Development of a method to calculate muscle resistivity of baseball pitchers

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Baseball is a famous game in category of bat and ball section among 18 players. Pitcher is one of the most important players in baseball who throws the ball to the catcher from his mound. Pitchers have to improve their physical qualities such as strength, endurance, speed, coordination and muscle resistivity by doing exercise in order to perform well. Objective of this study is to develop and test a machine which can assess the muscle resistivity. The developed machine has three parts; fabric sensor, Arduino-based circuit and software. Fabric sensor is placed on the throwing hand and the circuit is also secured close to the sensor. When the player starts the machine, a beep sound is heard. Then the player must do the movement. Resistivity values will be counted by the fabric sensor. Counted data is transferred to the software through the Bluetooth module located in the circuit. Software is installed on a phone or a computer. Researcher can obtain a draft report of resistivity capacity of movement. Muscle resistivity of twelve baseball players of the Sabaragamuwa University was measured to verify the accuracy of the measurement output. Recordings were obtained twice from each player and the readings were compared. Paired t-test indicate that there is no significant difference between the two readings obtained from each player verifying accurate measurements of muscle resistivity. The study concluded that reproducible muscle resistivity measurements can be obtained using the newly developed, low cost machine.

Keywords*: baseball, pitcher, muscle resistivity and fabric sensor

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