

ABSTRACT

Cycling is a sport that is currently popular with people, sometimes causing injury to the part of the body that sits in the saddle (perineum). Therefore, we need a system that can scan the perineal pressure against the saddle and monitor fatigue based on this pressure change.

In this study, a system was designed that can detect the magnitude of the perineal force on the saddle using the FSR402 force sensor. There are five sensors, two sensors on the left and right right in the sitting bone area, one each on the top and bottom. One sensor is located in the center of the top right in the scrotal area when cycling. The pressure value is obtained from the force value divided by the active area of the sensor.

The test is carried out by comparing the pressure value from three to four times the test against the pressure limit value taken from the two tests. Based on this comparison, sensor values that exceed the test limit are sensor 2 (776 KPa) and sensor 4 (681 KPa) for subject 1, sensor 1 (1181 KPa), sensor 2 (887 KPa) and sensor 4 (1148 KPa) for subject 2, sensor 2 (971 KPa) and sensor 4 (953 KPa) for subject 3, sensor 4 (651 KPa) and sensor 5 (1645 KPa) for subject 4, sensor 1 (857 KPa), sensor 2 (920 KPa) and sensor 4 (687 KPa) for subject 5, sensor 2 (1184 KPa), sensor 3 (1358 KPa), sensor 4 (749 KPa) and sensor 5 (1556 KPa) for subject 6, sensor 1 (1018 KPa), sensor 2 (1158 KPa), sensor 3 (691 KPa) and sensor 5 (1893 KPa). Each subject experienced fatigue (cramps) after driving for 13 minutes 30 seconds to 17 minutes 45 seconds. Body weight is one of the factors that causes greater pressure on the perineum so that riders experience fatigue more quickly.

Keywords : Pressure Scanning, Pressure, Saddle, Visualization, Perineum