

## # 🧬 The Longevity Blueprint: Beating Sarcopenia

### ## A Practical, Asia-Adapted Guide to Muscle Strength, Balance & Vitality for Seniors

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#### ## Part 1: The Science of Your Strength

As we age, our bodies face a common but manageable condition known as \*\*sarcopenia\*\*—the gradual loss of muscle mass, strength, and functional capacity.

One of the main drivers is \*\*anabolic resistance\*\*, where aging muscles become less responsive to protein intake and exercise signals. This can make it \*feel\* as though effort no longer produces results.

The good news is that your body retains a powerful biological trait called \*\*muscle plasticity\*\*.

> \*\*Scientific evidence is clear:\*\* skeletal muscle can be rebuilt at \*any age\*.

By combining:

- \* the \*\*right movements\*\*,
- \* \*\*adequate protein\*\*, and
- \* \*\*proper recovery timing\*\*,

muscle-building pathways can be re-activated—leading to:

- \* better balance

- \* improved metabolic health
- \* greater independence
- \* reduced fall risk

Strength is not lost forever. It is simply \*\*under-reminded\*\*.

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## ## Part 2: The “Big 5” Functional Strength Exercises

\*\*Frequency:\*\* 3–5 days per week

\*\*Volume:\*\* 2 sets of 10–12 repetitions per exercise

These movements were selected for \*\*maximum daily-life transfer\*\* and \*\*joint safety\*\*, especially for seniors living in compact urban homes.

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### ### 1. Chair Squats — \*The Stand-Up\*

\*\*How:\*\*

Sit on a sturdy chair, feet hip-width apart. Stand up using your legs only (avoid pushing with arms). Lower yourself back down slowly.

\*\*Safety Cue:\*\*

Weight in heels, chest tall, knees tracking forward.

\*\*Why It Matters:\*\*

Improves sit-to-stand ability, stair climbing, and car entry/exit.

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## LOWER BODY (FRONT VIEW)

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/ | \

[ Q ] ← Quadriceps

| |

( G ) ← Glutes

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[CALF][CALF]

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### ### 2. Wall Push-Ups — \*The Wall Press\*

#### \*\*How:\*\*

Hands flat on wall at shoulder height. Step feet back slightly. Lower chest toward wall, then press away.

#### \*\*Safety Cue:\*\*

Body in one straight line; no lower-back arching.

#### \*\*Why It Matters:\*\*

Builds pushing strength for doors, railings, and floor recovery.

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### SIDE VIEW (WALL PUSH-UP)

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/|==== WALL

/ | ← Chest / Triceps

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### ### 3. Bird-Dogs — \*The Balance Builder\*

#### \*\*How:\*\*

On hands and knees, extend opposite arm and leg. Hold 3 seconds, switch sides.

#### \*\*Safety Cue:\*\*

Eyes down, neck neutral, slow breathing.

#### \*\*Why It Matters:\*\*

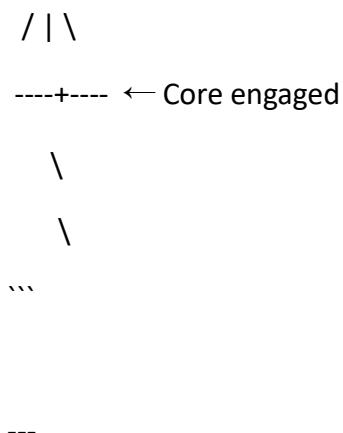
Improves core stability and fall prevention.

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### BIRD-DOG POSITION

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### ### 4. Heel Raises — \*The Ankle Anchor\*

#### \*\*How:\*\*

Stand behind a chair. Rise onto tiptoes, pause briefly, lower slowly.

#### \*\*Safety Cue:\*\*

Move deliberately—no bouncing.

#### \*\*Why It Matters:\*\*

Strengthens ankles for safer walking on uneven ground.

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### ### 5. Standing Side Leg Lifts — \*The Hip Stabilizer\*

#### \*\*How:\*\*

Stand behind a chair. Lift one leg sideways while keeping toes forward.

#### \*\*Safety Cue:\*\*

Stand tall—do not lean.

**\*\*Why It Matters:\*\***

Improves side-to-side balance and hip control.

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## ## Part 3: Nutrition & Recovery — Building the Material

Exercise provides the **\*\*signal\*\***. Nutrition supplies the **\*\*materials\*\***.

### ### Protein Pacing

Aim for **\*\*~30g protein per meal\*\***. Smaller amounts often fail to activate muscle-building pathways in older adults.

### ### The Power Trio

\* **\*\*Vitamin D:\*\*** supports muscle firing and coordination

\* **\*\*Omega-3s:\*\*** reduce inflammation and enhance muscle responsiveness

\* **\*\*Hydration:\*\*** keeps muscle tissue elastic and resilient

### ### Deep Sleep

Growth hormone is released during deep sleep. Aim for **\*\*7–8 hours nightly\*\*** to repair training-related micro-damage.

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## ## Part 4: 12-Week Progressive Strength Plan

Designed for seniors with \*\*anabolic resistance\*\* and \*\*joint recovery needs\*\*.

### ### Phase 1: Re-Awakening (Weeks 1–4)

- \* Frequency: 3x/week
- \* Sets: 1–2
- \* Reps: 8–10
- \* Focus: form, confidence, consistency

### ### Phase 2: Strength Signaling (Weeks 5–8)

- \* Frequency: 4x/week
- \* Sets: 2
- \* Reps: 10–12
- \* Add: 3–4s Bird-Dog holds, optional 0.5–1kg weights

### ### Phase 3: Functional Resilience (Weeks 9–12)

- \* Frequency: 4–5x/week
- \* Sets: 2–3
- \* Reps: 10–12
- \* Add: slow lowering, one-leg focus, light step-ups

\*\*Deload Rule:\*\* Every 4th week, reduce volume by 30–40%.

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## ## Part 5: Weekly Activity & Meal Planner

Day	Activity	Done
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Mon	Squats & Wall Push-Ups	<input type="checkbox"/>
Tue	Bird-Dogs & Heel Raises	<input type="checkbox"/>
Wed	Rest & Hydration	<input type="checkbox"/>
Thu	Side Leg Lifts & Squats	<input type="checkbox"/>
Fri	Wall Push-Ups & Bird-Dogs	<input type="checkbox"/>
Sat	20-min Brisk Walk	<input type="checkbox"/>
Sun	Rest & Meal Prep	<input type="checkbox"/>

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## ## Part 6: Safety & Warning Signs

### ### Green Light (Continue)

- \* Mild muscle burn
- \* Mild soreness 24–48h later
- \* Elevated but controlled breathing

### ### Yellow Light (Adjust)

- \* Sharp joint pain
- \* Swelling or heat
- \* Pain worsening with movement

### ### Red Light (Stop)

- \* Chest pressure
- \* Sudden dizziness
- \* Persistent breathlessness
- \* Sudden vision changes

### \*\*The Talk Test:\*\*

- \* Can sing → too easy
- \* Can talk, not sing → ideal
- \* Only a few words → slow down

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## ## Part 7: Asia / Singapore-Specific Adaptation

### ### Space & Lifestyle

- \* Chair + wall only
- \* Suitable for HDB flats
- \* Bird-Dogs optional on bed

### ### Local Protein Options (Combine to reach ~30g)

Food	Portion	Protein
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Soft tofu	300g	~18g	
Eggs	3	~18g	
Tempeh	100g	~20g	
Fish (ikan / pomfret)	120g	~25–28g	
Milk (HL / Meiji)	500ml	~16g	

### ### Tropical Hydration Rule

- \* 1 glass upon waking
- \* 1 glass pre-exercise
- \* 1 glass with each protein meal

Add electrolytes if sweating heavily.

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### ## Closing Principle

- > You are not “too old.”
- > Your muscles are simply \*\*under-reminded\*\*.

When signals are clear, nutrition sufficient, and recovery respected—strength returns.