

# Men 60–70 — Muscle-Building Stack

## Purpose

By the sixties, anabolic resistance and sarcopenia threaten strength, mobility, and independence. This stack is engineered to drive muscle protein synthesis (MPS) despite resistance, reduce muscle breakdown, protect joints and bone, maintain neuromuscular efficiency, and secure sleep-driven recovery.

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## System-by-System Optimization

### Musculoskeletal / Anti-catabolic + Anabolic (Score: 10/10)

**Creatine monohydrate:** Replenishes intramuscular phosphocreatine to regenerate ATP between reps, increasing strength, training volume, and lean mass; also supports cognition in aging.

Dose: **0.05 g/lb/day**.

**HMB ( $\beta$ -hydroxy  $\beta$ -methylbutyrate):** Leucine metabolite that reduces ubiquitin-proteasome-mediated proteolysis; consistently limits muscle loss and aids gains in older trainees and during layoffs or deficits. Dose: **3 g/day**.

**Leucine (extra focus):** Direct **mTORC1** trigger; older muscle requires a larger leucine pulse to overcome anabolic resistance. Ensure  $\geq 2.5$ –**3 g leucine per feeding**; supplement **3–5 g/meal** if a meal is leucine-light.

**EAA (essential amino acids):** Complete indispensable amino acids to drive MPS even with smaller meals or blunted appetite; more reliable than BCAAs in older adults. Dose: **0.06–0.1 g/lb/day**, split; include **peri-workout**.

**Whey isolate:** Rapid, leucine-rich protein to spike MPS post-training and help reach total daily protein. Daily protein target **0.8–1.0 g/lb** (consider **1.0–1.2 g/lb** if medically appropriate).

**Collagen peptides:** Provides glycine/proline/hydroxyproline to support tendon, ligament, and fascia tolerance under progressive loading—reduces soft-tissue bottlenecks that limit training.

Dose: **0.06 g/lb/day**.

**Vitamin C (with collagen):** Cofactor for prolyl/lysyl hydroxylases; required for stable collagen cross-linking and tendon remodeling. Dose: **3 mg/lb/day** taken **with** collagen.

**Silica (orthosilicic acid or MMST):** Supports collagen cross-linking and bone matrix mineralization, complementing collagen + Vitamin C. Dose: **1 mg/lb/day**.

**Vitamin K2 (MK-7):** Directs calcium into bone (osteocalcin activation) and away from arteries; critical with higher protein and resistance training in older adults. Dose: **100 mcg/day**.

### Endocrine / Hormonal (Score: 10/10)

**Vitamin D3 + K2:** D3 supports muscle function, balance/fall reduction, immunity, and testosterone milieu; K2 covered above for bone/vascular safety. Dose: **40–60 IU/lb D3 + 100 mcg K2/day**.

**Zinc + Copper:** Zinc is required for steroidogenesis and tissue repair; copper prevents deficiency from chronic zinc use and supports antioxidant enzymes (SOD). Dose: **Zinc 0.2 mg/lb + Copper 0.01 mg/lb/day**.

**Ashwagandha (root extract):** Lowers cortisol, improves sleep quality, and is associated with strength and testosterone improvements—blunts catabolism. Dose: **2 mg/lb/day**.

**Tongkat ali (Eurycoma):** Supports LH signaling to maintain endogenous testosterone and training drive. Dose: **1.2 mg/lb/day**.

**Cistanche tubulosa:** Enhances androgen-receptor sensitivity, amplifying the anabolic response to existing hormone levels. Dose: **3 mg/lb/day**.

**Boron:** Lowers SHBG to raise free (bioavailable) testosterone; also supports bone. Dose: **0.1 mg/lb/day**.

**DHEA (if indicated):** Replaces declining adrenal androgens; useful in some older men to support strength and well-being (lab-guided). Dose: **5–25 mg/day** under medical supervision.

### **Cellular / Mitochondrial + Senescence (Score: 10/10)**

**NMN:** Restores NAD<sup>+</sup>, sustaining mitochondrial ATP production, sirtuin activity, and repair after training stress. Dose: **0.5–1 mg/lb/day**.

**R-alpha-lipoic acid (R-ALA):** Mitochondrial cofactor that improves insulin sensitivity and recycles antioxidants (GSH, Vitamin C/E); supports glycogen replenishment. Dose: **0.5–1 mg/lb/day**.

**Acetyl-L-carnitine (ALCAR):** Facilitates long-chain fatty acid transport into mitochondria for energy; supports attention/drive during training. Dose: **6–8 mg/lb/day**.

**Rhodiola rosea:** Adaptogen that raises fatigue threshold (AMPK/PGC-1 $\alpha$ ), stabilizes mood and adherence across training blocks. Dose: **1 mg/lb/day**.

**Fisetin (intermittent) + Quercetin:** Senolytic pairing that helps clear senescent cells, improving tissue regenerative capacity and post-training recovery. Doses: **Fisetin 4–5 mg/lb/day for 2 consecutive days/month; Quercetin 3–4 mg/lb/day** (daily antioxidant and senolytic partner during pulses).

### **Neurocognitive / Training Focus (Score: 10/10)**

**L-Tyrosine:** Precursor to dopamine/norepinephrine; maintains focus, motivation, and motor drive—especially valuable under life stress. Dose: **5–7 mg/lb pre-workout**.

**Caffeine + L-theanine:** Improves force production and perceived effort while theanine reduces jitter and post-workout crash. Dose: **Caffeine 2–3 mg/kg pre-workout + Theanine 100–200 mg**.

**Lion's mane (Hericium):** NGF support for neuroplasticity and motor learning; helps maintain mind-muscle connection. Dose: **3–5 mg/lb/day (standardized extract)**.

**CDP-choline + Alpha-GPC:** Cholinergic donors to sustain acetylcholine at the neuromuscular junction for better contraction quality and skill acquisition. Dose: **CDP 1.5 mg/lb + Alpha-GPC 2 mg/lb/day**.

### **Cardiovascular / Recovery (Score: 10/10)**

**Omega-3 (EPA/DHA):** Lowers inflammation, supports joint comfort and endothelial health—key for high-quality training in older adults. Dose: **30–35 mg/lb/day**.

**CoQ10 (ubiquinol):** Enhances myocardial and skeletal muscle mitochondrial energy; consider higher range if on statins. Dose: **1.5–2 mg/lb/day**.

**Magnesium glycinate:** Improves glucose handling, reduces cramps, aids relaxation and sleep depth. Dose: **4–5 mg/lb/night**.

**Bergamot extract:** Polyphenols that improve LDL/TG and support arterial health during higher-calorie building phases. Dose: **2–3 mg/lb/day**.

**Aged garlic extract:** Supports arterial elasticity and helps reduce BP; complements training safety. Dose: **3–4 mg/lb/day**.

## **Immunologic / Anti-inflammatory (Score: 10/10)**

**Curcumin (with piperine):** Inhibits NF-κB, cutting chronic low-grade inflammation and DOMS so volume and frequency can stay productive. Dose: **~1 mg/lb/day**.

**Reishi (Ganoderma):** Beta-glucans modulate immune tone under chronic training stress, reducing illness-related interruptions. Dose: **6–7 mg/lb/day**.

## **Sleep / Growth (Score: 10/10)**

**Magnesium L-threonate:** Increases brain magnesium; improves sleep architecture and cognition—both crucial for adaptation. Dose: **~10 mg/kg/night**.

**Apigenin:** Gentle GABA-A modulation to shorten sleep latency without hangover. Dose: **50 mg/night**.

**Glycine:** Lowers core temperature and deepens slow-wave sleep; also supplies substrate for collagen synthesis. Dose: **0.02–0.03 g/lb/night**.

**Tart cherry extract:** Natural melatonin and polyphenols that extend sleep cycles and reduce soreness. Dose: **~6 mg/lb/night**.

**Melatonin:** Addresses age-related decline in endogenous melatonin to protect circadian GH pulses. Dose: **0.3–1 mg/night** (lowest effective dose).

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# **Daily Routine**

## **Morning (8–9 AM)**

- Astragalus-free block; take: **NMN, Rhodiola, ALCAR, Omega-3, Vitamin D3/K2, CoQ10, Bergamot, Aged garlic, Lion's mane, CDP-choline, Alpha-GPC.**

## **Pre-Workout (45–60 min prior)**

- **Creatine, Beta-alanine, L-tyrosine, Caffeine + L-theanine, EAAs (half dose).**

## **Post-Workout (0–60 min)**

- **Whey isolate** to help reach **0.8–1.0 g protein/lb/day**.
- **Leucine** added to reach **3–5 g** at the meal if needed.
- **Collagen + Vitamin C** for connective tissue remodeling.
- **EAA**s remainder if not using whey.

### **Midday / With Meals**

- **R-ALA, Curcumin, Quercetin, Silica.**
- **Zinc + Copper, Cistanche, Boron.**
- **HMB** at any time of day (may split).

### **Evening (9–10 PM)**

- **Magnesium glycinate, Magnesium L-threonate, Glycine, Apigenin, Tart cherry; Melatonin PRN.**

### **Monthly Senolytic Pulse**

- **Fisetin 4–5 mg/lb/day × 2 consecutive days** with daily **Quercetin** support.

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## **Disclaimer**

This guide is for educational purposes only. It does not constitute medical advice, diagnosis, or treatment, and it does not establish a doctor–patient relationship. Supplementation, dosing, and timing should be personalized under the supervision of a qualified healthcare provider. Always consult your physician before beginning any new supplement regimen.