

1RM bench press performance: a new method of evaluation in recreational male and female

Antonino Bianco^{1,2}, Davide Filingeri³, Marianna Bellafiore^{1,2}, Giuseppe Battaglia^{1,2}, Antonio Paoli⁴ and Antonio Palma^{1,2}

¹ Sport and Exercise Sciences Research Unit, University of Palermo, Italy

² Regional Sport School of CONI Sicilia, CONI Sicilia, Italy

³ Environmental Ergonomics Research Centre, Loughborough University, UK

⁴ Department of Biomedical Sciences, Physiological Laboratory, University of Padova, Italy

It is widely recognised that the 1 RM bench press test is the most valid in evaluating the upper body maximal strength in both athletes and sedentary individuals. Various approaches are used for its evaluation, both through prediction equations or practical attempts. The aim of this study was to assess a new method to perform the bench press test combining previously validated theoretical and practical procedures. Fifteen participants (8 male Age=23.5±2.3 FM%=17.3±9.2 and 7 female Age=27.9±10 FM%=25.6±6.9) with no specific training history were tested. Physiological parameters were recorded before, during and after each test. Participants had to perform a set of repetitions to fatigue (RTF) with a workload corresponding to 1/3 of their body mass (BM) for a maximum of 25 repetitions. After a 5-minute rest, a set of RTF was performed with 1/2 of BM. The number of repetitions performed in this set was then used to predict the theoretical 1RM using the Mayhew's equation. At this point participants were invited to attempt the 1 RM bench press test with the predicted workload, for a maximum of 3 attempts. Rate of perceived exertion (RPE) was assessed at the end each test. The results of the set RTF performed with 1/2 BM was significantly ($p<0.01$) gender related, with higher performance values for males (25±6.6 repetitions) than for females (11±10.6 repetitions). Mayhew's equation predicated the 1RM performance with an accuracy of 1.1% in females. However, this was underestimated (-15.5%) in males. No significant differences were found on Blood Lactate and RPE post 1RM performance. Oxygen uptake and Heart rate varied significantly during the set RTF performed with 1/2 BM. The new method we propose seems to be highly accurate, effective and not time consuming when estimating 1RM bench press performance, particularly in female individuals. These preliminary findings will be useful in the design of a validation study with a larger cohort of participants of both sex.

References

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Key words

1RM Bench press test, Performance, Predictive Formulas, Sedentary People.