Test Yourself by Yourself

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Breast cancer ranks first among the most common types of cancer globally, regionally and locally, as early detection of breast cancer increases the cure and survival rate, increases treatment options and its effectiveness, and more than 60% of breast cancer cases are diagnosed in the late stages. Doctors lose control of the disease and limit treatment options. A medical tool was made that enables the woman to examine herself by herself, a “breast tumor examination” by herself, by placing a small device on the breast that works with a direct pressure mechanism to feel the presence of an abnormal solid lump in the breast, as the pressure continues until it reaches a specific area, and alerts if there is an obstacle in front of him at an "abnormal or solid mass" and compares the abnormal situation with the normal one. Tumor detection is performed using this device by relying on the pressure difference between healthy tissues (without tumors) and abnormal tissues (containing tumors), as it gives a warning signal in the event of a pressure difference after each test, as there are 5 pressure resistance values (6, 5, 4, 3, 2) The values (2, 3, 5, 6) did not lead to accurate results in detecting small blocks. For positive results, the data indicates that a compression force of 4 is most appropriate for detecting the smallest breast mass of 3 mm maximum. The study indicated that the device was developed to become more accurate in detecting small masses, and it represents a tool that enables every woman to examine herself without external interference at any time and place and helps special cases such as pregnant women who cannot be exposed to any harmful radiation during pregnancy, The project does not use any Thermal or laser sensors that affect breast health.

Awards Won:

Third Award of $1,000

International Council on Systems Engineering - INCOSE: INCOSE Bill Ewald Socio-Technical Systems Engineering Award of $1000, a 1-year free student membership to INCOSE, and free virtual admission to the 2022 International Symposium of the INCOSE

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