



Predictive equation for the unsupported upper limb exercise test (UULEX) in healthy adults.

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European Respiratory Journal 2018 52: PA1433; DOI: 10.1183/13993003.congress-2018.PA1433

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Abstract

The Unsupported Upper Limb Exercise Test (UULEX) has been increasingly used to assess upper limb exercise capacity. However, contrary to lower limb exercise tests, predictive equations for the UULEX have never been established. This study developed a reference equation to predict UULEX capacity in healthy adults.

556 healthy volunteers (43% male; 53.6±24.6yrs) were enrolled. Gender, age, smoking habits, physical activity (PA), using the brief questionnaire of PA, and body mass index were collected. Participants performed 2 UULEX tests and the best performance was kept for analysis. Data from 389 participants was used in a stepwise multiple regression to produce a predictive equation, which was then validated in 167 participants using Pearson correlations.

Age, gender and PA were independent predictors of the UULEX test, explaining 58% ($p < 0.001$) of the variability. The derived reference equation was: $15.753 - (0.135 * \text{age}) + (2.428 * \text{gender}) + (0.274 * \text{PA})$, where males=1; females=0. A significant and high correlation ($r = 0.715$; $p < 0.001$) was found between the values predicted by the developed equation and participants' real performance (Fig.1).

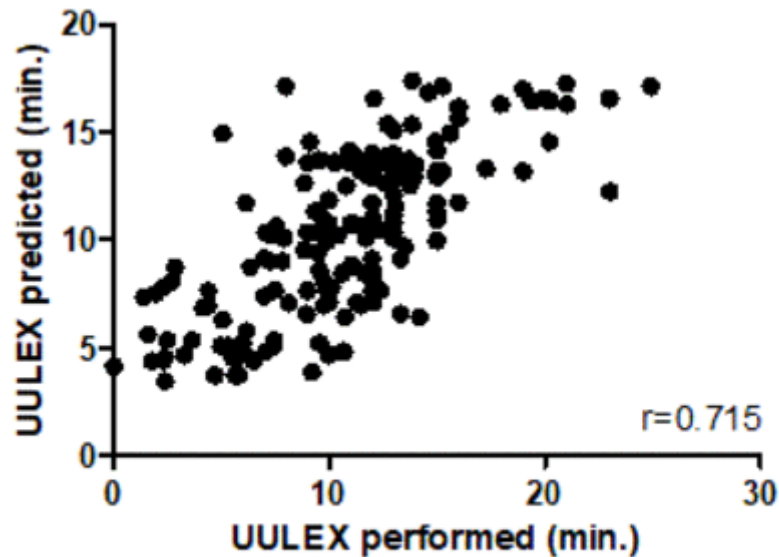


Fig. 1 - Correlation between the actual and predicted values of the UULEX

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This equation is a valuable tool to interpret UULEX obtained from people with or without a health condition. Future studies including measures of the upper limb, such as arm strength and/or length, might aid increasing the variability explained by the predictive equation proposed.

Footnotes

Cite this article as: European Respiratory Journal 2018 52: Suppl. 62, PA1433.

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