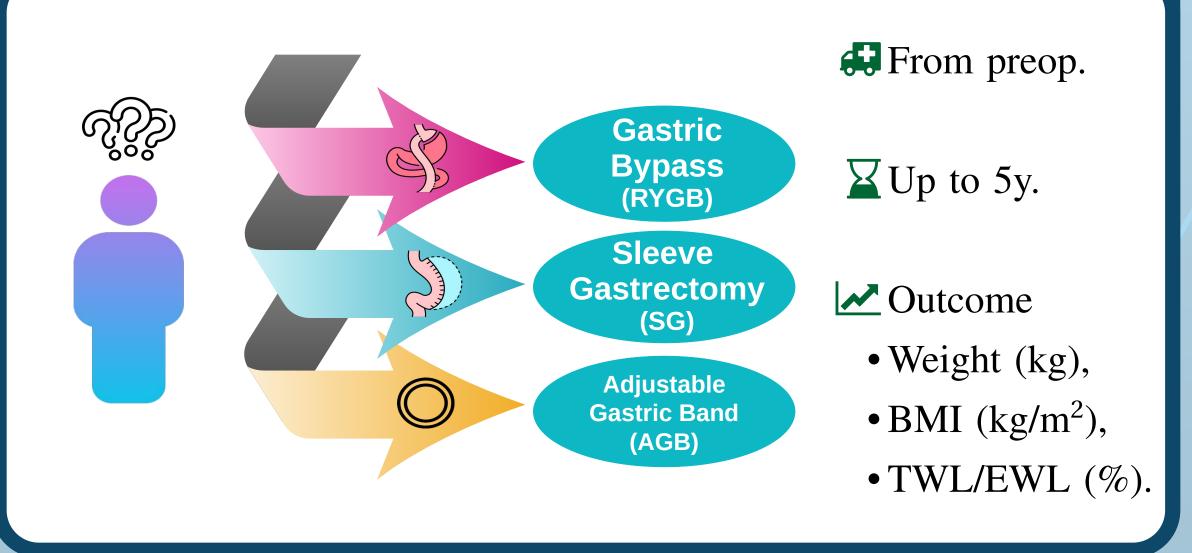




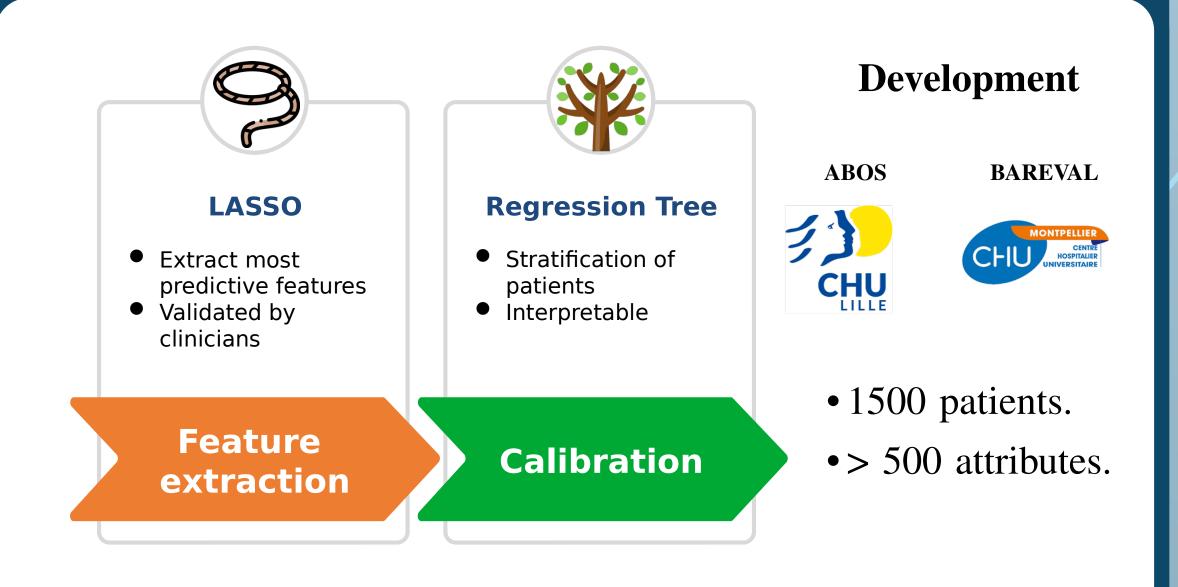
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# Goal: predict the outcome of surgery



### Machine learning model



### An international study

Validation: 8 cohorts + 2 RCT studies, 10,000 patients, 3 continents. SOPHIA Stratification of Obese Phenotypes to Optimize



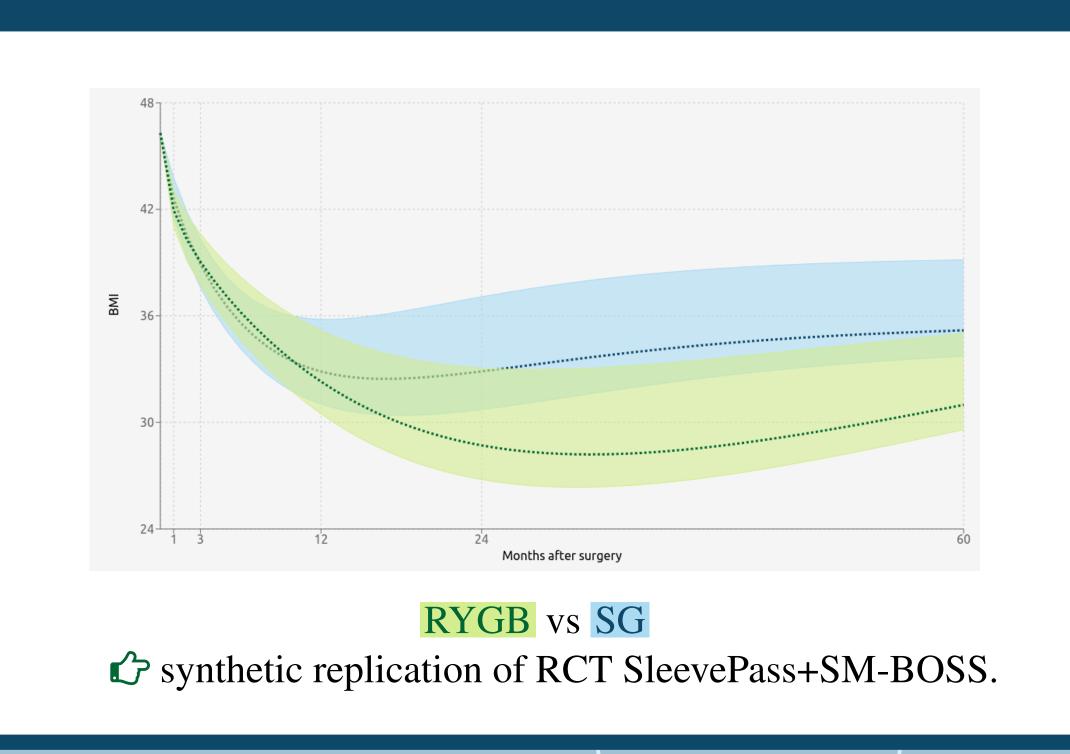
## Results

- 7 (simple) attributes are predictive of post-surgery weight loss:
  - Weight (preop),
  - •Height,
  - •Age,
  - Type of intervention,
  - Type II diabetes (T2D),
  - Duration of T2D,
  - •Smoking.

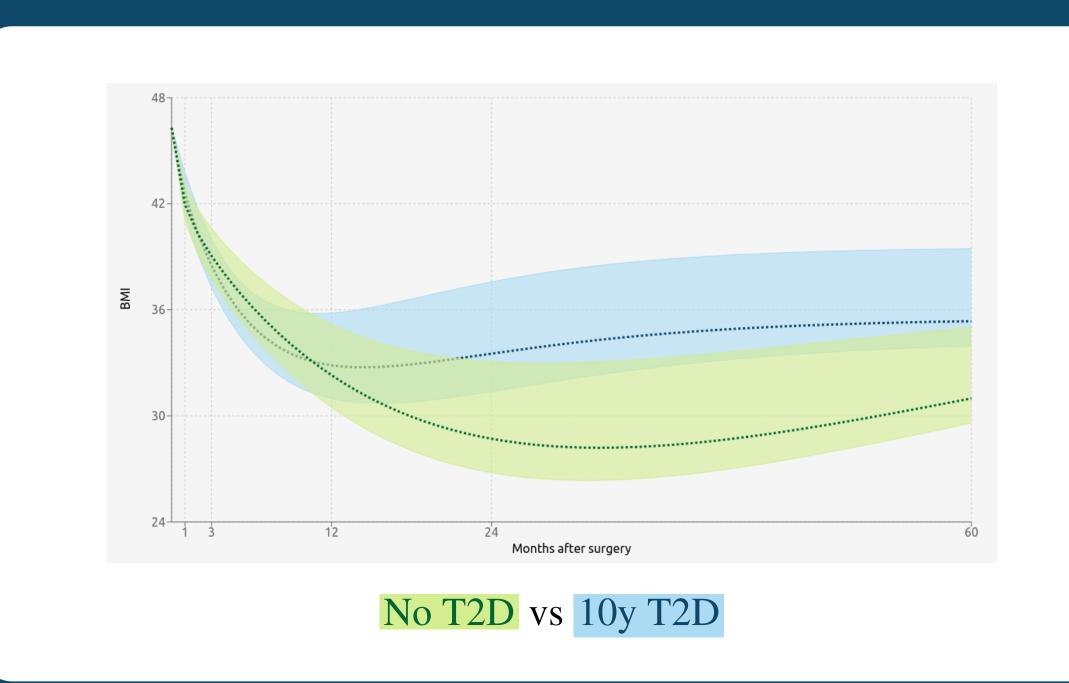
- **A** Lower weight loss with

  - •SG (after 1y),
  - T2D,
  - Longer (more severe) T2D.

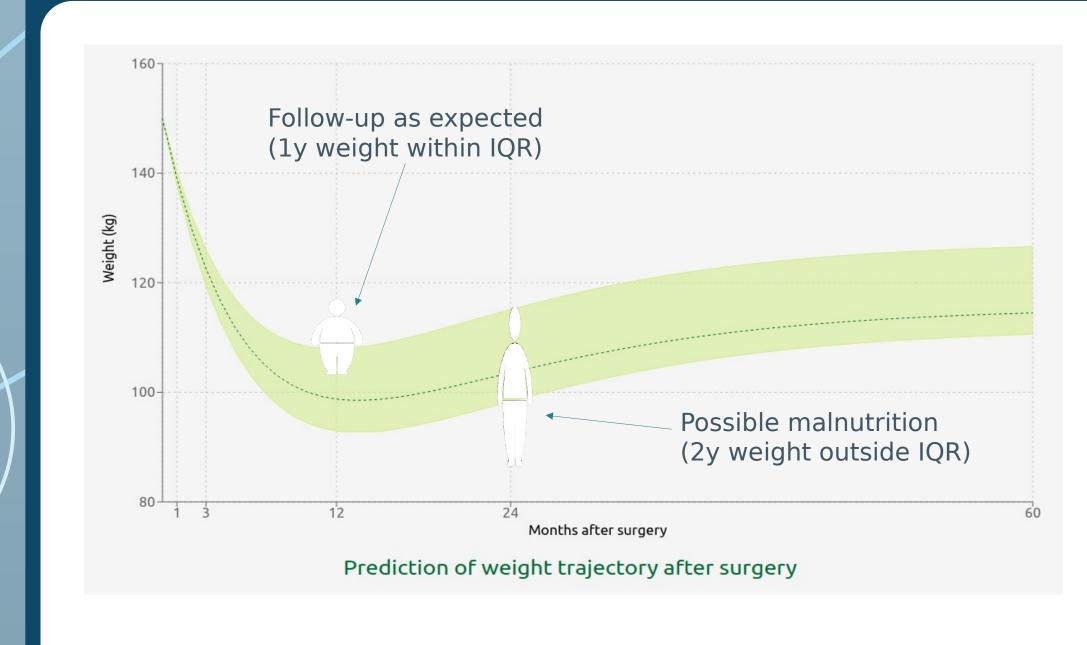
### Impact of RYGB vs SG



### Impact of T2D



### A companion tool for patients and care providers

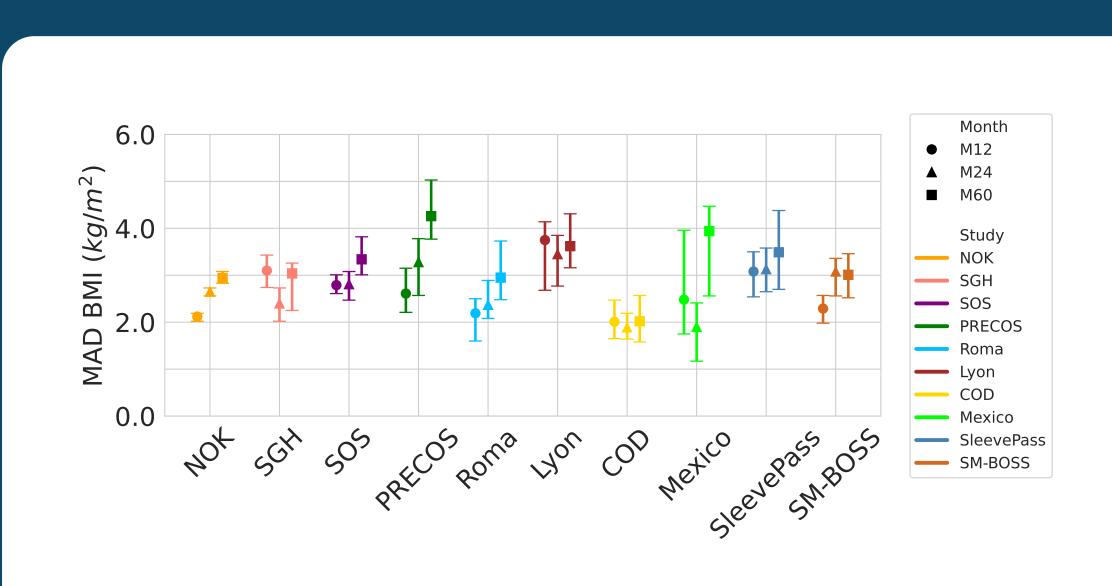




https://bwtp.univ-lille.fr

- Individualized trajectory (dotted line),
- "Green zone": where the majority of patients are (IQR),
- Preop: visualize expected weight loss,
- **Postop**: flag complications (patient out of green zone).

### Validation



MAD: accuracy in BMI points for a standard patient.

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