

## Metabolism | Glycogenolysis

We're going to talk about glycogen and glycogenesis we're really depending upon that concept first okay so if you guys watch like the genesis you know that we basically synthesize the glycogen by the activity of glycogen synthase and the branching enzyme right well we're going to show you exactly how does a glycogen polymer is getting broken down into glucose. The next question to ask is why is this reaction occurring it's occurring because the blood glucose levels are low. Glucagon and Epinephrine and Norepinephrine are the ones we'll talk more about but again there is other enzymes that you should know. We have to go over how this process is occurring and that's what we're going to discuss here so now we have to get into how is this process occurring okay so if you guys remember we left off with this glycogen polymer. He's going to grab on to a phosphate group the other hand is going to hold onto this glycogen molecule. When he flings that phosphate at the glycogen molecules he's specifically flinging it in between this what is this bond here getting guys here I'll actually zoom in.

Glycogen phosphorylase can no longer go past that point so for glucose molecules away from this alpha 16 glycosidic bond he can not pass so so he can't add a phosphate into that bond right there but then he stops right there. What is this? This is glucose does he have a phosphate on him though no so what is this molecule here called? Look it's going to come out of this. This comes from this guy who has toenails that are like ruffled potato chips. If you can imagine here for every five of these glucose 1phosphate i produce one free glucose. Debranching enzyme cuts the alpha 14 glycosidic bond right there in the glucose. Glycogen phosphorylase transferring phosphates onto the one carbon of the glucose and forming glucose 1phosphate. Then what is he transfers those three groups of glucose onto a longer chain. Then he adds these three glucose molecules and adds them on so one two three and again here's my six carbon six carbon.

In this paragraph, the author explains that pyridoxal phosphate is a derivative of vitamin B6, and goes on to explain what happens during glycogenolysis. They then explain that glycogenolysis occurs within the kidneys of the gut, and that the muscles do not have this enzyme. The author then explains another way for the muscles to release glucose into the blood, which is an indirect mechanism.