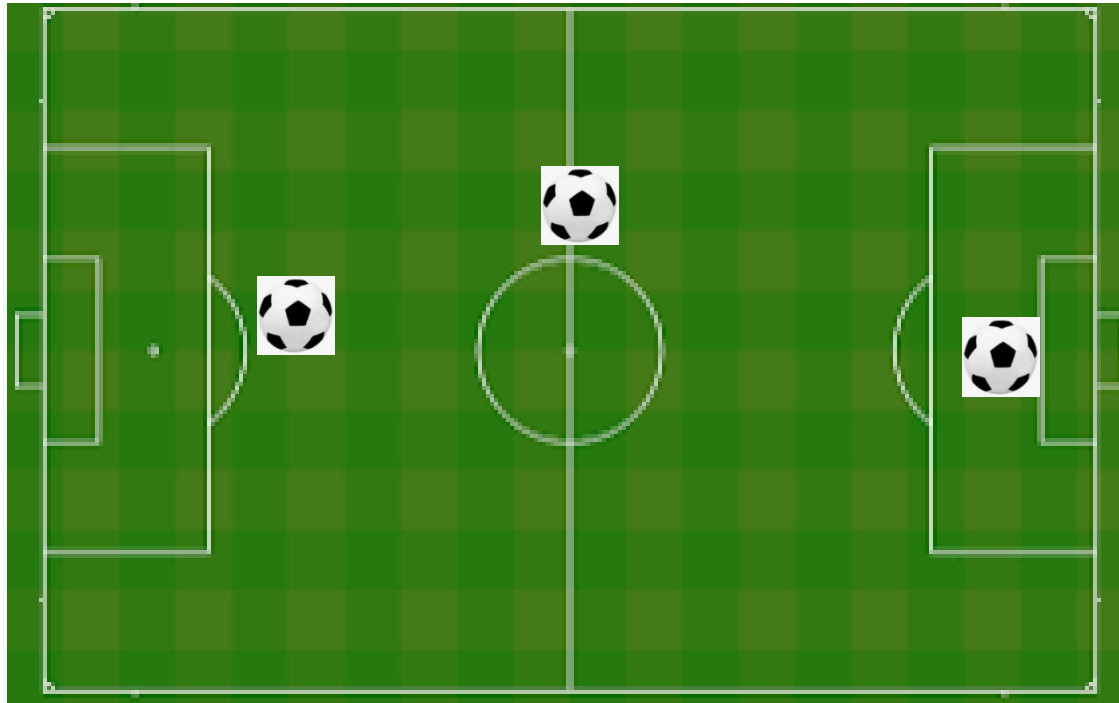
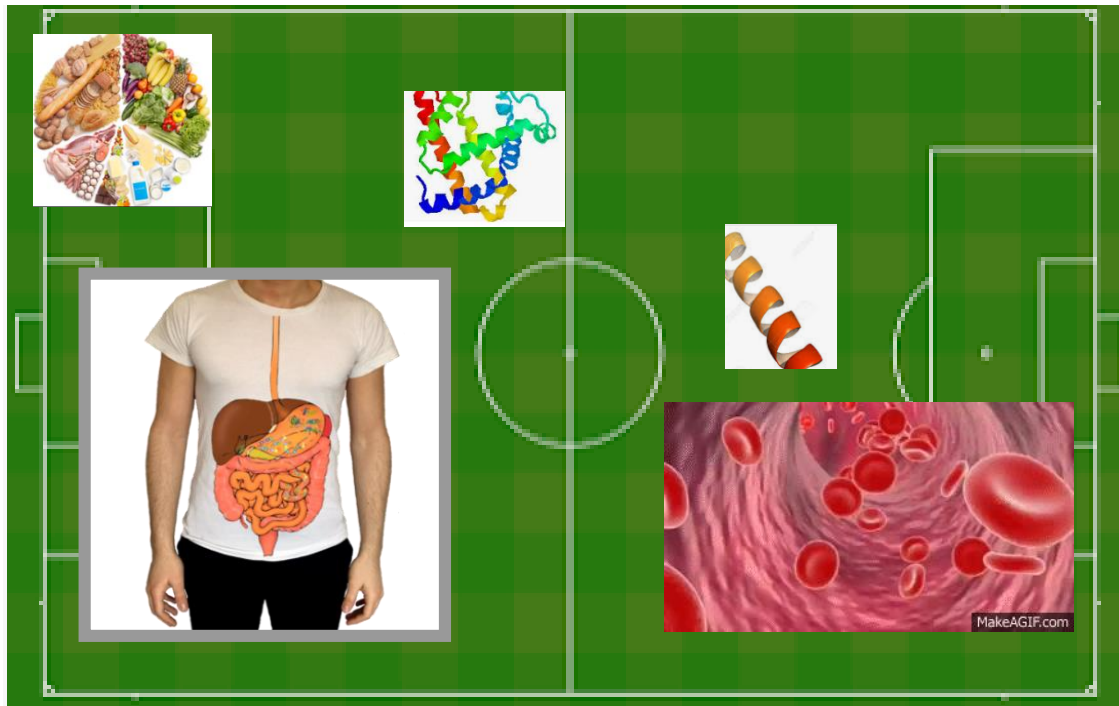
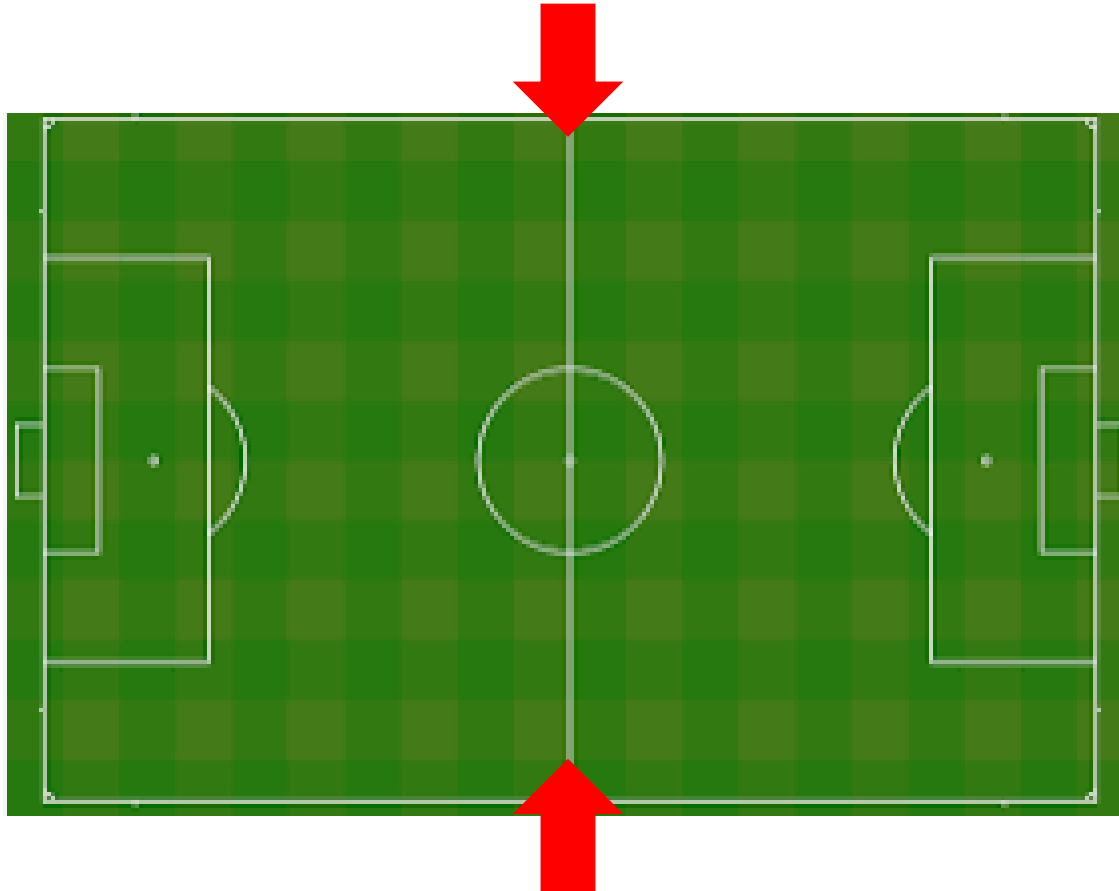


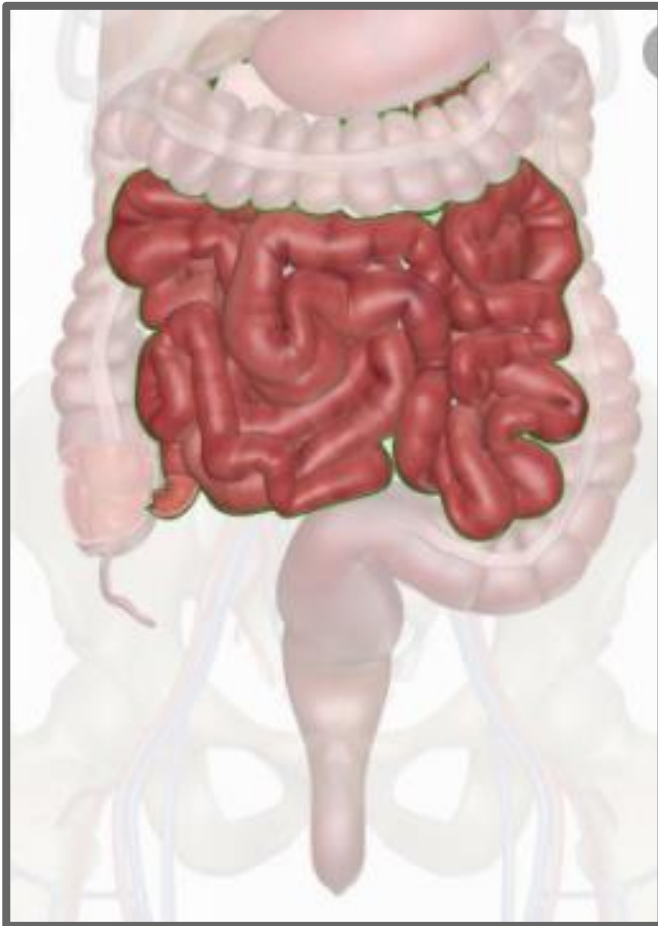


# Dr. Linda Giblin research = Soccer









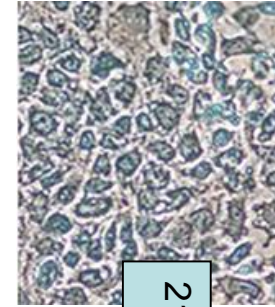
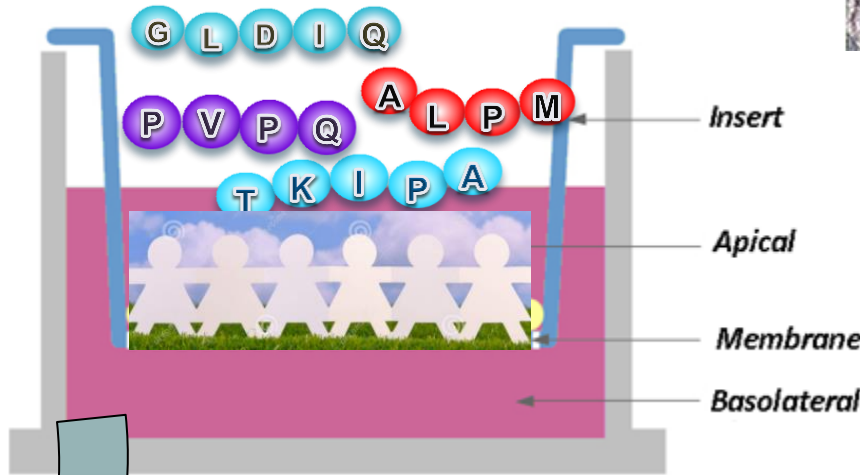
‘half way line’  
Small Intestine  
DIGESTED food  
crosses gut barrier

6m length  
Surface area upto  
250m<sup>2</sup>  
Villi

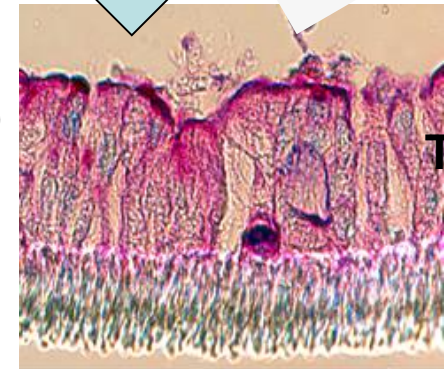




# What do I do?



21 days

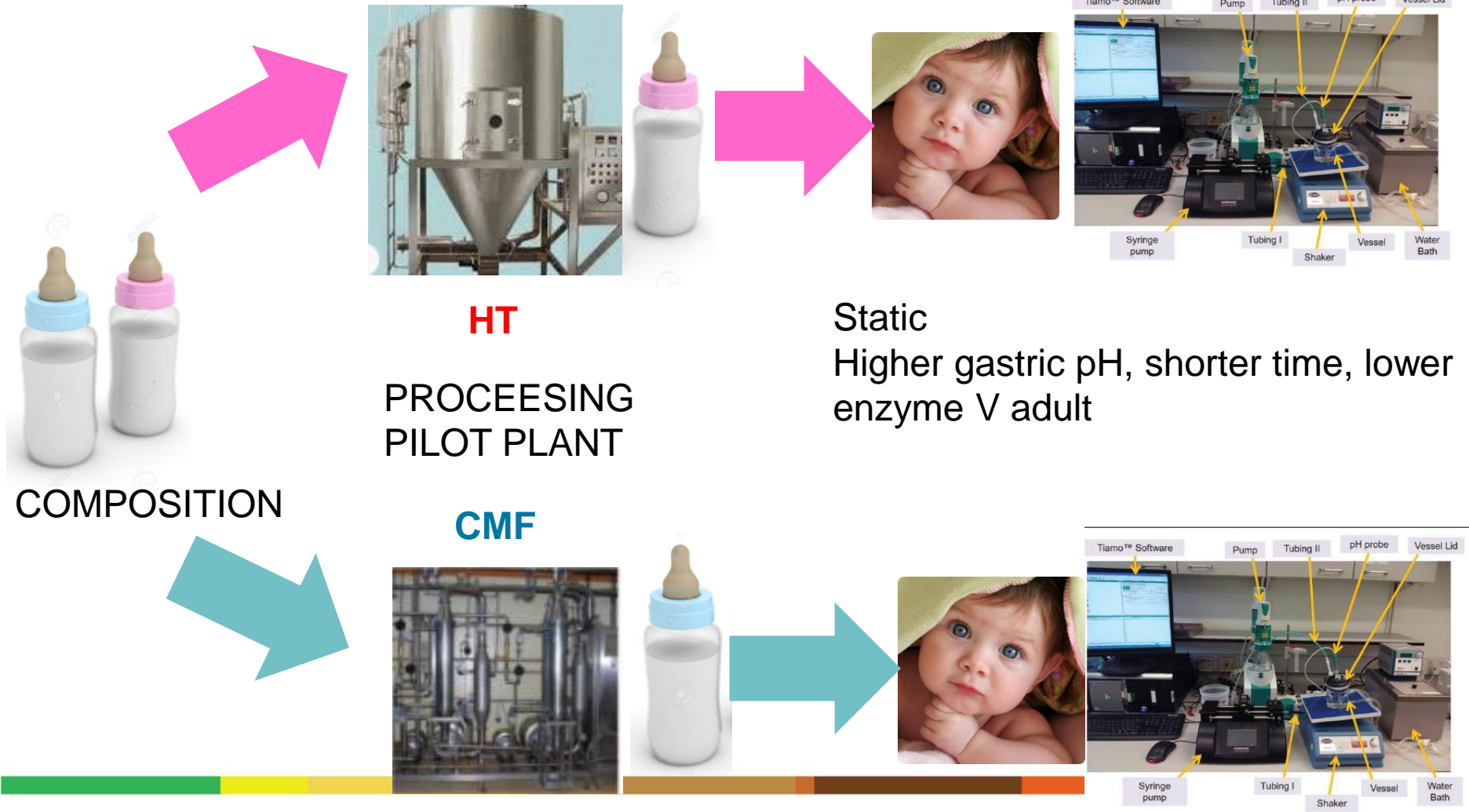


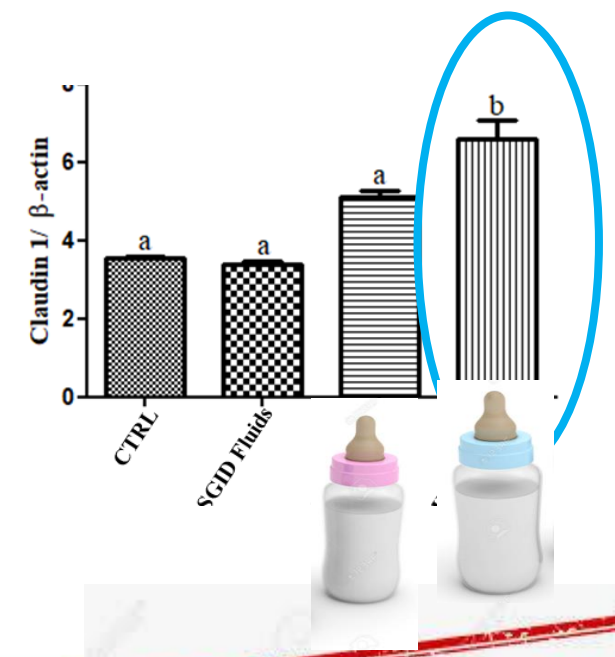
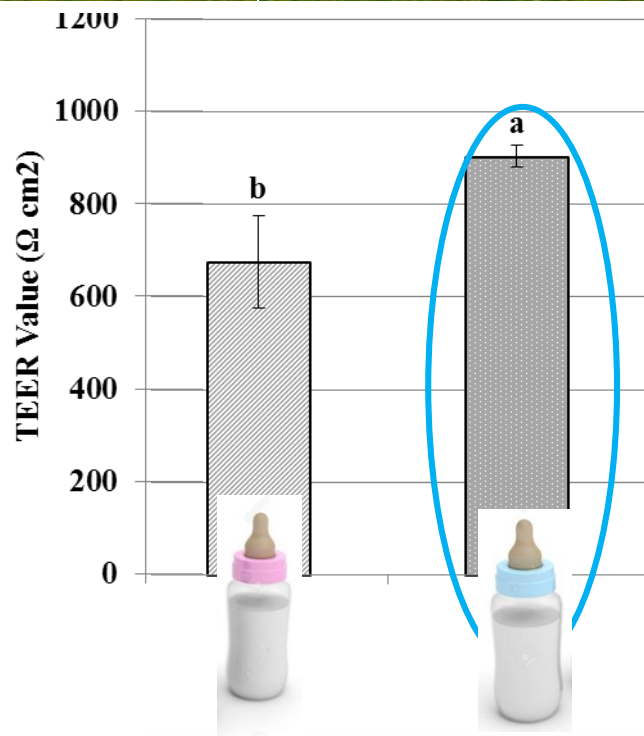
TEER

What foods keep gut barrier healthy?  
What crosses gut barrier?  
Biologically Active (BioActive)?

# What have I discovered?

## Example 1





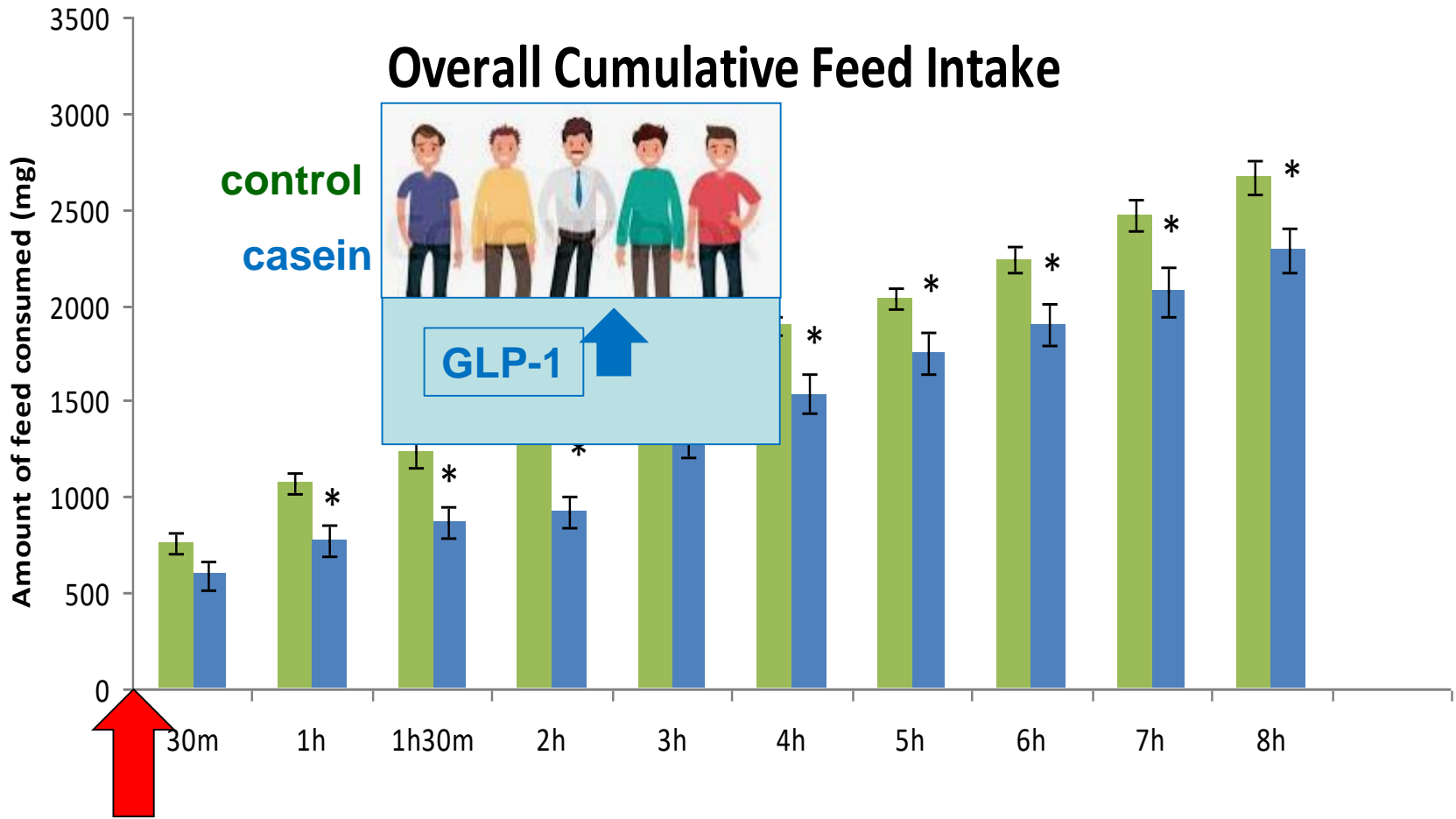
**Lower heat - tight junctions**





# What have I discovered?

## Overall Cumulative Feed Intake

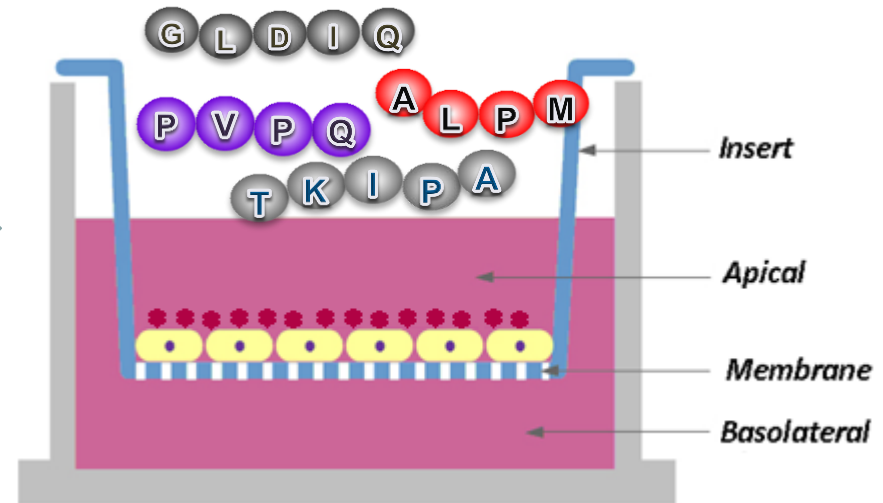
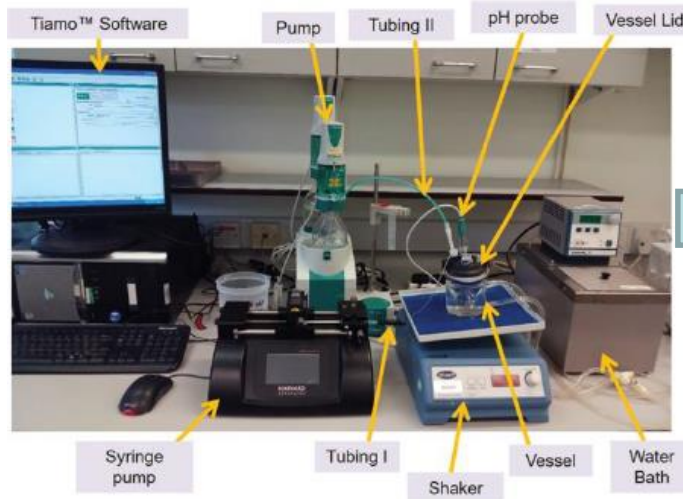


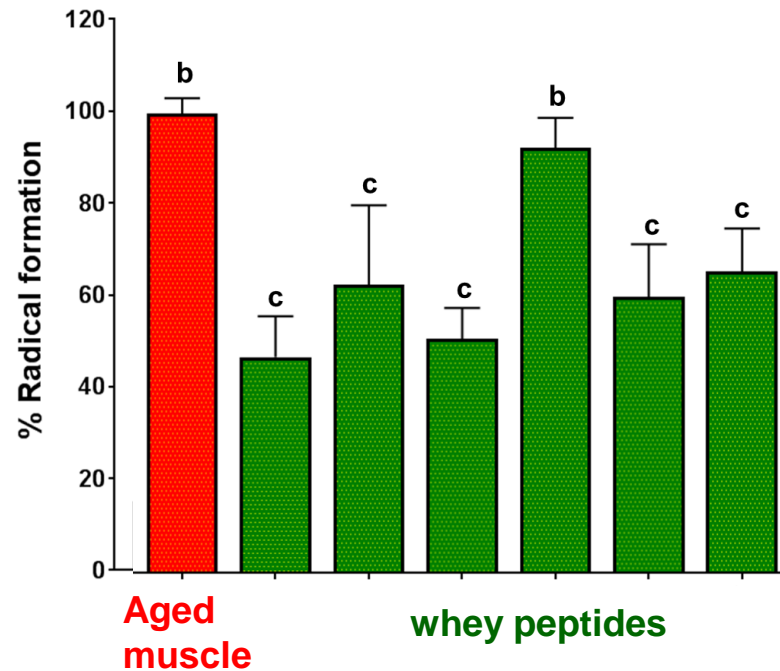
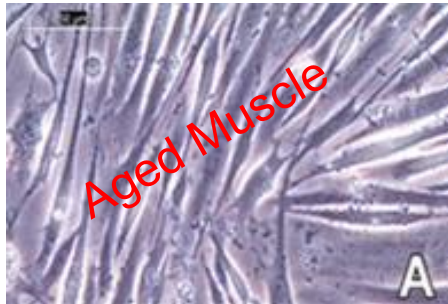
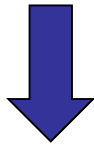
# What have I discovered?

## Example 3



## In vitro digestion



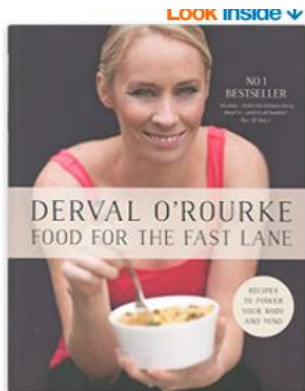


**Peptides reverse ageing**

# What is the pay off (healthy diet rich in bioactives)



# Athletes use bioactives for performance



‘got into cooking..... to improve her time’

**Rebekkah Brunson, US Basketball** ‘....limiting carbs and eating more protein and vegetables, which leaves me feeling energetic and ready to perform.’

**Emma Coburn, steeplechase world champion** ‘There is a short window, 30-60 minutes after a workout, where your body can restore the glycogen in your muscles. I always bring a bar, a banana or a smoothie with me to have as soon as my workout ends.’



**Conor McGregor** ‘I never drink energy drinks — ever!’...big on protein and sticks to very specific types of carbs  
Carb intake depends on his muscle mass levels

# Final outcome: live healthier for longer



**Kazu Miura 'Kazu' 53**  
Longstanding buy-in bioactives in Food



**COME ON, EILEEN** Eileen Noble, 85, braves torrential rain to become oldest woman to complete 2020 London Marathon despite the pandemic

# What is the alternative?

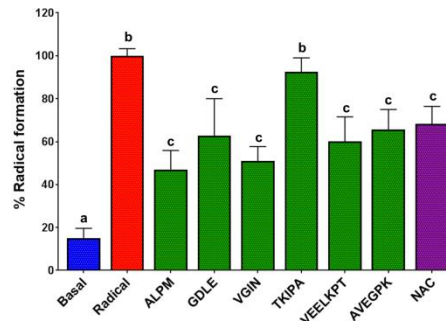
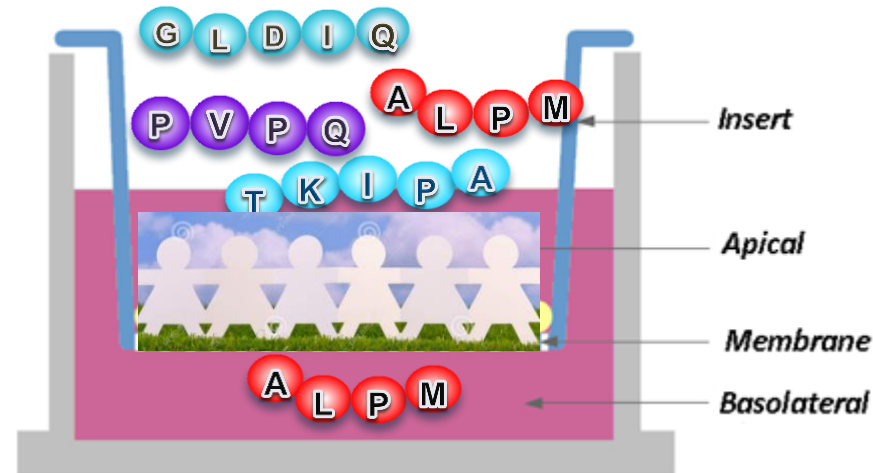
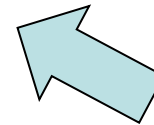
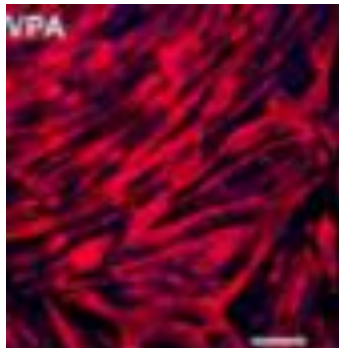
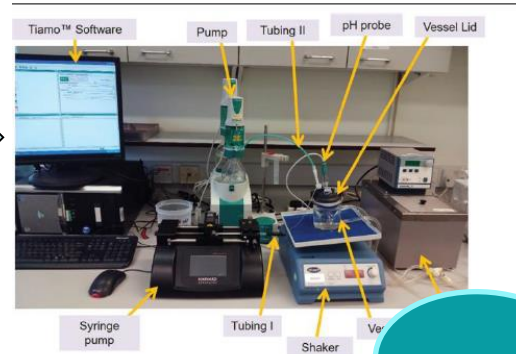
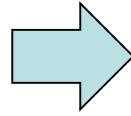


**Bad bioactives**









Food Bioactives', what are they? Do they cross gut barrier?  
how do they work in cells? Protect during food manufacture?  
enrich foods?