

Collagen is often spoken about as if it belongs solely in the beauty aisle. In truth, it belongs at the center of human biology.

In a recent article we explored how nuts support longevity, metabolic health and healthful ageing. This week, we're going even smaller – but arguably even more powerful.

Seeds

Tiny nutritional powerhouses that quietly deliver amino acids, minerals, healthy fats and phytonutrients – all essential for rebuilding **collagen**, the most abundant protein in the human body.

Collagen is often spoken about as if it belongs solely in the beauty aisle. In truth, it belongs at the center of human biology.

Collagen makes up around 30% of the body's total protein and acts as the structural framework for nearly every tissue. It gives skin its firmness, arteries their elasticity, joints their flexibility, bones their strength and the gut lining its integrity. When collagen declines we don't just see wrinkles. We feel it in slower recovery, reduced joint resilience, weaker hair and nails, and even compromised metabolic health.

From our thirties onward, collagen production naturally slows. For women, the drop in oestrogen during perimenopause and menopause accelerates this process considerably. For men, gradual declines in testosterone and growth hormone also impact collagen synthesis and tissue repair. **This is not a gendered issue. It is a whole body issue.**

The good news is that collagen production can be supported. Not only through supplements or topical treatments, but through strategic nutrition that feeds the cells responsible for building and protecting our connective tissue.

Seven seeds in particular stand out in functional medicine and nutritional biochemistry for their ability to activate fibroblasts, balance hormones, reduce inflammation, support the gut and restore metabolic efficiency. This is not skincare from the outside. It is cellular renewal from within.

Let's explore the seven seeds that deserve a place in your kitchen.

1. Flax Seeds: Hormonal Balance and Anti Inflammatory Protection

Flax seeds are rich in lignans – plant compounds that gently modulate oestrogen activity. Oestrogen stimulates fibroblasts, the cells responsible for producing collagen. When hormone levels fluctuate or decline, collagen synthesis weakens.

For women navigating hormonal change, flax can help stabilise the signalling pathways that keep collagen production steady. For men, flax supports balanced hormone metabolism and reduces inflammatory load.

Flax is also abundant in omega-3 ALA, which reduces inflammatory cytokines and protects the collagen you already have while supporting new synthesis.

● Best used freshly ground, one to two tablespoons daily stirred into yoghurt or blended into a smoothie.

2. Chia Seeds: Hydration and Mitochondrial Support

Collagen fibres need hydration to remain supple. When you soak chia seeds they form a gel that supports cellular water balance and stabilises blood sugar – preventing glycation, the stiffening of collagen caused by excess glucose. Beyond hydration, chia provides magnesium,



Set of seeds: pumpkin, hemp, black cumin, sesame, flax and sunflower.

zinc and small amounts of glycine and proline, key amino acids involved in collagen formation. Research also suggests chia supports mitochondrial biogenesis. Collagen production is energy intensive. Without efficient mitochondria, fibroblasts cannot function optimally.

● One tablespoon soaked in water for at

least 20 minutes and added to your breakfast smoothie can support both hydration and collagen metabolism.

They also supply methionine, a sulfur-containing amino acid critical for collagen cross-linking and structural strength.

● A tablespoon of sesame seeds, freshly ground in your smoothie, sprinkled on your meal, or a tablespoon of tahini with lemon juice, is a simple



The Wellness Column

by Amanda J. Butler

THE COLLAGEN RESET: 7 powerful anti ageing seeds that rebuild skin and strength from within

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3. Pumpkin Seeds: The Mineral Activators

Collagen synthesis depends on enzymes that require zinc, copper and magnesium. Pumpkin seeds are one of the richest whole-food sources of these minerals.

They also contain arginine, which boosts nitric oxide and improves circulation – meaning better nutrient delivery to skin and connective tissues, improving tissue repair in both men and women.

● Two tablespoons daily sprinkled over salads or soups deliver powerful structural support.

4. Sesame Seeds: The Collagen Protectors

Collagen is constantly under attack from oxidative stress caused by UV exposure, pollution and metabolic byproducts.

Sesame seeds contain sesamin and sesamol – potent antioxidants that help neutralise these

free radicals and protect collagen from breakdown.

5. Black Cumin Seed: Mitochondrial and Inflammatory Reset

Often called "the seed of blessing," black cumin, also known as *Nigella sativa*, has been used in traditional medicine for centuries. Modern research highlights thymoquinone as its key active compound.

Thymoquinone enhances mitochondrial efficiency and reduces inflammatory cytokines that suppress collagen gene expression. When mitochondrial function well, fibroblasts have the ATP energy required to assemble collagen's triple helix structure. Black cumin also improves insulin sensitivity and reduces oxidative stress. High blood sugar accelerates collagen breakdown through glycation, so metabolic balance is central to preserving youthful connective tissue.

● A small daily amount, around half a teaspoon of seeds or a quarter teaspoon of organic cold pressed oil, is sufficient.

6. Sunflower Seeds: Amino Acids and Vitamin E Shield

Collagen is composed primarily of glycine, proline and hydroxyproline. Sunflower seeds provide amino acids that act as precursors to these building blocks.

They are also one of the richest sources of vitamin E, a fat soluble antioxidant that protects cell membranes from oxidative damage. Higher vitamin E status is associated with lower markers of collagen degradation and photoageing.

Sunflower seeds also contain selenium and zinc, supporting antioxidant enzymes such as glutathione peroxidase. Lower systemic inflammation means reduced activation of matrix metalloproteinases, the enzymes responsible for collagen breakdown.

● A tablespoon or two daily can contribute to both collagen production and protection.

7. Hemp Seeds: Gut Repair and Complete Structural Support

Collagen production begins in the gut. Approximately 70 percent of immune signaling originates in the intestinal lining. When the gut barrier is inflamed, inflammatory molecules enter circulation and suppress collagen producing genes.

Hemp seeds support gut integrity through their fibre and polyphenol content, encouraging the production of short chain fatty acids such as butyrate. These compounds have been shown to activate fibroblast growth and enhance collagen gene expression.

Hemp also provides complete protein, including glycine and arginine, and delivers gamma linolenic acid, an anti inflammatory fatty acid that calms immune reactivity.

For both men and women, gut health, metabolic balance and skin vitality are deeply interconnected.

● One to two tablespoons of shelled hemp seeds daily can support this internal harmony.

Collagen Is a Whole Body Strategy

Collagen is not cosmetic. It is structural. It supports arteries, tendons, ligaments, bones, skin, hair, nails and the gut lining. When we nourish collagen production, we are investing in mobility, cardiovascular health, metabolic resilience and graceful ageing.

These seven seeds work synergistically. They balance hormones, activate collagen building enzymes, energise mitochondria, heal the gut and shield tissues from oxidative stress.

This is cellular renewal from the inside out.

A Final Note on Protein

While the focus here is collagen, it is worth remembering that collagen is a protein network. Including a variety of seeds such as hemp, pumpkin and sunflower can also contribute meaningfully to overall daily protein intake. When layered into balanced meals, they help support the recommended intake needed for tissue repair, muscle maintenance and healthy ageing.

And that's wellness at its most powerful: simple, sustainable, deeply biological.

Small seeds. Profound biological impact.

A daily ritual that strengthens your body at its very framework.

And that is true longevity.

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