Source: [KBhBIO101Carbs]

1 | Structures of Carbohydrates

Each carbohydrate could be a monomer (6 carbons, simple structure). A carbohydrate monomer (simple sugar) is called a "monosacharide"

- Two monomers could be chained to build a more complicated structure named Disachoride
- Monomers could be chained to build "polymers"
- Complicated polymers is what forms the energy builds of life
- The same atoms, with different bonds and hence a different species, result in "isomers"

General chemical formula: $C_nH_{2n}O$

- Monosacharride => a monomer of carbohydrates
- Disachoride => a dinomer (?) of carbohydrates
- Polysachride => a polymer of carbohydrates

1.1 | Basic Monomers

- Glucose: ring of 6 carbons
- Fructose: ring of 5 carbons

1.2 | The mer-library

Name	Note	Composition
Sucrose	Common Sugar	Disachoride: Glucose + Fructose
Lactose	The thing that's in milk	Disachoride: Glucose + Galactose
Cellose	We can't digest this, but plants use it	Polysacharides: beta-Glucose + beta-Glucose+ beta-beta-Glucose + … + Glucose
Glucose	Bulding block of sugar	Monomer
Galactose		Monomer
Fructose	Controvercial	Monomer

1.3 | Making and Breaking -mers

Creating a polymer ("dehydration")

- Take monomers
- Remove water molecules
- Fill the now-gaping hole with the next monomers

Breaking a polymer ("rehydration")

- Take polymers
- Add water
- Get Glucose
- Profit!

Hence, you get thirsty after around 45mins whenever you eat lots of sugar — ye gotta get that water to rehydrate and break down those polymers.

Bonds are called “glycocidic” bonds

1.4 | **Alpha vs Beta glucose**

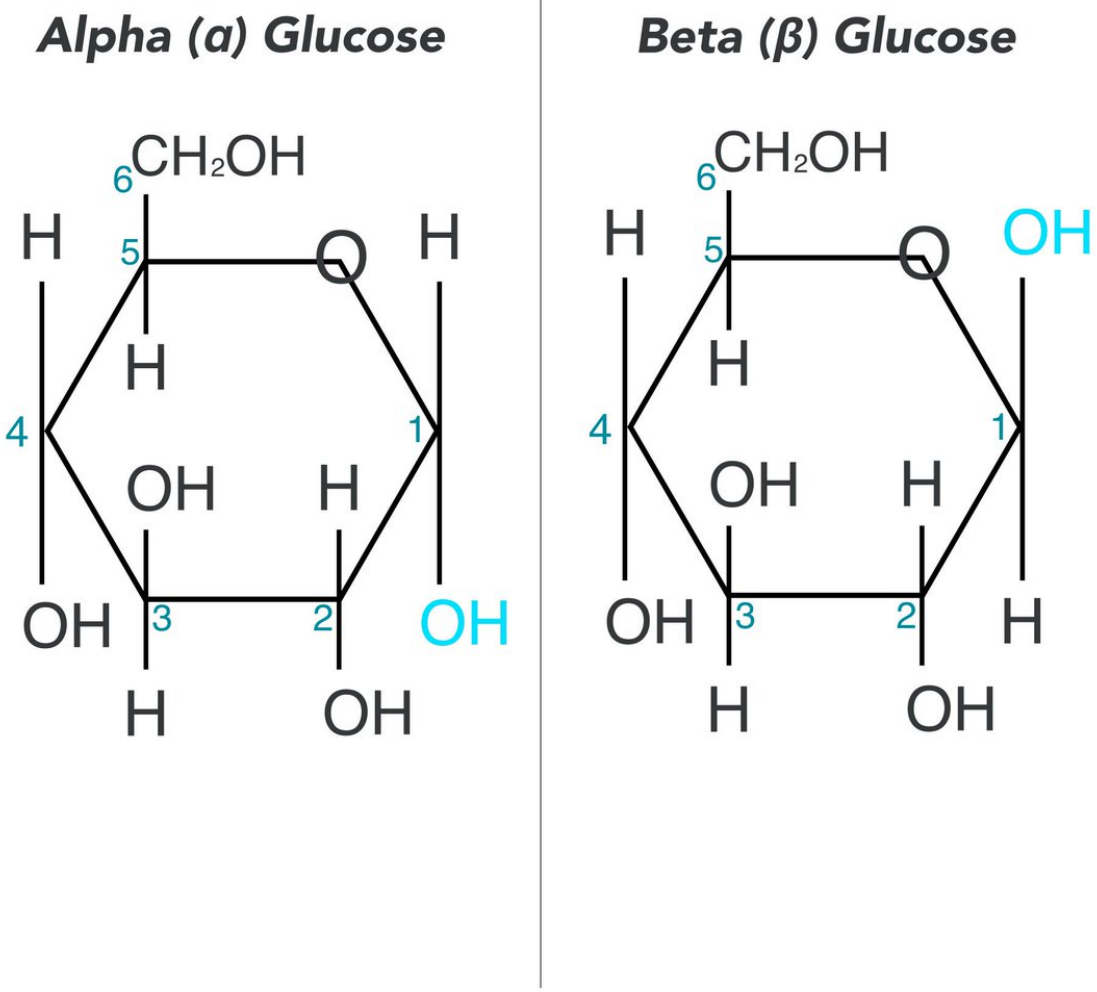

Figure 1: CrLHc0-WEAAe12C.jpg

And now, a note on energy.

[KBhBIO101Enthalpy]

You could add even more monosachrides/disacharides up to get polysacharides (starch, fiber, glycogen)

- We get energy for lots of glucose (the alpha variant of which's polysacharide is starch), but we can't get any from cellulose (whose polysacratide is fiber)
- We eat fiber to maintain gut health + poop goodly. Cellulose is hydrophillic, meaning that fiber makes your guts lubricated.
- Polysaccharides linked together by **glycosidic bonds**.

NOTE! **Whichever carbohydrates you are using, you get energy from breaking its bonds.**