



SNS COLLEGE OF TECHNOLOGY

**An Autonomous Institution
Coimbatore - 35**

Accredited by NBA – AICTE and Accredited by NACC – UGC with 'A+ Grade
Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai.

DEPARTMENT OF FOOD TECHNOLOGY

19FTO302-FOOD NUTRITION

III – YEAR VI SEMESTER

UNIT-III Proteins



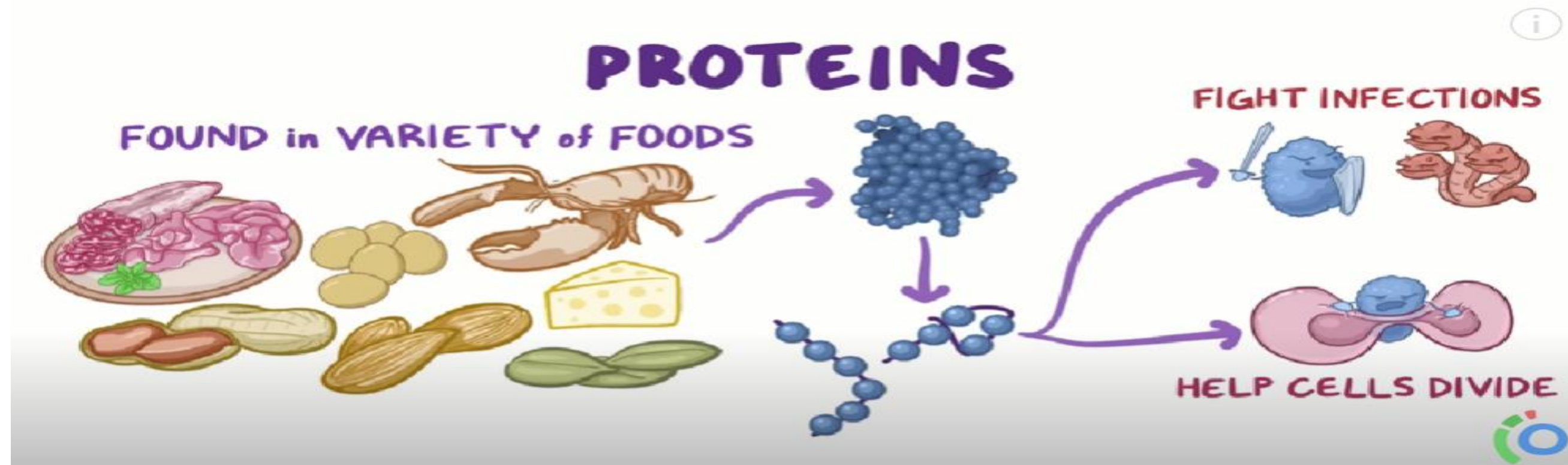
INTRODUCTION

What are Proteins?

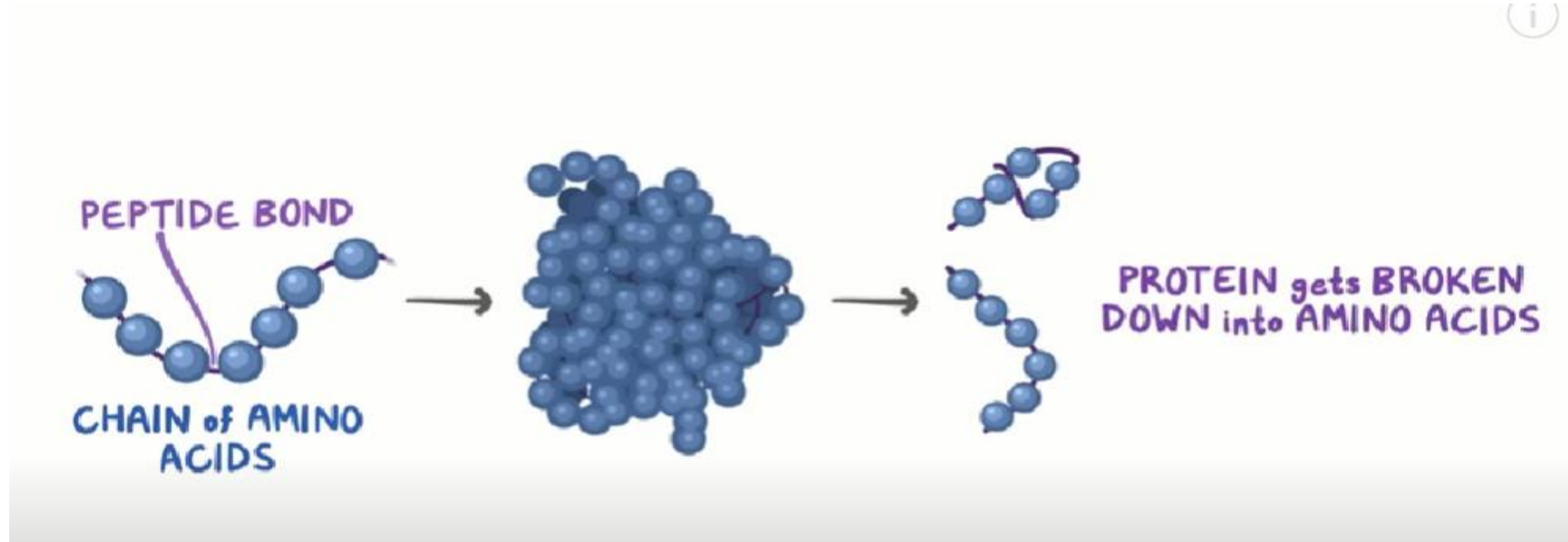




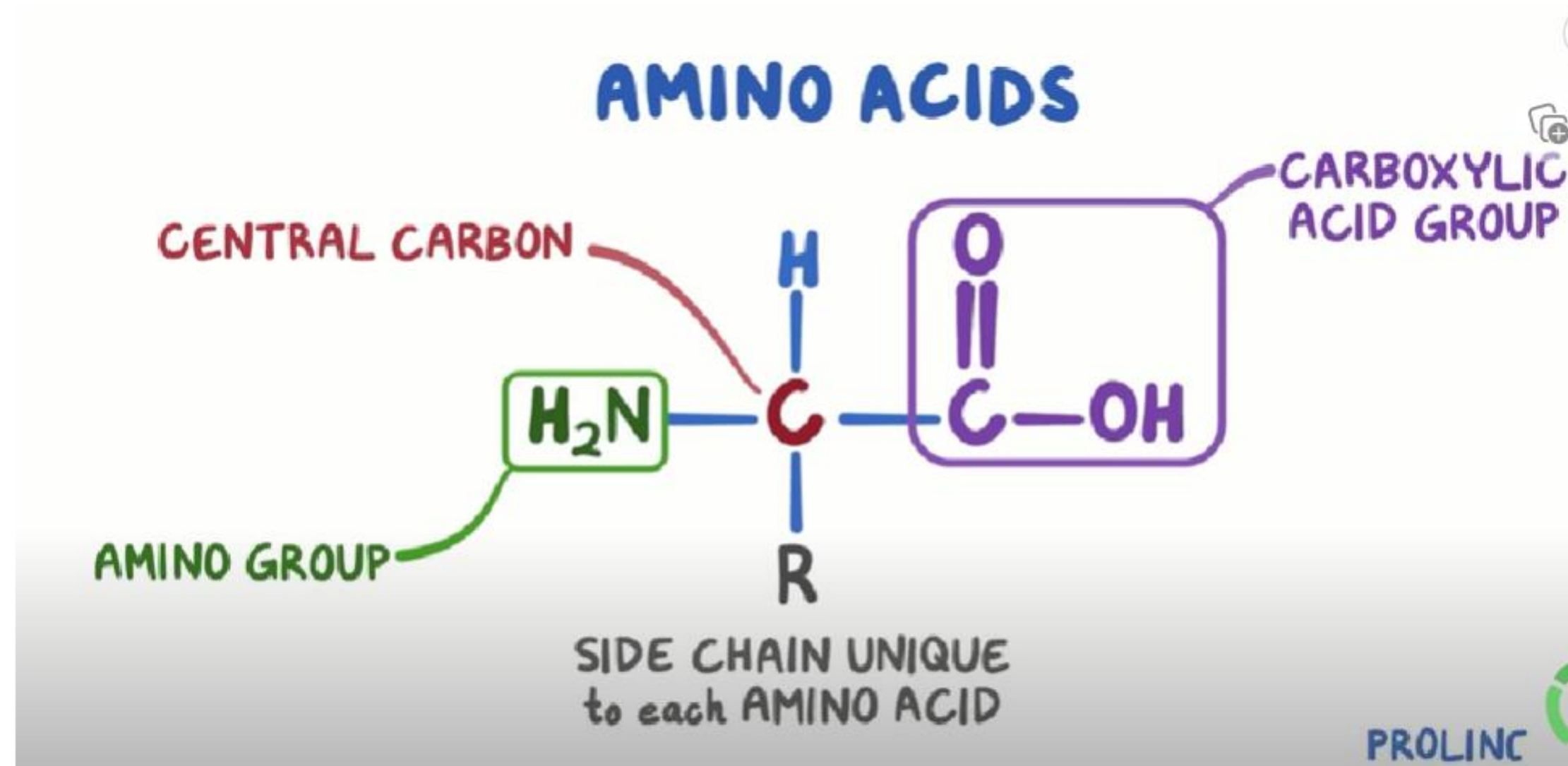
INTRODUCTION



Found in variety of foods in varying amount, which are always complex in nature.



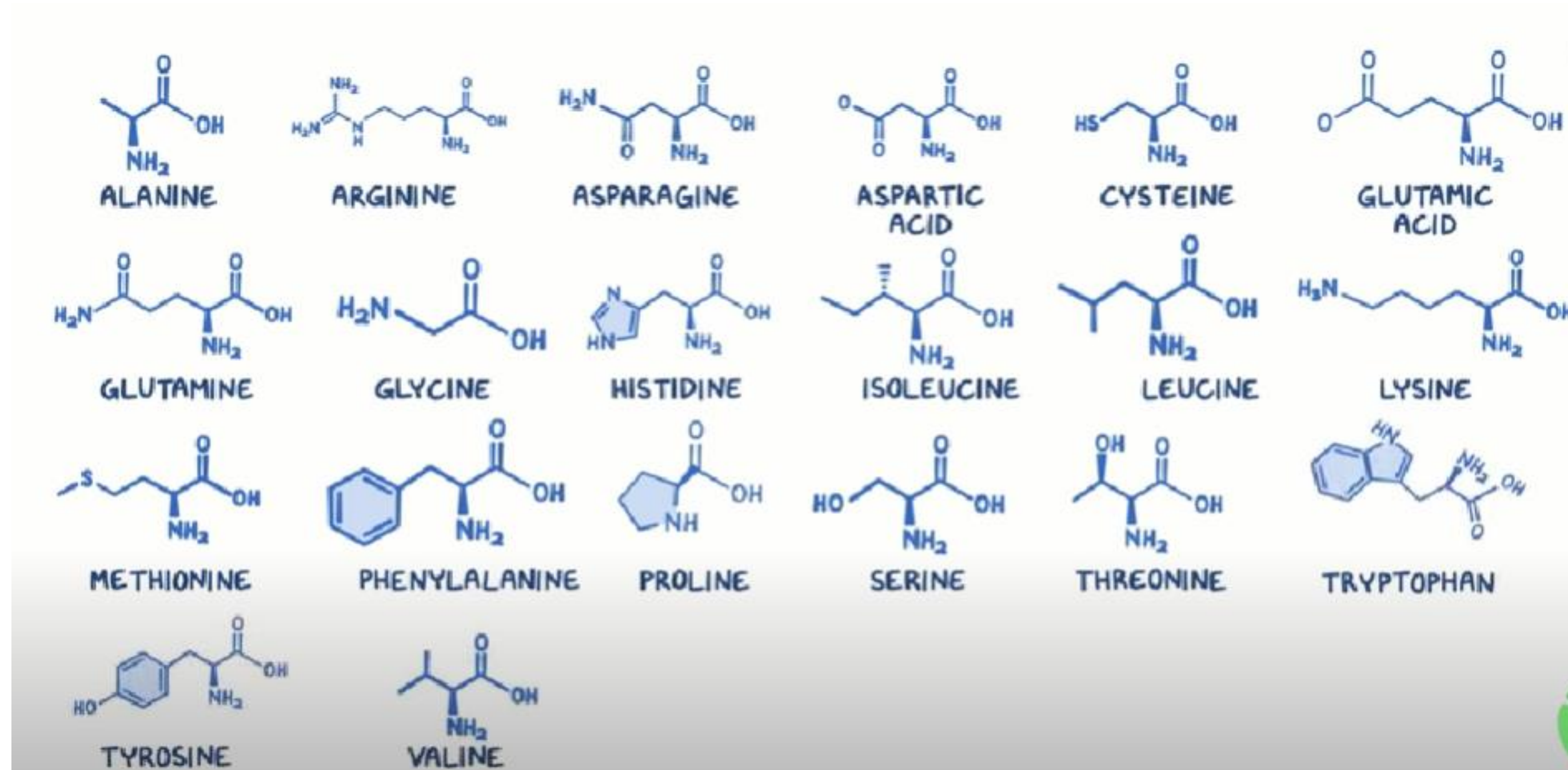
Amino acids are bonded together by peptide.



R group is decided by DNA. Each amino acid has its own R group



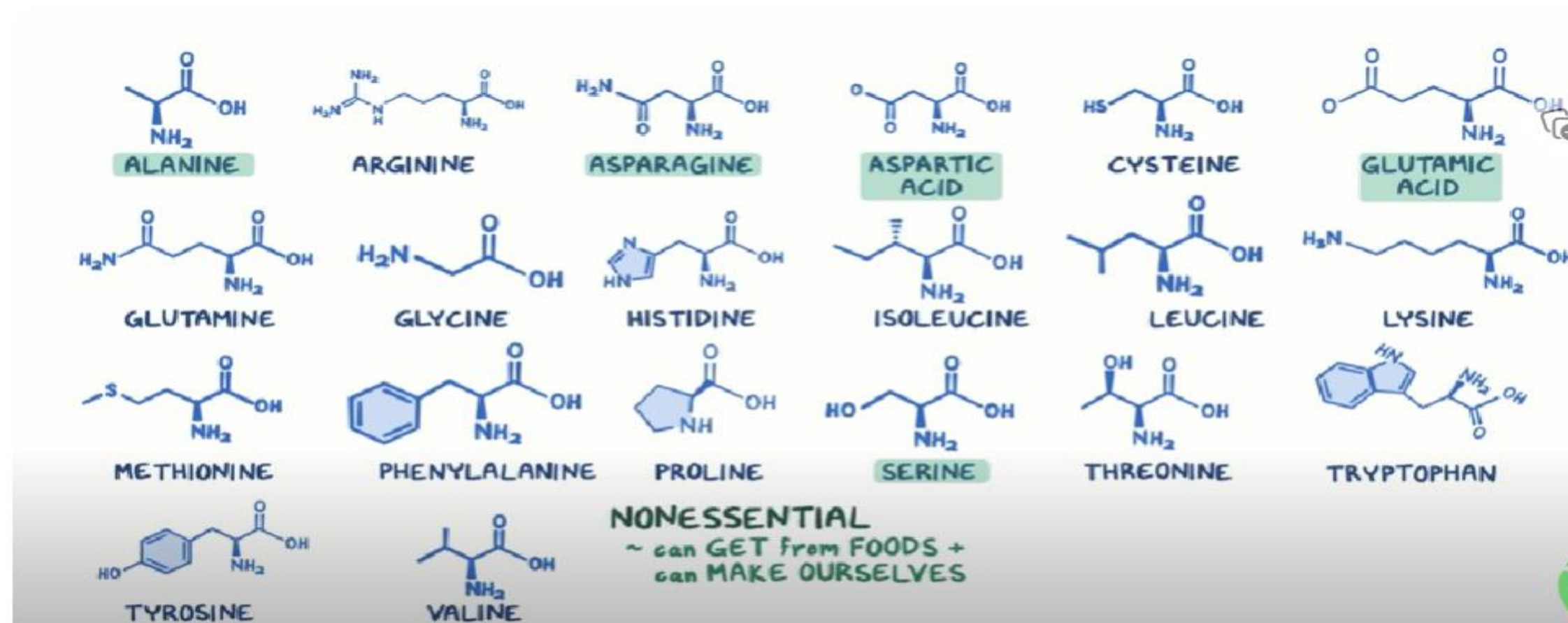
20 Amino acids required by our body





Out of 20, 5 are non essential which means our body can synthesis:

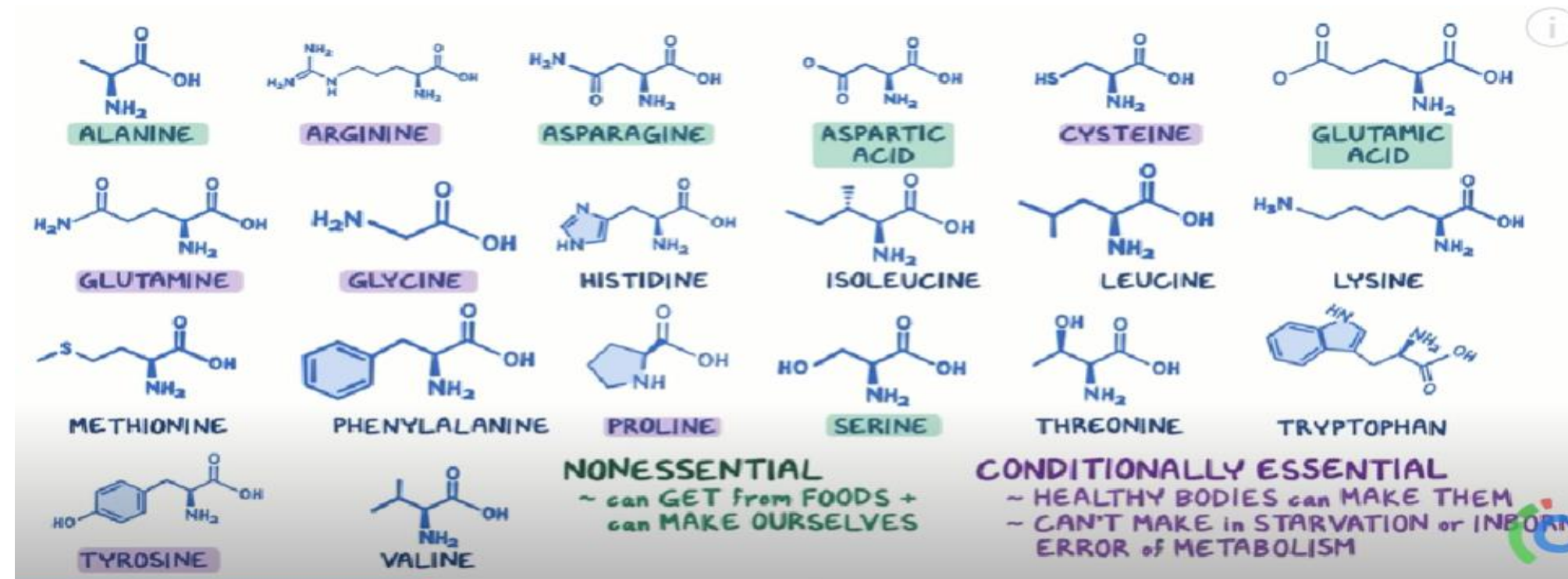
- Alanine
- Asparagine
- Aspartic acid
- Glutamic acid
- serine





Out of 20, 6 are conditionally essential which means our body may or maynot synthesis:

Arginine
Cysteine
Glutamine
Glycine
Tyrosine





Out of 20, 9 are essential which means our body cannot synthesis:

Histidine

Threonine

Isoleucine

Tryptophan

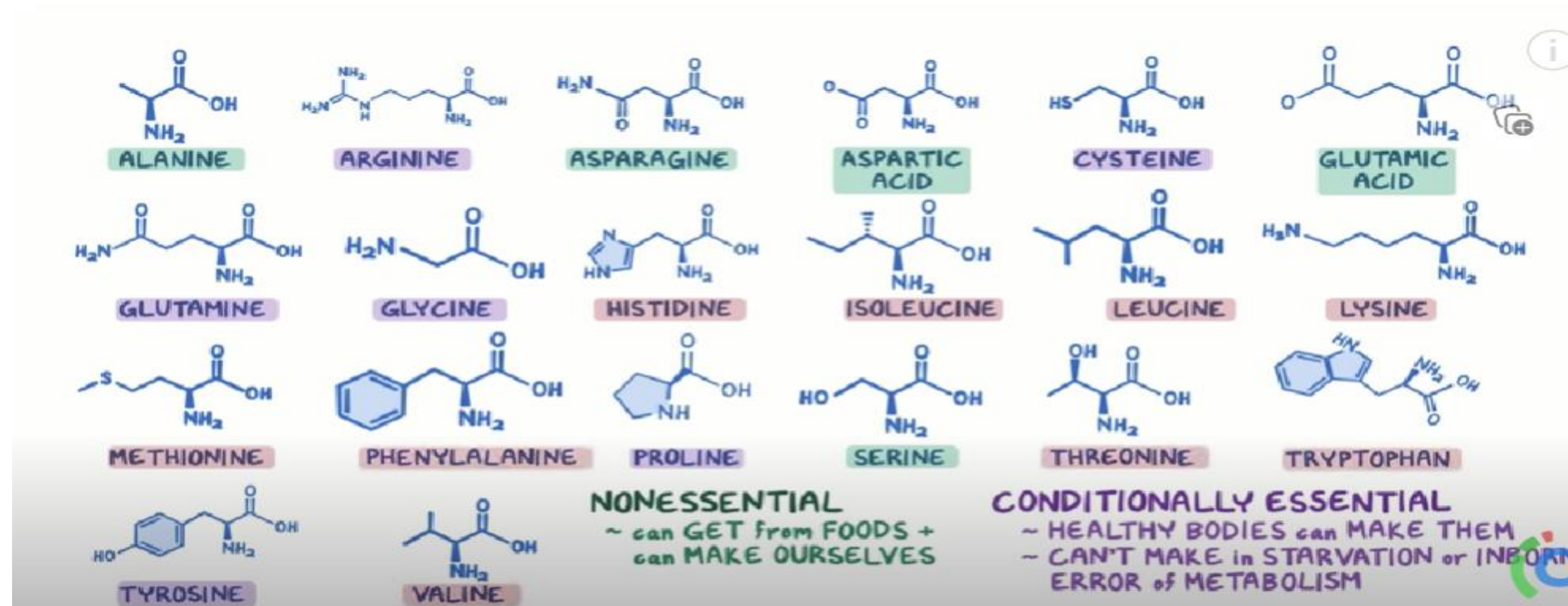
Leucine

Valine

Lysine

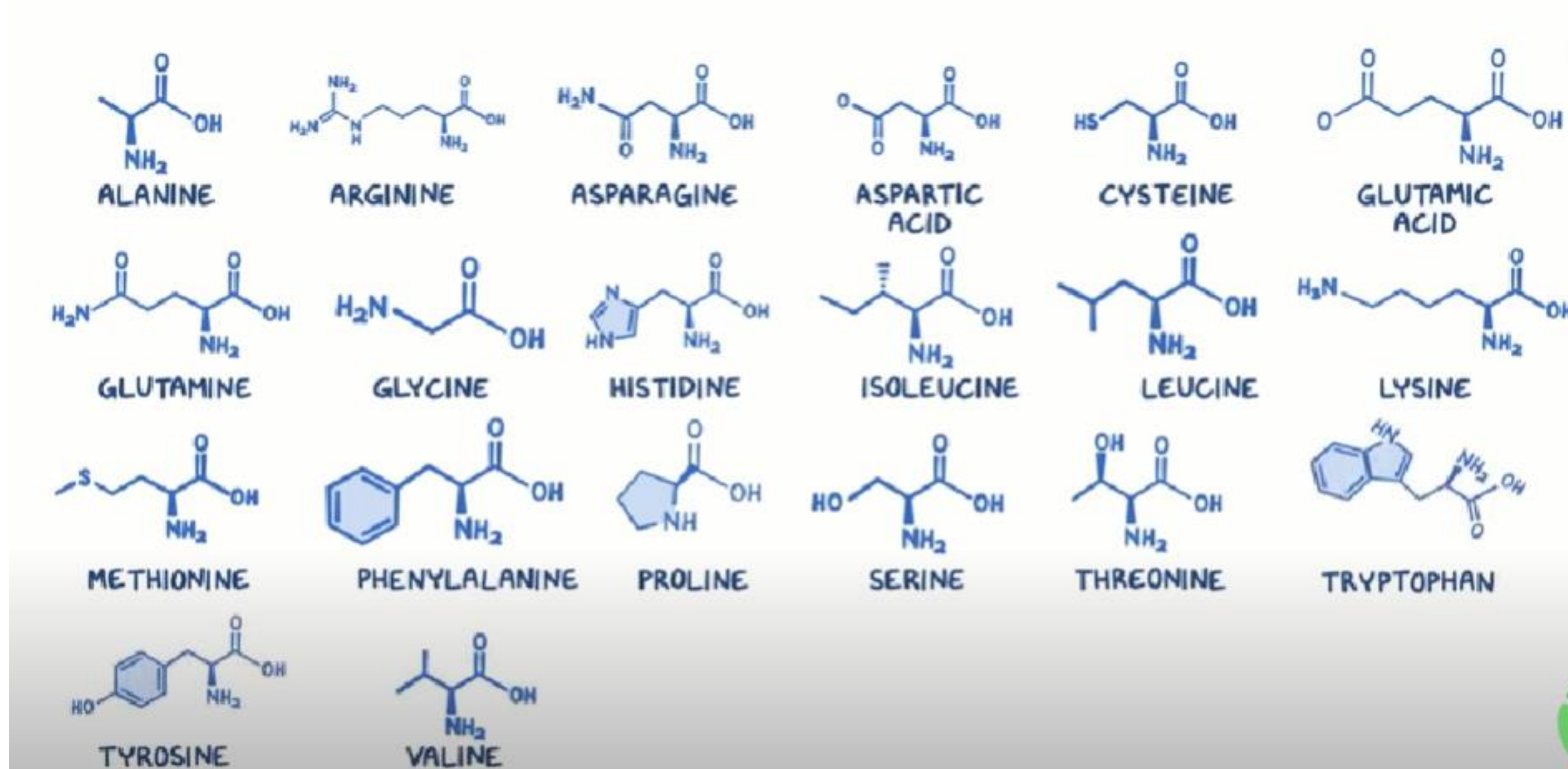
Methionine

Phenylalanine



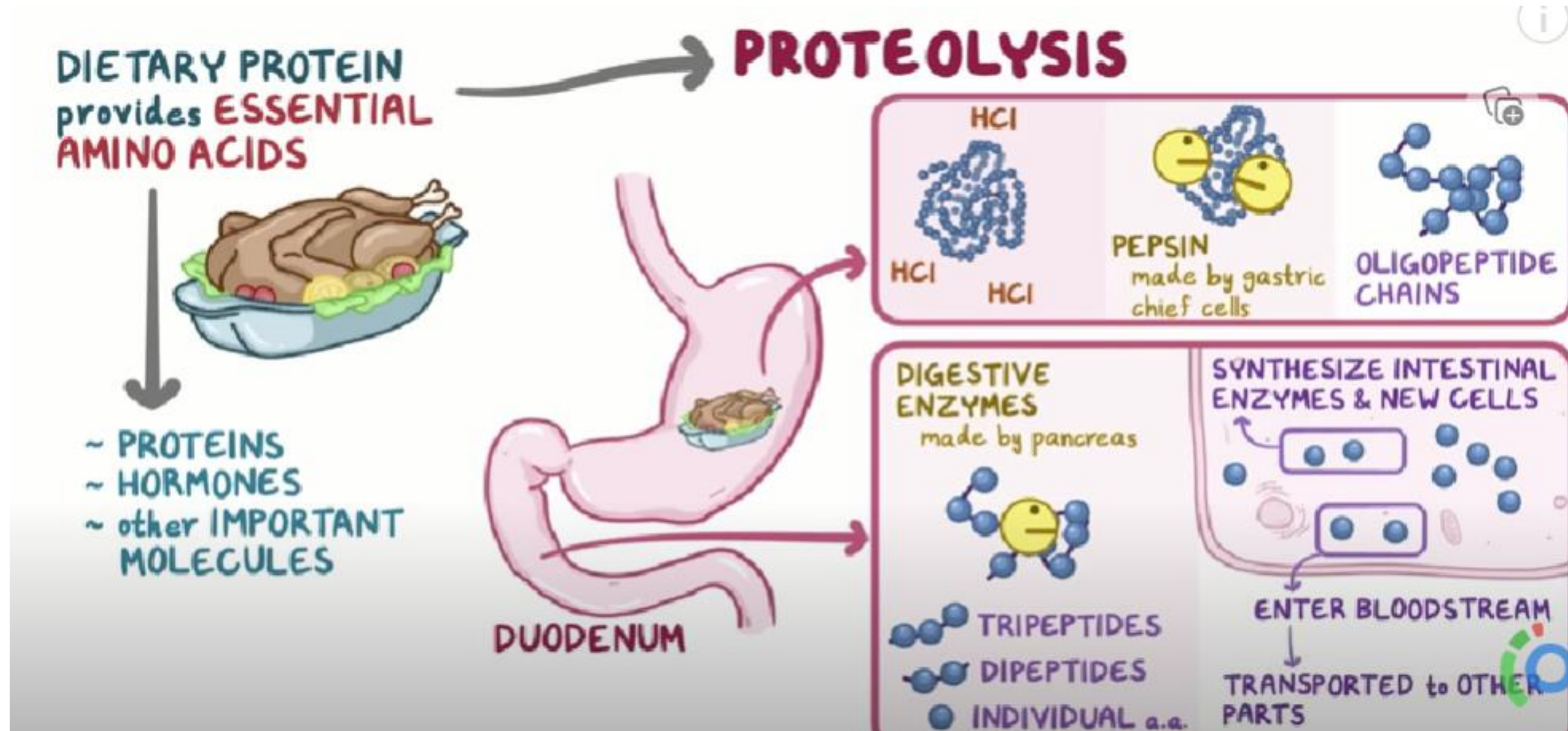


ACTIVITY



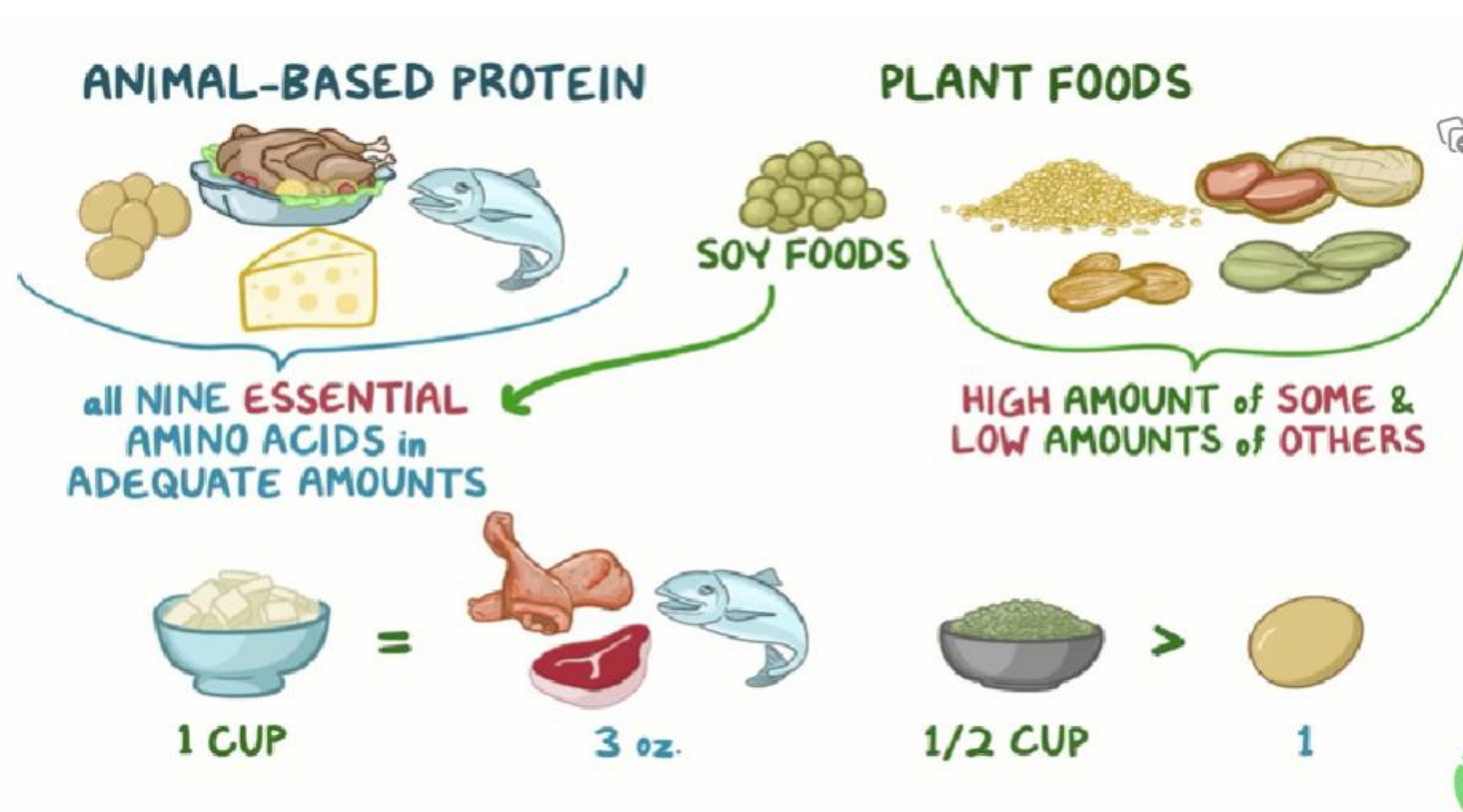


Dietary protein provides all the essential amino acids which are broken down by pepsin





Animal based and plant based foods have essential amino acids in Varying amount



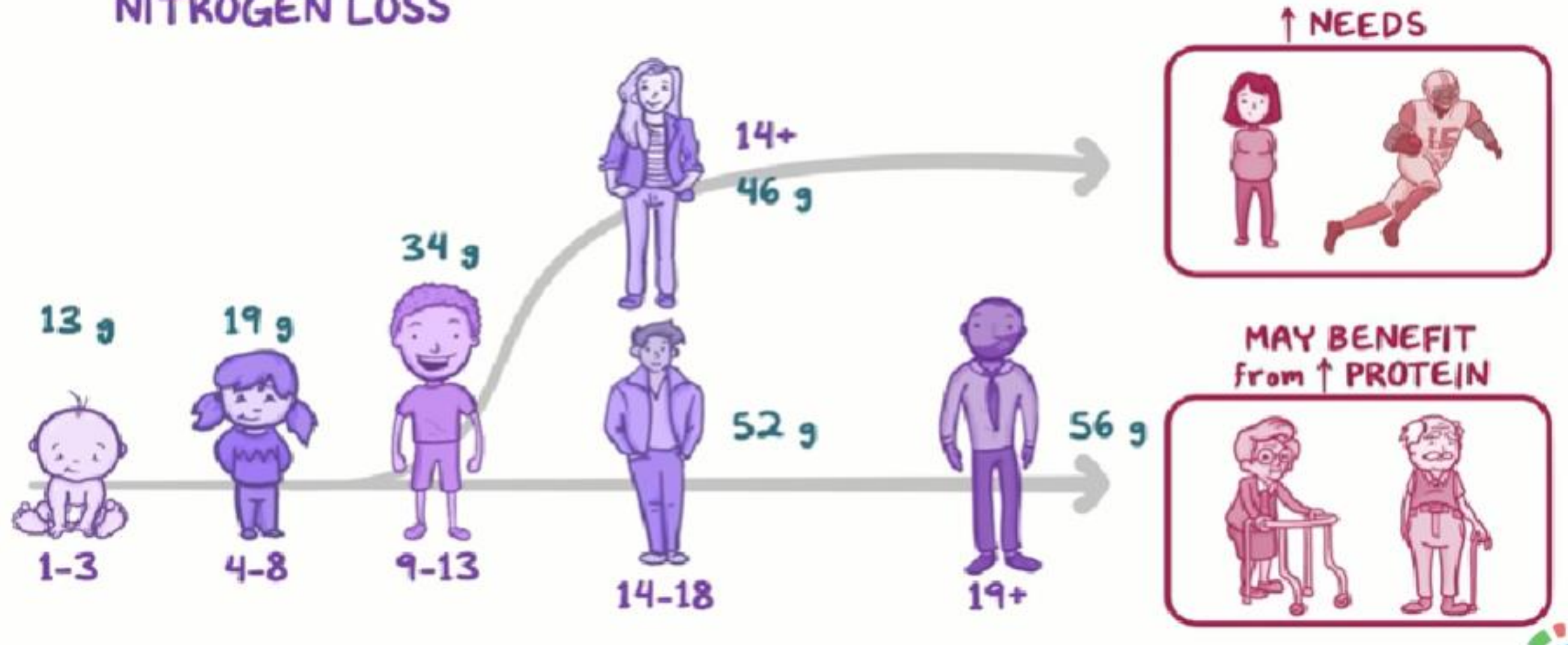


According to WHO and US Federation nominal intake of protein per day is 0.8 g/kg



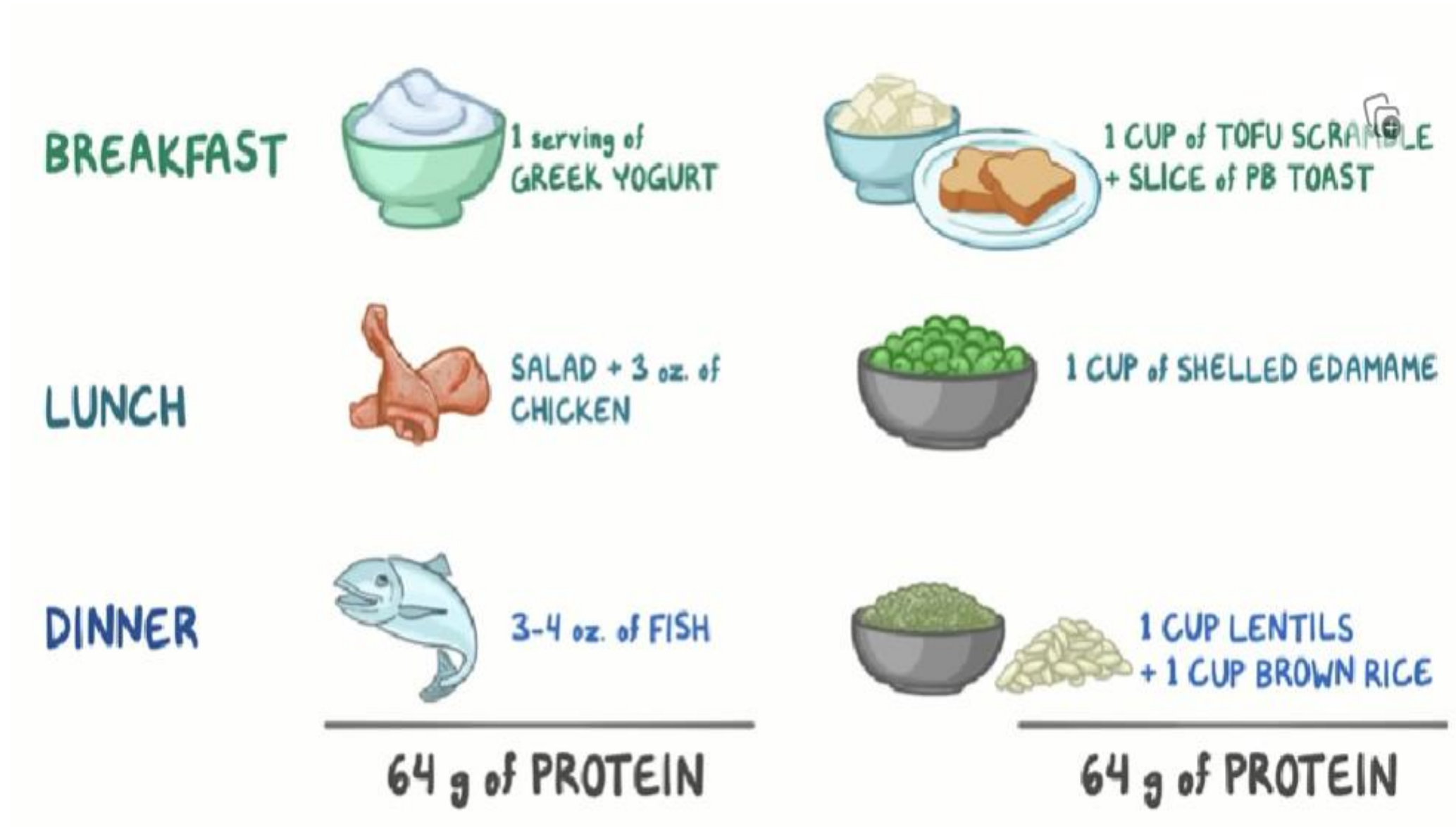
DAILY PROTEIN REQUIREMENTS

~ MINIMUM AMOUNT of PROTEIN to AVOID a PROGRESSIVE NITROGEN LOSS





According to WHO and US Federation nominal intake of protein per day is 0.8 g/kg



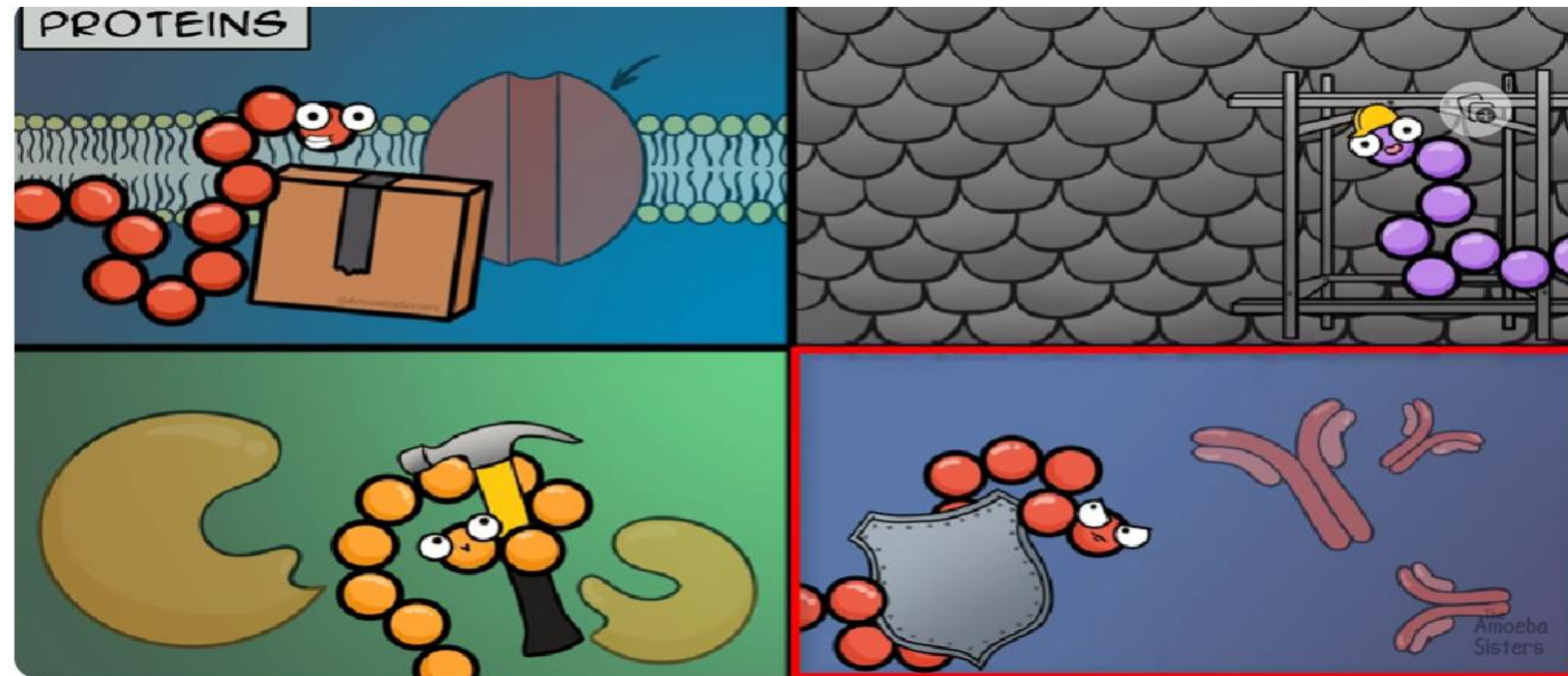


ACTIVITY

- Animal based
- Plant based



Functions of Proteins

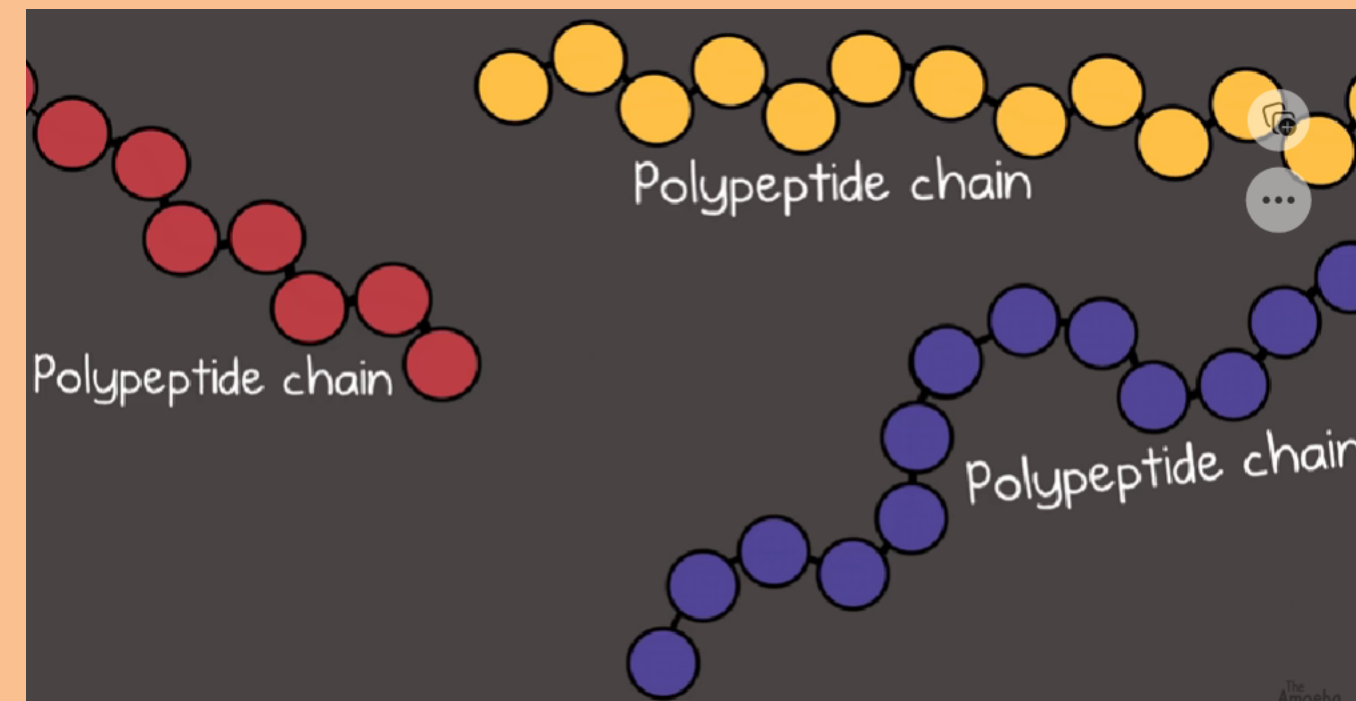




Structure of Proteins

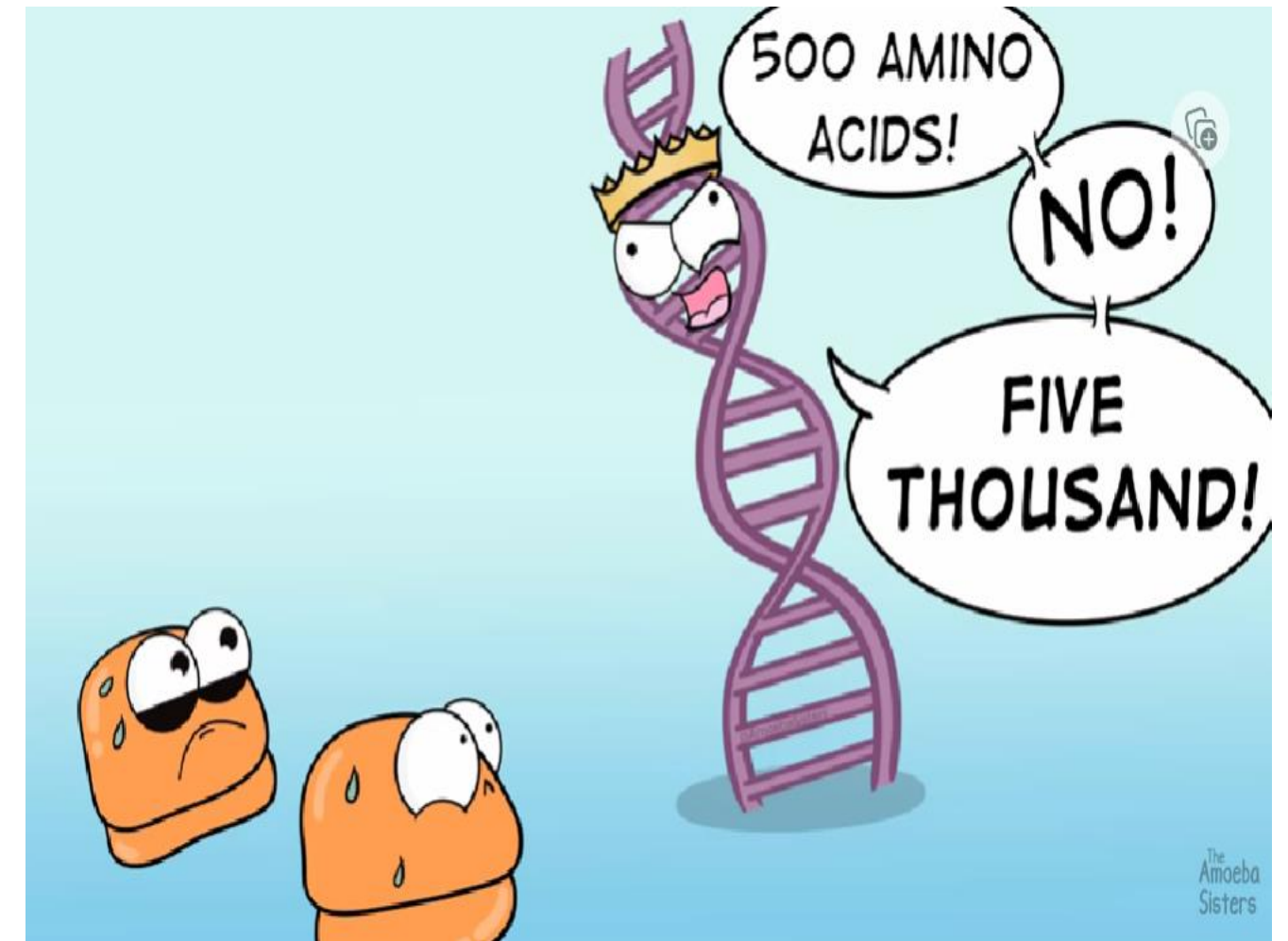
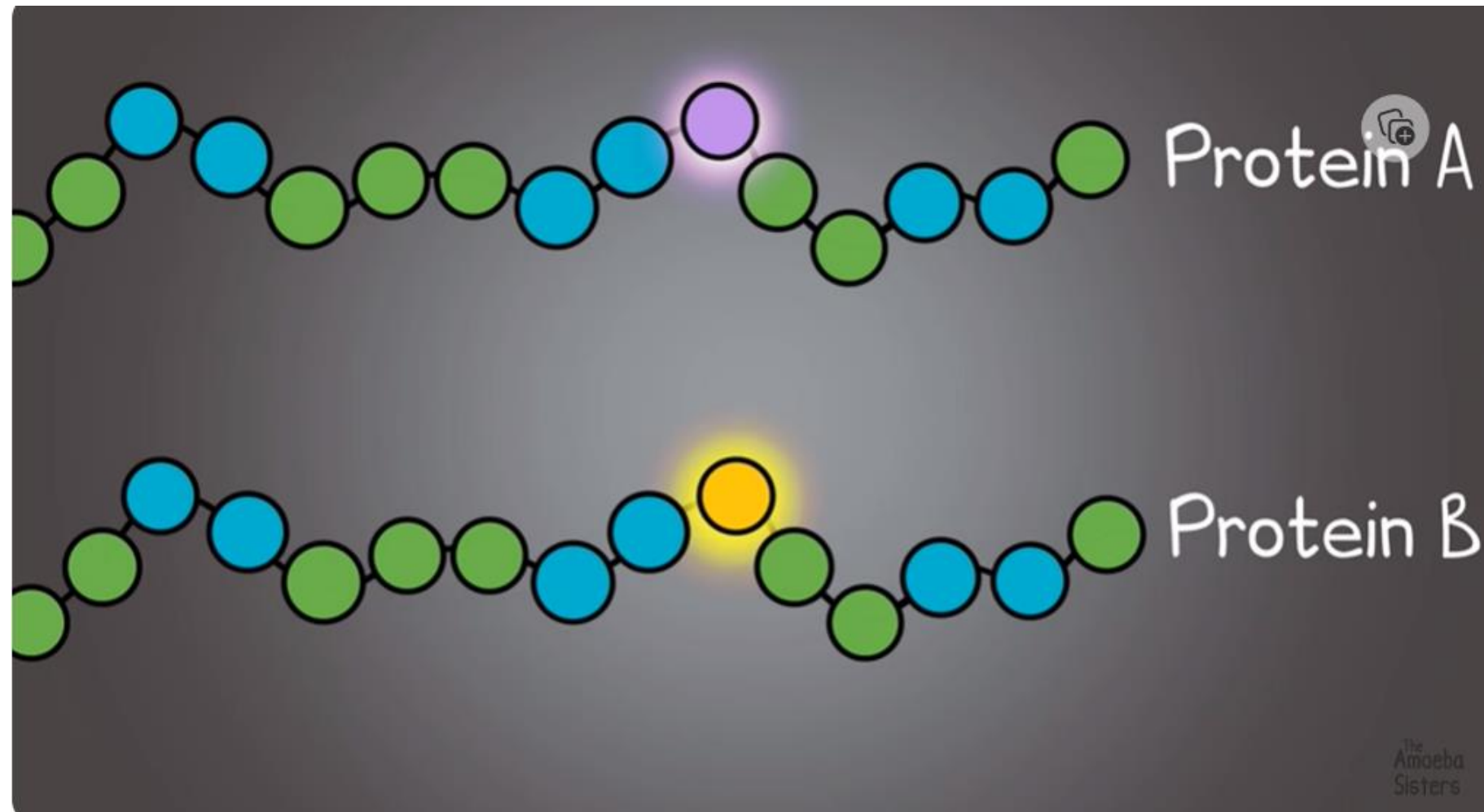
❖ Protein Shape –Protein Folding

1. Primary Structure
2. Secondary Structure
3. Tertiary Structure
4. Quaternary Structure



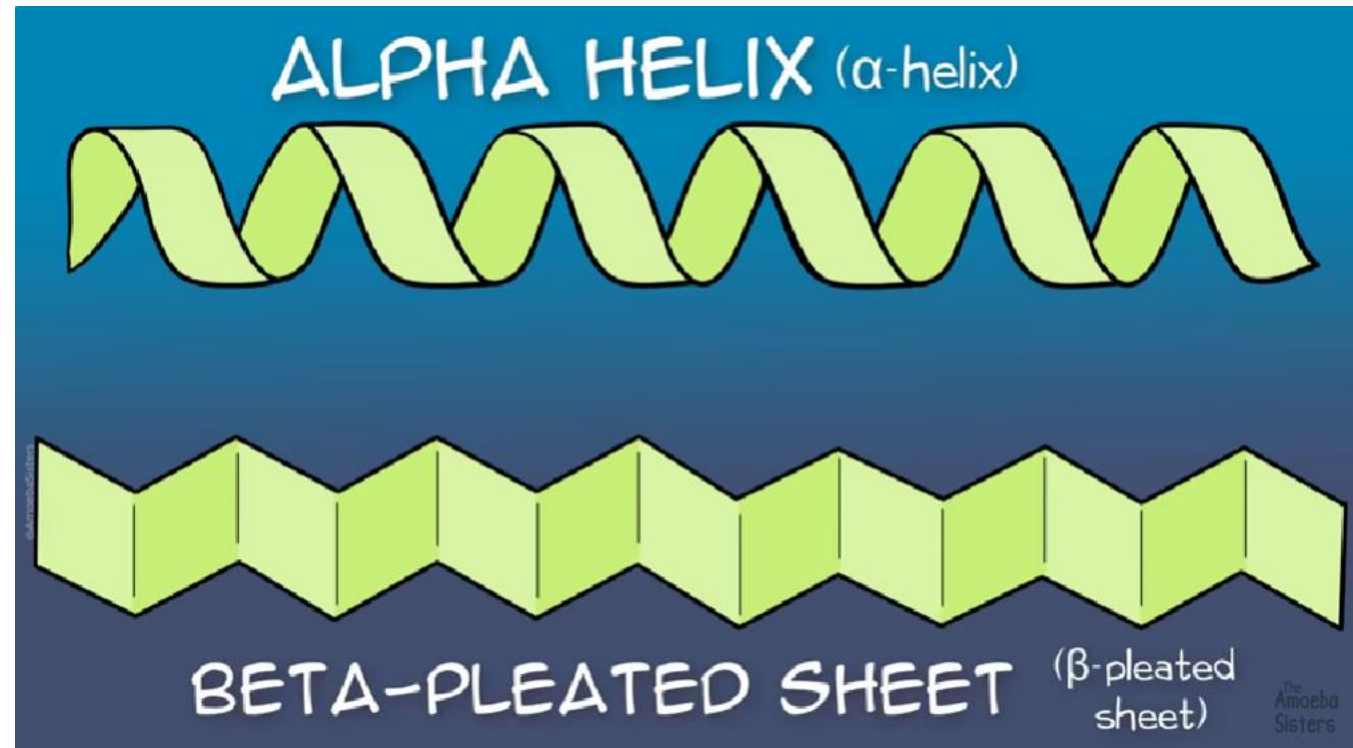


Primary Structure

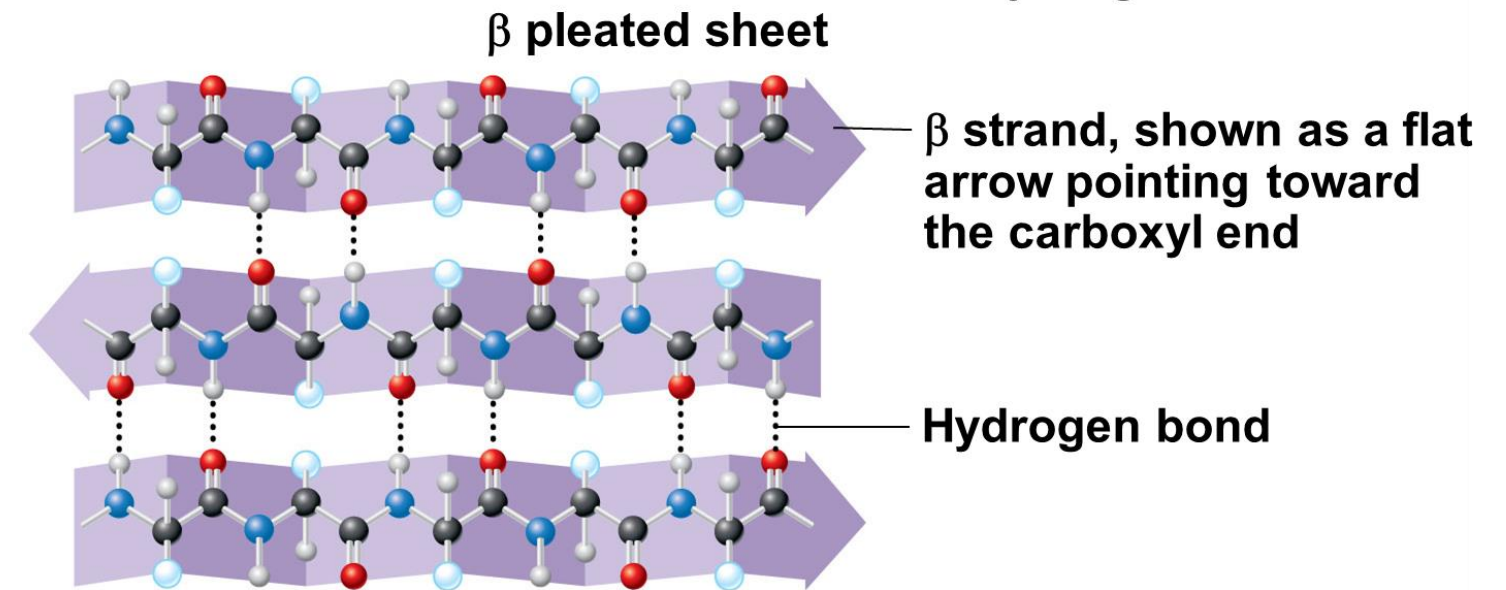
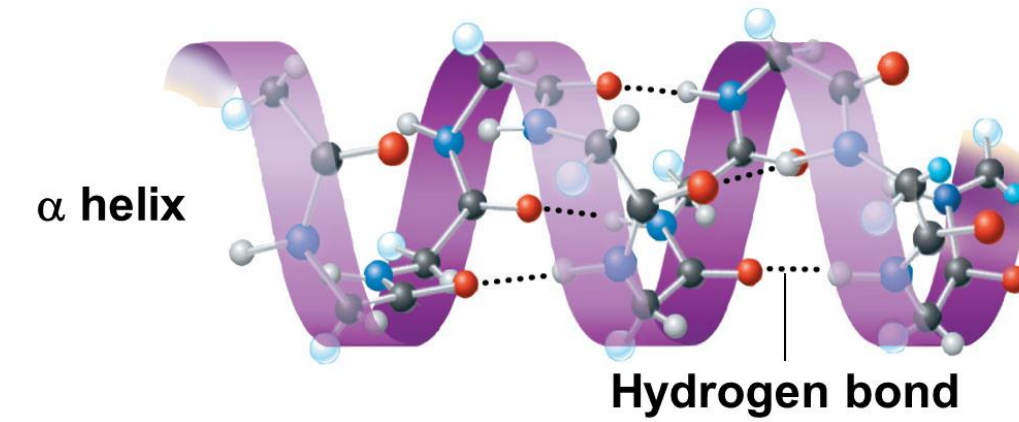




Secondary Structure

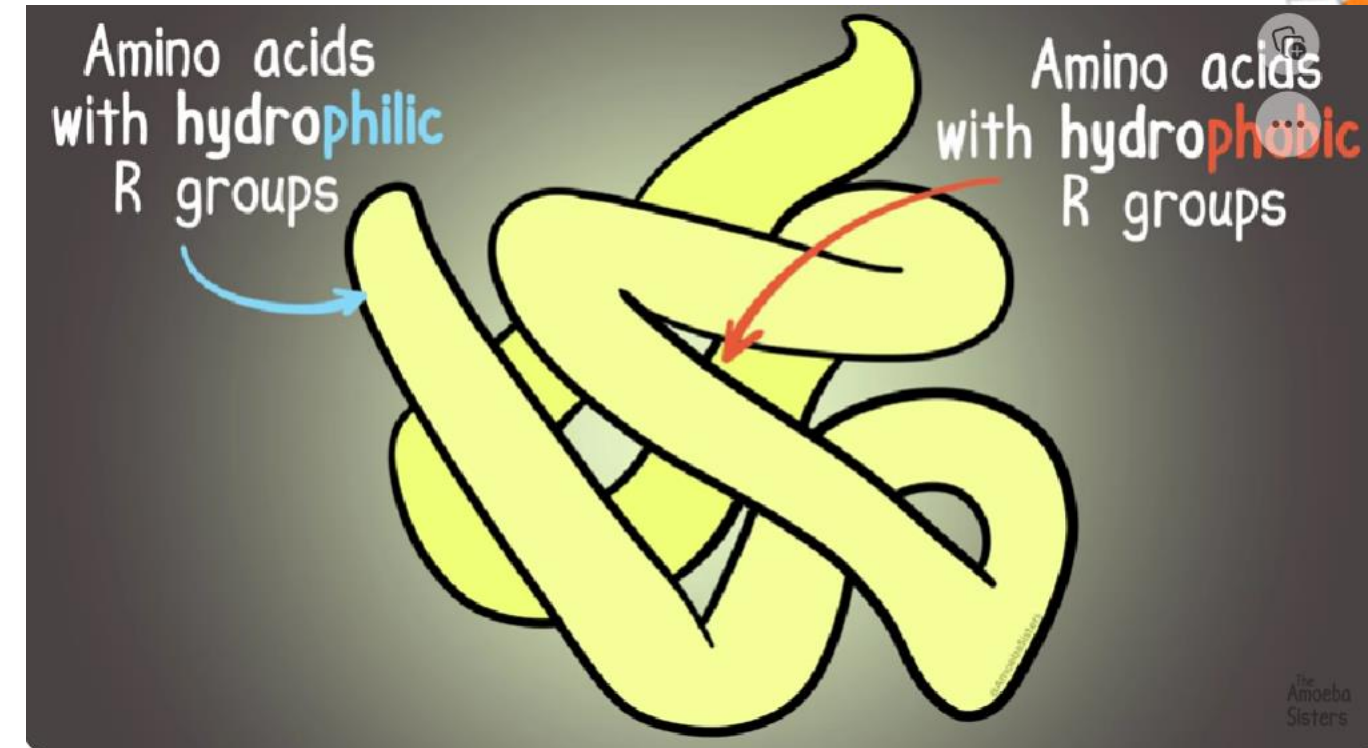
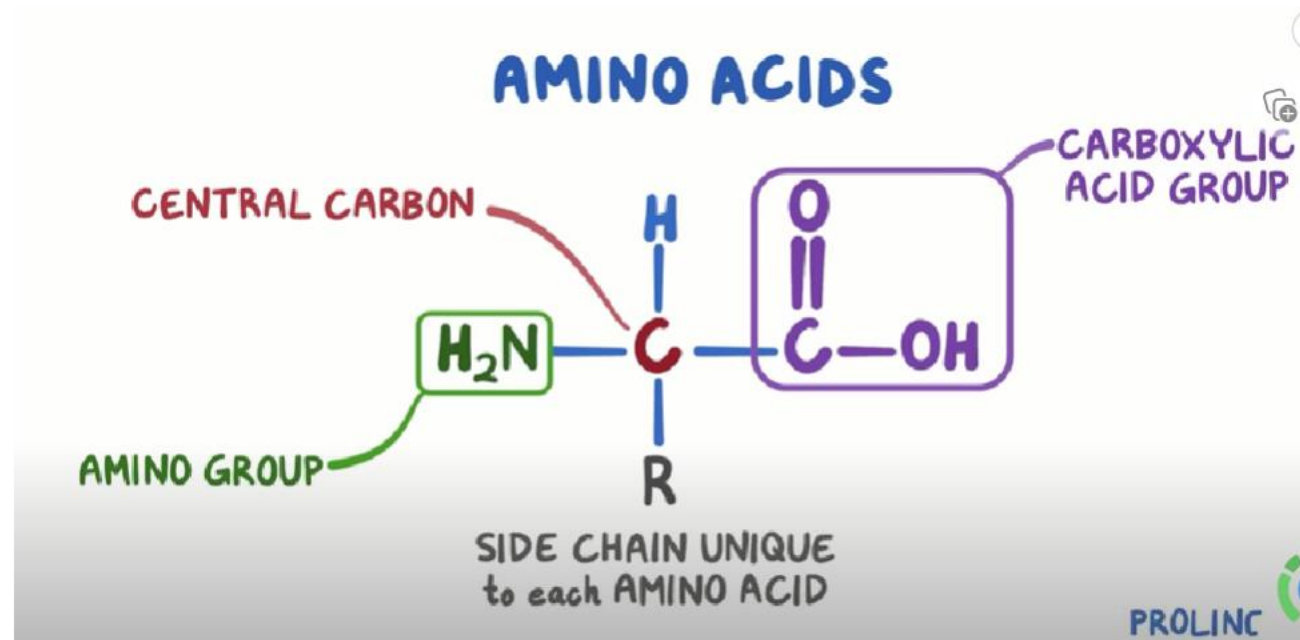


Secondary structure

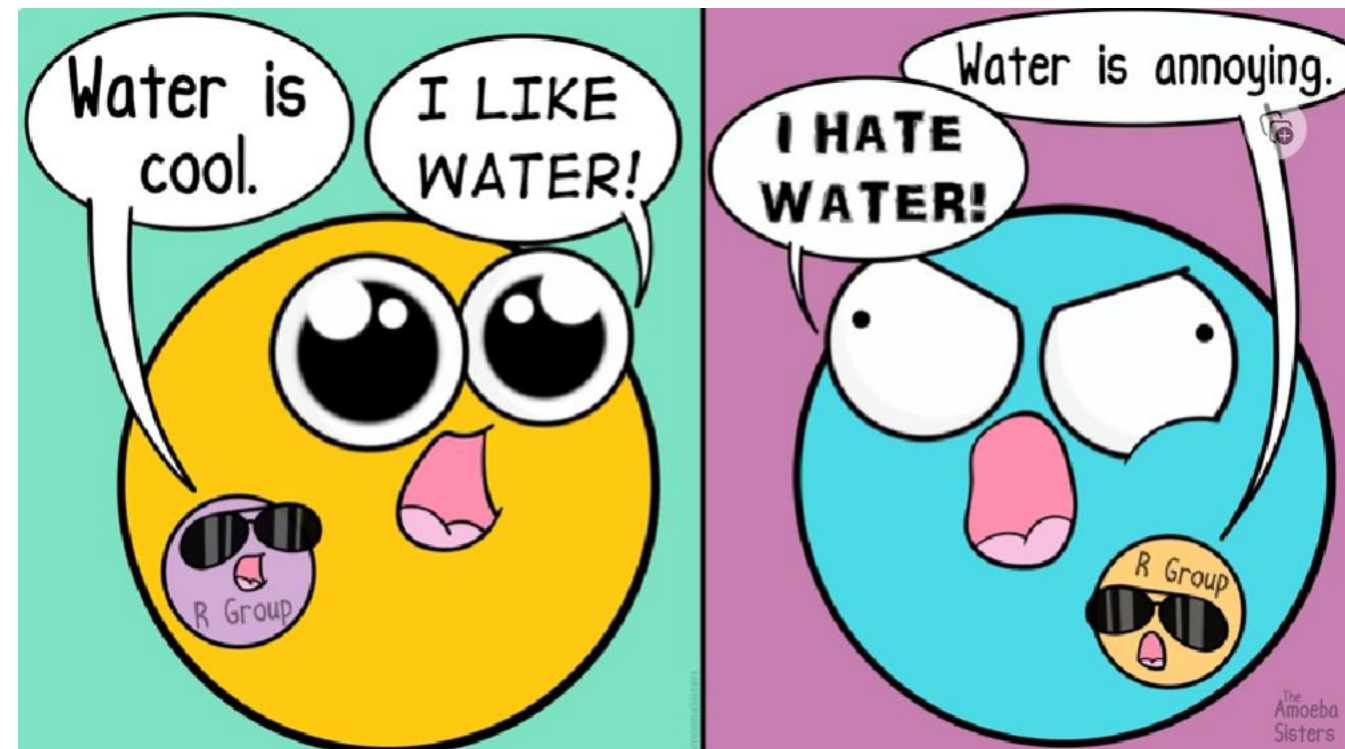




Tertiary Structure

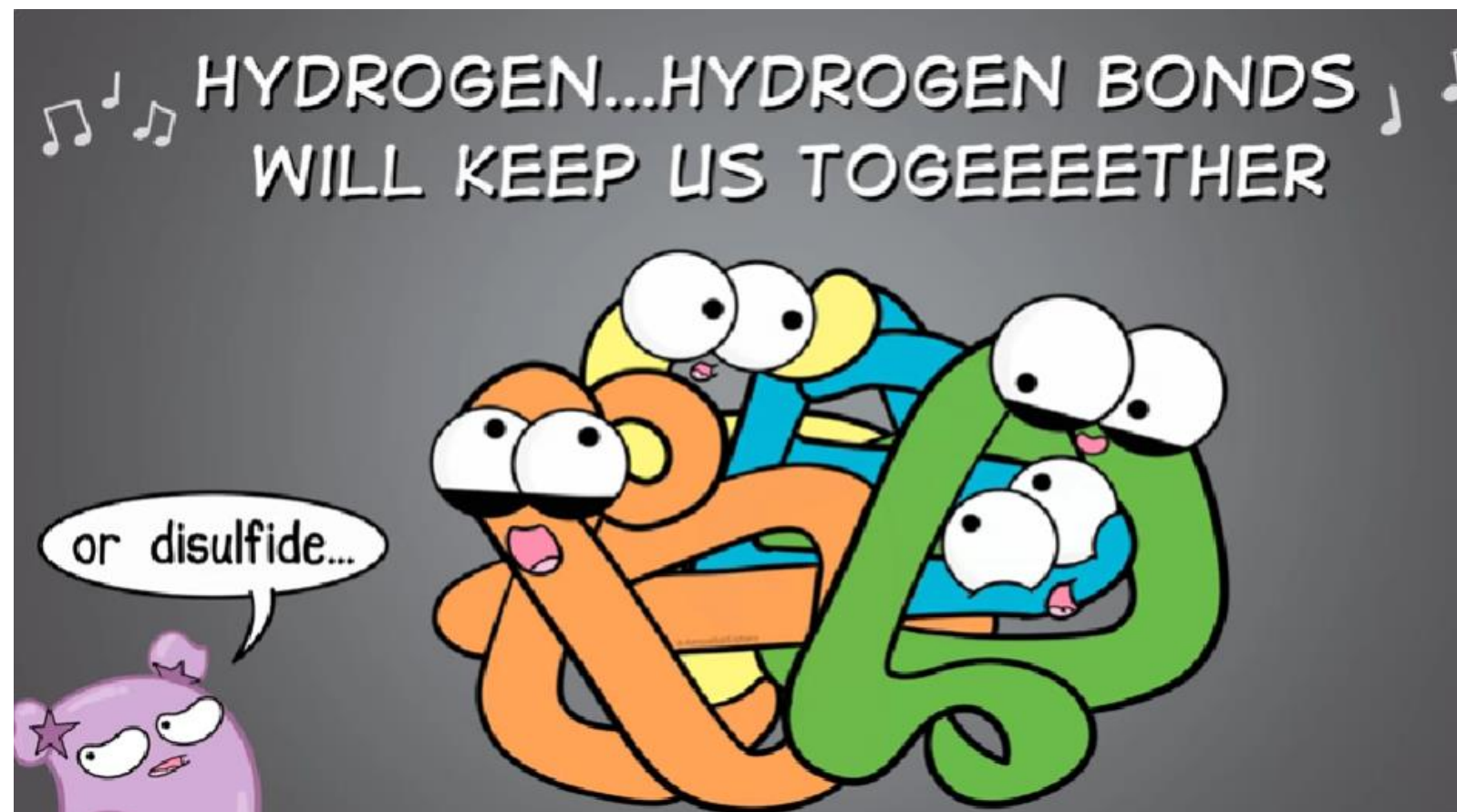


Other Bonds:
Disulfide bond
Van der Waals Bond
Hydrogen Bond
Ionic Bond



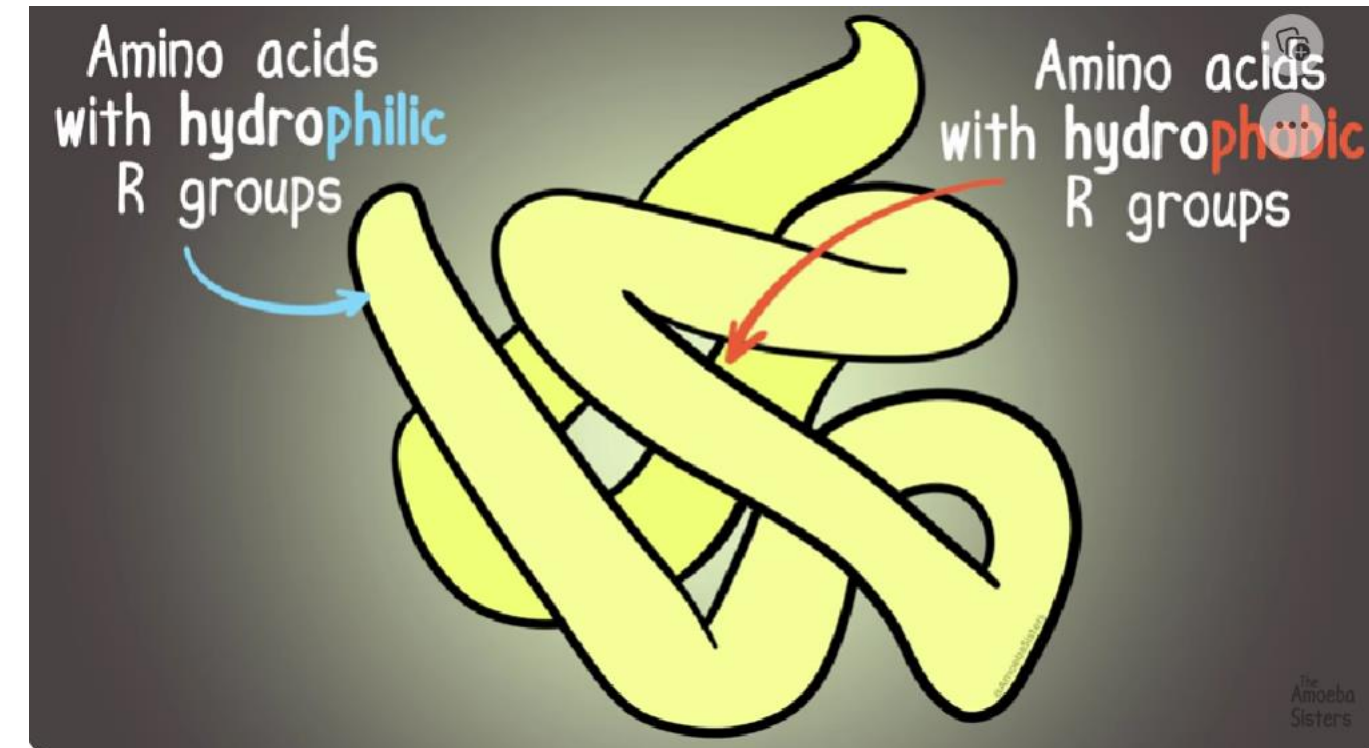
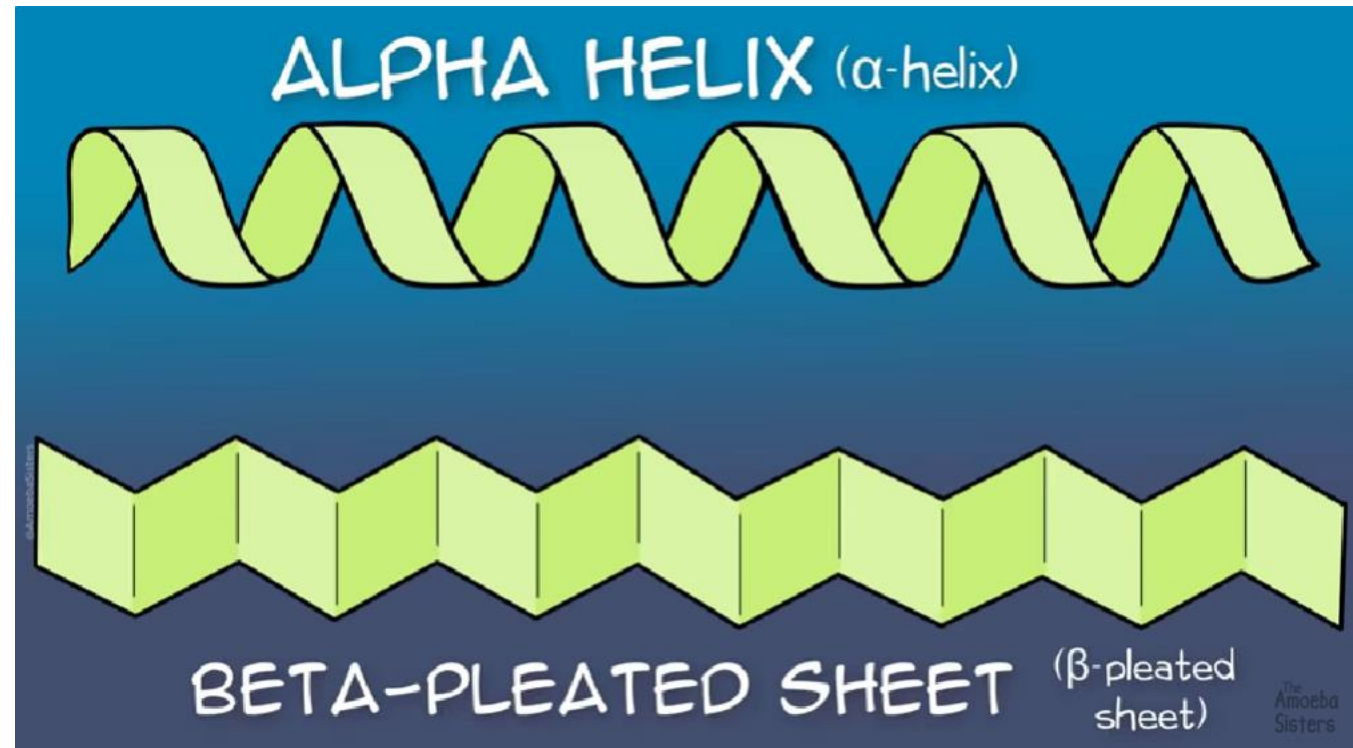


Quaternary Structure





ACTIVITY





THANK YOU