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LEVERAGING ON THE EXTENSIONAL PROPERTIES OF FLAXSEED EXTRACTS FOR THE DESIGN OF FOODS ADDRESSING SWALLOWING DISORDERS

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CONTEXT

- 21.5% of the world population is expected to be over 60 years old by 2050¹.
- Age-related physiological changes can induce swallowing disorders and strongly impact the quality of life².
- Texture adaptations should ensure safe swallowing but also maintain pleasure during consumption³.

OBJECTIVES

- ✓ To evaluate the *in vitro* and *in vivo* performance of flaxseed extracts as texture and elasticity enhancer to potentially improve palatability in designing tailored food textures for dysphagic patients.

MATERIALS & METHODS

Materials

Greek yogurt was diluted using water and flaxseed extracts at 1% dry matter. In this study, four drinkable yogurts (dilutions) are evaluated; two with and two without flaxseed extracts

Control_GY

DY20%FL

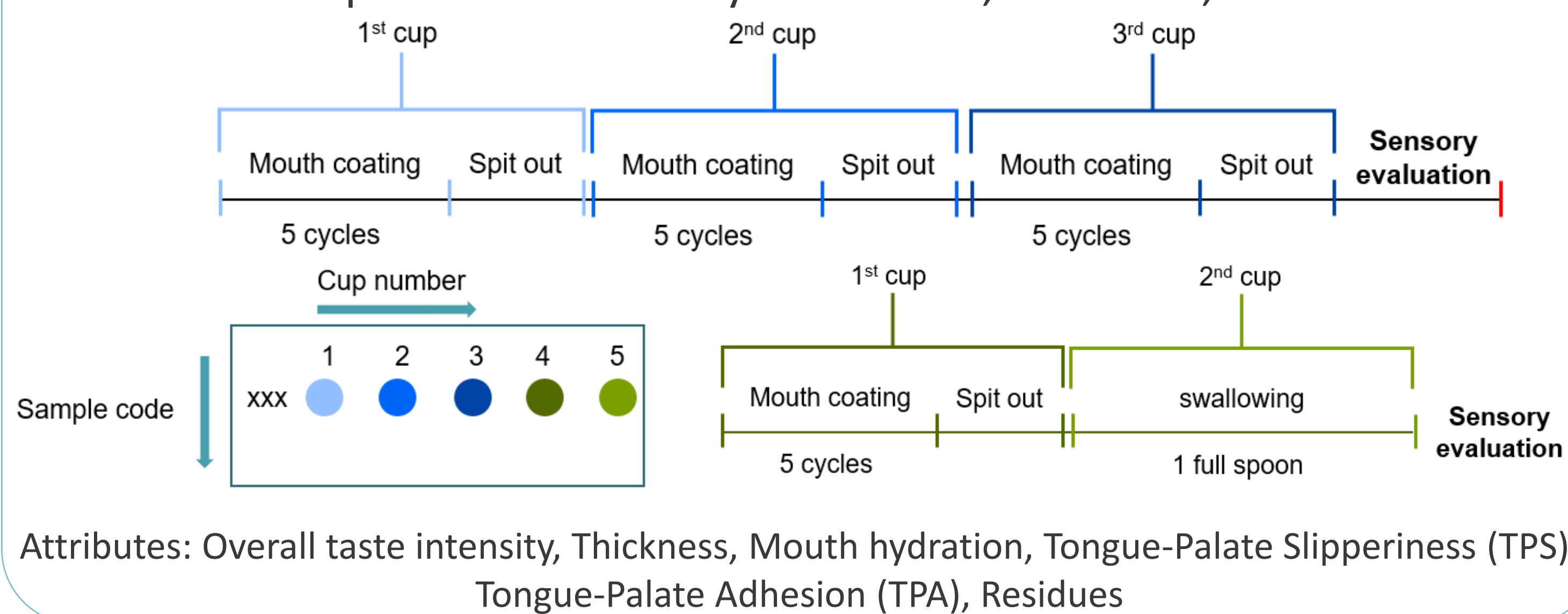
DY30%FL

DY20%W

DY30%W

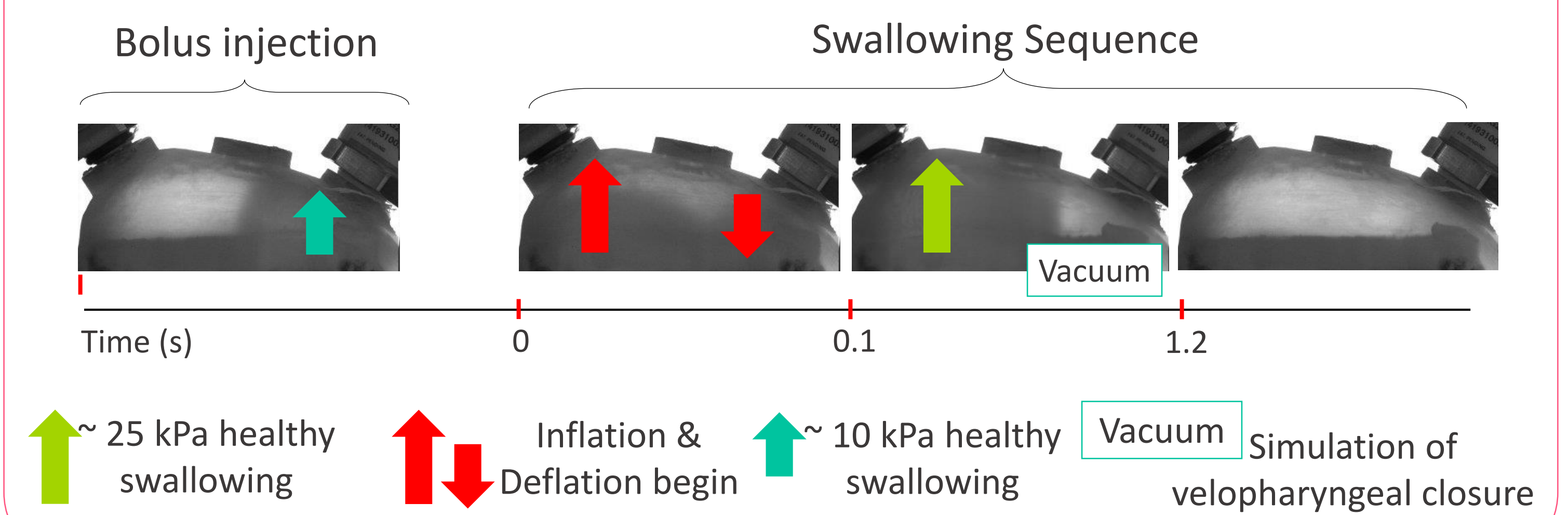
Sensory Study

A trained panel of 16 healthy individuals, 9 women, and 7 men.

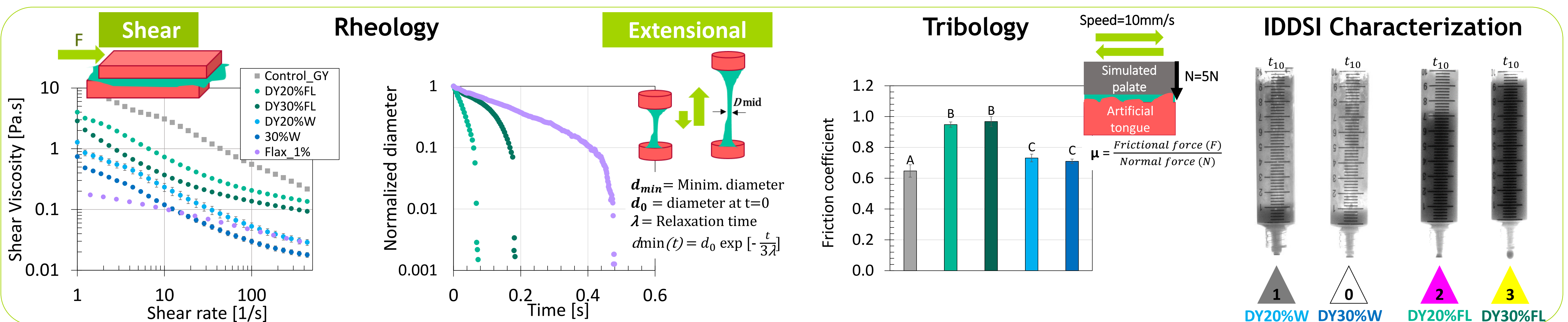


Soft Robotic *In-Vitro* Setup

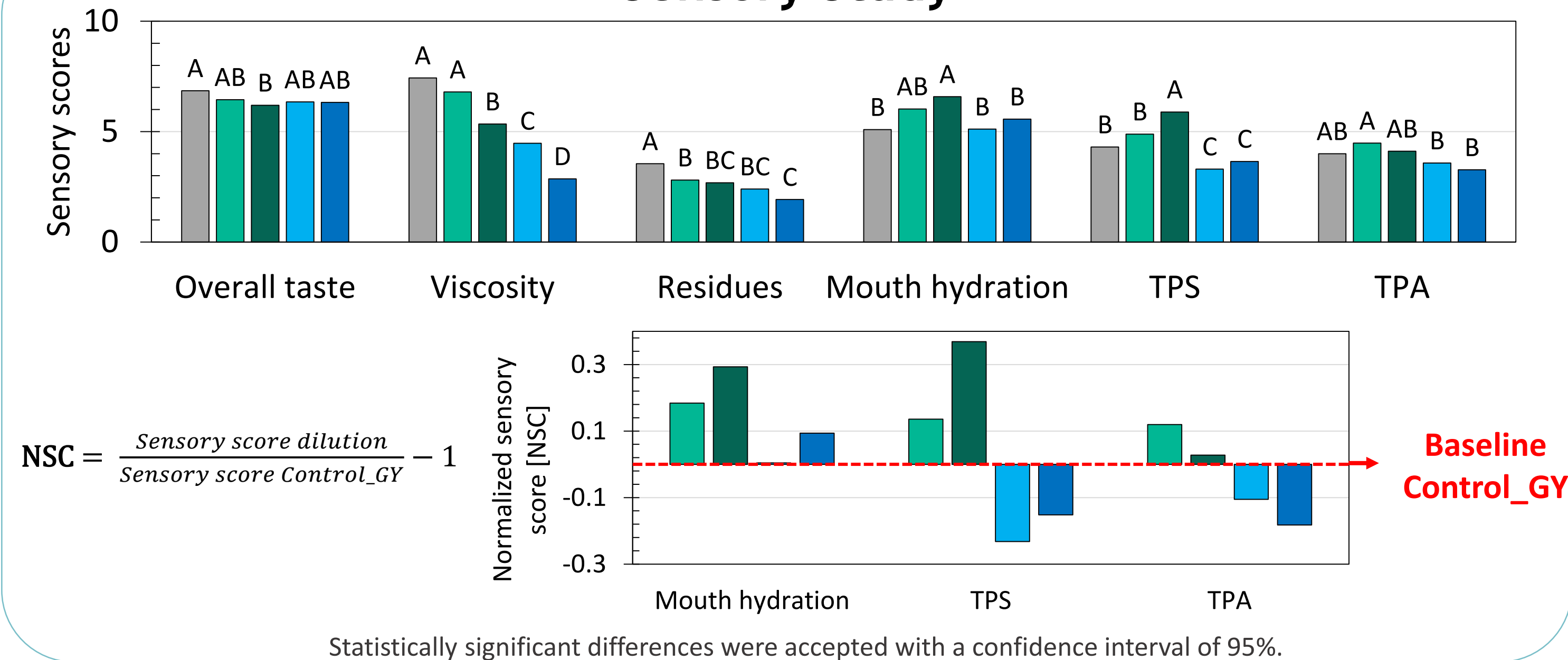
Soft robotics a preliminary step to foster safety swallowing assessment



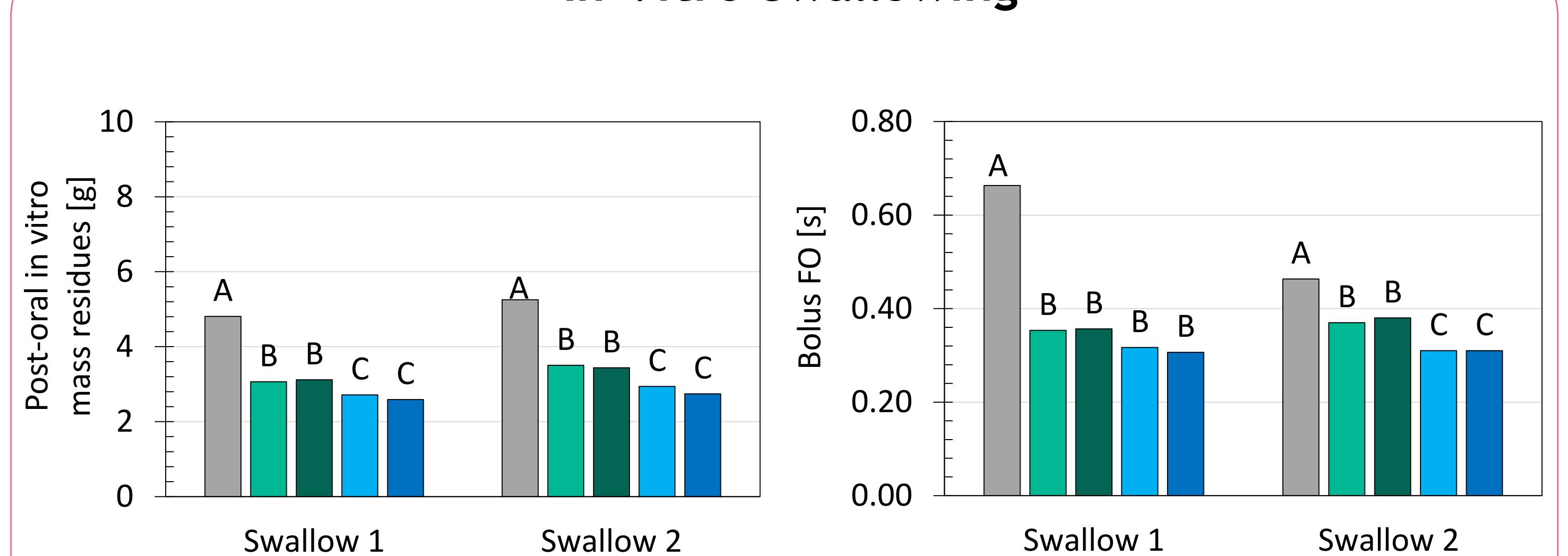
RESULTS



Sensory Study



In-Vitro Swallowing



CONCLUSIONS & FUTURE WORK

- ✓ Drinkable yogurt with flaxseed extracts enhanced sensory perceptions (mouth hydration and slipperiness), introduced elasticity, and improved bolus cohesiveness compared to drinkable yogurt without.
- ✓ Flaxseed extracts are a potential food ingredient to develop palatable products for patients suffering from swallowing disorders.
- ✓ For future development, instrumental characterization and *in vitro* performances could be valuable tools to evaluate and design personalized food.

CONTACT

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