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Table S1. SARC-F screening questionnaire.

SARC-F	Question	Scoring
1. Strength	How much difficulty do you have in lifting and carrying 10 pounds (4.5 kg)?	None = 0 Some = 1 A lot or unable = 2
2. Assistance in walking	How much difficulty do you have walking across a room?	None = 0 Some = 1 A lot or unable = 2
3. Rise from a chair	How much difficulty do you have transferring from a chair or a bed?	None = 0 Some = 1 A lot or unable = 2
4. Climb stairs	How much difficulty do you have climbing a flight of 10 stairs?	None = 0 Some = 1 A lot or unable = 2
5. Falls	How many times have you fallen in the past year?	None = 0 1-3 falls = 1 4 or more falls = 2

Note: A total SARC-F score of ≥ 4 is indicative of sarcopenia.

Table S2. Medications phase 1 clinical trials for sarcopenia identified from ClinicalTrials.gov.

Drug	Mechanism of action	Dose	Indication	Primary outcome(s)	Sample size	Status	Expected completion date	Registration (NCT)
Anamorelin (ghrelin receptor agonist)	Ghrelin mimetic; GH/IGF-1 axis	Oral daily vs placebo, 12 months	Adults with low bone and muscle mass	Total body muscle mass (D3-creatine dilution)	32	COMPLETED	Completed: November 2021	NCT04021706
Cetylpyridinium chloride (CPC)	Antimicrobial; proposed preventive effect	Oral, short-term	Pre-sarcopenia/sarcopenia ≥60 years old	Procollagen type III NT peptide trajectory	100	COMPLETED	Completed: August 2016	NCT02575235
Cetylpyridinium chloride (CPC)	Antimicrobial; proposed preventive effect	Oral, short-term	Pre-sarcopenia ≥60 years old	Myostatin, TNF- α , IL-6; urinary creatinine	65	COMPLETED	Completed: November 2015	NCT02297997
Metformin	AMPK activator; insulin sensitizer	850 mg daily → 850 mg BID (3 years)	Prediabetes, ≥65 years old	Change in total lean mass (DXA)	120	COMPLETED	Completed: August 2018	NCT01804049

AMPK: AMP-activated protein kinase; BID: twice daily; CPC: cetylpyridinium chloride; DXA: dual-energy X-ray absorptiometry; GH: growth hormone; IGF-1: insulin-like growth factor 1; IL-6: interleukin 6; NCT: National Clinical Trial identifier; TNF- α : tumor necrosis factor alpha

*Research on ClinicalTrials.gov using advanced search with keywords for condition or disease: “Sarcopenia” and study type: “Interventional studies (Clinical trials)” and filter: “Drug interventions” (search date 10 September 2025). A total of 29 trials were identified. Interventional trials on dietary supplementation, behavioural interventions, device-related studies and other non-drug interventions were excluded.

Table S3. Medications phase 2 clinical trials for sarcopenia identified from ClinicalTrials.gov.

Drug	Mechanism of action	Dose	Indication	Primary outcome(s)	Sample size	Status	Expected completion	Registration (NCT)
AVTR101 (alverine citrate)	Spasmolytic; novel indication	TID × 12 weeks versus (vs) placebo	Sarcopenia (older adults)	Change in SPPB (12 weeks)	100	TERMINATED (Due subject enrolment delay and to secure expiration of the test drug)	Terminated early, 2025	NCT06788236
AMC6156	Small-molecule; MOA not disclosed	Oral 0.1, 0.3, 1.0 mg daily × 12 weeks vs placebo	Sarcopenia (older adults)	SPPB score change (baseline to 12 weeks)	80	RECRUITING	Estimated completion: June 2026	NCT07072195
REGN1033 (SAR391786)	Anti-myostatin monoclonal antibody	Subcutaneous × 12 weeks vs placebo	Sarcopenia (older adults)	% change in total lean body mass (DXA)	253	COMPLETED	Completed: February 2015	NCT01963598
Bimagrumab	ActRII monoclonal antibody; blocks myostatin/activin signalling	Repeat dosing × 25 weeks vs placebo	Sarcopenia (older adults)	Change in SPPB to week 25	180 (113 bimagrumab; 67 placebo)	COMPLETED	Completed: June 2018	NCT02333331
MYMD-1	Oral immunomodulator; cytokine/TNF- α modulation	600–1050 mg daily × 28 days vs placebo	Sarcopenia/frailty with chronic inflammation	sTNFR1, IL-6, TNF- α reduction; PK parameters	40	COMPLETED	Completed: July 2023	NCT05283486
Losartan	AT1R blocker; ↓TGF- β , ↑IGF-1/mTOR signalling	25→50→100 mg daily × 24 weeks vs placebo	Older adults ≥70 years old (pre-frail/sarcopenia)	Isokinetic knee strength; fatigability	37	COMPLETED	Completed: October 2016	NCT01989793
LPCN 1148	Oral testosterone prodrug	Oral capsules; 24 weeks vs placebo	Men with cirrhosis and sarcopenia	Change from baseline in Skeletal Muscle Index (DXA)	30	COMPLETED	Completed: December 2023	NCT04874350

Nandrolone decanoate	Anabolic steroid; androgen receptor agonist	50 mg IM q3 weeks × 12 weeks vs placebo (plus physio & nutrition)	Sarcopenia ≥60 years old	SPPB; 400 m walk (12 weeks)	168	RECRUITING	Estimated completion: December 2025	NCT05978206
Testosterone gel vs anastrozole	Androgen receptor agonism vs aromatase inhibition	Topical gel or oral anastrozole × 12 months	Men ≥65 years old with low testosterone	Lumbar spine BMD (DXA)	44	COMPLETED	Completed: January 2015	NCT00104572
Testosterone enanthate ± finasteride	Androgen receptor agonism ± 5 α -reductase inhibition	125 mg IM weekly ± finasteride 5 mg daily × 52 weeks	Older hypogonadal men	1-RM strength (5 exercises)	60	COMPLETED	Completed: October 2014	NCT00475501
BIO101 (Sarconeos)	MAS receptor activator; RAAS modulator	350 or 700 mg daily × 26 weeks vs placebo	Sarcopenia ≥65 years old; SPPB ≤8	400 m walk gait speed (baseline to 6 months)	233	COMPLETED	Completed: January 2021	NCT03452488
Ghrelin + strength training	Ghrelin peptide; GH/IGF-1 axis	7.5 mcg/kg/day SC × 12 weeks + resistance training	Frail elderly (≥70 years old)	SPPB score; safety labs	16	COMPLETED	Completed: August 2016	NCT01898611
Ophiocephalus striatus extract	Nutraceutical; ↑IGF-1, ↓IL-6	5 g BID × 2 weeks vs placebo	Elderly with sarcopenia	IGF-1; IL-6; SARC-F; mass & strength	80	COMPLETED	Completed: December 2023	NCT05869383
Testosterone undecanoate (“muscle memory”)	Androgen receptor agonist ± resistance training	IM testosterone undecanoate vs placebo; 32-week protocol	Older men (sarcopenia/low T)	Fat-free mass (DXA); muscle CSA; fibre CSA	40 (target)	RECRUITING	Estimated completion: December 2026	NCT05964920

1-RM: one repetition maximum; ActRII: activin type II receptor; ALM: appendicular lean mass; ASM: appendicular skeletal muscle; ASMI: appendicular skeletal muscle index; AT1R: angiotensin II type 1 receptor; BID: twice daily; BMD: bone mineral density; CSA: cross-sectional area; DXA: dual-energy X-ray

absorptiometry; GH: growth hormone; IGF-1: insulin-like growth factor 1; IL-6: interleukin 6; IM: intramuscular; IV: intravenous; MAS: mitochondrial assembly receptor; MOA: mechanism of action; mTOR: mechanistic target of rapamycin; PK: pharmacokinetics; q3 weeks: every 3 weeks; RAAS: renin–angiotensin–aldosterone system; SMI: skeletal muscle index; SPPB: short physical performance battery; STS: sit-to-stand test; sTNFR1: soluble tumor necrosis factor receptor 1; T: testosterone; TGF- β : transforming growth factor beta; TNF- α : tumor necrosis factor alpha

Table S4. Medications phases 3 and 4 clinical trials for sarcopenia identified from ClinicalTrials.gov.

Drug	Mechanism of action	Dose	Indication	Primary outcome(s)	Sample size	Status	Expected completion	Registration (NCT)
Phase 3								
Denosumab	RANKL inhibitor (anti-resorptive)	SC injection; 12 months vs placebo	Osteoporosis + sarcopenia (osteoporosis–sarcopenia syndrome)	BMD; BTMs; SARC-F; grip; ASM/ASMI; gait speed; 5×STS	86	RECRUITING	Expected completion: March 2025	NCT06154707
Phase 4								
Denosumab vs zoledronic acid	Anti-resorptives; bone–muscle crosstalk	SC denosumab vs IV zoledronic acid; 12 months	Osteosarcopenia	D3-creatine muscle mass; DXA ALM; grip; gait speed; TBS; BMD	20	ACTIVE_NOT_RECRUITING	Expected completion: July 2026	NCT05666310
Levothyroxine	Thyroid hormone replacement	Oral titrated; 12–42 months	Subclinical hypothyroidism with sarcopenia	Gait speed (3- and 6-m walk)	322	COMPLETED	Completed, May 2018	NCT04354896
Testosterone gel (TOM trial)	Androgen receptor agonist	Topical gel × 6 months vs placebo	Older men with sarcopenia and low testosterone	Leg press strength (6 months)	209	TERMINATED Higher incidence of cardiovascular events in the testosterone arm of the trial	Completed, December 2009	NCT00240981
Pioglitazone (with diet and exercise)	PPAR-γ agonist; insulin sensitizer	Oral daily × 4 months	Obese older adults (body composition optimisation)	Appendicular non-bone lean mass	88	COMPLETED	Completed: April 2007	NCT00315146

ALM: appendicular lean mass; ASM: appendicular skeletal muscle; ASMI: appendicular skeletal muscle index; BMD: bone mineral density; BTMs: bone turnover markers; DXA: dual-energy X-ray absorptiometry; IV: intravenous; PPAR-γ: peroxisome proliferator-activated receptor gamma; RANKL: receptor activator of nuclear factor kappa-B ligand; STS (5×STS): 5 times sit-to-stand test; TBS: trabecular bone score