

運用3D人體掃描儀評估人體皮表面積估算公式之誤差

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摘要

Human body surface area (BSA) is often used as a standardization parameter in medicine, physiology and industrial hygiene. The BSA formula of DuBois and DuBois has been applied widely and taken as a standard formula since 1916. However, this formula has some problems that attracted other researchers to revise it. This study aims at investigating the DuBois and DuBois' formula using 3D laser scanning BSA data. Firstly, 97 samples are used to derive a new BSA formula. Secondly, another 20 samples are used to test the formulae of this study, DuBois and DuBois, and other 6 famous formulae. The results indicated that except for the formula of this study, the formula of DuBois and DuBois was the best according to the mean errors (1.32%) and maximum errors (3.36%). Although the errors of the formula of this study were smaller (mean 0.94%, maximum 2.59%), the formula of DuBois and DuBois is easier remembering and has been widely applied; therefore, we still suggest the application of the formula of DuBois and DuBois to estimate BSA.

關鍵字：Formula of DuBois and DuBois, human body surface area, 3D body scan, anthropometry