Beat it: Diabetes lifestyle and physical activity program - The effects and affordability of a 12-week community based, physical activity program for people with or at risk of diabetes

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Beat It: Diabetes Lifestyle and Physical Activity program - The effects and affordability of a 12-week community based, physical activity program for people with or at risk of diabetes.

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Introduction: With diabetes a growing problem, Diabetes Australia-NSW piloted 'Beat It' as a 'real world solution' using latest research, whilst addressing sustainability and affordability for people with or at risk of diabetes in a community based setting.

Method: Four pilot sites were recruited and eight trainers trained to deliver the program. 56 participants (averaging: 65yrs, 90.8kg, BMI: 32.78 and waist circumference: 108cm) attended twice-weekly exercise sessions (combination aerobic and resistance) over 12 weeks. Pre and post program fitness testing included anthropometric and physiological measures, 6MWT, Sit to stand, medicine ball throw, staged abdominal test, grip strength, sit-and-reach and one legged time stance. Physical activity levels (IPAQ), general health and wellbeing (SF-36), and generalised anxiety and depression (HADS) were also measured at pre and post. Cost/benefit and affordability evaluated through a post program questionnaire. Medical clearance and written informed consent was received from all subjects in accordance with Ethics approval through the University of Wollongong.

Results: 65% of participants initially tested completed the program. Statistically significant improvements in sit-to-stand, upper limb strength, grip strength, 6MWT, post exercise Diastolic BP, flexibility and balance were seen. Statistically significant improvements were also observed in health and wellbeing, and physical activity levels. Improvements in weight, waist circumference, BMI and pre and post exercise systolic blood pressure were also observed, however not statistically significant.

Participants rated affordability positively at 7.1/10 and enjoyment a positive 9/10.

Conclusion: The Beat It pilot program successfully demonstrated a community based physical activity program for people with diabetes can be safe, effective, and affordable.

Acute antioxidant supplementation improves fatigue resistance during a single bout of high volume free weight training.

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Introduction: Adaptations in muscular strength with resistance training (RT) are typically associated with cumulative exposure to forceful repetitive muscle contractions. Reactive oxygen species (ROS) produced during RT have been implicated in evoking skeletal muscular fatigue. Oligomeric proanthocyanidins (OPC) are a potent natural antioxidant extract which have been shown to improve endurance performance. The purpose of this investigation was to determine the effects of a new antioxidant supplement (Lactaway©) containing OPC on muscle force generating capacity during RT in healthy moderately trained males.

Methods: Fifteen trained males (mean age 23±4 yrs; body mass 86±8 kg) participated in a double blind placebo controlled experiment. Subjects were assessed for three repetition maximum (3RM) strength and this was extrapolated to determine a 1RM. After a familiarisation session the subjects performed two test sessions consuming either a placebo (P) or supplement (S) four hours before exercise. Each subject performed six sets of ten repetitions, set at a 12 RM load. Power output (PO) (W) and velocity (m·s⁻¹) during the training was measured through a GymAware portable measuring device (Kinetic Performance technology, Australia).

Results: Accumulated PO was significantly (p<0.01) greater during the S trial compared to the P (6740±5.9 vs. 6493 ± 17.1 W). PO was also significantly (p<0.01) higher during each set in S compared to P. Velocity was significantly
Addressing the shortage of foot soldiers in the upward battle against diabetes.

Diabetes Australia-NSW 12-week community-based, user pays, physical activity and lifestyle program.

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Introduction: Diabetes is a fast growing problem in Australia with 1 in 4 adults with or at high risk. It is well established that exercise is beneficial not only in the management of diabetes but also in prevention. Diabetes Australia-NSW have designed the Beat It program to increase awareness and knowledge surrounding exercise prescription for diabetes, including the complications, common medications and training considerations associated.

Diabetes Australia-NSW aimed to increase access to a suitable and safe exercise environment in an attractive and sustainable way.

People suffering from diabetes complications should be seeking the expertise of an Accredited Exercise Physiologist. With only 2500 AEPs across Australia and a quarter of the Australian adult population with or at risk of diabetes, the large network of personal trainers and exercise scientists across Australia can be invaluable for those who are free of complications.

What is Beat It? Beat It is a physical activity and lifestyle program utilizing a progressive combination of aerobic and resistance training, in an effort to provide an attractive, safe and affordable exercise program for people with or at risk of developing diabetes.

Beat It aims to increase awareness of Personal trainers and Exercise Physiologists to the needs, concerns and complications of the large and ever-expanding population.

Methods: Diabetes Australia-NSW piloted the Beat It program recruiting 56 participants in 4 locations (6 days, 90 mins, 22.75 hrs and waist circumference 105cm). Initial anthropometric, physical and physiological measures were taken before and after the 12 week intervention.

Results: Statistically significant improvements were observed in many categories of the Short Form 36 (SF 36) physical functioning questionnaire as well as in "time spent being physically active" as measured via the International Physical Activity questionnaire. Improvement in physical parameters including: 5K to stand, grip strength, 6 minute walk, post-exercise diastolic blood pressure, flexibility and balance were also seen, as well as a trend towards 0.4% absolute reduction in HbA1c over the 12 weeks.

Participants rated their enjoyment of the program as 8.64/10, and its affordability as 7.17/10 with 70% of participants happy with the pricing and a further 23% of participants responding they would expect to pay more for participation in such a program.

Conclusion: The Beat It pilot project has successfully demonstrated that a fee for service community based physical activity intervention designed for people with or at risk of diabetes can be safe, effective, affordable, and sustainable. Diabetes Australia-NSW has demonstrated through Beat It is a successful model for implementing the best evidenced based, best practice research into a real world setting.

The results we have observed are very encouraging and we look forward to opening up pathways between GPs, Accredited Exercise Physiologists and fitness professionals to achieve these outcomes for more and more people with or at risk of diabetes and chronic disease.

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References:
4. Exercise and Sport Science Australia.

For more resources or information on exercise, physical activity and diabetes contact Diabetes Australia-NSW 1800 736 568.