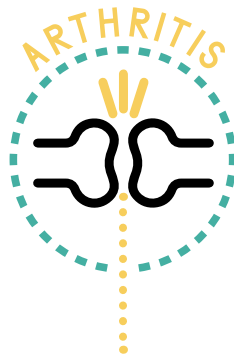


NATURAL TREATMENTS FOR JOINT DEGENERATION



4 TYPES OF ARTHRITIS

1

OSTEOARTHRITIS

- > degenerative joint disorder
- > **most common** joint disorder
- > exacerbated by **overweight** & **old age**

2

RHEUMATOID ARTHRITIS

- > an auto-immune disorder

3

GOUT

- > causes **sudden**, severe attacks of pain, tenderness, redness, warmth and swelling in some joints.
- > it usually affects one joint at a time, especially the **joint of the big toe**
- > needle shaped uric acid crystals that precipitate out of the blood are deposited into the joints

4

BURSITIS & TENDONITIS

- > **localized** and not systemic painful conditions

Bursitis

inflammation of the **sac** surrounding any joint that contains a lubrication fluid

Tendonitis

inflammation of a **tendon**



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Interesting facts

- > In young people, **cartilage is 85% water**
- > **no blood supply**
- > **no nerves**
- > **no lymphatics**
- > **chondrocytes** are the only cells found in cartilage

Focal point of Osteo-arthritis

Osteoarthritis begins in the **cartilage** → the rubbery, **gel-like tissue** found at the ends of bones.

About **85% water**, cartilage is designed to do **two things**:

1. **reduce friction** caused by one bone rubbing against another
2. **blunt the constant trauma** inflicted on bones during everyday life

Healthy cartilage = a **sponge** between the hard ends of the bones.

↓
soaks up liquid (specifically synovial fluid) when the joint is at rest
 when the pressure is on, the **liquid is squeezed out** again

Over time, unfortunately, **osteoarthritis can dry out the cartilage**, eroding this protective buffer between the bone. The problem starts in the cartilage matrix long before any symptoms are felt.

As the disease progresses the cartilage begins to soften and crack.

Advanced cases

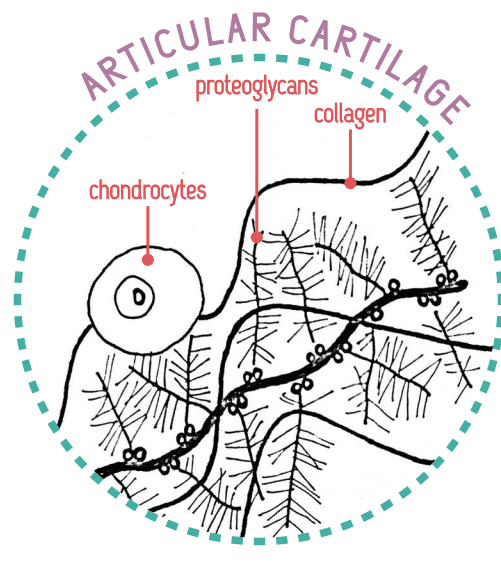
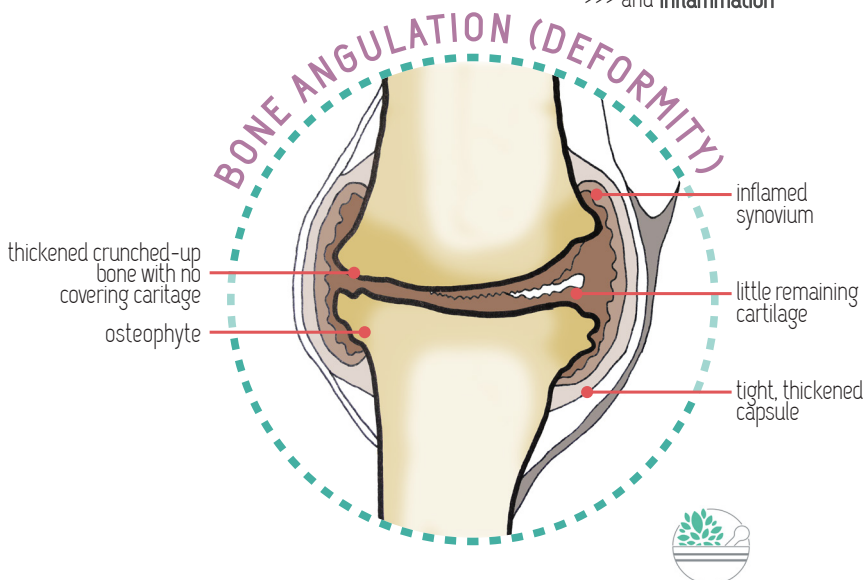
- > bone spurs (osteophytes)
- > abnormal bone hardening (eburnation)
- > fluid filled pockets in the bone (subchondral cysts can form)

Severe cases

- > cartilage may disappear altogether leaving the bone ends completely exposed

The more the cartilage wears away :

- > the more the bones **rub** together
- >> creating **greater amounts of pain** & bone deformities
- >>> and **inflammation**



A closer look at articular cartilage in joints

To get an idea of what cartilage does :

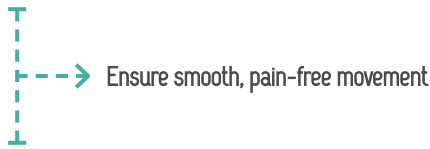
- > Imagine rubbing together two perfectly flat, smooth, slightly **wet ice cubes**
- > They glide across each other quickly and easily, never catching or slowing

Now imagine a surface that is **five to eight times more slippery than ice!**

- > There is no man-made substance that can compare to the **low friction** and **shock absorbing** properties of healthy cartilage.

Ingredients of cartilage matrix

- > 85% water
- > Collagen
- > Chondrocytes
- > Proteoglycans




Collagen

- > provides **elasticity**
- > ability to **absorb shock**
- > creates a **framework** to hold the proteoglycans in place
- > the **glue** that holds the cartilage matrix together

Chondrocytes

- > miniature **factories** that produce **new collagen and proteoglycan** molecules
 - >> always making sure that there are enough of these vital substances
- > everything eventually **ages and weakens**
 - >> the chondrocytes also release enzymes to 'chew up' and
 - >> **dispose of the aging collagen** and proteoglycan molecules that have passed their prime

Proteoglycans

- > huge molecules made up of **protein and sugars**
- > looks a little like **round bottle brushes**  >> **woven** around and through the collagen fibres
 - >> forming a **dense netting** inside of the cartilage
- > makes cartilage **resilient** so that it can **stretch** then bounce back when we move
- > **traps water**



Imagine that you are holding a **sponge under water**.
When you **squeeze** that sponge,
water squirts out, only to **rush back in**
as soon as you relax your grip.

Thanks to the thirsty and resilient proteoglycans, your
cartilage acts like that sponge,
rapidly **absorbing water** when the pressure is off
the joint, then **squeezing** when the pressure is on.

This allows **cartilage to respond to our movements** and
absorb shock without cracking under the strain, the way
a solid material would.



What is glucosamine? How does it work?

Glucosamine is made up of

- > **glucose** >> the sugar that the body burns for **fuel**
- > **amino acid** >> **Glutamine**

It is an important part of the **mucopolysaccharides** >> **provide structure** to the bone, cartilage, skin, nails, hair and other body tissues

Glucosamine provides raw material for the synthesis of proteoglycans and GAG's



Glycosaminoglycans:
proteins that **bind water** in the cartilage matrix

Glucosamine's mere presence

- > acts as a **stimulant** to the cells that produce these products, namely the chondrocytes
- > is a key factor in determining **how many** proteoglycans are produced by the chondrocytes
- > a lot of **proteoglycans** will be produced >> a lot of **water** will be held in place
- > spurs the **chondrocytes** >> produce **more collagen and proteoglycans**
- > normalizes **cartilage** metabolism >> which helps to keep the cartilage from breaking down

Because **glucosamine** 'jump starts' the production of these key elements of the cartilage matrix and then **protects** them, it can actually help the body to repair damaged or eroded cartilage.

*In other words, glucosamine strengthens your body's natural repair mechanisms.
Glucosamine also helps to reduce pain and improve joint function.*

The water magnet : Chondroitin

Chondroitin sulphates

- > act like **liquid magnets** >> a long chain of **repeating sugars**
- > helps attract fluid into the proteoglycan molecules, which is important for the following reasons:
 - >> the fluid acts as a **spongy shock absorber**
 - >> the fluid **sweeps nutrients** into the cartilage

Articular joint has **no blood supply**, so all its nourishment and lubrication come from the **liquid** that ebbs and flows as pressure to the joint is applied and released.

Glucosamine and chondroitin sulphates – the one-two punch

Something goes wrong in the cartilage matrix in a person with **Osteoarthritis** :

- > The body doesn't produce proteoglycans and collagen (the building blocks for cartilage) fast enough to keep the cartilage healthy.
- > At the same time, cartilage chewing enzymes are hard at work, destroying the working cartilage that is present.

It's a two-fold problem that needs a **two-part solution**: **glucosamine and chondroitin sulphates**

Working together synergistically, glucosamine and chondroitin sulfates

- > **stimulate the synthesis of new cartilage**
- > while simultaneously **keeping the cartilage busting enzymes under control**

The vitamin C-connection

- > **Vitamin C**
 - >> vital for **healthy joints**
 - >> required for the **synthesis of collagen** (the intracellular **glue** that keeps skin, lungs, arteries, digestive track and all our organs intact)
 - >> potent **antioxidant**
- > Both bone and cartilage formation depend on collagen as a building material
 - >> collagen can only be synthesised in the presence of vitamin C



Natural source of collagen

Eggshell Membrane

- > 500 - 600 Eggshells are utilized for 1 capsule of NEW JOINT
- > novel dietary supplement
- > processed from crude Egg Shell Membrane by a unique and highly innovative separation technology
- > natural product

IT CONTAINS

- > naturally occurring Collagen Type-1,V,X Elastin
- > Chondroitin Sulfate (20%)
- > Glycosaminoglycans (20%)
- > Membranous protein
- > Hyaluronic acid
- > other fractional molecules that includes
 - >> Growth factor
 - >> Ovocalixin
 - >> Ovocleidin
 - >> Ovotransferrin
 - >> Desmosine
 - >> Isodesmosine
 - >> Sulphur-bearing amino acids as essential to maintaining healthy joint and connective tissues

COMPOSITION

- > Hyaluronic acid (4%)
- > Collagen (33-38%)
- > Elastin (20%)
- > Keratin (1%)
- > Sulphur bearing amino acids: methionine, cysteine
- > Over 500 different proteins

KEY BENEFITS

- > Diminished pain
- > Reduction in inflammation
- > Maintains and regenerates cartilage
- > Improves the elasticity of tendons and ligaments reducing the probability of having injuries
- > Strengthens joints by improving its flexibility and functionality
- > Prevents joint injuries
- > Assist management of OA & RA
- > 100% natural product
- > Contains more than 36% of essential amino acids
- > Very low daily dosage (300 - 500mg)
- > Gluten free
- > Vegetarian

