

YIN SHI

Pain & joints

Osteoarthritis

Professional dietetics sheet

A joint disease where weight loss is the best-proven dietary lever in the overweight patient, and where the anti-inflammatory quality of the plate modulates the flares, far from the promises of miracle diets.

UNDERSTANDING THE CONDITION

Osteoarthritis

Osteoarthritis is the degeneration of articular cartilage associated with bone remodelling: mechanical pain, stiffness, loss of function. It mainly affects knees, hips, hands and spine. It is not a primary inflammatory disease, but low-grade inflammation modulates its flares, and that is where dietetics acts.

SUGGESTIVE SIGNS

• Mechanical pain: worse with exertion, eased by rest, weak in the morning

• Short morning stiffness (under 30 minutes), progressive loosening

• Inflammatory flares: hot, swollen, painful joint even at rest, possible night wakings

• Loss of function: climbing stairs, prolonged walking, grasping

• Joint cracking, progressive finger deformity

• Slow evolution, in phases of worsening and calming

THE FAVOURABLE TERRAIN

The factors that accelerate osteoarthritis are largely modifiable: excess weight (mechanical load on knees and hips, but also inflammation of adipose tissue), metabolic syndrome, sedentary living and deficit of protective muscle mass, insufficient vitamin D and protein intake in the elderly.

THE PROFILES

One plan per subtype

Two questions guide the dietary plan: is the patient overweight (weight loss is lever no. 1)? Is there an inflammatory terrain or flare (the anti-inflammatory profile of the plate takes first role)? Three profiles cover the dominant situations.

SUBTYPE	DISTINCTIVE SIGNS	QUICK SIGNAL
Overload osteoarthritis: the weight lever	Gonarthrosis or coxarthrosis on excess weight, dominant mechanical pain, rare flares	***every kilo lost relieves four kilos of load at each step***
Inflammatory flare: the hot episode	Hot, red, swollen joint, pain even at rest, possible night wakings	***the joint that heats up***
Background inflammatory terrain: metabolic syndrome	Abdominal overweight + multi-site osteoarthritis, disturbed glycaemia or lipids, frequent flares	***osteoarthritis settling into a body that slowly catches fire***

The three profiles often coexist: in the overweight patient with flares, start by soothing then establish the background pattern. Postmenopausal finger osteoarthritis (rhizarthrosis, nodules): same framework, with particular attention to protein coverage and vitamin D. The 'nightshade-free diet' has no evidence: do not promote it.

1 Overload osteoarthritis: the weight lever · *the best-proven lever*

The profile where weight commands everything: each kilo of mass translates into 3 to 4 times its load on the knee while walking, and adipose tissue moreover produces pro-inflammatory adipokines. The goal is a gentle, lasting deficit, with protein and micronutrient coverage that protects muscle and bone during the loss.

FOOD	WHY	PRACTICAL ADVICE
Chicken	Lean protein: the satiety that preserves muscle during the deficit	*1 portion per main meal*
Sardine	Protein + omega-3 + vitamin D + calcium from bones	*Twice a week*
Chicken egg	Complete protein with high satiety, vitamin D	*At breakfast or as an evening dish*
Carrot	Volume + fibre at very low calorie density	*Raw or cooked, start of meal*
Courgette	The volume vegetable par excellence of the low-calorie plate	*Half of the evening plate*
Pumpkin	Sweet starch, potassium, very good satiety for few calories	*Soup or purée, rice alternative*
Rice	Portion-controlled starch: the base without excess	*1 measured portion, complete with vegetables*
Adzuki	Fibre-rich legume: lasting satiety, low density	*In soup or salad, 1 portion*
Yogurt	Protein + calcium: protects bone during weight loss	*Plain, daily*
Apple	Whole fruit rich in pectin: the satiety of the snack	*Whole, not juiced*

TO LIMIT	REASON
Ultra-processed foods	Cohort and trials associate them with +500 spontaneous kcal/day and low-grade inflammation
Sugary drinks	Liquid calories without satiety: the easiest deficit to create
Fried foods and breaded items	Calorie density ×3 and denatured fats
Alcohol	Empty calories + inflammation + poor sleep: triple enemy of the profile
Drastic restriction	Severe diets lose the muscle that protects the joint

GOLDEN RULE

Better 5% of weight lost and maintained than a fast drop regained: in knee osteoarthritis, it is duration that relieves.

WHAT THE RESEARCH SAYS

Weight loss is the dietary intervention with the best evidence in knee osteoarthritis: 10% of weight combined with exercise improved pain and function in the IDEA trial (Messier et al., JAMA, 2013). Metabolic syndrome is associated with faster osteoarthritis progression; plate quality acts through both routes. No specific 'anti-osteoarthritis diet' is demonstrated.

2 Inflammatory flare: the hot episode · *the episode to soothe*

The profile of the synovial episode: local inflammation runs away beyond the mechanical. During the flare, the goal is to maximise the anti-inflammatory profile of the plate and reduce pro-inflammatory substrates, while keeping protein intake.

FOOD	WHY	PRACTICAL ADVICE
Turmeric	Curcumin: trials on knee osteoarthritis compare it favourably to mild NSAIDs	*1 tsp with black pepper and fat, daily during flare*
Fresh Ginger	Anti-inflammatory gingerols, good tolerance	*Grated in dishes or as infusion*
Sardine	EPA/DHA: the fatty acids that compete with pro-inflammatory prostaglandins	*3 times a week during flare*
Mussel	Omega-3 + antioxidant trace elements	*Marinière, several times during flare*
Eel	Fatty fish rich in EPA/DHA	*Braised or with greens*
Pineapple	Documented anti-oedema bromelain	*Fresh, 1 portion per day during flare*
Celery	Apigenin + potassium: the gentle anti-swelling	*Stalk or in soup*
Eggplant, Aubergine	Skin polyphenols + fibre, traditional for hot joints	*Roasted or caviar, with the skin*
Vervain	Gentle anti-inflammatory calming infusion	*2 cups per day during flare*
Cherry	Anthocyanins: documented effect on uricemia and inflammation	*15 cherries per day in season*

TO LIMIT	REASON
Excess omega-6 fatty acids	Sunflower, maize, grapeseed oils: direct substrate of pro-inflammatory prostaglandins
Fast sugars and pastries	Glycaemic spikes + glycation products: inflammatory amplification
Alcohol	Pro-inflammatory and hepatotoxic: banned during the flare
Cured meats and processed meats	Salt + saturated fats + nitrites: documented aggravators
Ultra-processed foods	The most complete pro-inflammatory cocktail of modern eating

GOLDEN RULE

The flare is played over fifteen days of rigorous plate: it is the moment when every meal counts double.

WHAT THE RESEARCH SAYS

Curcumin has randomised trials on knee osteoarthritis: non-inferior to mild ibuprofen in the Kuptniratsaikul trial (Clin Interv Aging, 2014), better tolerated. Marine omega-3 have modest but consistent signals on inflammatory pain. No food replaces prescribed NSAIDs during a flare: diet completes it and prepares the exit.

3 Background inflammatory terrain: metabolic syndrome · *flare prevention*

The metabolic profile: osteoarthritis no longer lives alone but in a terrain of insulin resistance, adipokines and chronic inflammation. The goal is the global dietary pattern, close to the Mediterranean diet, more than any isolated food: oily fish, olive oil, vegetables, whole grains, sugar reduction.

FOOD	WHY	PRACTICAL ADVICE
Olive	Olive oil: oleocanthal, the polyphenol with measured ibuprofen-like activity	*The main oil, raw on dishes*
Sardine	Weekly anti-inflammatory background omega-3	*2 to 3 times a week*
Mackerel	The richest accessible source of EPA/DHA	*In rotation with sardine*
Spinach	Vitamin K + lutein + magnesium: the green of the Mediterranean pattern	*Possible daily*
Turmeric	Daily terrain anti-inflammatory	*1 tsp in dishes, with pepper*
Walnut	ALA + polyphenols: the oleaginous of the anti-inflammatory pattern	*4 to 6 kernels per day*
Avocado	Monounsaturates + fibre: the fat that replaces the bad one	*1/2 per day*
Barley	Beta-glucans: glycaemia and cholesterol of the metabolic terrain	*As grain or bread, regular*
Adzuki	Low-GI legume + fibre: the carbohydrate base of the terrain	*3 times a week*
Tea	Documented anti-inflammatory catechins	*2 to 3 cups, unsweetened*

TO LIMIT	REASON
Sugars and sweetened products	The first enemy of the metabolic terrain: glycation + insulin resistance
Ultra-processed foods	Concentrated salt + sugars + pro-inflammatory oils
Excess red and processed meat	Saturated fats + glycation in high consumption
Alcohol	Pro-inflammatory + hypertriglyceridaemic
Excess fatty dairy products	The saturated fats of the terrain to reduce, not fermented dairy

GOLDEN RULE

It is the global pattern that wins: no super-food compensates a metabolic terrain left to itself.

WHAT THE RESEARCH SAYS

The Mediterranean pattern (olive, fish, vegetables, oleaginous, whole grains) is the best-documented model against the low-grade inflammation associated with metabolic osteoarthritis. Glucosamine and chondroitin have controversial trial results (GAIT, NEJM 2006): food first. Vitamin D should be corrected if deficient; check status before concluding.

CROSS-CUTTING

What applies to all profiles

Whatever the profile, six gestures form the base: they act continuously, not only during flares.

- Build every meal on the half-vegetables, quarter-protein, quarter-whole-starch rule: the pattern covering the three profiles
- Replace omega-6 oils (sunflower, maize) with olive oil as the main oil
- Introduce oily fish 2 to 3 times a week routinely, never only in crisis
- Ensure vitamin D: oily fish, eggs, sun exposure, check status if in doubt
- Cover protein at every meal: the quadriceps muscle is the knee's first shock absorber
- Drink water and unsweetened tea: cartilage hydration is a real subject, not a slogan
- Always combine diet with adapted exercise: in the IDEA trial, it was the couple of the two that won

IN THE KITCHEN

Recipes that fit

Soothe the flares

The anti-inflammatory dishes of the hot episode.

• Golden Bone Broth, Recovery broth with turmeric and beef bones (United States, New York) ●○○ Easy

• Chicken broth with turmeric and red jujubes (China: Guangdong) ●○○ Easy

• Sardines à la Plancha, Tomato and Basil Salad

• Mussels in Saffron and Fennel

• Ginger and Turmeric Drink

• Nasi Kuning, Festive yellow rice with coconut milk and turmeric (Indonesia, Java and Bali) ●○○ Easy

Build the terrain

The meals of the Mediterranean pattern and background broths.

• Phở Bò (Vietnamese Beef Soup)

• Moules Marinières

• Traditional Scottish Porridge

• Anguille au Vert

• Carpe au Gingembre et Oignon Vert

• Congee de Larme de Job au Poulet et Gingembre

NOTES FOR THE PRACTITIONER

• Document to support reflection intended for nutrition professionals: it replaces neither medical diagnosis nor clinical judgement. Osteoarthritis is diagnosed clinically and by imaging by the doctor.

• Signs requiring medical advice: intense flare with fever or single very inflammatory joint (consider gout or septic arthritis), permanent night pain, joint locking, rapid deformity, onset before 45 years. In routine consultation: check 25-OH-D status before concluding osteoarthritis alone; deficiency mimics and worsens chronic pain.

• Key references: IDEA trial weight loss + exercise (Messier et al., JAMA, 2013); curcumin versus ibuprofen (Kuptniratsaikul et al., Clin Interv Aging, 2014); GAIT trial glucosamine/chondroitin (NEJM, 2006); NutriNet cohort ultra-processed (Schnabel et al., Am J Gastroenterol, 2018).

• Strategy: weight loss first if overweight (it is the best-proven lever); the anti-inflammatory background pattern continuously; curcumin and omega-3 as documented adjuvants, never replacing prescribed care.