

THE EXTRAORDINARY SECRET LIFE OF YOUR MUSCLES

The Four Superpowers of Muscle in Menopause — Quick Reference Guide

Anna Pattison | Registered Nurse · Clinical Myotherapist · Menopause Mentor

menopausehub.com.au

650+	70%	80%	~10 yrs
myokines released by contracting muscle	of women experience the Musculoskeletal Syndrome of Menopause	of blood glucose cleared by skeletal muscle after meals	global gap between lifespan and years of good health

YOUR MUSCLES PROTECT YOUR HEALTH IN FOUR WAYS

1. YOUR BRAIN

Your Muscles Are Talking to Your Brain

Contracting muscles release BDNF — a growth factor that supports neuron health, memory and cognitive function. As oestradiol falls, active muscle becomes even more critical for brain health.

- Brain fog, memory lapses and difficulty concentrating have a physiological explanation
- Exercise is one of the most evidence-backed tools for protecting cognitive health
- When oestradiol's neuroprotective role diminishes, muscle becomes your primary defence

"When your muscles work, your brain benefits. Every session is a deposit into your cognitive future."

2. YOUR METABOLISM

Your Muscles Are Your Metabolic Engine

Skeletal muscle clears up to 80% of blood glucose after meals and drives your resting metabolic rate. Post-menopausal women show a 25% reduction in muscle glucose uptake. This is biology, not willpower.

- Metabolic changes in menopause are a muscle and hormone story — not a willpower story
- Every 1kg of muscle burns 3–5x more energy at rest than fat tissue
- Muscle loss accelerates during the menopause transition and continues post-menopause

"The muscle you build now is metabolic protection you carry with you for the rest of your life."

3. YOUR IMMUNE SYSTEM

Your Muscles Are Medicine for Your Immune System

Every time your muscles contract, they release anti-inflammatory myokines — your body's natural defence against chronic inflammation (inflammageing). Oestradiol is also powerfully anti-inflammatory. In menopause, both systems weaken at once.

- Oestradiol decline removes a key layer of anti-inflammatory protection
- Muscle loss and reduced activity compound this — a double hit
- Chronic inflammation drives cardiovascular disease, insulin resistance and cognitive decline

"Exercise is not just good for fitness. It is medicine for your immune system."

4. YOUR BONES

Your Muscles Are Protecting Your Bones

Muscle places mechanical load on bone and releases irisin — a myokine that directly stimulates osteoblasts (bone-building cells). Osteoporosis is not just a calcium story. It is a muscle story.

- 70% of women experience the Musculoskeletal Syndrome of Menopause — most are never told it has a name
- Oestradiol decline accelerates bone breakdown while muscle loss reduces bone-building signals — simultaneously
- Calcium, D3 and K2 (MK-7) build the structure — but muscle sends the signal to use them

"Bone density and muscle strength are not separate conversations. They are the same conversation."

ONE LINE TO REMEMBER FROM EACH PART

INTRO	<i>"Your muscles are not just mechanical tissue. They are one of the body's most sophisticated signalling organs."</i>
BRAIN	<i>"When your muscles work, your brain benefits. Every session is a deposit into your cognitive future."</i>
METABOLISM	<i>"Muscle loss in menopause is not about ageing. It is about a change in hormonal environment — and it is modifiable."</i>
IMMUNITY	<i>"Exercise is not just good for fitness. It is medicine for your immune system."</i>
BONES	<i>"Nutrients build the structure. Muscle sends the signal to use them."</i>
HEALTHY AGEING	<i>"Menopause is the moment you find out what your body is truly made of — and what it can still become."</i>

THE PRESCRIPTION — THE SAME ANSWER FOR ALL FOUR SUPERPOWERS

WHAT	HOW	SUPERPOWERS
Resistance Training	2–3 sessions per week. Compound movements — squats, deadlifts, rows, presses, hip thrusts. Progressive overload: gradually increase weight, reps or difficulty over time.	Supports: Brain · Metabolism · Bones · Healthy Ageing
Impact & Aerobic Exercise	Weight-bearing activity most days — walking, hiking, dancing, jogging. Also include moderate aerobic exercise (150 min/week). Note: swimming and cycling are great for cardio but do not provide the loading signal bone needs.	Supports: Brain · Metabolism · Immunity · Healthy Ageing
Protein	1.2–1.6 g per kilogram of body weight daily. Distribute across meals — prioritise at breakfast. Whole food sources first: meat, fish, eggs, legumes, dairy.	Supports: Metabolism · Bones · Healthy Ageing
Calcium, Vitamin D3 & K2 (MK-7)	Food-first for calcium (dairy, leafy greens, tinned fish with bones). Ask your GP to check your vitamin D — many women are deficient. K2 in MK-7 form directs calcium into bone rather than soft tissue.	Supports: Bones · Immunity · Healthy Ageing
Menopausal Hormone Therapy (MHT)	Restores oestradiol — directly addressing the hormonal drivers of muscle loss, bone loss, inflammation and cognitive change. Supported by NICE, IMS and BMS guidelines. An evidence-based conversation worth having early with a clinician who understands the full picture.	Supports: All four superpowers

WHAT HEALTHY AGEING CAN LOOK LIKE

Stronger Bones

Reduced fracture risk through muscle load and bone turnover.

Sharper Mind

Better memory, focus and cognitive resilience into your 60s and 70s.

Stable Blood Sugar

Less insulin resistance, less belly fat, more energy.

Fewer Aches

Reduced joint pain, better posture and everyday mobility.

Better Sleep

Exercise and muscle health improve sleep architecture and depth.

Longer Healthspan

More years living well — not just living longer.

*"You are not too late. Your muscles are ready to respond.
The most important step is the next one."*

ABOUT THE AUTHOR

Anna Pattison

Former Registered Nurse · Clinical Myotherapist · Menopause Mentor

Postgraduate Certificate in Menopause Medicine (University of South Wales, UK)

Specialist menopause training: Newson Health · PCWHF · Impart

menopausehub.com.au

THE COMPLETE SERIES

Read all six parts at menopausehub.com.au

Intro Why Your Muscles Do Far More Than Move You

Part 1 Brain & Cognitive Health — Your Muscles Are Talking to Your Brain

Part 2 Metabolism — Your Muscles Are Your Metabolic Engine

Part 3 Immunity — Your Muscles Are Medicine for Your Immune System

Part 4 Bones — Your Muscles Are Protecting Your Bones

Part 5 Healthy Ageing — Your Muscles and the Art of Ageing Well