EMG Controlled Bionic Hand

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The purpose of this project was to develop a bionic hand that can use surface EMG as an input in order to understand what the user wants to do with the hand while also being at a low cost. Lots of research has gone into bionics and robotics so that means that there are other bionic hands out there. The most sophisticated hand was developed by Johns Hopkins University. However this hand does have its drawback just as any technology does. First of all, it is a multi-million dollar hand and arm which insurance will not cover. The arm also needs to have a bracket surgically implanted into the bone. Electrode to monitor the muscles also need to be embedded into the muscle via surgery. This may be alright for adults but this arm would be practically impossible to implement for adolescents. These young people still have growing bones so the hand would not be able to be proportional to the body and the surgery may cause growth defects because the implanted bracket may stunt the growth of the bone. The purpose of this project would be to abolish these drawbacks but still keep the advantages. Not only can a bionic hand be what the human needs but it can be much more. It can have capabilities that you normally wouldn't have such as flashlights, charging and internet capabilities. The possibilities are endless.

Awards Won: