RESULTS

A significant regression equation was found for KEPT ($F(1,47) = 6.933, p = 0.011$), with a $R^2$ of 0.129, and QCSA ($F(1,47) = 4.797, p = 0.034$), with a $R^2$ of 0.093. Subjects’ predicted KEPT (Figure 5) and QCSA (Figure 6) is equal to 112.506 + 0.976 (PD) N·m and 46.531 + 0.210 (PD) cm², respectfully, when PD is measured in grams.

Subjects’ KEPT and QCSA increased 0.976 and 0.093 for each gram of PD.

INTRODUCTION

Physical dysfunction can be linked to sarcopenia and dynapenia, the gradual and progressive loss of muscle mass, muscle strength and endurance with aging. To mitigate these losses, proper nutrition and adequate protein intake is essential.

The trend to consume more protein at dinner is an important dietary concept to address given 25-30g of high quality protein at each meal has been shown to maximize muscle protein synthesis and help with the age-related declines in muscle mass, strength, and functional ability.

METHODS

Forty-nine sedentary males ($n = 23$; age = 42.22 ± 15.56 years) and females ($n = 26$; age = 41.38 ± 17.80 years) completed a KEPT test on a Biodex Pro4 System dynamometer (Figure 2) and serial axial plane MRI scans on a 3.0T Siemens Skyra whole body scanner (Figure 3).

KEPT was assessed at an angular velocity of 60 degrees/second, with a range of motion of 95° flexion and 20° extension, for three repetitions. Licensed MRI technologists, under researcher supervision, conducted MRI scans. Participants laid supine with heels and knees elevated to minimize muscle distortion. QCSA was obtained from the analysis of MRI scans using the free-hand tool in Image J (version 1.42) (Figure 4).

Stepwise regression was used to predict the dependent variables of KEPT and QCSA from four independent variables: Protein at breakfast (PB), protein at lunch (PL), protein at dinner (PD), and total daily protein (PT).

CONCLUSIONS

PD was a significant predictor of KEPT and QCSA in sedentary adults. The coefficient of determination indicates that 13% of KEPT and 10% of QCSA is predicted by PD. PD was large enough to be a predicting variable and demonstrated the trend of highest consumption among participants.

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