Supplementary Table 1: Baseline characteristics of cohort separated by study

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Study 1** | | **Study 2** | | **Study 3** | | **Study 4** | | **Study 5** | |
| **Variable** | **N** | **Mean ± SD** | **N** | **Mean ± SD** | **N** | **Mean ± SD** | **N** | **Mean ± SD** | **N** | **Mean ± SD** |
| ALM (kg) | 16 | 19.8 ± 2.3 | 21 | 19.8 ± 3.0 | 44 | 15.7 ± 3.4 | 3 | 13.2 ± 1.9 | 11 | 17.8 ± 2.4 |
| ALMBMI |  | 0.6 ± 0.1 | 21 | 0.6 ± 0.1 |  | 0.7 ± 0.1 | 3 | 0.7 ± 0.2 | 11 | 06. ± 0.1 |
| Adiponectin (μg/ml) | 16 | 13.1 ± 5.8 | 17 | 10.8 ± 8.6 | 44 | 17.7 ± 7.3 | 3 | 16.2 ± 5.2 | 11 | 6.6 ± 4.6 |
| Leptin (ng/ml) | 16 | 30.0 ± 18.9 | 19 | 40.4 ± 21.5 | 44 | 33.1 ± 26.1 | 3 | 19.9 ± 18.6 | 11 | 22.4 ± 12.7 |
| BMI (kg/m2) | 16 | 31.1 ± 4.3 | 21 | 35.2 ± 5.4 | 44 | 28.2 ± 5.2 | 3 | 23.8 ± 4.2 | 11 | 31.0 ± 3.9 |
| Trunk Fat (kg) | 16 | 19.0 ± 4.7 | 21 | 25.1 ± 6.9 | 44 | 16.1 ± 5.9 | 3 | 11.5 ± 5.0 | 11 | 19.7 ± 3.1 |
| IL6 (pg/ml)\* | 12 | 14.0 ± 4.3 | 17 | 18.0 ± 7.3 | 43 | 1.7 ± 1.4 | 3 | 1.1 ± 0.9 | 10 | 2.3 ± 12.7 |
| CRP (mg/L)\* | 16 | 5.3 ± 4.3 | 21 | 6.1 ± 6.5 | 44 | 2.7 ± 3.0 | 3 | 0.7 ± 0.9 | 11 | 1.0 ± 1.5 |
| Age (years) | 16 | 59.3 ± 5.1 | 21 | 58.0 ± 6.6 | 44 | 55.4 ± 7.0 | 3 | 51.0 ± 1.0 | 11 | 58.6 ± 8.2 |
| Postmenopausal | 16 |  | 21 |  |  |  |  |  | 11 |  |
| Menopausal |  |  |  |  | 44 |  | 3 |  |  |  |
| T2DM | 0 |  | 21 |  | 44 |  | 0 |  | 11 |  |

Serum was used for adiponectin, leptin, IL6 and CRP for all studies, except for Study 1 which used plasma for adiponectin, leptin and IL6.

Abbreviations: ALM, appendicular lean mass; ALMBMI, appendicular lean mass normalized to body mass index; BMI, body mass index; CRP, C-Reactive Protein; IL6, Interleukin-6; SD, standard deviation; T2DM, Type 2 Diabetes Mellitus.

Supplementary Table 2: Inclusion and exclusion criteria of each study

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| --- | --- | --- | --- | --- |
| **Study 1** | **Study 2** | **Study 3** | **Study 4** | **Study 5** |
| **Inclusion Criteria**  Metabolic Syndrome  Female  Postmenopausal  BMI 25-55  Age 50-69  Stable medical history  Stable body weight  Waist circumference ≥ 88cm  **Exclusion Criteria**  Tobacco use  Substance abuse  Type 2 Diabetes  Medication for Type 2 Diabetes  OTC Medication or supplements for weight loss  Impaired cognition  Renal disease  HRT  GI diseases | **Inclusion Criteria**  Type 2 Diabetes  HbA1c ≤9%  BMI 25-45  Age 30-70  Stable medical history  Stable body weight  Postmenopausal if female  **Exclusion Criteria**  Tobacco use  Substance abuse  OTC Medication or supplements for diabetes or weight loss  CHF  Claustrophobia  Abnormal liver function  Impaired cognition  Renal disease  HRT  GI diseases  Use of insulin | **Inclusion Criteria**  Healthy breast cancer survivors or women with initial abnormal mammogram  **Exclusion Criteria**  History of additional cancers  COPD  Symptomatic ischemic Heart disease  Substance abuse  Immune-related conditions  Inflammatory diseases  Use of blood lipid lowering medications, Angiotensin 1 receptor blockers, and steroids | **Inclusion Criteria**  Healthy adults  Age 24-61  Married for at least 3 years  No chronic health problem in both partners  **Exclusion Criteria**  Substance abuse  HbA1c >6.5  Anemia  Any medication except birth control & levothyroxine  ≤2 hours/week of vigorous exercise if BMI <25  ≤5 hours/week of vigorous exercise if BMI ≥25 | **Inclusion Criteria**  Female  Postmenopausal  BMI≥30  Type 2 Diabetes  Age 18-70  HbA1c 6.5-14%  **Exclusion Criteria**  Tobacco use  Substance abuse  Impaired cognitive function  Renal diseases  GI diseases  Abnormal liver function  HRT  Insulin use  Pacemaker/ defibrillator |

Abbreviations: BMI, body mass index; CHF, chronic heart failure; COPD, Chronic Obstructive Pulmonary Disease; GI, gastrointestinal; HRT, Hormone Replacement Therapy; OTC, over-the-counter