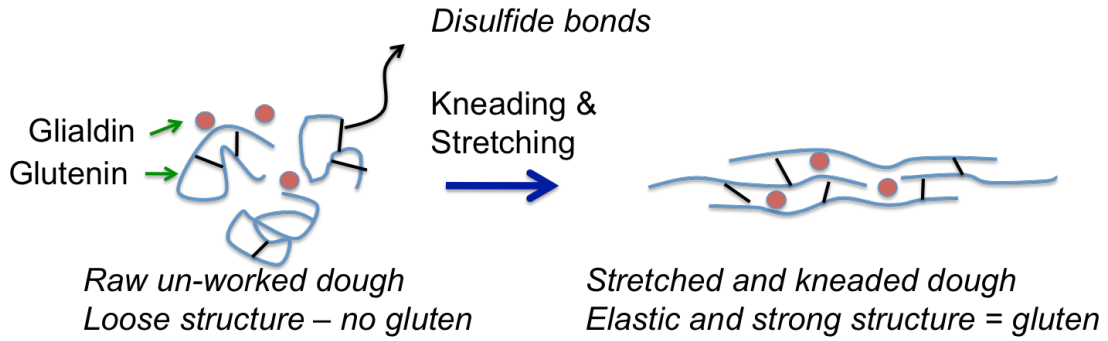


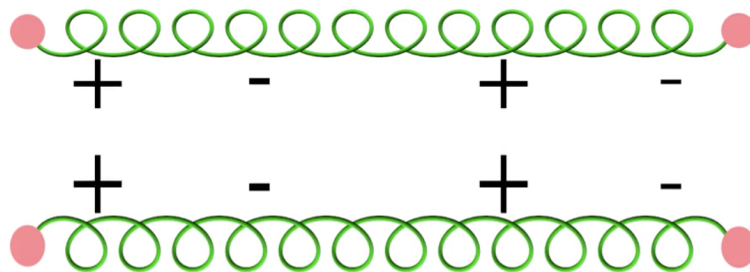
Looking at gluten



Looking at gluten



Some side chains on the protein chain can have charges.
Causes chains to **repel** and want to spread apart.



Looking at gluten

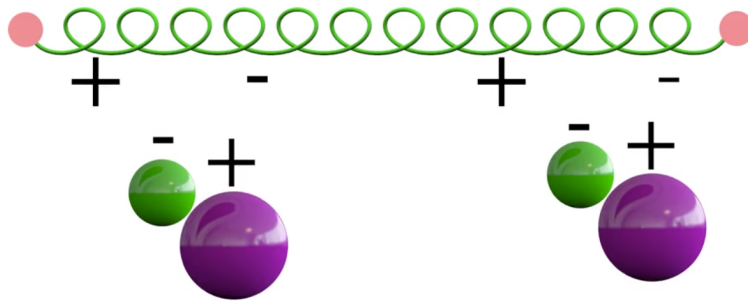


Salt is composed of:

- positive sodium ions
- negative chloride ions



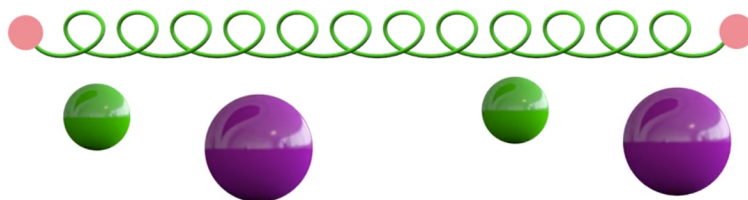
these charges are going to be attracted to the charged amino acids.



Looking at gluten



The charged amino acids on the glutenin molecules are being **neutralized**.

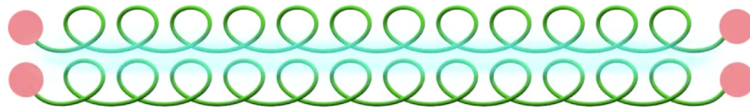


Looking at gluten



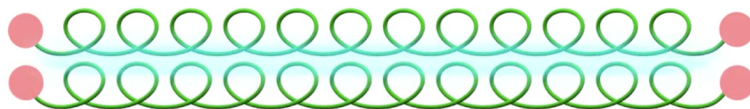
As you knead the dough, the glutenin molecules stack up much closer to each other

- because there are not the charged amino acids that make them repel each other



- unfolds, straightens and aligns strands

Looking at gluten



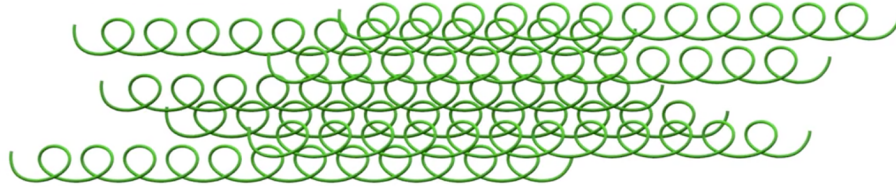
Held together through **hydrophobic interactions**

- allows strands to slide across each other

What does this mean is a necessary ingredient?

water!

Looking at gluten



To make dough stronger:

1. Add salt
2. Use High-Protein Flour (more gluten)

To make dough weaker:

1. Add sugar (inhibits gluten development)
2. Add fats/oils (weaken gluten bonding)
3. Acidity in the dough (weakens network)