Mirage lipidomics paper

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# Methods

Study duration: “6 months, two sides: University of Pittsburgh and the AdventHealth Translational Research Institute (AH TRI)”

Participants: “68 subjects (60–80 years of age), physically inactive men and women with obesity.”

84 participated, 68 completed, 33 who completed pre and post selected for: 12 in diet weight loss, 9 in control group, 12 in diet and exercise group.

**Selected based on?**

Design: Randomized 1:1:1 into control (health education), calorie restriction weight loss, and weight loses and exercise.

ClinicalTrials.gov identifier: NCT02230839

Inclusion and exclusion criteria:

“Participants 60–80 years of age were included if they met the following criteria: body mass index (BMI) ≥ 30 kg/m2; stable weight over the last 6 months; physically inactive (≤1 continuous exercise session/week); nonsmoking; resting systolic blood pressure (SBP) < 150 mmHg; and diastolic blood pressure (DBP) < 95 mmHg. Exclusion criteria included clinically significant cardiovascular disease including history of myocardial infarction within the past year; peripheral vascular disease; hepatic, renal, muscular/neuro- muscular, or active hematologic/oncologic disease; the presence of bruits in the lower extremities; history of pulmonary emboli; per- ipheral neuropathy; anemia; and substance abuse. Medication ex- clusions included the following: anticoagulants, glucocorticoids, thiazolidinediones, or insulin.”

Groups:

Control: General biweekly education on weight loss and type 2 diabetes.

WL-group: 10% weight lose over study with 500-1000 kcal deficit daily. Diet was <30% fat. NB. isocaloric intake last two weeks of study. Dietitian supervised.

WLEX-group: Aerobic exercise 4-5 times per week, 45 min sessions. Intensity was at 50-80% of HRreserve. After 8 weeks also resistance training twice weekly of larger muscle groups. All indoor training supervised, outdoor training (walking) unsupervised.

Measurements:

Insulin sensitivity: hyperinsulinemic-euglycemic clamp. **NB 36 to 48 hrs after last exercise bout** [too short after?]**.** “4 hours at 40 mU/m2 min”

Glucose isotope infusion with [6,6-2H2]-glucose measured from arterialized blood by gas chromatography–mass spectrometry. Calculated by non-steady state equations.

“Hepatic insulin sensitivity was assessed as the suppression of EGP during steady state using the glucose enrichment data.”

Waist circumference was measured using the Gulick II tape measure.

“Fat mass (kg) and fat-free mass (FFM; kg) were determined by dual-energy X-ray absorpti- ometry using a GE Lunar (GE Healthcare, UK).”

Abdominal and thigh AT and muscle volume were measured by MRI at baseline and following treatment on a 3-Tesla magnet using multislice protocols (Philips Acheiva, Cambridge, MA) at AH TRI.

# Introduction

Intermuscular adipose tissue increases with age causes (check) lipo toxicity and decreased function.