

So before we get into the immune response, we're going to need to understand how Dengue actually infects the cell. And if we can roll this video, you will see how Dengue can actually approach a particular cell, this is as we saw very nicely from Joe's lectures what the Dengue virus virion looks like and the lipid bilayer underneath the proteins, the capsid and then within the capsid the RNA genome of the virus. And so this virion is floating in your blood stream and will approach a cell, often a myeloid cell which is a monocyte or a macrophage, a dendritic cell of the immune lineage and will attach to what is called the cognate receptor, and later we'll talk about a different type of receptor called the FC receptor. And what will happen is there will be an interaction and through what is called receptor mediated endocytosis, the virion will enter into this endosome, which is a membranous vesicle. What will happen is there are pumps that will pump in protons that will lower the pH and you can see this by a gradient of pink, and as the pH is lowered there is a movement of those envelope proteins which will actually completely transform the conformation which will allow it to actually fuse with the endosomal membrane; fuse it will the virion membrane and then allow the capsid and then within that that RNA genome to be delivered into the cytoplasm of the cell. And that will then establish infection.