In myasthenia gravis the situation is the same autoreactive P cells produce antibody against the postsynaptic receptor that leads to abnormalities in the neuromuscular junction leading to severe muscle pain and inflammation so all these things tells us that when immune system turn their face against us and become rogue the situation could be detrimental there should be some safeguard mechanism which can protect our body and ensures that our body is protected from this kind of situation so two questions are crucial to understand first where does these autoreactive immune cells come from and is there any safeguard mechanism present in our body which can prevent the production of these autoreactive cells it turns out there is a mechanism called immune tolerance which works like a safeguard mechanism to prevent the production of these autoreactive cell thus protecting our body from the harmful effect of these autoreactive cells and in this video we'll talk about the immune tolerance immune tolerance could work in two different levels like the central tolerance and the peripheral tolerance the mechanism is employed on T cell as well as B cell and we will learn about both and at least have a bird's eye view about that let's talk about the B cell development first to understand the tolerance mechanism during B cell development lymphoid progenitor cell in subsequent step give rise to immature B cell and in this immature B cell you have the B cell receptor which can recognize antigens but if that if they recognize self antigens with very high affinity or shows very strong BCR signaling then body has to take a preventive measure because there are chances that this immature B cells which interact with very high affinity could become rogue in future and they would harm their own body so they could be killed by apoptotic mechanism by a programmed cell death or they could be suppressed or they could go to a hibernation by a mechanism known as energy where B cell receptors are down regulated and there is a third way where there is a the body gives chance to these immature B cell to re-edit their BCRs such that they no longer show high affinity to that self antigens and all these mechanisms ensure that autoreactive B cell production is prevented in the level of bone marrow and this mechanism is known as central tolerance mechanism just like we have seen central tolerance mechanism there is peripheral tolerance mechanism which takes place in the lymph node which is a peripheral lymph organ in the peripheral lymph organ generally the immature B cells populate there they divide there and undergoes clonal expansion they undergo affinity maturation and class switching ultimately they undergo differentiation to produce plasma cells but sometimes things can go wrong and they create autoreactive plasma cells which secretes autoreactive antibodies against self antigens this situation is detrimental and this situation could lead to autoimmune disease so what is peripheral tolerance mechanism ensures that these autoreactive B cells or the plasma cells would die via apoptosis and instead of undergoing proliferation they undergo clonal energy where they hibernate and they don't react with other antigens so these mechanism ensures that at periphery tolerance is established this leads to central and peripheral tolerance of the B cell in case of T cell the situation is the same T cell development is very stringent which occurs in the thymus in the thymus when the T cell enters by high endothelial venue they reach the thymal subcapsular region which is a peripheral region of the thymus from there they descend they increase in number by rapidly dividing they descend down to the cortex and they interact with thymal epithelial cell thymic epithelial cells and that they learn many things from them and they undergo several screening rounds they move to corticomedullary junction where they encounter again some other thymic

epithelial cells and eventually they move to medulla and when their training is over they leave the thymus but during this training which