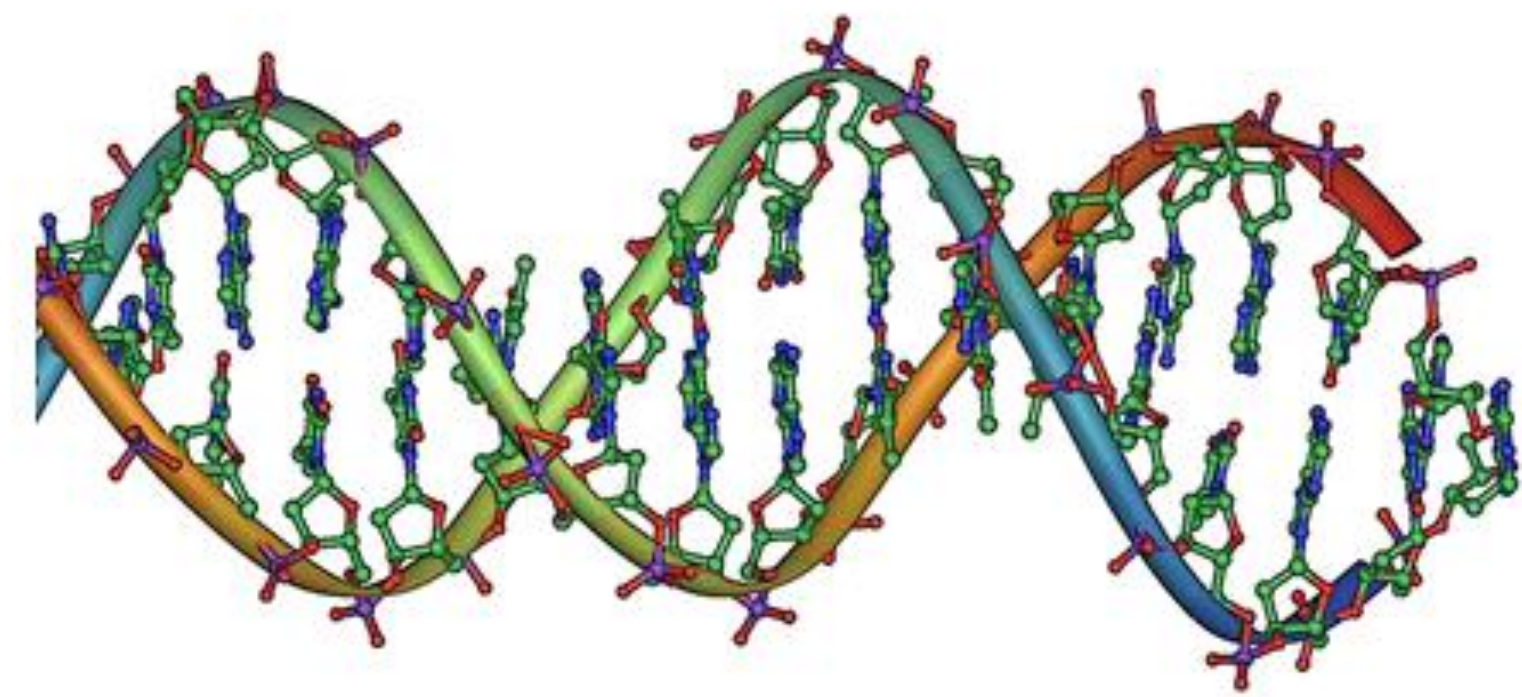




# Genetics and Dental Caries

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## Question

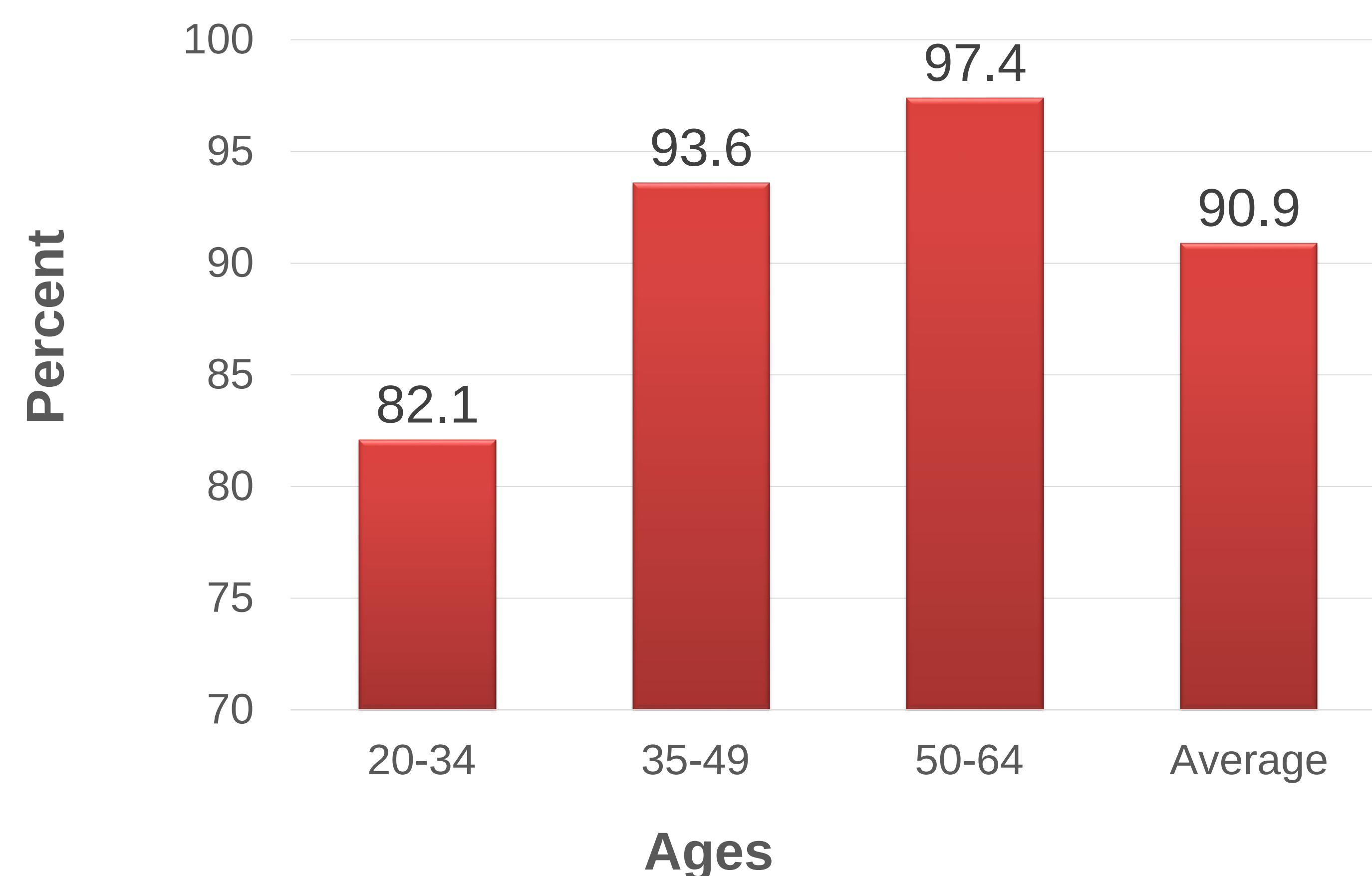
For dental health care providers, will testing for the genes GLUT2 and TAS1R2 help diagnose patients for high caries risk?



## Introduction

- Dental caries** is one of the **most frequent** multifactorial diseases
- Frequent snacking** and **sugary foods/drinks** increase an individual's risk of dental caries
- Genetic** variants affecting **taste preference** and **glucose transport** are associated with caries risk
- Gene polymorphisms of **TAS1R2** and **GLUT2** may be used to help **diagnose patients with high caries risk**

Dental Caries Experience in Adults



## Genes

TAS1R2

- Sweet taste receptor
- Detection of sweet taste on the tongue and palate
- Polymorphisms can either cause high or low sweet sensitivity

GLUT2

- Glucose transporter involved in postprandial glucose levels
- Expression of this gene has been seen in localized regions of the brain involved in food intake behavior



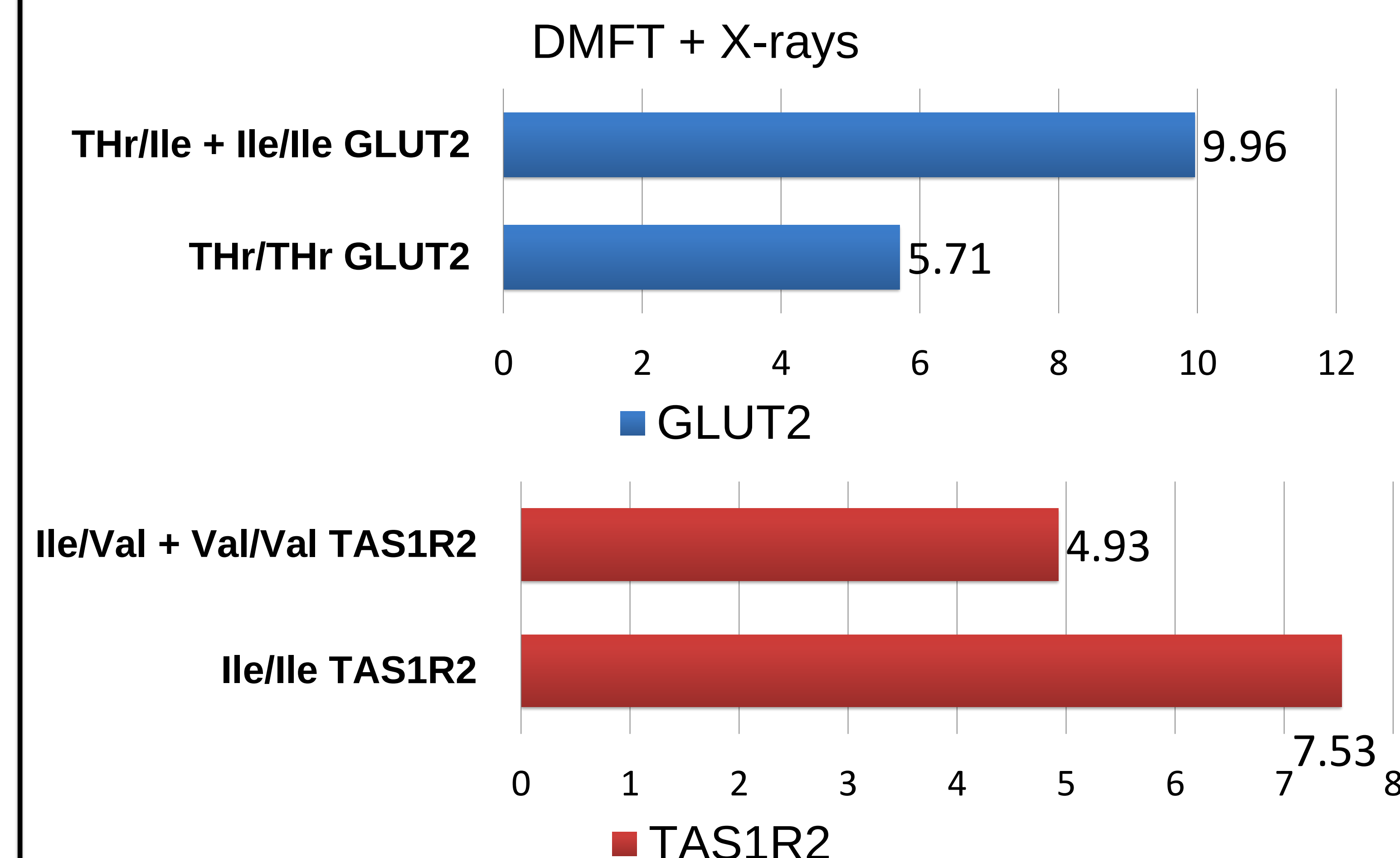
## Methods of Current Research

- Decayed/missing/filled teeth (DMFT) index**
- 9-point sweetness preference scale**
- Dietary history interview**
- Dental radiographs**
- DNA extracted from peripheral blood**

## Results

- Individuals with the **GLUT2** polymorphism associated with more frequent snacking, tend to have more caries
- Individuals with the **TAS1R2** polymorphism associated with higher sweet sensitivity, tend to have less caries

## Caries Scores



## Conclusion

- Statistical significance varied between studies**
- Current results are too inconclusive for health care providers to diagnose patients with high caries risk**

## References

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