

SOMMA Analysis Plan Tracking Log

AP #	Author First Name	Author Last Name	Analysis Plan Title	Status
0000	Multiple authors		GSA Abstracts	Presented
0001	Philip	Kramer	The Study of Muscle, Mobility, and Aging (SOMMA): A Multi-Institutional Respirometric Study	Presented
0002	Multiple authors		GSA Abstracts; November 2-6, 2022	Presented
0003	Multiple authors		ICFSR 2022 Symposia; April 20-22, 2022	Presented
0004	Multiple authors		ICFSR 2023 Symposia, March 22–24, 2023	Presented
0005	Nancy	Glynn	Emerging Results from the Study of Muscle, Mobility and Aging (SOMMA): Fatigability, Fitness, and Chrono-Nutrition, GSA November 8-12, 2023	Presented
0006	Paul	Coen	The Study of Muscle, Mobility, and Aging (SOMMA): Mitochondrial Energetics Of Skeletal Muscle; GSA November 8-12, 2023	Presented
0007	Multiple authors		ICFSR 2024 SOMMA Symposia: Skeletal muscle mitochondrial energetics in the study of muscle, mobility and aging (SOMMA); ICFSR March 20-22, 2024	Presented
0008	Nancy	Glynn	Perceived and Performance Fatigability in Understanding Healthy Aging: Study of Muscle, Mobility and Aging (SOMMA); GSA November 13-16, 2024	Presented
0009	Kim	Kennedy	The Study of Muscle, Mobility and Aging (SOMMA): Lessons Learned Recruiting Sedentary Older Adults; GSA November 13-16, 2024	Presented
2	Peggy	Cawthon	Muscle mass and its relation to muscle mitochondrial function and histologic characteristics in older men and women	Active
3	Steve Theresa	Cummings Mau	The roles of ATP and mitochondria in power and fitness	Published
4	Emma	Gay	Mitochondrial energetics and fatigability severity in older adults	Published
5	Russ	Hepple	In Search of Sarcopenia.	Active
6	Steve	Kritchevsky	Physical Correlates of Cognitive Function	Withdrawn
7	Susanna	Qiao	Muscle characteristics in physically active vs inactive older adults	Published
8	Philip	Kramer	Sex differences in age-related mitochondrial dysfunction within the Study of Muscle, Mobility, and Aging (SOMMA)	Published
9	Giovanna Philip	Distefano Kramer	Exploratory analysis of the factors affecting the quality of permeabilized muscle respirometry in the SOMMA multicenter study	Active
10	Karyn	Esser	Age associated changes in circadian behavior, strength and mobility	Published
11	Reagan	Garcia	Relationship between Walking Energetics and Fatigability in Older Adults	Published
12	Bret	Goodpaster	Associations of adipose tissue distribution with muscle mitochondrial capacity and function	Published
13	Elsa	Strotmeyer	Stair climb functional power and stair climb time relationships to muscle function and physical function measures	Active
14	Kate	Duchowny	Early Life Adversity and Mitochondrial Function	Published
15	Kyle	Moored	The Role of Fitness and Fatigability in Life-Space Mobility	Published
16	Susanna	Qiao	Validation of the Pittsburgh Performance Fatigability Index: The Study of Muscle, Mobility and Aging (SOMMA)	Published
17	Fred	Toledo	Is statin therapy associated with muscle mitochondrial dysfunction in elderly individuals at risk for mobility disability?	Active
18	Samaneh	Farsijani	The relationship between protein intake and mobility function in older adults	Withdrawn

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19	Paul	Coen	Lower mitochondrial energetics is associated with lower cardiorespiratory fitness in African Americans	Published
20	Sofhia	Ramos	Exploring the contribution of physical activity, adiposity and mitochondrial energetics to physical function in older adults with diabetes in the study of Muscle, Mobility and Aging (SOMMA).	Published
21	Steve	Kritchevsky	Intrinsic Pace – describing a potentially new fundamental capacity related to mobility.	Active
22	Theresa	Mau	Deconstructing multimorbidity and mitochondrial energetics in older adults.	Published
23	Atalie	Thompson	Self-reported and performance-based measures of visual function and physical function.	Published
24	Scott	Bauer	Skeletal Muscle Health and Lower Urinary Tract Symptoms in Older Adults.	Published
25	Paul Matt	Coen Hinkley	Mitochondrial energetics and cardiorespiratory fitness in older cancer survivors.	Active
26	Karen Daria	Corbin Igudesman	Relationship between Hepatic Steatosis, Clinical Risk Factors of Non-Alcoholic Fatty Liver Disease, and Muscle Mass and Function.	Published
27	Lauren	Roe	The association between the composition of 24-hour movement behaviors with bone strength and microarchitecture at the distal limb in older adults.	Manuscript approved
28	Kristen	Koltun	The effect of age and sex on cortical bone density, microarchitecture, and strength.	Active
29	Reichelle Theresa	Yeo Mau	Characterizing human adipose tissue in older adults.	Published
30	Steve	Cummings	Determinants of 400m walk speed.	Published
31	Nancy	Lane	Association of muscle composition and strength with radiographic knee OA subjects with or without knee pain.	Published
32	Nancy	Lane	Mitochondrial energetics in older adults with knee osteoarthritis, with and without pain.	Active
33	Siana	Jones	The relative contributions of local circulatory versus respiratory capacity to the decline in cardiorespiratory fitness with age.	Active
34	Steve	Cummings	The Study of Muscle, Mobility, and Aging (SOMMA). A Unique Cohort Study about the Cellular Biology of Aging and Age-related Loss of Mobility.	Published
35	Ezequiel	Zamora	Percutaneous biopsies of skeletal muscle and adipose tissue in individuals older than 70: methods and experience of the SOMMA study.	Published
36	Sanjay	Divakaran	Differences in Mitochondrial Function and Walking Performance Among Men and Women with Normal and Abnormal ABI Values in the Study of Muscle, Mobility, and Aging (SOMMA).	Active
37	Karyn	Esser	Rhythmic and Temporal Patterns of Activity in SOMMA.	Published
38	Theresa	Mau	Phenotypic frailty and muscle mitochondrial energetics in older women and men	Published
39	Peggy	Cawthon	Association between income, wealth and mitochondrial function.	Active
40	Samaneh	Farsijani	Chrono-Nutrition and Aging Muscles.	Published
41	Benjamin	Schumacher	The Association Between Perceived Fatigability and Cognitive Performance.	Manuscript submitted for publication
42	Katie	Stone	Are circadian rest-activity rhythm parameters associated with cognitive function and decline, and do associations differ by sex?	Active
43	Cody	Wolf	CPET Methods Paper	Published
44	Reagan	Garcia	Can a Usual-Paced 400-m Long Distance Corridor Walk Estimate Cardiorespiratory Fitness in Older Adults?	Published

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45	Anne	Newman	SOMMA Frailty: advancing the science of frailty.	Published
46	Kyoungmin Steve	Kim Cummings	The association between red cell distribution width (RDW) and muscle quantity or exercise ability in elderly people.	Manuscript accepted by journal
47	Howard	Phang	The impacts of mito-toxic medication use on measures of muscle performance and bioenergetics.	Published
48	Megan	Hetherington-Rauth	D3Cr muscle mass and its association with muscle function and physical performance across the lifespan.	Active
49	Susanna	Qiao	The Association between Mitochondrial Energetics and Objectively-measured Performance Fatigability	Published
50	Nora	Petnehazy	Association between different sarcopenia metrics (collected in SOMMA) on life-quality (EQ-5D) of older adults.	Published
51	Elvis	Alvarez Carnero	Mitochondrial function and metabolic ventilatory thresholds.	Active
52	John	Noone	Association between cardiorespiratory fitness and skeletal muscle mitochondrial energetics within middle-aged, older, and oldest old volunteers enrolled in the Study of Muscle, Mobility and Aging (SOMMA).	Active
53	Russ	Hepple	Serum Proteomics and Metabolomics in Elderly with High, Normal and Low Gait Speed.	Published
54	Benjamin	Schumacher	Characterizing Relative Intensity of Physical Activity.	Withdrawn
55	Jane	Cauley	Muscle mitochondrial energetics and volumetric BMD and failure load by high-resolution peripheral quantitative computed tomography (HR-pQCT).	Active
56	Nina	Heilmann	Associations of VO2 peak and 400m walk with HR-pQCT bone parameters in older adults.	Manuscript accepted by journal
57	Elsa	Strotmeyer	Leg muscle power and strength associations with HRpQCT bone volumetric density, microarchitecture and strength.	Active
58	Russ	Hepple	Indices of the burden of denervation predict muscle mass and function in SOMMA.	Active
59	Philip	Kramer	The Association of the Neutrophil to Lymphocyte ratio (NLR) with Muscle Mitochondrial Energetics and Physical Function.	Active
60	Lauren	Roe	Associations of 24-hour Compositional Behavior Data with Perceived Fatigability, Performance Fatigability, and Cardiorespiratory Fitness: Study of Muscle, Mobility and Aging.	Active
61	Eileen	Johnson	Test-retest reliability of integrative physical function measures in SOMMA	Active
62	Atalie	Thompson	Relationship between visual impairment, mobility, cognition and recurrent falls in older adults in SOMMA	Active
63	David	Marcinek	Relationship between change in mitochondrial function and mobility is a small repeated measures SOMMA cohort	Active
64	Christine	Seo	Impact of glycemic status on skeletal muscle mass, muscle quality, and strength in older adults	Active
65	Eileen	Johnson	Dimensions of sedentary behavior and muscle strength, power and energetics in the Study of Muscle, Mobility and Aging (SOMMA)	Active
66	Morgan	Bolger	Examining phenotypic clusters of cross-sectional bone morphology, density and muscle properties in older men and women	Manuscript submitted for publication
67	Paul	Coen	Expression of autophagy genes in muscle is associated with muscle mass and performance measures in SOMMA	Published
68	Megan	Hetherington-Rauth	Relationship of sedentary time and physical activity intensity with body composition in older adults	Active

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69	Greg	Tranah	Expression of oxidative stress genes in muscle is associated with muscle mass and performance measures in SOMMA	Published
70	Lana	Chahine	The Contribution of Dopaminergic Neurotransmission to Resilience to Central and Peripherally Induced Gait Changes in Older Adults	Manuscript approved
71	Terri	Blackwell	Applying a systematic process to standardize medication use data from epidemiologic studies: The SOMMA and SOMMA Jr studies	Active
72	Ezequiel	Zamora	Predictability of mitochondrial respiration on falls in the older population	Published
73	Russ	Hepple	Expression of denervation genes in muscle is associated with muscle mass and performance measures in SOMMA	Published
74	Kailyn	Witonsky	The contribution of dopaminergic neurotransmission to physical activity in older adults with and without pain	Active
75	Samaneh	Farsijani	Linking Chrononutrition to Cardiometabolic and Cardiorespiratory Health	Active
76	Kyle	Moored	Longitudinal associations between fitness/fatigability and life-space mobility and moderation by perceived neighborhood environment	Active
77	Nancy	Glynn	Does Perceived Physical Fatigability Predict Change in Cardiorespiratory Fitness: The Study of Muscle, Mobility and Aging	Active
78	Peggy	Cawthon	Association of D3Cr muscle mass with MR thigh muscle volume and their corresponding relationships with strength, power, physical performance, fitness, and functional limitations in older men and women from the SOMMA study	Published
79	David	Marcinek	Testing whether the decline in in vivo ATPmax with age is independent of physical activity	Active
80	Namhyun	Kim	Associations of Circadian Rest-Activity Rhythms and Fatigability: Study of Muscle, Mobility and Aging	Active
81	Steve Nicholas	Cummings Day	Association of protein cysteine oxidative modifications with muscle and physical function	Published
82	Caterina	Rosano	The contribution of dopaminergic neurotransmission to performance fatigability	Published
83	Vera Anatoly	Gorbulnova Korotkov	Elevated gamma-H2A.X as a marker of DNA damage response in the aged human muscle	Withdrawn
84	Atalie	Thompson	Relationship between multisensory impairment with physical performance in older adults in SOMMA	Published
85	Theresa	Mau	Pain and mobility in older adults: the Study of Muscle, Mobility and Aging	Manuscript submitted for publication
86	Erin	Kershaw	Regional Adiposity and Cognition in Older Men and Women	Active
87	Grace	Ditzenberger	Comparing Muscle Quality & Function in Older Adults with and without HIV	Active
88	Jennifer	Linge	Associations of MR muscle volume z-score, muscle fat infiltration, and adverse muscle composition with strength, power, physical performance, fitness, and limitations in the SOMMA study	Active
89	Caterina	Rosano	Associations of cognition with muscle mitochondrial function	Withdrawn
90	Reagan	Garcia	Cross-sectional associations of sedentary behaviors with perceived and performance fatigability among older adults	Manuscript approved
91	Kate	Duchowny	Is perceived neighborhood physical disorder associated with skeletal muscle mitochondrial function?	Active

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92	John	Noone	Are rhythmic and temporal patterns of rest-activity behavior related to skeletal muscle metabolism?	Active
93	Lauren	Shaver Roe	Determining the association between 24-hour activity composition using compositional data analysis with skeletal muscle strength and power among community-dwelling older adults.	Manuscript submitted for publication
94	Peggy Megan	Cawthon Hetherington-Rauth	Association of radiomic signatures of muscle tissue from CT with muscle function and physical performance in SOMMA	Active
95	Line Katie	Elingaard-Larsen Whytock	Isolation of nuclei from human intermuscular adipose tissue and downstream single nuclei RNA sequencing using 10X Genomics	Published
96	Yixiao	Song	The contribution of dopaminergic neurotransmission to apathy and motivation	Manuscript submitted for publication
97	Lana	Chahine	Prodromal Features of Parkinson's Disease, Gait Speed, and Dopaminergic Neurotransmission in a Population-Based Sample of Community Dwelling Older Adults	Manuscript approved
98	Iva	Miljkovic	Associations of cognition with skeletal muscle fat infiltration	Withdrawn
99	Cheehoon	Ahn	Cellular heterogeneity in subcutaneous white adipose tissue and its relationship to age-related functional decline	Active
100	Anne	Newman	SOMMA Vigor to Frailty Outcomes	Active
101	Yurun	Cai	Pain characteristics and complexity of daily physical activity	Active
102	Yurun	Cai	Does Skeletal muscle energetics associate with musculoskeletal and neuropathic pain?	Withdrawn
103	Line Katie	Elingaard-Larsen Whytock	Interrogating the relationship of intermuscular adipose tissue (IMAT) cell composition with muscle function/strength and knee osteoarthritis with pain (Knee OA SOMMA cohort) using single nuclei RNAseq	Manuscript submitted for publication
104	Emma	Gay	Bioenergetic correlates of fatigability phenotypes	Active
105	Reagan	Garcia	Comparing Physical Activity Intensity Cut-points for Older Adults: The Study of Muscle, Mobility and Aging	Active
106	Scott	Bauer	Cardiorespiratory Fitness and Lower Urinary Tract Symptoms in Older Adults	Active
107	Scott	Bauer	Skeletal Muscle Mitochondrial Energetics and Lower Urinary Tract Symptoms in Older Adults	Active
108	Sofhia	Ramos	Relationship Between Muscle Tissue Composition and Mitochondrial Energetics in The Study of Muscle, Mobility and Aging (SOMMA).	Active
109	Marissa	Gogniat	Associations of Sedentary Behavior with Cognition in Community-Dwelling Older Adults: The Study of Muscle, Mobility and Aging (SOMMA)	Active
110	Jennifer	LaCross	Physical Performance Measures and Pelvic Floor Morphology in Older Women	Active
111	Lauren	Carlson	Associations Between Cognitive Performance and Bone Health in Older Adults	Active
112	Scott	Bauer	Imaging-Based Pelvic Floor Morphology and Lower Urinary Tract Symptoms in Older Women	Active
113	Nina	Heilmann	D3-Creatine Muscle Mass and MRI Thigh Muscle Volume Associations with HR-pQCT and DXA Bone Parameters	Active
114	Theresa	Mau	Impact of musculoskeletal pain and depressive symptoms on muscle mitochondrial bioenergetics	Active
115	Bragi	Sveinssonv	Predicting Physical Function from MRI SOMMA Data Using Machine Learning	Active

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116	Melissa	Erickson	Are rhythmic and temporal patterns of rest-activity behavior related to cardiorespiratory fitness (and other measures of walking energetics)?	Active
117	Paul	Coen	Associations of cognition with muscle mass, strength, energetics and adiposity	Active
118	Cheehoon	Ahn	The impact of adipose secreted proteins on functional decline in older adults through tissue crosstalk	Manuscript approved
119	Cody	Wolf	5-minute Preferred walking speed treadmill protocol estimates cardiorespiratory fitness in older adults: The Study of Muscle, Mobility and Aging	Active
120	Vera	Gorbunova	Expression of DNA repair genes in muscle is associated with mitochondrial function, muscle mass and performance measures in SOMMA	Manuscript approved
121	Samaneh	Farsijani	Advancing Muscle Health in Older Adults Through Chrononutrition and Nutrigenomics	Active
122	Ahn	Bumsoo	Muscle transcripts with mitochondrial localization predict cardiorespiratory fitness, walking energetics, and the cost-capacity ratio in older adults.	Active
123	Gina	Many	Association of Gene Expression (bulk RNA seq) from muscle biopsies in knee OA subjects and controls	Active
124	Katie Paul	Whytock Coen	Investigating the relationship between skeletal muscle cell type proportion and muscle/physical function phenotype in SOMMA	Active
125	Peggy	Cawthon	Muscle mass and risk of hospitalization in community dwelling older men and women in SOMMA	Active
126	Emma	Gay	Associations between Cerebral Metabolic Rate of Oxygen and Performance Fatigability	Manuscript submitted for publication
127	Andrea	Rosso	Nigrostriatal dopaminergic transmission and prefrontal cortex function during dual-task walking	Manuscript approved
128	Mauricio	Gil-Silva	Associations between striatal dopaminergic neurotransmission and gait quality	Active
129	Harneel	Gill	Worse Lower Back Pain is associated with poorer Life Space Mobility	Active
130	Nicole	Sekel-Derstine	Association of Continuous Hemoglobin Levels and Anemia with HR-pQCT-derived Bone Macro- and Microstructure in Older Men and Women	Active
131	Seyoung	Kim	Associations of striatal Dopaminergic integrity with muscle mitochondrial function using RNAseq	Active
132	Daniel	Rubin	Accelerometer Derived Metrics to Estimate Functional Capacity in Older Adults	Manuscript under review
133	Theresa	Mau	Differential expression of chronic musculoskeletal pain in older adults	Active
134	Caterina	Rosano	Associations of striatal Dopaminergic integrity with muscle mitochondrial function using biopsy and spectroscopy measures.	Active
135	Genesio	Karere	Identification of miRNA-gene networks underlying physical function in older Americans	Manuscript submitted for publication
136	Dan	Forman	Expression of mTOR and autophagy genes in skeletal muscle is associated with cardiovascular disease	Active
137	Lauren	Roe	Associations between skeletal muscle fat infiltration and HR-pQCT variables at the distal tibia and radius in older men and women	Active
138	Greg	Tranah	Examining the Impact of Mitochondrial-Nuclear Epistasis on OXPHOS in Muscle Tissue	Active
139	Nicholas	Rowan	Evaluating the Association of Olfactory Assessment and Cognitive Impairment in Older Adults	Active
140	Dan	Evans	Identification of age-associated gene expression in muscle in SOMMA	Active
141	Nathan	LeBrasseur	Signatures of cellular senescence in SOMMA	Active

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142	Christina	Mu	Examining the Bidirectional Relationship Between Sleep Health and Pain: The Study of Muscle, Mobility and Aging (SOMMA)	Active
143	Jennifer	LaCross	Associations of Imaging-Based Pelvic Floor Morphology With Age and Physical Activity in Women Across the Adult Lifespan	Active
144	Samaneh	Farsijani	Associations between eating times and mitochondrial function in skeletal muscle	Active
145	Anne Theresa	Newman Mau	Associations of SOMMA Vigor to Frailty Score with Mitochondrial Bioenergetics	Active
146	Namki	Hong	Homeostatic dysregulation index of muscle histology as a measure of entropy	Active
147	Newman	John	Multicomponent frailty outcome for TAKEOFF	Manuscript under review
148	Daniel	Rubin	Association Between Frailty Phenotype and Poor Functional Capacity for Perioperative Risk Stratification: Analysis from the Study of Muscle, Mobility and Aging	Manuscript under review
149	Cheehoon	Ahn	Adipose-muscle crosstalk in older adults - Identification of adipose tissue-derived proteins that impact age-associated decline in skeletal muscle function	Active
150	Yu	Yanming	Cross-sectional and longitudinal associations between performance fatigability and physical activity in older adults: the Study of Muscle, Mobility and Aging	Active
151	Yao	Shanshan	Associations Between Muscle Energetics and Weight Loss in Older Adults	Active
152	Campbell	Matthew	3-dimensional engineered muscle tissue metabolism and force measurements	Active
153	Vitor	Oliveira	The comparison of sarcopenia and myosteatosis parameters between people with and without HIV, and the influence of physical activity on the development of these conditions	Active
154	Tong Andy	Yu Kin On Wong	FRAX and HRpQCT bone characteristics in men and women with knee osteoarthritis: Findings from SOMMA study	Active
155	Anita	van den Hoek	Validation of sex specific changes associated to physical weakness & biomarkers for early frailty in an independent 2nd cohort (SOMMA)	Active
156	Zane	Koch	The relationship of transcriptomic entropy in skeletal muscle with fitness and mobility during aging	Active
157	Nancy Lauren	Lane Sparks	Association of Gene Expression (bulk RNA seq) from subcutaneous fat of abdomen in knee OA subjects and controls	Active
158	Elvis Anne	Alvarez Carnero Newman	Lung function and Maximal (VO ₂ peak) and Submaximal (Ventilatory Thresholds) Cardiorespiratory Fitness in SOMMA	Active
159	Karyn Melissa	Esser Erickson	Defining skeletal muscle circadian clock, and clock-related, gene expression patterns versus strength, power, speed and physical function in human aging	Active
160	Yenisel	Cruz-Almeida	Investigating Pain Mechanisms in Aging Muscle via RNAseq Analysis	Active
161	Ashley	Weaver	Computed Tomography Associations Between Lumbar Muscle Properties and Bone Mineral Density in Older Adults of the Study of Muscle, Mobility and Aging (SOMMA)	Active
162	Nancy	Lane	Association of Joint space and trabecular morphometry (tibia and femur) with thigh muscle strength and composition in knee OA subjects and controls elderly individuals	Active

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163	Andrea	Brennan	Associations of SOMMA Vigor to Frailty Score with regional adipose tissue distribution and adipose tissue biological properties	Active
164	Nicholas	Day	Association of protein abundances and cysteine oxidative modifications with muscle and physical function	Active
165	Caterina	Rosano	Bayesian network analysis to identify the determinants of gait slowing in older adults	Active
166	Morgan	Bolger	Myokine gene expression associations with HR-pQCT measures of bone density, morphometry and mechanics	Active
167	Peggy	Cawthon	Proteomic Factors associated with Muscle Size and Strength in Older Adults	Active
168	Mason	Shaffer	Associations Between Hip Muscle Properties and Bone Mineral Density in Older Adults of the Study of Muscle, Mobility and Aging (SOMMA): A Computed Tomography (CT) Ancillary Study	Active
169	Steve	Cummings	Association between neurofilament light (NfL) levels and potential consequences of denervation	Active
170	Tan Peggy	Zhang Cawthon	Correlation between IgG and membrane repair related gene expression levels and muscle mass, function, and physical performance in SOMMA study older adults	Active
171	Javier Yenisel	Tamargo Cruz-Almeida	Diet Quality and Pain Outcomes in Older Adults: Exploring the Role of Muscle Quality, Mitochondrial Function, and Gene Expression	Active