

Re-Life Socks

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Research problem: Diabetic foot: It is a foot of diabetic. In 2014 there was 422,000,000 people diabetic. Diabetic foot is one of the most common complications of diabetes. It is leading to weak immunity in it, dry, high temperature of it, loss sensation in it, and non-healing of wounds, eventually, this leads to tissue damage that causes the amputation. Every 30 seconds in the world, a limb is amputated because of diabetes, and 70% of cases of amputation around the world are caused by diabetes. Worse still, half of diabetics who undergo amputation do not live more than 3 years, and about two-thirds do not complete 5 years. Method: I putted the main functions that must be provided in the project to reduce the causes of amputation (adjustment of foot moisture and heat, full sterilization of foot, absorption of shocks affecting the foot during daily life, prevention of penetration of small things to the foot, sensation of foot pressure, and blood delivery) and then studied how these functions will be available in sock by the electronic systems (spraying system, sensor system and air suction system). And to know the mechanism of the socks work I designed it and identified the pieces to be used In addition to drawing circuits and writing the code for it, and I started in making the prototype of the socks, to be able to try it on patients. Results: The sock have proven to be effective in short time in all of the foot. The systems also proved her ability to help other groups such as athletes and on the elderly and who suffer from atherosclerosis in the feet or Clots in it.

Awards Won:

Qatar Foundation, Research & Development: Award of \$1,000