

**Table S1.** Listing of biomarkers analyzed to identify which markers are impacted by chronic nutrition supplementation.

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6Ckine (pg·mL<sup>-1</sup>)  
Adiponectin (μg·mL<sup>-1</sup>)  
Agouti-Related Protein (AgRP) (pg·mL<sup>-1</sup>)  
Alanine Transaminase (ALT) (U·L<sup>-1</sup>)  
Alpha-1-Antichymotrypsin (AACT) (μg·mL<sup>-1</sup>)  
Alpha-1-Antitrypsin (AAT) (mg·mL<sup>-1</sup>)  
Alpha-1-Microglobulin (A1Micro) (μg·mL<sup>-1</sup>)  
Alpha-2-Macroglobulin (A2Macro) (mg·mL<sup>-1</sup>)  
Alpha-Fetoprotein (AFP) (ng·mL<sup>-1</sup>)  
Amphiregulin (AR) (pg·mL<sup>-1</sup>)  
Angiopoietin-2 (ANG-2) (ng·mL<sup>-1</sup>)  
Angiotensin Converting Enzyme (ACE) (ng·mL<sup>-1</sup>)  
Angiotensinogen (ng·mL<sup>-1</sup>)  
Apolipoprotein (a) (LP(a)) (μg·mL<sup>-1</sup>)  
Apolipoprotein A-I (Apo A-I) (mg·mL<sup>-1</sup>)  
Apolipoprotein A II (Apo A-II) (ng·mL<sup>-1</sup>)  
Apolipoprotein A IV (Apo A-IV) (μg·mL<sup>-1</sup>)  
Apolipoprotein B (Apo B) (μg·mL<sup>-1</sup>)  
Apolipoprotein C I (Apo C-I) (ng·mL<sup>-1</sup>)  
Apolipoprotein C III (Apo C-III) (μg·mL<sup>-1</sup>)  
Apolipoprotein D (Apo D) (μg·mL<sup>-1</sup>)  
Apolipoprotein E (Apo E) (μg·mL<sup>-1</sup>)  
Apolipoprotein H (Apo H) (μg·mL<sup>-1</sup>)  
AXL Receptor Tyrosine Kinase (AXL) (ng·mL<sup>-1</sup>)  
Aspartate Aminotransferase (AST) (U·L<sup>-1</sup>)  
B-cell Activating Factor (BAFF) (pg·mL<sup>-1</sup>)  
B Lymphocyte Chemoattractant (BLC) (pg·mL<sup>-1</sup>)  
Beta-2 Microglobulin (B2M) (μg·mL<sup>-1</sup>)  
Betacellulin (BTC) (pg·mL<sup>-1</sup>)  
Brain-Derived Neurotrophic Factor (BDNF) (ng·mL<sup>-1</sup>)  
Blood Urea Nitrogen (BUN) (mg·dL<sup>-1</sup>)  
C-Peptide (ng·mL<sup>-1</sup>)  
C-Reactive Protein (CRP) (μg·mL<sup>-1</sup>)  
Calbindin (ng·mL<sup>-1</sup>)  
Cancer Antigen 125 (CA-125) (U·mL<sup>-1</sup>)  
Cancer Antigen 15-3 (CA-15-3) (U·mL<sup>-1</sup>)  
Cancer Antigen 19-9 (CA-19-9) (U·mL<sup>-1</sup>)  
Carcinoembryonic Antigen (CEA) (ng·mL<sup>-1</sup>)  
CD40 Ligand (CD40-L) (ng·mL<sup>-1</sup>)  
CD5 Antigen-like (CD5L) (ng·mL<sup>-1</sup>)  
Chemokine CC-4 (HCC-4) (ng·mL<sup>-1</sup>)  
Chloride (mmol·L<sup>-1</sup>)  
Chromogranin-A (CgA) (ng·mL<sup>-1</sup>)  
Ciliary Neurotrophic Factor (CNTF) (pg·mL<sup>-1</sup>)  
Clusterin (CLU) (μg·mL<sup>-1</sup>)  
Complement C3 (C3) (μg·mL<sup>-1</sup>)  
Complement Factor H-Related Protein (CFHR1) (μg·mL<sup>-1</sup>)  
Cortisol (ng·mL<sup>-1</sup>)

Creatine Kinase-MB (CK-MB) (ng·mL<sup>-1</sup>)  
Cystatin-C (ng·mL<sup>-1</sup>)  
Dehydroepiandrosterone-sulphate (DHEA-S) (μg·dL<sup>-1</sup>)  
E-Selectin (ng·mL<sup>-1</sup>)  
EN-RAGE (μg·mL<sup>-1</sup>)  
Eotaxin-1 (pg·mL<sup>-1</sup>)  
Eotaxin-2 (pg·mL<sup>-1</sup>)  
Eotaxin-3 (pg·mL<sup>-1</sup>)  
Epidermal Growth Factor (EGF) (pg·mL<sup>-1</sup>)  
Epidermal Growth Factor Receptor (EGFR) (ng·mL<sup>-1</sup>)  
Epiregulin (EPR) (pg·mL<sup>-1</sup>)  
Epithelial-Derived Neutrophil-Activating Protein 78 (ENA-78) (ng·mL<sup>-1</sup>)  
Estradiol (pg·mL<sup>-1</sup>)  
Factor VII (ng·mL<sup>-1</sup>)  
Fas Ligand (FasL) (pg·mL<sup>-1</sup>)  
FASLG Receptor (ng·mL<sup>-1</sup>)  
Fatty Acid-Binding Protein, heart (F ABP, heart) (ng·mL<sup>-1</sup>)  
Ferritin (FRTN) (ng·mL<sup>-1</sup>)  
Fetuin-A (μg·mL<sup>-1</sup>)  
Fibrinogen (mg·mL<sup>-1</sup>)  
Fibroblast Growth Factor 4 (FGF-4) (pg·mL<sup>-1</sup>)  
Fibroblast Growth Factor basic (FGF-basic) (μg·mL<sup>-1</sup>)  
Follicle Stimulating Hormone (FSH) (mIU·mL<sup>-1</sup>)  
Glucagon (pg·mL<sup>-1</sup>)  
Glucagon-like Peptide-1 (GLP-1) (pg·mL<sup>-1</sup>)  
Glutathione S-Transferase alpha (GST-alpha) (ng·mL<sup>-1</sup>)  
Granulocyte Colony-Stimulating Factor (G-CSF) (pg·mL<sup>-1</sup>)  
Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) (pg·mL<sup>-1</sup>)  
Growth Hormone (GH) (ng·mL<sup>-1</sup>)  
Growth-Regulated Alpha Protein (GRO-alpha) (pg·mL<sup>-1</sup>)  
Haptoglobin (mg·mL<sup>-1</sup>)  
Heat Shock Protein 60 (HSP-60) (ng·mL<sup>-1</sup>)  
Heparin-Binding EGF-Like Growth Factor (HB-EGF) (pg·mL<sup>-1</sup>)  
Hepatocyte Growth Factor (HGF) (ng·mL<sup>-1</sup>)  
Human Chorionic Gonadotropin beta (hCG) (mIU·mL<sup>-1</sup>)  
Immunoglobulin A (IgA) (mg·mL<sup>-1</sup>)  
Immunoglobulin E (IgE) (U·mL<sup>-1</sup>)  
Immunoglobulin M (IgM) (mg·mL<sup>-1</sup>)  
Insulin (uIU·mL<sup>-1</sup>)  
Insulin-like Growth Factor 1 (IGF-1) (ng·mL<sup>-1</sup>)  
Insulin-like Growth Factor Binding Protein 2 (IGFBP-2) (ng·mL<sup>-1</sup>)  
Intercellular Adhesion Molecule 1 (ICAM-1) (ng·mL<sup>-1</sup>)  
Interferon gamma (IFN-gamma) (pg·mL<sup>-1</sup>)  
Interferon gamma Induced Protein 10 (IP10) (pg·mL<sup>-1</sup>)  
Interferon-inducible T-cell alpha chemoattractant (ITAC) (pg·mL<sup>-1</sup>)  
Interleukin-1 alpha (IL-1 alpha) (ng·mL<sup>-1</sup>)  
Interleukin-1 beta (IL-1 beta) (pg·mL<sup>-1</sup>)  
Interleukin-1 Receptor Antagonist (IL-1ra) (pg·mL<sup>-1</sup>)  
Interleukin-2 (IL-2) (pg·mL<sup>-1</sup>)  
Interleukin-2 Receptor alpha (IL-2ra) (pg·mL<sup>-1</sup>)

Interleukin-3 (IL-3) (ng·mL<sup>-1</sup>)  
Interleukin-4 (IL-4) (pg·mL<sup>-1</sup>)  
Interleukin-5 (IL-5) (pg·mL<sup>-1</sup>)  
Interleukin-6 (IL-6) (pg·mL<sup>-1</sup>)  
Interleukin-6 Receptor (IL-6r) (ng·mL<sup>-1</sup>)  
Interleukin-7 (IL-7) (pg·mL<sup>-1</sup>)  
Interleukin-8 (IL-8) (pg·mL<sup>-1</sup>)  
Interleukin-10 (IL-10) (pg·mL<sup>-1</sup>)  
Interleukin-12 Subunit p40 (IL-12p40) (ng·mL<sup>-1</sup>)  
Interleukin-12 Subunit p70 (IL-12p70) (pg·mL<sup>-1</sup>)  
Interleukin-13 (IL-13) (pg·mL<sup>-1</sup>)  
Interleukin-15 (IL-15) (ng·mL<sup>-1</sup>)  
Interleukin-16 (IL-16) (pg·mL<sup>-1</sup>)  
Interleukin-17 (IL-17) (pg·mL<sup>-1</sup>)  
Interleukin-18 (IL-18) (pg·mL<sup>-1</sup>)  
Interleukin-23 (IL-23) (ng·mL<sup>-1</sup>)  
Kidney Injury Molecule-1 (KIM-1) (ng·mL<sup>-1</sup>)  
Latency-Associated Peptide of Transforming Growth Factor beta 1 (LAP TGF-β1) (ng·mL<sup>-1</sup>)  
Lectin-like Oxidized LDL Receptor 1 (LOX-1) (ng·mL<sup>-1</sup>)  
Leptin (ng·mL<sup>-1</sup>)  
Luteinizing Hormone (LH) (mIU·mL<sup>-1</sup>)  
Macrophage Colony-Stimulating Factor 1 (M-CSF) (ng·mL<sup>-1</sup>)  
Macrophage-Derived Chemokine (MDC) (pg·mL<sup>-1</sup>)  
Macrophage Inflammatory Protein-1 alpha (MIP-1 alpha) (pg·mL<sup>-1</sup>)  
Macrophage Inflammatory Protein-1 beta (MIP-1 beta) (pg·mL<sup>-1</sup>)  
Macrophage Inflammatory Protein-3 alpha (MIP-3 alpha) (pg·mL<sup>-1</sup>)  
Macrophage Inflammatory Protein-3 beta (MIP-3 beta) (pg·mL<sup>-1</sup>)  
Macrophage Migration Inhibitory Factor (MIF) (ng·mL<sup>-1</sup>)  
Magnesium (mEq·L<sup>-1</sup>)  
Malondialdehyde-Modified Low-Density Lipoprotein (MDA-LDL) (ng·mL<sup>-1</sup>)  
Matrix Metalloproteinase-1 (MMP-1) (ng·mL<sup>-1</sup>)  
Matrix Metalloproteinase-3 (MMP-3) (ng·mL<sup>-1</sup>)  
Matrix Metalloproteinase-7 (MMP-7) (ng·mL<sup>-1</sup>)  
Matrix Metalloproteinase-9 (MMP-9) (ng·mL<sup>-1</sup>)  
Matrix Metalloproteinase-9, total (MMP-9 total) (ng·mL<sup>-1</sup>)  
Matrix Metalloproteinase-10 (MMP-10) (ng·mL<sup>-1</sup>)  
MHC Class I Chain-related protein A (MICA) (pg·mL<sup>-1</sup>)  
Monocyte Chemotactic Protein-1 (MCP-1) (pg·mL<sup>-1</sup>)  
Monocyte Chemotactic Protein-2 (MCP-2) (pg·mL<sup>-1</sup>)  
Monocyte Chemotactic Protein-3 (MCP-3) (pg·mL<sup>-1</sup>)  
Monocyte Chemotactic Protein-4 (MCP-4) (pg·mL<sup>-1</sup>)  
Monokine Induced by Gamma Interferon (MIG) (pg·mL<sup>-1</sup>)  
Myeloid Progenitor Inhibitory Factor 1 (MPIF-1) (ng·mL<sup>-1</sup>)  
Myeloperoxidase (MPO) (ng·mL<sup>-1</sup>)  
Myoglobin (ng·mL<sup>-1</sup>)  
N-terminal Prohormone of Brain Natriuretic Peptide (NT proBNP) (pg·mL<sup>-1</sup>)  
Nerve Growth Factor beta (NGF-beta) (ng·mL<sup>-1</sup>)  
Neuron Specific Enolase (NSE) (ng·mL<sup>-1</sup>)  
Neuronal Cell Adhesion Molecule (Nr-CAM) (ng·mL<sup>-1</sup>)  
Neutrophil Gelatinase-Associated Lipocalin (NGAL) (ng·mL<sup>-1</sup>)

Osteopontin (ng·mL<sup>-1</sup>)  
Osteoprotegerin (OPG) (pM)  
Pancreatic Polypeptide (PPP) (pg·mL<sup>-1</sup>)  
Peptide YY (PYY) (pg·mL<sup>-1</sup>)  
Phosphate (mg·dL<sup>-1</sup>)  
Placenta Growth Factor (PLGF) (pg·mL<sup>-1</sup>)  
Plasminogen Activator Inhibitor 1 (PAI-1) (ng·mL<sup>-1</sup>)  
Platelet-Derived Growth Factor BB (PDGF-BB) (pg·mL<sup>-1</sup>)  
Pre-albumin (mg·dL<sup>-1</sup>)  
Progesterone (ng·mL<sup>-1</sup>)  
Proinsulin, Intact (pM)  
Proinsulin, Total (pM)  
Prolactin (PRL) (ng·mL<sup>-1</sup>)  
Prostate-Specific Antigen, Free (PSA-f) (ng·mL<sup>-1</sup>)  
Pulmonary and Activation-Regulated Chemokine (PARC) (ng·mL<sup>-1</sup>)  
Receptor for Advanced Glycosylation End Products (RAGE) (ng·mL<sup>-1</sup>)  
Red Blood Cells (RBC) (x10<sup>12</sup>·L<sup>-1</sup>)  
Resistin (ng·mL<sup>-1</sup>)  
S100 Calcium-Binding Protein B (S100-B) (ng·mL<sup>-1</sup>)  
Serotransferrin (Transferrin) (mg·dL<sup>-1</sup>)  
Serum Amyloid P-Component (SAP) (μg·mL<sup>-1</sup>)  
Sex Hormone Binding Globulin (SHBG) (mol·L<sup>-1</sup>)  
Sortilin (ng·mL<sup>-1</sup>)  
Stem Cell Factor (SCF) (pg·mL<sup>-1</sup>)  
Stromal Cell Derived Factor-1 (SDF-1) (pg·mL<sup>-1</sup>)  
Superoxide Dismutase-1 (SOD-1) (ng·mL<sup>-1</sup>)  
Total c-Terminal Agrin Fragment (t-CAF) (pmols)  
T-cell-Specific Protein RANTES (RANTES) (ng·mL<sup>-1</sup>)  
T Lymphocyte-Secreted Protein I-309 (I-309) (pg·mL<sup>-1</sup>)  
Tamm Horsfall Urinary Glycoprotein (THP) (μg·mL<sup>-1</sup>)  
Tenascin-C (TN-C) (ng·mL<sup>-1</sup>)  
Testosterone (ng·mL<sup>-1</sup>)  
Thrombomodulin (TM) (ng·mL<sup>-1</sup>)  
Thrombospondin-1 (ng·mL<sup>-1</sup>)  
Thyroid Stimulating Hormone (TSH) (μIU·mL<sup>-1</sup>)  
Thyroxine Binding Globulin (TBG) (μg·mL<sup>-1</sup>)  
Tissue Inhibitor of Metalloproteinases 1 (TIMP-1) (ng·mL<sup>-1</sup>)  
TNF-Related Apoptosis-Inducing Ligand Receptor (TRAIL-R3) (ng·mL<sup>-1</sup>)  
Total Protein (g·dL<sup>-1</sup>)  
Transforming Growth Factor alpha (TGF alpha) (pg·mL<sup>-1</sup>)  
Transforming Growth Factor beta-3 (TGF-beta-3) (pg·mL<sup>-1</sup>)  
Transthyretin (TTR) (mg·mL<sup>-1</sup>)  
Trefol Factor-3 (TFF3) (μg·mL<sup>-1</sup>)  
Triglycerides (mg·dL<sup>-1</sup>)  
Tumor Necrosis Factor alpha (TNF-alpha) (pg·mL<sup>-1</sup>)  
Tumor Necrosis Factor beta (TNF-beta) (pg·mL<sup>-1</sup>)  
Tumor Necrosis Factor Receptor-1 (TNFR1) (pg·mL<sup>-1</sup>)  
Tumor Necrosis Factor Receptor-2 (TNFR2) (ng·mL<sup>-1</sup>)  
Vascular Cell Adhesion Molecule (VCAM-1) (ng·mL<sup>-1</sup>)  
Vascular Endothelial Growth Factor (VEGF) (pg·mL<sup>-1</sup>)

Vitamin B12 (pg·mL<sup>-1</sup>)  
Vitamin D (nmol·L<sup>-1</sup>)  
Vitamin D-Binding Protein (VDBP) (μg·mL<sup>-1</sup>)  
Vitamin E (nmol·mL<sup>-1</sup>)  
Vitamin K-Dependent Protein S (VKDPS) (μg·mL<sup>-1</sup>)  
Vitronectin (μg·mL<sup>-1</sup>)  
Von Willebrand Factor (VSF) (μg·mL<sup>-1</sup>)

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**Table S2.** Biomarkers excluded from statistical analyses because at least 30% of the samples had levels below the lower limit of quantitation.

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Agouti-Related Protein (AgRP) (pg·mL<sup>-1</sup>)  
Amphiregulin (AR) (pg·mL<sup>-1</sup>)  
B Lymphocyte Chemoattractant (BLC) (pg·mL<sup>-1</sup>)  
Betacellulin (BTC) (pg·mL<sup>-1</sup>)  
Calbindin (ng·mL<sup>-1</sup>)  
Cancer Antigen 125 (CA-125) (U·mL<sup>-1</sup>)  
Cancer Antigen 19-9 (CA-19-9) (U·mL<sup>-1</sup>)  
Ciliary Neurotrophic Factor (CNTF) (pg·mL<sup>-1</sup>)  
Eotaxin-1 (pg·mL<sup>-1</sup>)  
Eotaxin-3 (pg·mL<sup>-1</sup>)  
Epregrulin (EPR) (pg·mL<sup>-1</sup>)  
Fas Ligand (FasL) (pg·mL<sup>-1</sup>)  
Fatty Acid-Binding Protein, heart (F ABP, heart) (ng·mL<sup>-1</sup>)  
Fibrinogen (mg·mL<sup>-1</sup>)  
Fibroblast Growth Factor 4 (FGF-4) (pg·mL<sup>-1</sup>)  
Fibroblast Growth Factor basic (FGF-basic) (μg·mL<sup>-1</sup>)  
Glucagon (pg·mL<sup>-1</sup>)  
Glucagon-like Peptide-1 (GLP-1) (pg·mL<sup>-1</sup>)  
Glutathione S-Transferase alpha (GST-alpha) (ng·mL<sup>-1</sup>)  
Granulocyte Colony-Stimulating Factor (G-CSF) (pg·mL<sup>-1</sup>)  
Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) (pg·mL<sup>-1</sup>)  
Heat Shock Protein 60 (HSP-60) (ng·mL<sup>-1</sup>)  
Heparin-Binding EGF-Like Growth Factor (HB-EGF) (pg·mL<sup>-1</sup>)  
Human Chorionic Gonadotropin beta (hCG) (mIU·mL<sup>-1</sup>)  
Immunoglobulin E (IgE) (U·mL<sup>-1</sup>)  
Interferon gamma (IFN-gamma) (pg·mL<sup>-1</sup>)  
Interleukin-1 beta (IL-1 beta) (pg·mL<sup>-1</sup>)  
Interleukin-1 Receptor Antagonist (IL-1ra) (pg·mL<sup>-1</sup>)  
Interleukin-2 (IL-2) (pg·mL<sup>-1</sup>)  
Interleukin-3 (IL-3) (ng·mL<sup>-1</sup>)  
Interleukin-4 (IL-4) (pg·mL<sup>-1</sup>)  
Interleukin-5 (IL-5) (pg·mL<sup>-1</sup>)  
Interleukin-6 (IL-6) (pg·mL<sup>-1</sup>)  
Interleukin-7 (IL-7) (pg·mL<sup>-1</sup>)  
Interleukin-10 (IL-10) (pg·mL<sup>-1</sup>)  
Interleukin-12 Subunit p70 (IL-12p70) (pg·mL<sup>-1</sup>)

Interleukin-13 (IL-13) (pg·mL<sup>-1</sup>)  
Interleukin-15 (IL-15) (ng·mL<sup>-1</sup>)  
Interleukin-17 (IL-17) (pg·mL<sup>-1</sup>)  
Lectin-like Oxidized LDL Receptor 1 (LOX-1) (ng·mL<sup>-1</sup>)  
MHC Class I Chain-related protein A (MICA) (pg·mL<sup>-1</sup>)  
Macrophage Inflammatory Protein-1 alpha (MIP-1 alpha) (pg·mL<sup>-1</sup>)  
Macrophage Inflammatory Protein-1 beta (MIP-1 beta) (pg·mL<sup>-1</sup>)  
Malondialdehyde-Modified Low-Density Lipoprotein (MDA-LDL) (ng·mL<sup>-1</sup>)  
Matrix Metalloproteinase-9 (MMP-9) (ng·mL<sup>-1</sup>)  
Monocyte Chemotactic Protein-3 (MCP-3) (pg·mL<sup>-1</sup>)  
Nerve Growth Factor beta (NGF-beta) (ng·mL<sup>-1</sup>)  
Peptide YY (PYY) (pg·mL<sup>-1</sup>)  
Placenta Growth Factor (PLGF) (pg·mL<sup>-1</sup>)  
Progesterone (ng·mL<sup>-1</sup>)  
Proinsulin, Intact (pM)  
Proinsulin, Total (pM)  
Prostate-Specific Antigen, Free (PSA-f) (ng·mL<sup>-1</sup>)  
S100 Calcium-Binding Protein B (S100-B) (ng·mL<sup>-1</sup>)  
T Lymphocyte-Secreted Protein I-309 (I-309) (pg·mL<sup>-1</sup>)  
Transforming Growth Factor alpha (TGF alpha) (pg·mL<sup>-1</sup>)  
Transforming Growth Factor beta-3 (TGF-beta-3) (pg·mL<sup>-1</sup>)  
Tumor Necrosis Factor alpha (TNF-alpha) (pg·mL<sup>-1</sup>)  
Tumor Necrosis Factor beta (TNF-beta) (pg·mL<sup>-1</sup>)

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**Table S3.** Means  $\pm$  standard deviations (SD) of biomarkers that changed over 12 weeks after supplementation of the Experimental ONS (E<sub>ONS</sub>) with HMB.

	E <sub>ONS</sub>			C <sub>ONS</sub>		
	Baseline	12 Weeks	Percent Change (n=90) <sup>a</sup>	Baseline	12 Weeks	Percent Change (n=103)
Osteopontin (ng·mL <sup>-1</sup> )	17.47 $\pm$ 15.84	14.67 $\pm$ 15.86	-18.24 $\pm$ 24.32 <sup>c</sup>	15.37 $\pm$ 8.63	14.04 $\pm$ 10.18	-4.59 $\pm$ 45.96
Ferritin (ng·mL <sup>-1</sup> )	127.42 $\pm$ 99.51	105.56 $\pm$ 105.18	-17.73 $\pm$ 26.36 <sup>c</sup>	136.95 $\pm$ 157.41	126.11 $\pm$ 162.06	-1.80 $\pm$ 48.70
Interleukin-6 Receptor (ng·mL <sup>-1</sup> )	25.89 $\pm$ 8.65	26.96 $\pm$ 9.20	4.29 $\pm$ 8.57 <sup>c</sup>	26.14 $\pm$ 8.08	26.75 $\pm$ 9.73	2.78 $\pm$ 9.04
Interleukin-16 (pg·mL <sup>-1</sup> )	383.56 $\pm$ 119.11	410.61 $\pm$ 137.97	9.16 $\pm$ 22.37 <sup>b</sup>	367.06 $\pm$ 132.91	374.79 $\pm$ 132.10	3.97 $\pm$ 16.99
Tumor Necrosis Factor receptor-1 (pg·mL <sup>-1</sup> )	2073.73 $\pm$ 857.29	2163.82 $\pm$ 896.57	5.04 $\pm$ 12.32 <sup>b</sup>	2064/73 $\pm$ 1090.94	2156.73 $\pm$ 1137.51	5.26 $\pm$ 15.52
Tumor Necrosis Factor receptor-2 (ng·mL <sup>-1</sup> )	7.44 $\pm$ 2.66	7.86 $\pm$ 3.08	6.48 $\pm$ 16.13 <sup>b</sup>	7.76 $\pm$ 2.98	8.09 $\pm$ 3.50	4.13 $\pm$ 16.99
Immunoglobulin A (mg·mL <sup>-1</sup> )	2.82 $\pm$ 1.53	2.98 $\pm$ 1.66	6.46 $\pm$ 12.21 <sup>c</sup>	2.51 $\pm$ 1.64	2.60 $\pm$ 1.78	3.53 $\pm$ 10.66
Immunoglobulin M (mg·mL <sup>-1</sup> )	1.45 $\pm$ 0.90	1.57 $\pm$ 0.92	11.40 $\pm$ 16.89 <sup>c</sup>	1.57 $\pm$ 1.32	1.62 $\pm$ 1.30	4.97 $\pm$ 14.94
Magnesium (mEq·L <sup>-1</sup> )	1.66 $\pm$ 0.18	1.71 $\pm$ 0.19	3.35 $\pm$ 6.31 <sup>c</sup>	1.70 $\pm$ 0.14	1.72 $\pm$ 0.15	1.02 $\pm$ 7.02
Total Protein (g·dL <sup>-1</sup> )	6.93 $\pm$ 0.41	7.05 $\pm$ 0.41	1.86 $\pm$ 4.56 <sup>b</sup>	6.98 $\pm$ 0.37	7.08 $\pm$ 0.40	1.52 $\pm$ 4.72
Vitamin E (nmol·mL <sup>-1</sup> )	15.86 $\pm$ 16.17	17.54 $\pm$ 18.14	15.15 $\pm$ 36.05 <sup>b</sup>	18.21 $\pm$ 23.16	22.03 $\pm$ 27.54	34.93 $\pm$ 110.28
Sex Hormone Binding Globulin (mol·L <sup>-1</sup> ) <sup>a</sup>	71.38 $\pm$ 39.56	60.84 $\pm$ 35.04	-11.59 $\pm$ 18.98 <sup>c</sup>	66.42 $\pm$ 33.92	58.57 $\pm$ 31.28	-9.95 $\pm$ 28.36
Myoglobin (ng·mL <sup>-1</sup> )	63.73 $\pm$ 50.62	71.78 $\pm$ 64.59	13.02 $\pm$ 30.80 <sup>b</sup>	53.57 $\pm$ 36.61	54.99 $\pm$ 33.54	8.25 $\pm$ 29.50

<sup>a</sup> EONS n=89 for Sex Hormone Binding Globulin

<sup>b</sup> Change from baseline using univariable dependent t-test with Sidak adjusted p-value  $\leq 0.05$ , to account for the larger number of simultaneous tests.

<sup>c</sup> Change from baseline using univariable dependent t-test with Sidak adjusted p-value  $\leq 0.001$ .

**Table S4.** Baseline biomarkers Correlation of biomarkers with measures of skeletal muscle strength at baseline in study participants (n=193).

	<b>Osteopontin</b>	<b>IGF-1</b>	<b>IGFBP-2</b>	<b>Leptin</b>	<b>SHBG</b>
Handgrip Strength (kg)	-0.169*	0.387*	-0.129	-0.221*	-0.271*
Average Extensor Peak Torque (Nm)	-0.156*	0.362*	-0.178*	-0.213*	-0.265*
Peak Extensor Peak Torque (Nm)	-0.157*	0.365*	-0.182*	-0.222*	-0.269*

\* Indicates a significant correlation,  $p < 0.05$ .  
Insulin Growth Factor-1 (IGF-1), Insulin Growth Factor Binding Protein-2 (IGFBP-2), Sex Hormone Binding Globulin (SHBG).