

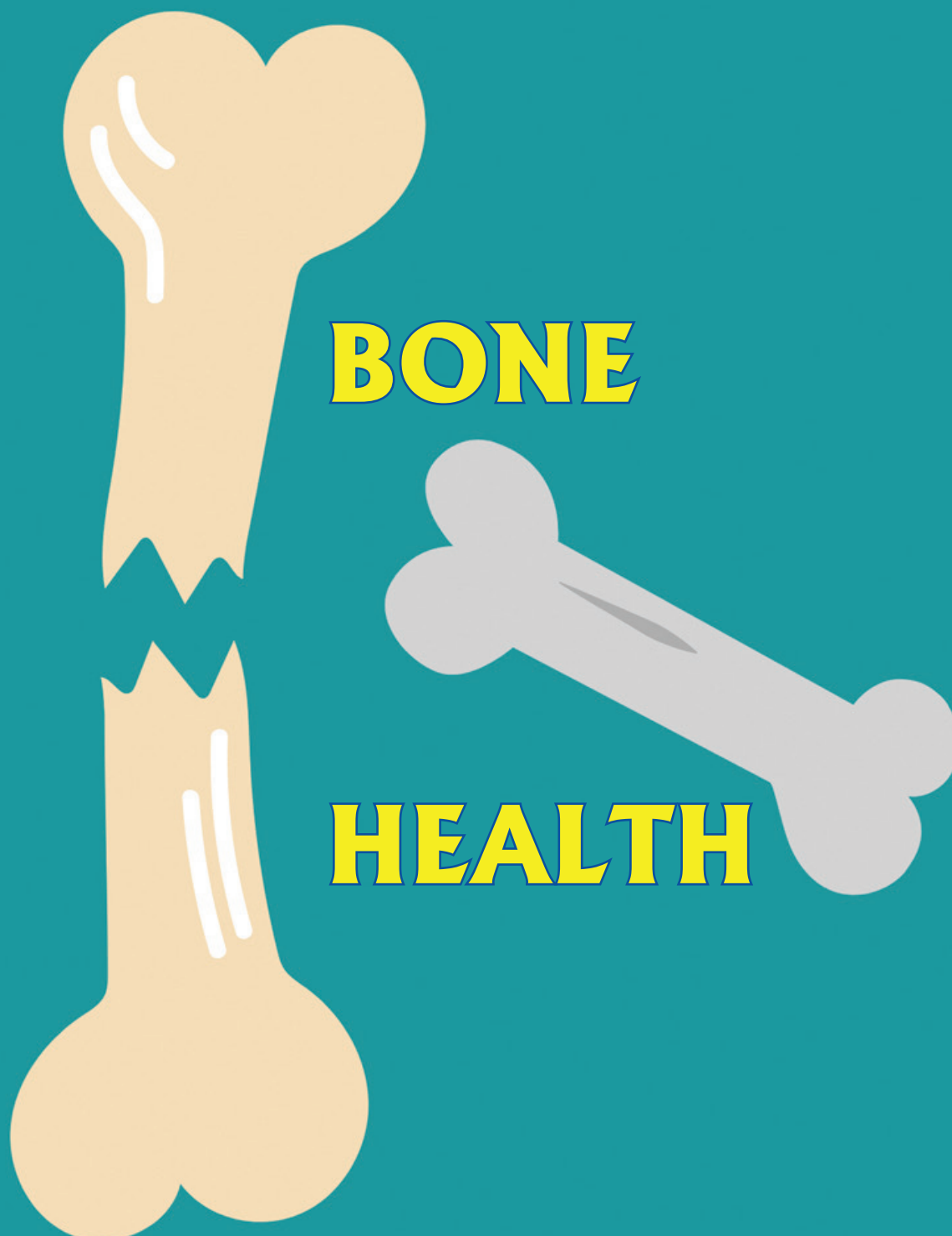
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Heritage Amruth

A Magazine For Healthy Living, The Natural Way





SOURCE OF LIFE

Amruth is a sanskrit word meaning 'immortal', local name for *Tinospora cordifolia*, a plant used in India for its rejuvenating properties

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Heritage Amruth is not a magazine or an organization. It believes that there is a design, purpose and use in every element of nature. It believes that there is science underlying most of our health traditions. It believes that we should build upon wisdom, not forget it. That we should live in harmony with nature, not fight it. It believes that every plant, every animal, every human being is a miracle. It believes in life.

A PREVIEW TO OUR FORTHCOMING ISSUES

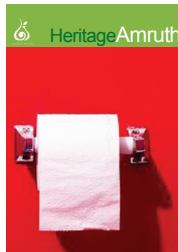
AUGUST 2021 INFERTILITY

According to Ayurveda, a healthy conception takes place in the presence of a healthy sperm and ovum in a healthy womb at proper time with proper nourishment. Any discrepancy among these factors results in infertility. Read this issue for more.....



DECEMBER 2021 ANO-RECTAL DISEASES

Due to change in life style, anorectal diseases like piles, fistula in ano, fissure are becoming quite common. Ayurveda has a very effective and easy treatment for anorectal diseases without any complications. Ayurveda texts explain about Arshas (piles), Bhagandara (fistula) etc. as that which trouble the person like an enemy.....



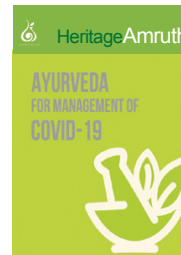
APRIL 2022 SKINCARE

Ayurveda is a perfect combination of art and science for natural beauty. In Ayurveda, it is all about inner wellness which will then reflect a healthy glow on your skin. Read this issue for the best treatments for most of the skin ailments.....



OCTOBER 2021 COVID AND POST COVID

The COVID-19 pandemic has created a global health crisis posing an unprecedented public health emergency. Effective management to address this infection is still evolving and attempts are being made to integrate traditional interventions along with standard of care. Ayurveda and Yoga can certainly play a pivotal role to augment preventive measures.



FEBRUARY 2022 BACK PAIN

Extended hours of sedentary work, without any physical activity, is more than enough to offer an array of back pain problems, with each of them having a different twist to the spine. Explore this issue for the natural and effective cures for the pain in your back....



JUNE 2022 OBESITY AND WEIGHT LOSS

Ayurveda can provide a holistic treatment for overweight and obesity. A traditional treatment program in Ayurveda aimed at weight loss primarily recommends lifestyle changes and appropriate modification in daily diet to improve health along with oral medications that would help in optimizing the metabolism steadily.....



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Ayurveda offers effective treatment for rejoining bones and restoring them to their original form and strength. The treatment includes bone setting, therapies, splints or slings and herbal medicines as required.

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Disclaimer Note: All views and opinions expressed in the respective articles are sole responsibility of the authors - Editor

Bones live on to tell a Tale



In order to understand bone health, one needs to understand the concept of dhatus in Ayurveda physiology. The term dhatu is sometimes loosely translated as biological tissues, but in fact there is no direct correlation established thus far between the two concepts. Establishing correlation may constitute useful Trans-Disciplinary research. It will need to be supported by both theoretical research and experimental studies. Such research may provide useful insights to deepen both Ayurveda and mainstream physiology.

Dhatu's etymological root is '**dharanat dhatavaha**' or those substances in the body that have the capability to support or nurture the body. They are body fluids (dravyas) with transformative properties (shakti yukt dravyas). According to Ayurveda physiology, 'food' depending on its nutritive potential can be transformed and metabolised into seven sequential dhatus. So, what essentially are these seven dhatus?

The first conversion of food is into rasa. Rasa is loosely correlated to plasma or lymph. The nutrients in rasa in turn transform it into rakta (correlated to blood), similarly rakta nutrients can transform it into mamsa (muscle). Next in sequence is meda (lipids) which is created from mamsa. Asthi or bones are a transformation from meda. The next transformation is from asthi into majja (marrow) dhatu and finally the last product of metabolism is the shukra dhatu (reproductive fluids). The correlations of rasa and rakta with modern physiological terms like plasma and blood, muscle, lipid etc are difficult to establish as their properties and functions in the two knowledge systems, while having some overlap, do not match on a one-to-one basis.

Ayurveda pharmacology recognizes that not all foods have the nutritional potential to contribute substantially to all the seven dhatus. For instance, Milk is an example of a complete food because it has the potential to get converted into all the seven tissues. A grain like millet (ragi) and fruits like grape on the other hand contribute primarily to rasa and rakta. They are energy foods because nourishment of the first two tissues gives instant energy. The starch (satva) of wheat is particularly good for strengthening skeletal tissues and is advised for early healing of broken bones. The plant called 'hadjod' (*Cissus quadrangularis*) contributes to improving efficiency of callus formation.

All dhatus formation depends on the nutrients inherent in specific foods. However, the quality of all seven dhatus, even in the case of a complete food, is influenced primarily by the quality of rasa, the first dhatu. If the quality of rasa, which is the first product of the metabolic process, is poor, all the subsequent tissues that evolve are affected. Dhatu poshana is a complex process. It is a function of several factors viz. the nutritional status of food, metabolic efficiency, unobstructed channels (shrotas) of transmission, the Vata function and most importantly the happy state of mind.

Asthi is valued as an important dhatu because it has the role of sharira dharan which gives structure and shape to the body. Formation of Asthi dhatu takes place in the early embryonic stage i.e., in garbhavastha and after birth, it is nourished by ahararasa. Danta (teeth) are the upadhatu or secondary tissue of Asthi dhatu. Kesha (hair) and nakha (nails) are the mala i.e., waste products of Asthi dhatu. Hence, an Ayurvedic physician will pay attention to correcting

the underlying Asthi metabolism in a case of hair loss or other diseases of the hair or nails.

Since the Asthi dhatu is precursor of Majja dhatu or sukshma majja and is in turn nourished by Meda dhatu, it is perhaps reflected in calcium formation. Absorption of calcium is possible only in the presence of Vitamin D which is a fat-soluble vitamin. It is synthesized dermally from cholesterol (Meda) on sun exposure.

According to Charaka, heels (parshi), ankles (gulpha), knees (janu), forearm (aratni), collarbones (jatra), chin (chibuk), digits (parva), bones (asthi), nails (nakha), teeth (danta) of Asthi sara individuals are robust or big. Asthi sara individuals have well-built bodies (sara sthira sharira) and are very active (kriyawanta). Because of their enthusiastic nature, activeness, endurance and strong body, Asthi sara individuals live long lives (Ayushmanta).

Since birth to death, the structure of Asthi dhatu remains unchanged because of the dominance of prithvi mahabhoot and resultant stability. Alterations in Asthi dhatu occur in ill health reflected laghuta-guruta (lightness-heaviness), ghanatva-riktata (density-vacuity) and dridhatva-bhangurta (tenacity-brittleness) of bones, but its form by and large remain unchanged.

The unchanging nature of the structure of bones even after death and the passage of time helps in palaeontology: the specialized domain of study of fossils. These fossils live on to tell a tale.

Darshan Shankar
Managing Editor

Brandishing Bone Health



Chaithrika G K

In the times of yore, there was a great sage named Dadhichi who sacrificed his bones to fashion a weapon out of them! This was bestowed to Lord Indra to fight against the mighty demons. This goes to show that bones are indeed one of the strongest and hardest structures in our body. We may not have bones as strong as sage *Dadhichi* and not have to fight against demons, but we have to brandish (flaunt the healthy state) our bones all the same, to sail through the day-to-day activities!

Bones are primarily made out of the earth element; hence they have such firmness and steady demeanor. Can you imagine how our body would look without bones? Exactly, it is very hard to imagine. Our bodies would be soft, jelly-like wobbling masses! The adult human body consists of 206 bones which range hugely in their size, shapes and functions. They give a definite skeletal

framework to the body which helps in locomotion, gives a particular shape and also protects the vital organs. The skeletal system is a very much living and thriving system in our body with rich colonies of intricately woven bone cells, blood vessels and nerves. Thus, bones are vital points (*marmas*) which shelter the life itself. Any injury to the bones is harmful to the entire body.

Fracture of bones is one of the most common injuries of bones, which becomes a major reason for restricted movement. There are several reasons for fracture of bones, such as:

- External trauma
- Stress (repetitive stress/ overuse)
- Medical conditions such as Osteoporosis (loss of tissue leading to fragile bones), Osteopenia (loss of protein and mineral content of bone tissue), bone cancer etc.

Long before the introduction of modern medicine, the traditional healers were adept at treating the bone fractures without applying casts.

One such herb used in bone-setting is *Blepharis asperima*. In Kannada it is called “*Haridarehachhu*”, which means “apply when there is a cut/ fracture”. Another common Kannada name is *elu kootti* which means bone binder, this indicates its therapeutic efficacy in healing bone fractures.

Blepharis asperima belongs to the family Acanthaceae. It is called Hill Blepharis in English.

What does the plant look like?

Hill Belpharis is an annual prostrate herb, with 20-60 cm long stems, rooting at nodes. Oppositely arranged, ovate-lancelike leaves are 5-8 cm long and hairy. Leaf-stalks are about 1 cm long. Stalkless flowers occur either singly in leaf axils or in spikes at the end of branches. The blue flowers are 2-lipped, 2-3 cm across. Upper lip is almost absent. The lower lip is blue with dark veins and shallowly 3-lobed. Flowers are yellowish white in throat.

Flowering: November-April.

Distribution : The plant can be seen in evergreen and semi- evergreen forests of the Western Ghats. It is fairly common as an undergrowth of forests on gravelly slopes and along forest paths.

Usage : *Blepharis asperima* is used to treat bone fracture in humans and in other animals as well. When we cut/ tear the leaves of *Blepharis asperima* and place the cut ends together, they



rejoin in a matter of days/ minutes/ hours. This ‘sign of doctrine’ is used for setting the fractured end of bones.

- In case of fracture in human beings, the paste of leaves mixed with ghee is given internally for nine days.
- In cattle, a fistful of whole plant is taken and pounded well with two eggs (this is the general quantity but the quantity varies depending upon the severity of fracture). Finally, this paste is applied as cast and it remains up to four days.
- For Bone fracture: The whole plant is crushed, slightly warmed, mixed with egg albumen and applied externally on wounds for early healing and joining of fractured bones.
- Leaf paste applied on wounds.
- Else than bone fractures, the plant is used in treating sprains and headaches.

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Fixing Frozen Shoulder



Sharad Kulkarni

Isn't it annoying when you suddenly start feeling discomfort or soreness in your neck while trying to move it? Well, that might be because of the 'Frozen shoulder' and you certainly would want to get rid of it as soon as possible. So, what do you do about it?

in people aged 40 to 60 years. Women are usually affected than men. In most of the conditions, a specific cause cannot be identified, but inflammatory process is involved.

Freezing of shoulder can occur because the shoulder has been immobilized for long time by injury, surgery or illness. The pain in shoulder may radiate to arm and usually worsens at night. The connective tissue surrounding the glenohumeral joint thickens and contracts leading to stiffness and pain when the shoulder is immobilized. When the movement of the shoulder is avoided in order to avoid pain, there is further contraction of the capsule. There will also be loss of its lubricating synovial fluid. In advanced cases, there is formation of bands of scar tissue between the capsule and head of humerus.

Stages of Frozen Shoulder

Frozen shoulder typically develops in 3 stages:

1. **Freezing stage** – Movement of shoulder causes pain, and range of motion becomes restricted

Frozen shoulder is a condition characterized by stiffness, swelling, pain in shoulder joint and loss of normal range of motion. It is also called as **adhesive capsulitis**. When the tissue in the shoulder joint becomes thicker and tighter, scar tissues develop over time, due to which shoulder joint does not have enough space to rotate. The movement of Glenohumeral joint (shoulder joint) is restricted. This condition is commonly seen

2. **Frozen stage** – During this the pain diminishes, stiffness increases and movement becomes difficult
3. **Thawing stage** – Range of movement gradually starts to improve

Causes

- Injury
- Surgery
- Inactivity of the joint
- Formation of scar tissues
- Weakened immunity
- Medical conditions like Diabetes mellitus, cardiovascular diseases
- Degenerative disorders such as cervical spondylosis, chronic rheumatoid arthritis.

Risk Factors

- People aged over 40 years, particularly women
- Prolonged immobility of shoulder in case of injury, surgery, stroke, fracture etc.
- Systemic diseases like diabetes, hyperthyroidism, hypothyroidism, cardiovascular diseases, tuberculosis etc.

Symptoms

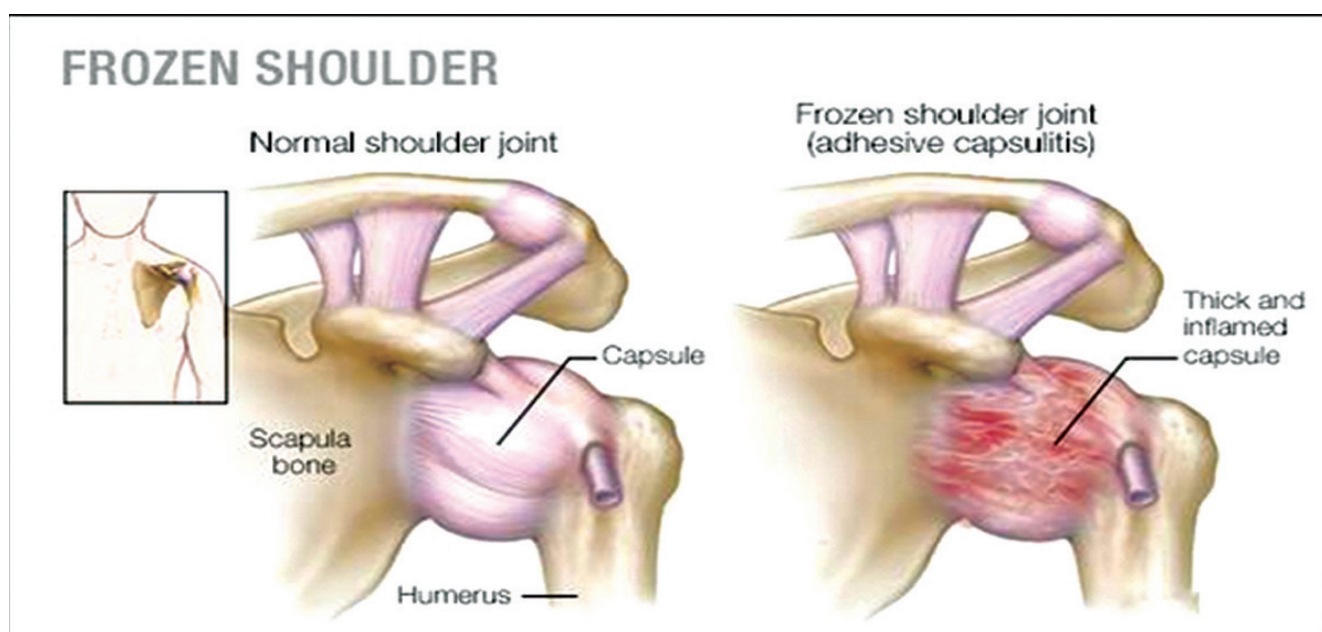
- Pain
- Stiffness
- Restricted movements
- Swelling

Investigations

- X- ray
- MRI
- CT scan

Management

- Physiotherapy
- Anti- inflammatory diet
- Stretching exercises
 - Shoulder rotation
 - **Pendulum stretch** – Relaxing the shoulders, the affected arm is hung down. In small circle swing the arms 10 revolutions in each direction is done. As pain and stiffness comes down the diameter of swing is increased.
 - **Towel stretch** – A towel is held with both hands behind the back horizontally. The affected arm is pulled upwards and stretched. This is done for 10-20 times
 - **Finger walk** – Facing the wall, touch the wall with fingertips at waist level. Slowly walk up the fingers until arm is raised to shoulder level. Lower the arm slowly and repeat for 10 – 20 times
 - **Cross-body stretch** - Lift the affected arm using the other hand at the elbow and bring it across body with gentle pressure across the shoulder. Hold it for 15-20 seconds, repeat this for 10-15 times.



With approach to Ayurveda, Frozen shoulder can be co related with *Apabahuka*. Vata located in the *amsa pradesha* (scapular region) desiccates the *Sleshaka kapha* present in *amsa sandhi* and causes contraction of *siras* leading to *apabahuka*. Apabahuka is characterized by difficulty in moving the arms and pain. Pain can be generalized or pain radiates from shoulder to elbow.

As per opinion of few Acharyas, this condition is considered as two different entities based on the pathophysiology involved in the manifestation.

- Amsa sosha (Bahu sosha) – Caused by Vata drying up sleshaka kapha of amsa sandhi
- Apabahuka – The *siras* in *amsa pradesha* contract leading to *apabahuka* which causes restricted movements.

Chikitsa:

- Snehana – Abhyanga, Pichu
- Swedana – Patrapinda sweda, Jambira pinda sweda, Churna pinda sweda, Shashtika shali pinda sweda, Snigdha agnikarma, Agnikarma
- Nasya – with Anutaila, Shadbindu taila, Laghumasha taila
- Vatahara aahara and vihara

Include Ghee, Turmeric, Ginger, Pepper, Moringa, Okra, Gooseberry, whole wheat, red rice, Millets, Flax seeds, Dry fruits.

Do warm water bath, Abhyanga (Oil massage)

Avoid cold foods, fried foods, processed foods, curds, potato, brinjal.

Avoid cold water bath, excess exercise, excess use of AC, sleeping or laying in improper position, staying awake at night, travelling long distances

- Single drugs like Rasna, Eranda, Bala, Ashwagandha, Nirgundi, Guggulu, Shigru, Lashuna, Punarnava
- Formulations like *Yogaraja guggulu*, *Brubhat vata chintamani rasa*, *Ekanagaveera rasa*, *Vatari guggulu*, *Trayodashanaga guggulu*, *Ashwagandharishta*, *Dashamoolarishta*, *Balarishta*, *Maharajana taila*, *Vishagarbha taila*, *Dhanwantara taila*, *Kottamchukkadi taila*, *Prasaranyadi taila*, *Bala taila*, *Sabacharadi taila*, *Rasnaerandadi Kashaya*, *Sabacharadi Kashaya*, *Rasnasaptaka Kashaya*, *Maharasnadi Kashaya*, *Mahanatavidhwamsana rasa*

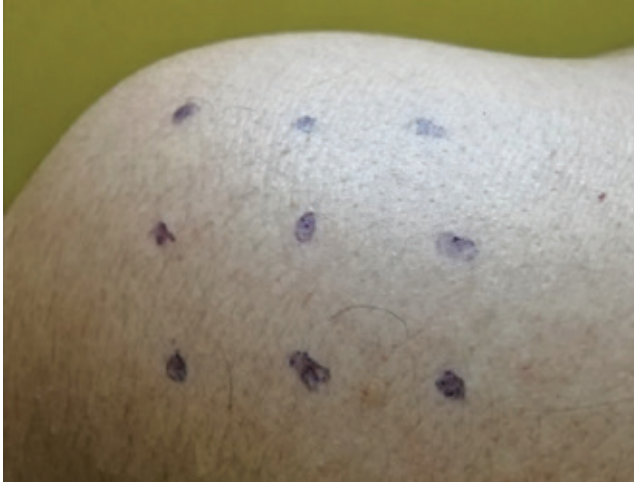


Case Study:

A 60 years old female, who was a known case of *Diabetes mellitus* for 2 years presented with pain in bilateral shoulders and arms with restricted movements for 1 year. Her day-to-day activities were being hampered because of pain and immobility. Therapies advised were Agnikarma (Snigdha and Ruksha) and Nasya. Along with those internal medications, diet for pain and diabetes was advised. Along with that few exercises to strengthen the muscles and reduce stiffness were advised. There was considerable change within a month.

Agnikarma:

Agnikarma is a time- tested treatment modality of Ayurveda which involves topical application of controlled heat over most tender spots of the affected area. In agnikarma heat is transmitted to affected area to nullify the pathology. Agnikarma is opted when all the other treatment modalities fail to cure. The chances of recurrence of the issue with agnikarma is nil. Depending on the nature of disease, dosha involved, condition and affected site the amount heat and the instrument (*Dahanopakarana*) is selected and agnikarma carried out.



Procedure:

Procedure of agnikarma is to be done in 3 stages:

1. Poorvakarma:

- Preparation of the patient- by explaining the procedure, inform presence of pain and scar after the procedure, Hematological investigations like CBC, FBS, PPBS to be done
- Preparation of the essential equipments and instruments- Agnikarma shalaka (Panchaloha), Gauze, Cotton, Jatyadi ghritha/ Kumari swarasa, Haridra
- Part preparation by cleansing with Triphala Kashaya or normal saline

2. Pradhana karma:

- Identification of pain area
- Marking the tender points
- Apply heated shalaka on the marked areas, and notice samyak dagdha lakshans

3. Paschaat karma:

- Application of Jatyadi ghritha/ Kumari swarasa , haridra
- Dressing

Probable mode of action:

- Ushna guna acts antagonistic to vata and kapha guna thereby reducing pain and stiffness
- Heat applied during agnikarma improves local tissue metabolism, i.e increases *Dhatvagni* leading to *Amapachana* which removes accumulated toxins and enhancing nourishment for new tissue formation
- When heat is applied there is stimulation of superficial sensory nerves causing dilatation of local blood vessels and increasing blood circulation

Indications of Agnikarma:

- Joint related issues – Osteoarthritis, Ankylosing spondylitis, Cervical spondylosis etc.
- Neuro -Muscular pain – Fibromyalgia, Tennis elbow, Tendonitis, Plantar fasciitis, Bursitis, Frozen shoulder, Corn and Sprains.

Diet Recommendations (Aahar)

Consume a diet that reduces vata dosha in the body:

- Oils and ghee
- Moist foods like berries, melons and curd
- Soups and moong dal khichadi
- Oily foods like avocado, coconut, olives, buttermilk, cheese, eggs, milk, wheat, nuts and seeds.

Lifestyle changes (Vihar)

- Get adequate rest
- Warm water bath is advised.
- Avoid straining your shoulder
- Perform mild exercises to improve the mobility of your shoulders
- Avoid A/C rooms
- Avoid cold water bath
- Practice yogasanas regularly. Some asanas that can help include: garudasana and dhaurasana.

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Bone Health through Diet Wealth



Could we imagine our body without bones? Never! Isn't it? Shape and structure are important parameters to identity anything and these bones give the same parameters to the human body.

Human body is made up of many organs and systems, in which bones and joints are involved; this is called the “skeleton system” in scientific parlance. This system gives support and protection to the human body. Healthy skeleton system is very important for longevity and healthy ageing.

The Role of Bones

- Bones/ skeleton system provides support and shape of the body with their stiff nature, allow body movements with the help of joints.
- They protect internal soft and important organs like heart, brain, lungs etc.

- These act as storehouse of essential nutrients like iron, copper, zinc etc.
- They help to maintain water and electrolyte balance in body through regulation of calcium, magnesium, sodium, and potassium.
- Bone marrow produces red blood cells and white blood cells which are essential for the formation of blood and to build up immunity respectively.

In a nutshell, along with conventional functions like support, movement and protection, bones also contribute towards whole body homeostasis and maintenance of multiple important non-bone organs/ systems.

Bone Illnesses

The disorders of bones and the impaired functions of extra skeletal system are defined as bone illnesses. There are several illnesses found in this system, commonly occurring problems are: Osteoarthritis, Arthritis, Rheumatoid arthritis etc. Joint pain and moving disability are the common complaints of all arthritis conditions, though clinically they are different from each other.

Osteoarthritis is a mechanical condition that occurs due to gradual wearing down of joint cartilage. Ageing, malnourishment and obesity are common causative factors. Patients feel pain during movement which gets eased off during rest.

Arthritis is a state of inflammation which gradually destroys the joint structure. This is not a result of wear and tear mechanism. It can be infectious, genetic or metabolic in origin. In this condition, the patient experiences pain during movement which subsides after sufficient resting.

Rheumatoid arthritis is an autoimmune disease. In this condition, the immune system does not work properly and attacks the lining of the joints as well other body organs like heart, lungs etc. Causes of this disease are not known, females are more prone than males and this usually develops in middle age. Initial symptoms are onset of fever followed by joint pain, inflammation with typical sign of morning stiffness. Early diagnosis may prevent further disease progress.

Most of the time people ignore their joint pain by thinking it will become alright on its own. It is true that bones have healing and regenerating properties just like other body tissues, but after the age of thirty, this nature declines naturally. We can increase this healing and regenerating capacity of bones through proper lifestyle and diet which will help to maintain healthy skeletal system and prevent bone illnesses.

Some Recipes for Healthy Bones

Ayurveda has two aims, prevention and treatment. For prevention, there are three basic concepts: Ahara (proper food), Nidra (proper sleep) and Brahmacharya

(limited carnal indulgence), these three are called the “Tryaopstambha” or sub pillars for health. Here, food is placed first, indicating its prime importance. To be healthy is not a condition; rather it is a culture which comes through daily practices.

India as a country has always had healthy eating traditions across all regions, season’s as well nutritional requirements for any health condition. In Ayurveda, there are several medicinal plants mentioned which are used to strengthen bones as well to treat joint problems. Here are some medicinal plants with easy recipes which can add nutritional value to your daily diet for healthy bones.



Shigru - Botanical name: *Moringa oleifera*

Common names: English: Drumstick, Hindi: Sahijan, Marathi: Shevaga, Kannada: Nuggakai, Telugu: Munaga and Tamil: Murungaikaai

This beautiful tree endemic to India is known as “Mother’s best Friend” and “Miracle Tree” due to its nutritional value. Its leaves, flowers, green pods and dried seeds are used as food.

Collect tender leaves, dry in shade, store in air tight bottle for further use similar to “Kasoori Methi”. 1 to 2 tsf of this can be added in different curries and vegetables to give different flavour and to add nutritional value. Tea can also be prepared with this powder.

Pakora (fritters/ bhajji) can be prepared from leaves or flowers, recipe same as onion pakora. Leaves can be used to prepare sambhar/ curry/ palya, flowers are also a good option for dry vegetable preparation.

Drumstick soup is famous in Maharashtra and is frequently used to recover from weakness followed by long illness, it is highly nutritious, easy to digest as well easy to prepare with minimum ingredients.

Ingredients

- 250gms of Drumsticks
- 6-7 Black Pepper
- 1/4 tsf Red Chilli Powder
- 1/2-inch Ginger (chopped)
- 1 to 2 Red chillies (chopped)
- 1 tsf chopped coriander leaves
- 1 tsf Butter
- 1 tsf Roasted Ground nut powder
- 3/4 tsf Salt
- 1 Green Mango or Tomato
- 1/2 tsf Sugar



Preparation: Take drumsticks, wash and cut in small pieces, add green mango or tomato and pressure cook on a medium flame for 5 minutes or 2 whistles. After cooling, remove pulp from drumsticks and mango separately. Keep aside. Chop ginger into small pieces. Now take roasted groundnut powder, black pepper, chopped coriander leaves, some chopped ginger pieces and make paste of these all. Then take a pan, add butter, heat it and add chopped ginger, red chilli pieces, then add above paste and

cook for 1-2 min. Add the pulp of drum stick, 250 to 300 ml of water, boil for 2-3 minutes and turn off the flame. Now add red chilli powder, mango pulp, sugar and salt. Stir well and serve.

AsthiShrunkhala

Botanical Name: *Cissus quadrangularis*, **Family:** Vitaceae, **Common Names-** English: Edible stemmed vine, Devil's backbone, Hindi: Hadjod, Marathi: Kandvel, Kannada: Mungarali, Telugu: Nalleru, Tamil: Pirandai

This is an easily available creeper rich in calcium. In Ayurveda, this is used for many ailments; it corrects digestion, expels out intestinal worms, good for bone health and gives special benefit in all bone fracture. Acharya Bhamishra wrote a recipe in his text which gives very good result in prevention of Osteoarthritis and Osteoporosis.

Ingredients

- 250gms of small pieces of *Cissus quadrangularis* (Apply sesame oil all over palm. Cut creeper with knife. Wash it and remove fibre from the sides. Chop into smaller pieces and keep aside)
- 125gms urad daal (Black gram) (Wash urad daal soak it in water for 30min, strain water, keep aside)
- 3-4 garlic cloves
- 3-4 black pepper
- 1/2 tsf cumin seeds powder
- Salt for taste
- Sesame oil for frying

Preparation: Take all ingredients in a blender, make paste and transfer it in another vessel. Now add sesame oil in frying pan heat it on slow to medium flame, and fry the vataka (wadas).

Kushmand - Botanical Name: *Benincasa hispida*, **Family:** Cucurbitaceae, **Common Names:** Ash gourd, white pumpkin, Hindi: Petha, Marathi: Kohala, Kannada: BooduKumbalakayi, Telugu: BoodidaGummadi, Tamil: Pusinikkai.

This is one of the best vegetables having several medicinal properties. It is packed with phyto

nutrients which improve intelligence, strengthens nerve and muscles. Several recipes such as sambhar, vegetable, Petha, Halwa etc. can be prepared from this. In Maharashtra, Kohalyache Sandge is a famous recipe made from this. “Kohalyache Sandge” contains urad daal which has enough calcium. Kohala has antioxidant properties and is a perfect food item for growing kids.

Sandge - It is a famous Maharashtra vegetarian recipe. Summer time is the best time to make this. Maharashtrian ladies make different types of sandge from different ingredients during summer. Sandge are type of dried cakes which are used to prepare different curries or used as a snack by frying in oil during rainy season.



Ingredients

- 500gms Urad daal (Black Gram)
- 750gms Grated Kohala (Ash gourd)
- 6 tsf Red chilli powder
- 1tsf Methi powder (Fenugreek seed powder)
- 2tsf Hing (Asafoetida)
- Salt

Preparation: Soak 500gms of urad daal in water for 8 hours, blend it in night and leave overnight. Next morning, add grated kohala, chilli powder, methi powder, hing and salt as per taste. Mix them well and make dough. Now take one plate grease with cooking oil, put small portions of the dough on plate and let dry these pieces under sun light for 10 days. Then store them in air tight box for further use.

Kamal - **Botanical Name:** *Nelumbo nucifera*, **Family:** Nelumbaginaceae, **Common Names:** Lotus, Hindi: Kamal, Marathi: Kamal, Kannada: Taavarai, Telugu: Tamara Puvvu, Tamil: Taamarai

Kamal is in use since the times of Sushruta Acharya. Flowers, seeds, stem and stamens are used to prepare medicines. “Kamal kakadi” is the stem of lotus plant which is used to prepare a variety of dishes. It is very good for pregnant ladies, after delivery, for kids and also used for strengthening bones.



Ingredients for Kamal Kakadi Bhaji

- 300gms of Lotus stem
- 3 tsf Mustard oil
- 1 Cup chopped onion
- 2 tsf Ginger Garlic paste
- 1/2 cup curd
- 2 tsf coriander powder
- 1 tsf red chilli powder
- 1/2 tsf Turmeric powder
- 1/2 tsf cumin seed powder
- 1/2 tsf Garam masala
- 2 tsf of chopped coriander leaves
- Salt to taste

Preparation: Properly wash and peel the lotus stem, cut into thin slices. Boil these pieces in water till the slices become soft, drain the water and keep aside. Take another pan, heat it, add 3 tsf of mustard oil, add chopped onions fry till they turn slightly brown. Now add curd cook for a minute. Add coriander powder, turmeric powder, red chilli powder, cumin powder, salt and half cup of water, fry till oil leaves

from the sides of pan. Now add cooked lotus stem slices and water, cook it again for 10 minutes with closed lid. Remove lid, keep gas flame high till the water completely evaporated. Nice and dry vegetable is ready. Finally add garam masala and coriander leaves mix well. Serve hot with chapatti.

Kadali - **Botanical Name:** *Musa paradisiaca*, **Family:** Musaceae, **Common Names:** Banana tree, Hindi: Kela, Marathi: Keli, Kannada: Bale gida, Telugu: Amritapany, Tamil: Valakkai, Banana flower-Valapoovu

Almost all parts of tree have medicinal importance, nutritional and spiritual value. Its flowers are used to prepare vegetable which is easy to prepare in a minimum duration and gives maximum nutrition.



Ingredients for Fried Banana Flower Vegetable

- 1Banana flower (cut and soak in buttermilk as it retains its natural colour)
- 1 sprig curry leaves
- 3 Red chillies
- 1 cup grated coconut
- 2 tsf Coconut oil
- 1/2 tsf Mustard seeds
- Salt to taste

Preparation: Boil the Banana flower pieces for 7 minutes, and then strain the water. Heat 2 tsf of coconut oil in a pan, add mustard seeds, red chilli pieces and curry leaves. Now add boiled banana flowers, stir well, cover the lid and cook for 5 minutes. Finally add grated coconut and salt mix well. Serve with roti or rice.

Kharjoor - **Botanical Name:** *Phoenix sylvestris*, **Family:** Palmae, **Common Names:** Dates, Hindi: Khajur, Marathi: Pend khajura, Kannada: Eachalu mara, Telugu: Chettetha, Tamil: Ichan

It is a commonly used fruit that acts as food and medicine, it is best for enhancing health and immunity. Khajoor laddus are good for growing children, easy to prepare and can be stored for one month.

Ingredients for Khajoor Laddus

- 1 cup seedless dates
- 1 tsf Ghee
- 1/2 chopped almonds
- 1/2 Chopped cashew nuts
- 2 tsf Black resins
- 1/4 cup grated dry coconut
- 1 tsf Khas-Khas (Poppy seeds)





Preparation: Initially make a coarse paste of seedless dates without adding any water in blender. Keep it aside. In a big pan heat 1 tsf of ghee, add almonds, cashew nuts, black resins, coconut powder roast these on low flame for 5minutes or when all these turn in crunchy. Now add 1tsf of poppy seeds and roast for 2 minutes. Add coarse paste of dates and mix well. Continue frying on medium flame smashing the dates with spatula. This helps the dates to separate out and mix uniformly with other dry fruits. Furthermore, sauté till the dates start releasing oil. Turn off the gas flame and allow cooling it for 5 minutes. Then immediately start making laddus (do not cool completely otherwise it would be difficult to make laddus). Serve immediately or store these in air tight container for a month.

20 Calcium-rich plant foods in India

with their calcium contents per 100gms

(Calcium content in cow's milk: only 120mg!)

 Almonds - 230mg	 Urad dal - 154mg	 Ragi - 344mg	 Sesame (Til) - 1000mg
 Kidney beans (Rajma) - 260mg	 Moong - 124mg	 Curry leaves - 830mg	 Fenugreek (methi) - 395
 Tofu - 350mg	 Kala Chana - 287mg	 Amranth leaves - 530mg	 Coriander(Dhania) - 184mg
 Dried basil - 2240mg	 Soy bean - 277mg	 Moth dal - 202mg	 Poppy seeds (Khaskhas) - 1438mg
 Dried figs (anjeer) - 162mg	 Radish leaves - 265mg	 Betal leaves - 230mg	 Flax seeds - 255mg

Haridra - Botanical Name: *Curcuma longa*,
Family: Zingiberaceae, Common Names:
Turmeric, Hindi: Haldi, Marathi: Halad, Kannada:
Arishina, Telugu: Pasupu, Tamil: Manjal

Ingredients for Turmeric Pickle

- 250gms Wet Turmeric (Grated)
- 50gms Ginger (Grated)
- 50gms Mustard seed Powder
- 2 -3tsf Red chilli Powder
- 50ml Ground nut oil
- 1tsf Cumin Seeds
- 1 tsf Mustard seeds
- 1/4 tsf Asafoetida
- 4 Lemon (Juice)
- Salt to taste

Preparation: Take lemon juice, Soak mustard seed powder in it and keep aside. Wash and peel the wet turmeric and ginger, grate them separately. Take

grated turmeric and soaked mustard seed powder in one vessel. Add red chilli powder and salt, mix them well. Now add grated ginger again and mix it well. Now take one small pan heat ground nut oil, add cumin seeds, mustard seeds, fenugreek seeds, and asafoetida, keep it for cooling. After cooling, pour this oil on mixture which is kept aside, mix well. Store it in airtight container.

Good health comes through healthy food so let food be your first medicine and kitchen be your first pharmacy!

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Ayurveda Remedies for Arthritis



Suhas Kumar Shetty

Are you suffering from severe joint pains? Are you unable to stand up immediately, walk or climb? Do you have disfigured joints? Usually these are caused if you are suffering from Arthritis. Ayurveda can be an effective solution for your malaise here...

Arthritis essentially is inflammation of the joints. The main symptoms are pain and/ or stiffness. Usually arthritis is a condition experienced as one grows old. Arthritis in general can be classified as: degenerative and infective. Both the conditions are not very easy to handle.

Degeneration is the law of nature. But it can be definitely slowed down if it is happening due to lifestyle issues. One major factor leading to degenerative arthritis is sedentary life and constant trauma on the joints due to excess weight. Weight bearing joints like knees, hip and ankles get affected faster due to obesity and they degenerate faster. Injury and improper handling of the joint can also lead to arthritis.

Infective arthritis are many, but the most common one is Rheumatoid Arthritis (RA). This is an auto-immune condition where in all the joints (especially the small) get inflamed. This if not handled properly, can lead to disfiguration of the joints. In modern medicine, steroids are usually prescribed for this condition, which have a lot of side-effects.

Treatments vary depending on the type of arthritis. The main goals of arthritis treatments are to reduce symptoms like pain and swelling and improve quality of life to carry out daily routine

Osteoarthritis

Osteo Arthritis (OA) is a degenerative joint disorder without inflammation. This involves both the bones

and cartilage of the particular joint. It can occur in all ages but most prevalent in overweight elderly adults and larger joints like knee, shoulder, hip etc. Pain is the main symptom. In advanced cases, it also creates a crackling sound while the joint moves. Occasionally the joint gets fluid filled. Pain while climbing down the stairs is one of the most significant symptoms.

Rheumatoid arthritis

In rheumatoid arthritis, the body's immune system attacks the lining of the joint capsule, a tough membrane that encloses all the joint parts. This lining (synovial membrane) becomes inflamed and swollen. The disease process can eventually destroy cartilage and bone within the joint.

In Ayurveda, Osteoarthritis is compared with Sandhi Vata where there is vitiation of vata dosha in different joints. There will be pain, swelling and difficulty in flexion and extension of various joints. There are various causative factors like food, lifestyle disturbances and psychological factors leading to Sandhi Vata. Rheumatoid arthritis is compared with Amavata which is caused due to Ama (incomplete metabolic toxins accumulated inside body due to disturbed digestive fire - Agni) leading to generalised and localised symptoms like laziness, body ache, loss of taste and appetite, heaviness of body, fever, pain and swelling of joints etc.

Risk Factors for Arthritis

- **Age.** The risk of many types of arthritis, including osteoarthritis, rheumatoid arthritis and gout increases with age.
- **Gender.** Women are more likely than men to develop rheumatoid arthritis, while most of the people who have gout, another type of arthritis like osteoarthritis, are men.
- **Family history.** Some types of arthritis run in families, so you may be more likely to develop arthritis if your parents or siblings have the disorder.
- **Previous joint injury.** People who have injured a joint, perhaps while playing a sport or if they had fall, are more likely to eventually develop arthritis in that joint.
- **Obesity.** Carrying excess weight puts stress on joints, particularly your knees, hips and spine. People with obesity have a higher risk of developing arthritis.

Complications

Severe arthritis, particularly if it affects your hands or arms, can make it difficult for you to do daily tasks. Arthritis of weight-bearing joints can keep you from walking comfortably or sitting up straight. In some cases, joints may become twisted and deformed.

Management

Arthritis treatment focuses on relieving symptoms and improving joint function. You may need to try several different treatments, or combinations of treatments, before you determine what works best for you.



Medications

The medications used to treat arthritis vary depending on the type of arthritis. Commonly used arthritis medications include **painkillers** like acetaminophen, diclofenac sodium **Non-steroidal anti-inflammatory drugs** (NSAIDs) like ibuprofen, **Counter irritants** like creams and ointments which contain menthol or capsaicin, **Disease-modifying antirheumatic drugs** (DMARDs) like methotrexate, Corticosteroids like prednisone etc. Corticosteroids can be taken orally or can be injected directly into the painful joint.

Physical Therapy (Physiotherapy)

Physical therapy can be helpful for some types of arthritis. Exercises can improve range of motion and strengthen the muscles surrounding joints. In some cases, splints or braces may be warranted.

Surgery If conservative measures do not help, your doctor may suggest surgery, such as: Joint repair, Joint replacement, Joint fusion etc.

Lifestyle and home remedies:

In many cases, arthritis symptoms can be reduced with the following measures:

- **Exercise.** Regular exercise can help keep your joints flexible. Swimming and water aerobics may be good choices because the buoyancy of the water reduces stress on weight-bearing joints.
- **Weight loss.** If you are obese, losing weight will reduce the stress on your weight-bearing joints. This may increase your mobility and limit future joint injury.
- **Heat and cold.** Heating pads or ice packs may help relieve arthritis pain.



Alternative Medicine

Many people use alternative remedies for arthritis and the most promising alternative remedies for arthritis include:

- **Acupuncture.** This therapy uses fine needles inserted at specific points on the skin to reduce many types of pain, including that caused by some types of arthritis.
- **Yoga.** The slow, stretching movements associated with yoga may help improve joint flexibility and range of motion in people with some types of arthritis.
- **Massage.** Light stroking and kneading of muscles may increase blood flow and warm affected joints, temporarily relieving pain. Make sure your massage therapist knows which joints are affected by arthritis.

Ayurvedic Management

Management of arthritis in Ayurveda includes combination of dietary advice (Ahara), lifestyle practices (Vihara), psychological measures and support (Achara/ Vichara) and therapies and medicines (Aushadhi). Use of all of them depends on type of arthritis, like in Sandhi Vata – vata pacifying regimen are advised where as in Amavata, therapies pacifying Ama and controlling Vata are advised.

Dietary Advice (Ahara)

- Lots of whole grains, vegetables, and fruits. They should make up two-thirds of plate.
- Low-fat dairy and lean proteins, which should make up one-third
- Small amounts of saturated fats like ghee
- Fruits- Dried plums, grapes, blueberries, cherries, pomegranate, mango, banana, peaches, apples, orange and other citrus fruits
- Cereals- oats
- Legumes-Black soyabean, black gram
- Whole grains-Wheat, rice, oats, corn, barley, millets

- Spices-Ginger, turmeric, black pepper, bay leaves, cinnamon, clove, nutmeg
- Oils-Olive oil, Fish oil containing Omega 3 fatty acids
- Miscellaneous- Buttermilk, low fat milk, green tea, Basil (tulasi) tea
- Vegetables- beans, spinach, broccoli, garlic, spinach, tomatoes
- Fish-sardines, mackerel
- Nuts-Walnuts
- Drink plenty of water
- Reduce salt and sugar
- Avoid- Alcohol, fried items, red meat, fast food, soft drinks

Lifestyle Practices (Vihara)

- Warm, dry climates allow people with arthritis to feel better
- Cold, damp conditions lead to elevated pain levels in people with arthritis
- Avoid bending forward and reaching when possible.
- Keep items at counter level and use a grabber tool to reduce the need to stretch for items.
- Sit while doing common activities. For example, put a chair next to the sink so you don't have to stand while washing dishes.
- Avoid slips and falls.
- Use lifts or ramp
- Put the cookware and appliances you use often on the counter, so you do not have to bend, stretch, or reach into drawers or cabinets.
- Replace heavy stoneware for lighter pots and pans.
- Do stretching exercise with care
- Use ergonomically designed kitchen tools
- Avoid smoking and alcohol use
- Manage stress wisely
- Avoid exposure to cold breeze
- Use luke warm water for bath
- Avoid day time sleep



Psychological Measures (Achara)

- Stay active and keep fit. Studies show that physical exercise may help reduce arthritis pain and fatigue.
- Rest when you need to. Bed rest is best or lie down spine on floor with blanket spread
- Meditate. Chronic pain studies showed that meditation had positive effects on pain, quality of life, and functional status
- Practice yoga daily
- Get proper sleep- 8 hours of restorative sleep

Therapies Kati basti, Janubasti , Abhyanga (Oil massage), Udvartana (dry powder massage), Basti (medicated enema) are used based on condition and types of arthritis in Ayurveda, after consulting the physician.

Medicines (Aushadhi)

- Ashwagandha (*Withania somnifera*)
- Shallaki (*Boswellia serrata*)
- Garlic, Ginger
- Giloy (*Tinospora cordifolia*)
- Yogaraja guggulu
- Dhanwantharam taila
- Mahanarayana taila etc. can used as prescribed by doctors

Pain is as painful as you allow it to be. Stop ignoring it, start with your Ayurvedic treatment and improve the quality of your life.

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Fixing Fractures and Dislocations



C Suresh Kumar

Fracture of a bone and dislocations can occur at any time to anybody, during a fall, or an accident, and at times due to osteoporosis, and bone cancer. Whatever the case, it requires immediate attention. Ayurveda offers effective treatment for rejoining bones and restoring them to their original form and strength. The treatment includes bone setting, therapies, splints or slings and herbal medicines as required.

The Indian subcontinent abounds as it were in a variety and diversity of health traditions. We have with us what is perhaps the longest unbroken health tradition which has not only a stream of practitioners but also a textual and theoretical backing. These knowledge systems did not limit themselves in fulfilling the needs of primary health care alone but also ventured in specialized areas such as Netra (Ophthalmology) Visha (Toxicology) Marma (Orthopaedics)* One such popular but little known area is that of Bone setting.

*(*Here author confesses that Marma cannot be restricted to orthopaedics alone as certain even neurological illness could be addressed through this).*

Ayurvedic Understanding of Fractures and Dislocations

In Ayurveda, the fundamental principles of technical management of fractures like first aid, reduction, immobilization and physiotherapy have beautifully been described. These basic principles have as such been adopted by the modern medical science also. In

addition to the local technical management, adjuvant therapies viz. oral medications, Panchakarma, diet regimen have also been mentioned.

Just like the modern orthopaedics has two branches - Orthopaedics and Traumatology, Ayurveda too had similar branches namely Marma chikitsa and Bhagna chikitsa. Bhagna chikitsa is well practiced even now in Kerala and other parts of India, as a totally harmless, painless and cheap remedy for all types of fractures.

Bone fractures are classified into two types “*dislocation and fracture*”. Ayurveda adopts the touch and analyze method for diagnosis. The diagnosis is made by touching and analysing the appearance of the affected part. The treatment methods adopted are bone setting, medicines, therapies, splints or slings, as required. Splints are made with bamboo pieces in different shapes and thickness.

Traditional Ayurvedic Bone setting involves pulling and adjusting the bones gently, back to their original position. Thereafter, herbal medicines in the form of pastes are applied to rejoin the splints and the bones. When joining, the bones, muscle, ligaments and tendons are also healed. One of the main advantages of Ayurvedic treatment for bone fracture or dislocation is its external and internal use of herbal medicines in various forms, which shows great results in reducing pain, healing wounds, and joining bones.

The Concept of Osteology

According to Hornle, the author of medicine of ancient India part I 1907, the word ‘Osteon’ has developed from the word ‘Asthi’. The derivation of this word is from As Sanchibhyam Kithan or As Kshepe: That which is thrown away: even the carnivorous animals discard the bony part after consuming the flesh. Probably people of yore might have found these (bones) all around the forests as thrown away. The word skeleton is derived from the Greek word ‘Skeletos’ – dried applies to parts which remains after the softer tissues have disintegrated.

‘Asthi’ or bones is one of the seven dhatus and the only dhatu Khara (salty) in nature. They are divided into five namely Kapala (flat bones), Ruchaka (lustrous bones), Taruna (cartilaginous bones), Valaya (curved/ tubular bones), and Nalaka (long bones).

Fractures

Fractures occur as a result of falls, or even at times when a person’s bones are weak because of osteoporosis or rare conditions that cause brittle bones. Ayurveda explains fractures or Bhagna as a break in the continuous structure of the bones, resulting in its lack of motion. A break in the bone can be a dislocation, also called Sandhi Muktha, or a fracture, also called Kanda Bhagna. Ayurvedic texts describe at least 12 types of dislocations and 6 types of fractures. The Ayurveda treatment of fractures is hence distinct for each type.

Cardinal Features of a Fracture

Swayadhu Bahulyam	- Massive swelling
Spandana vivarthna.....	- Tenderness
Avapeedyamaney Sabda	- Crepitus and Loss of transmitted movement
Vividha vedana	- Different types of pain
Sarvasvasthasu	- Agonizing pain and
Na sarmalabha	discomfort in all posture

Classification of Dislocations

Utpishta	- Swelling on either sides of jt with pain worsening at night. There will be gharshana (Crepitus) – Fracture dislocation
Vishlista	- Mild swelling constant pain joint deformity

Classification of Fractures

Kartaka	Two ends of shaft bent; swelling over the fracture in the middle.
Ashvakarna	Fractured ends in angular deformity
Curnita	Fracture comminuted with crepitus
Piccita	Fracture site crushed with severe swelling
Asthichalita	One fractured end displaced downwards and other end sideways
Kandabhangna	Fractured end free move on vibrating
Majjanugata	One fractured end impacted into the marrow cavity of the other with exudation of the marrow.
Atipatita	Fractured end droops (e.g. JAWS)
Vakra	Bone is bent, not completely fractured (Greenstick: A greenstick fracture occurs when a bone bends and cracks, instead of breaking completely into separate pieces. The fracture looks similar to what happens when you try to break a small, "green" branch on a tree. Most greenstick fractures occur in children younger than 10 years of age).
Chinna	One surface fractured, the other surface of the bone is intact.

Vivararthita – Pain deformity with lateral displacement

Avakshipta – Pain deformity with downward displacement

Atikshipta – Severe pain deformity wide displacement

Tiryakshipta – Unbearable pain with bone end obliquely displaced.

Inability to extend, rotate, flex or virtually all types of movements are either impossible or extreme pain and swelling are the main signs of a dislocation.

Symptoms and Primary care

The excruciating pain, excessive swelling, and complete immobility are the characteristic symptoms of a fracture. Any amount of shifting weight does not resolve the pain. Ayurveda treatment recommends placing the suspected part of the body completely immobile and tying it securely using cloth. The patient must be immediately taken to the Ayurveda doctor for treatment. Avoid using other home remedies such as ice pack, which can worsen the condition.

Ayurvedic Diagnosis and Treatment

The Ayurveda physician will first diagnose condition of fracture by evaluating the appearance of the location. The type of fracture or dislocation is then determined by using the touch-and-feel approach to confirm the diagnosis.

The three fundamental principles of fracture treatment are

- Bhagna Sthapana (Reduction)
- Bhagna Sthirikara (Immobilisation)
- Punah cheshta prasara (Rehabilitation)

Since recovery from a fracture involves giving time for the new bone tissues to develop, the treatment focuses on enabling complete restoration of normal bone functioning. The time required to heal depends on other underlying conditions such as osteoporosis, the nature of the fracture, whether other regions such as the ligament are involved, and the age of the patient. Serious dislocation, multiple fractures or fracture to certain vital points requires expert attention. But the usual approach too requires an immensely skilled practitioner who can set the bones back to their original positions carefully, aligning it accurately. This is a critical step in correcting fractures of the bone.

After this step the specific location has to be maintained immobile using splints, which are usually made from bamboo or wood. The fractured portion of the body is bandaged with the splint firmly and strongly to help facilitate bone tissue recovery. The bandage will need to be changed once in a while and the fractured portion treated with herbal formulations for enabling easy recovery. This approach also helps in healing the surrounding tissues.

Another crucial aspect of fracture treatment is relief from pain, which is managed by external application of herbal oils and internal medicines. Oil massage only by experts helps ensuring quick recovery and that the bones set in the right shape. Supporting treatment approaches such as herbal packs and steaming helps control the inflammation. However, these must be performed only by well-trained experts.

The correct repositioning of the displaced bone is achieved by raising the depressed fragment, pressing down the elevated, pulling and straightening when one end is overlapping the other. The basic procedures in treating a fracture are: **Traction** (ancana), **Compression** (peedana), Immobilization (samkshepa) and **Bandage** (bandha). Once a joint or fracture is reset and the deformity corrected, it regains its normal state by healing which is facilitated by rest and cold irrigation, medicinal plaster and dressings with linen soaked in medicated oils and splints. During olden days splints were used for immobilization.

The barks of the following trees are found to be used as splints:

Madhuca	<i>Madhuca longifolia</i>
Udumbara	<i>Ficus glomerulata</i>
Aswatha	<i>Ficus religiosa</i>
Palasa	<i>Butea frondosa</i>
Kakubha	<i>Terminalia arjuna</i>
Vamsa	<i>Bambusa bambos</i>
Sarja	<i>Terminalia tomentosa</i>
Vata	<i>Ficus bengalensis</i>

Bandages

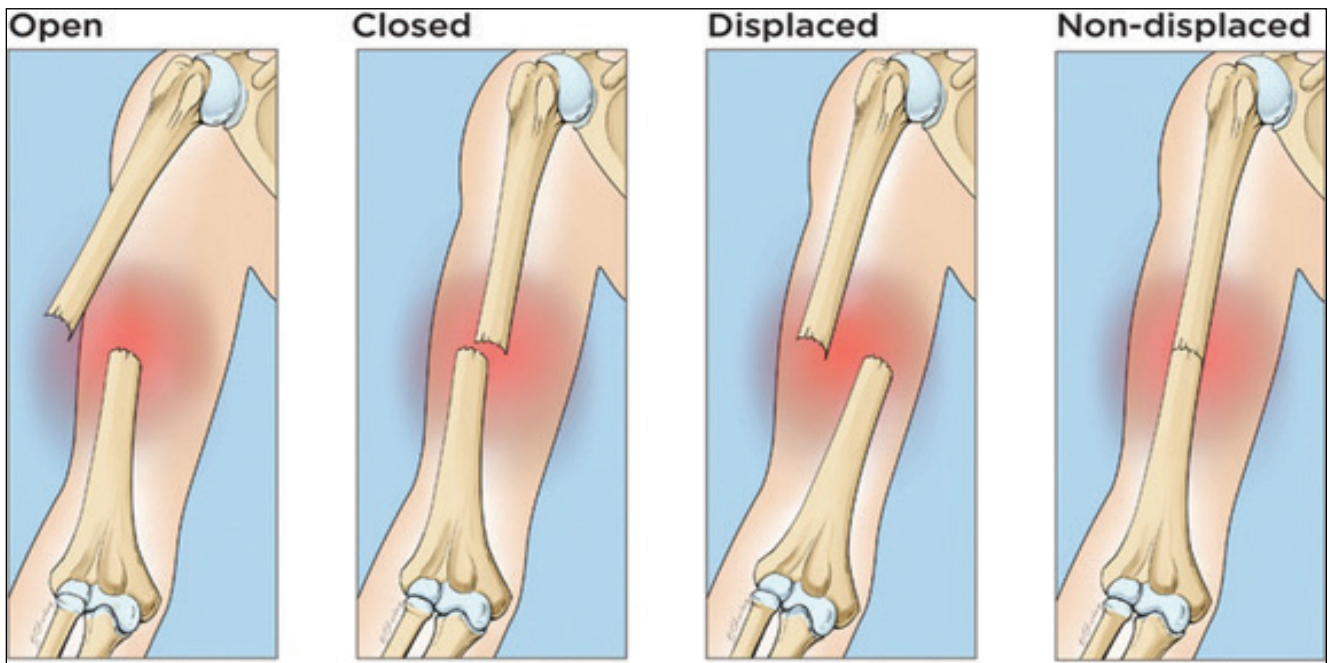
Bandages are indispensable in the treatment of fractures. Bandages are usually done to hold the splints and dressings in position its main uses are

- To stop bleeding by pressure
- To give rest and support
- To retain dressings and splints in position
- To prevent oedema
- To correct deformity

Types of Bandages

- Sheath (kosa)-Around thumb and fingers
- Long roll (dama)-Sling around straight parts of small width
- Cross – like (svastika)-Spica around joints
- Spiral (anuvellita)-Around upper and lower limbs
- Winding (mutoli)-Circular around neck penis
- Ring (mandala)-Circular around stumps
- Betel box type (sthaagika)-Amputation stumps tip of penis or fingers
- Two tailed (yamaka)-Around limbs to treat ulcers
- Four-tailed (khatva)-For jaw, cheeks, temples
- Ribbon-like (cina)-Outer angles of eyes: temples
- Loosely knotted over back, abdomen and chest
- Noose like (vibantha)
- Canopy like- Protective cover over head wound
- Cow horn (gosphana) Over chin, nose, lips, ano-rectal region
- Five tailed (pancangi)-Head and neck above the level of clavicles





The following materials are used for making bandages

- Cloths made from linseed fibres
- Cloths made from cotton fibres
- Woolen materials
- Fine cloth
- Silk cloths made from naga tree fibres
- Chinese cloth
- Inner layer of bark of trees
- Animal skin
- Skin of gourd
- Beaten syama creeper
- Rope of munja grass

Acharyas have mentioned the rules of bandaging very scientifically. Bandage should be neither too tight nor too loose. Tightness can lead to swelling pain, blebs and too loose a bandage can never give the desired stability of the fractured fragments. Likewise, bandaging should be done in the interval of three (hot season), five (normal season) or seven days (cold season) depending upon the climatic conditions.

Immobilization Techniques in Ayurveda

There is enough evidence to prove that Achary Sushruta and his followers had profound knowledge on immobilization techniques. One of the applications mentioned in Bhaishajya Ratnavalli is Panka Pradeha. It means application of mud around the fracture site. Most probably, it could be analogous with Plaster

of Paris which we practice today. Another type of immobilization techniques which are quite prevalent in Kerala and adjoining states are a combination of white of egg, black gram powder and cloth.

Rehabilitation

The first objective of rehabilitation is to eliminate the physical disability to the greatest extent possible, second to alleviate or to reduce the disability to maximum possible level and third to train the person with residual physical disability to work and live within the limits of disability but to the hilt of his capabilities. Significance of the principles of rehabilitation was known to the Acharyas. Sushruta used to instruct the patient of carpal bone fracture to bear weight in increasing order as the fracture healing progress. He instructed the patient to bear the bolus of mud and then rock salt and later Pashana.

There are certain foods that hasten fracture healing and they are

- Salyanna - Unpolished rice
- Mamsarasa - Meat soup
- Majja - Marrow soup
- Ksheera - Milk and its products
- Gritha - Ghee
- Yoosha - Dal soup
- Brimhana aahara - Nourishing foods
- Brimhana paaniya - Nourishing drinks

Individual Joint Injuries

If a nail or nail bed is crushed, a swelling develops with the collection of blood; blood should be drained by incision with a sharp knife and wound bandaged with paste of Sali rice.

When a joint of a finger is dislocated with or without a fracture, the deformity should be corrected to restore normal appearance and finger bandaged with ghee soaked linen and irrigated with ghee.

When foot gets injured, the part should be anointed and protected with splints. Patient should be advised to desist from movement.

If the fracture is at lower limb-knee joint or femur injured area should be anointed and site should be straightened with great care. After straightening, the area should be immobilized with splints made of bark of Nyagrodha (banyan) tree. If it is a compound fracture also, the fractured site should be anointed well and reduce the fracture site with 'Chakrayoga' and bandaged properly. Similar treatment should be adopted for Piccita and sphutitha type of fractures.

When the pelvic bone is fractured, it should be corrected with raising the depressed part or compressing the elevated portion.

When the ribs are injured, the patient is made to stand and the area anointed with ghee and immobilised with splints. The patient is made to lie down in 'Taila kataham' (oil bath).

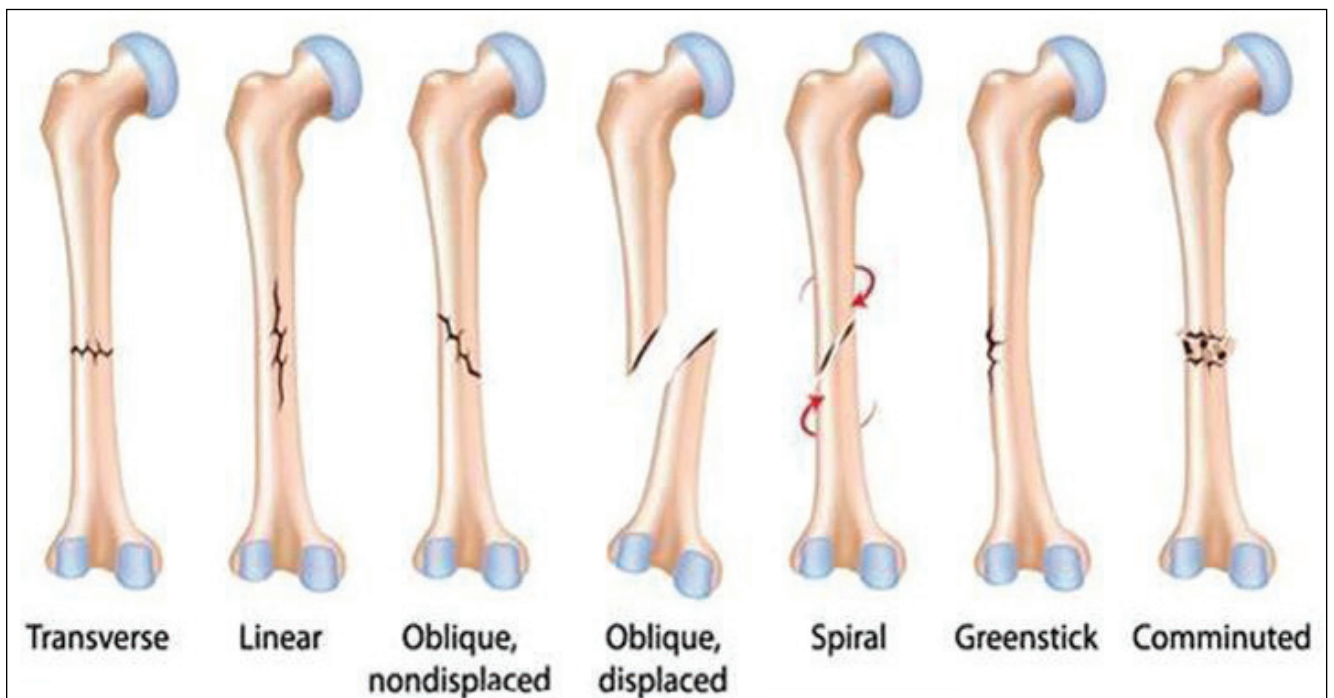
Shoulder joint dislocation should be reduced using a 'Musala' to lift the head of humerus upwards. Expert physician should bandage it into a swasthika bandha.

Elbow dislocation should be bandaged after reduction with thumb joint should be extended and wrist joint injuries.

Both palms should be joined together and bandaged exactly after reduction of any injury related to palms. The affected palms should be properly irrigated with medicated ghee.

Collar bone if fractured, the site is fomented and fracture reduced by pressing down the elevated fragment and bandaged with the help of musala.

Neck if injured by twisting or bending should be straightened by inserting fingers through the nape of neck. Bandage is administered with help of splint and thereafter the patient is made to lie for a week.



Jaw if dislocated should be reduced and panchangi bandha administered. Nasya and vatahara drugs are advised thereafter.

In young adults, if the tooth becomes loose and not broken, the blood collected should be drained and tooth washed with cold water and replaced with the help of certain cold paste. He should drink liquid foot through the help of straw of lotus stem. For elderly people the tooth should be pulled out.

Depressed nasal fragment should be straightened with the help of Salaka and two tubes. The nose should be irrigated and bandaged.

Ear if injured should be rubbed with medicated ghee and normal appearance restored manually.

Skull fracture without tissue should be bandaged after the application of ghee and honey for a week.

Fractured lower limb patient should be made to lie down on hard and wooden board and limb immobilised with fixing five pegs, two on each side and one at the centre. Similar method is advised in fractures over spine, hip chest and collar bones.

In chronic dislocation where the deformity is longstanding stiffness should be softened with lubricants and fomentation.

In mal-united fracture the site should be re-fractured and treated like a fresh fracture.

Ayurvedic surgeon should not spare any effort to prevent infection or suppuration which will affect the muscles, vessels, and ligaments. A good outcome of treatment is when the part shows no deformity or lengthening or shortening and when movements and activities are unrestricted and comfortable.

Final Recovery

Physiotherapy is a useful technique to gain back the lost mobility after the fracture heals. Minor exercises in a monitored environment help in quick recovery. Heavy exercise is not encouraged, but after complete recovery, the patient can resume routine activities.

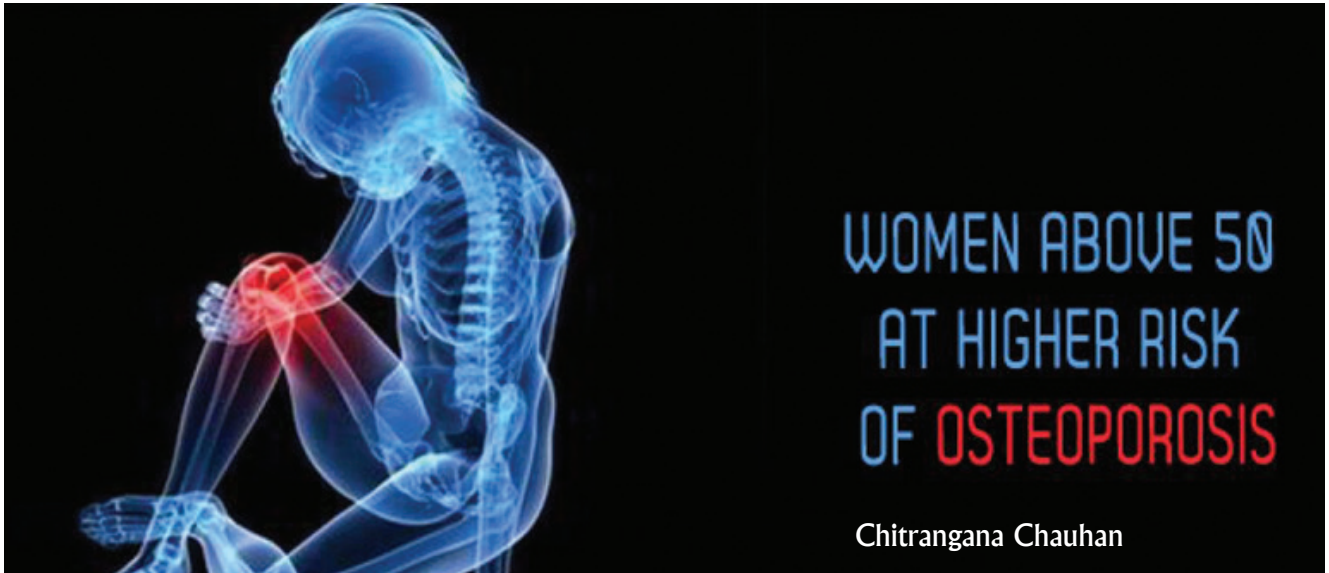


Orthopaedics in Ayurveda is so well developed that nothing needs to be added or deleted from the texts even now. Except for its surgical part, we can find solution for almost all orthopaedic problems through our good old Sushruta Samhitha. Sushruta's approach to the treatment of fractures and dislocations were rational, practical and even radical because he was not averse even to break a malunited bone and resetting it.

These practices are still in vogue in many parts of rural India where families of bonesetters continue to serve and remind one of their common ancestries with Sushruta tradition. No wonder why Sushruta is said to be the 'Father of Surgery'.

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Women and Bone Health



Almost 46 million women in India are affected by osteoporosis. Women have a lower peak bone mass, which is compounded by the hormonal changes that occur at the time of menopause

Women tend to have smaller, thinner bones than men. Estrogen, a hormone in women that protects bones, decreases sharply when women reach menopause, which can cause bone loss. This is why the chance of developing osteoporosis increases as women reach menopause.

This also contributes to significant morbidity and mortality to postmenopausal women. This is because women have a lower peak bone mass, which is compounded by the hormonal changes that occur at the time of menopause. It is a silent disease until fractures occur, which causes important secondary health problems.

Factors that affect Bone health in Women

Physical Activity: Just keep moving: yes, regular physical activity and exercise play a role in maintaining and improving bone density. It is not surprising that

maintaining strong muscles helps to support your bones and reduce the amount of stress that is placed on them over a lifetime. In particular, women should be doing weight bearing exercise. This just means moving your body bearing your own weight. Brisk walking, dancing or skipping are great examples of ways you can move your body every day.

Puberty: There are a lot of changes that happen to the body during puberty. A teenager's brain becomes more advanced and their decision making and self-control is improved. They do however, become clumsier and this is because they are growing so fast it takes a while for the brain to adjust. Not only will their organs get bigger and stronger, but their bones will increase in thickness. In fact, approximately half of a person's bone mass is accumulated during adolescence. It is important to eat plenty of foods with calcium to help support bone growth at this time.

Pregnancy and Breastfeeding: A developing baby needs a lot of calcium. If the mother does not get enough calcium, her baby will draw what it needs from the mother's bones. To help support your bone health during pregnancy and breastfeeding, it is important to include at least two to three serves of dairy products or equivalent high-calcium foods every day.

Menopause: Menopause happens when your estrogen and progesterone production begins to slow down, which can affect your bone health. Estrogen plays a role in bone health and during menopause the estrogen levels rapidly decline. When estrogen levels decrease, bones lose calcium and other minerals at a much faster rate.

A woman's bone loss is approximately 2% per year for several years after menopause. Because of this, women are in fact at a greater risk than men of developing osteoporosis due to the loss of calcium and other minerals.

Smoking and Alcohol: Long term smoking can cause a significant reduction in bone density leading to an increased risk of fracture. If you are a smoker, you may also go through menopause 1.5-2 years earlier than the average woman, and this will increase your risk of developing osteoporosis earlier than most.

Ageing: It is no surprise that age is a factor when

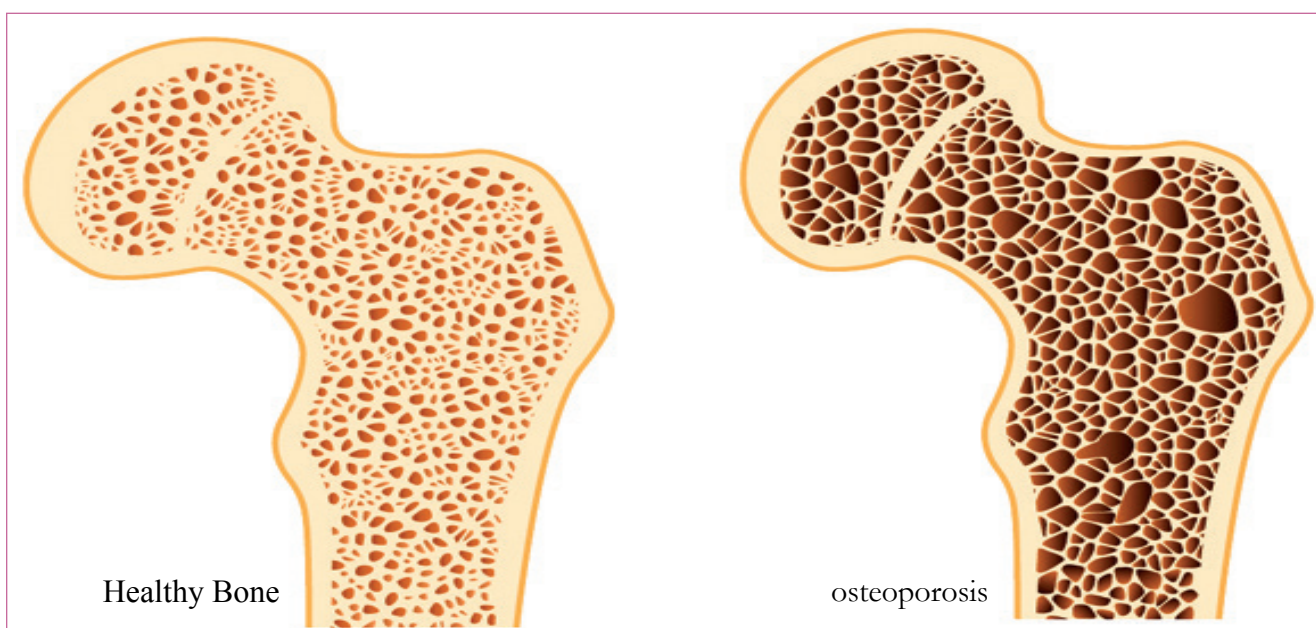
it comes to your bone health. Most of your bone growth will happen when you are a child and teenager, but you are never too young or too old to improve your bone health. Your bones will stop growing and increasing in strength in your twenties and from 30 onwards, it's only bone mass maintenance.

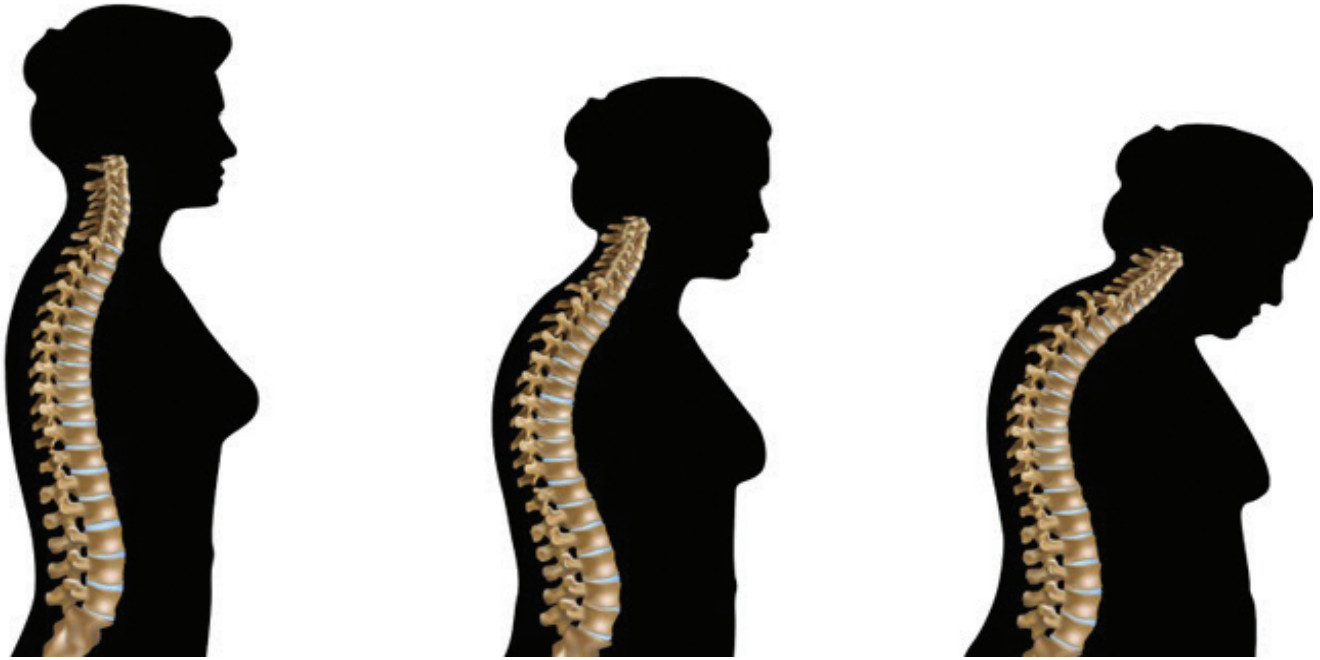
Diet and Vitamins: Eating a healthier diet and maintaining a healthy weight is very important in reducing the risk of bone disorders. It's not just about calcium and dairy; women should include foods such as leafy green vegetables, pulses, etc.

Vitamin D levels: A lack of sun exposure can mean you are not getting enough vitamin D which your body needs to absorb calcium. Daily exposure to the sun is important maintaining vitamin D levels. Aim to get a few minutes of sunlight by walking.

Thyroid Problems: Thyroid conditions are more common in women than men. High concentrations of thyroid hormones can lead to more bone breakdown than bone formation, which affects bone density and causes osteoporosis.

Medication and Treatments: Some treatments and medication can increase the risk of developing osteoporosis. For example, medicines for breast cancer, prostate cancer, epilepsy and some antidepressants can affect your bone health.





Self Help Tips

- Chew four Ashwagandha leaves in the morning empty stomach for maintaining optimum bone health.
- As a healthy snack, consume roasted chickpeas (bhuna chana) with jaggery. Daily intake of two handfuls is sufficient.
- Drink at least three glasses of full fat milk each day mixed with one tsp of ghee. Intake of ghee helps in proper absorption of fat soluble vitamin D.
- Massage your body with Til Taila or MahaNarayan Taila before shower.
- Consume 2 soaked walnuts and a teaspoon of flax seeds each day.
- Early morning sunlight exposure minimum 30 minutes. You can go for a walk or do Yoga during the sunlight exposure time.
- Weight bearing exercises, strengthening and balancing postures of Yoga to be practiced. Lifting certain weights as per capacity, Yoga like SuryaNamaskar, Taadasana, Bhujangasana, Naukasana, Shalabhasana, Shashankasana, Veerabhadrasana must be performed each day.
- Chew a handful sesame each day during winters.
- **Avoid** salt foods, alcohol, beans/legumes, caffeine.

Prevent Osteoporosis

- Calcium helps in building bone density and vitamin D helps the body absorb calcium. Dairy products such as milk, curd and cheese are good

sources of calcium and must be included in diet.

- Include herbs like Ashwagandha, Shatavari, Jatamansi and Bala in diet to strengthen bones.
- Consume green vegetables such as spinach, turnip, whole grains, fortified oatmeal, broccoli, cabbage, sprouts, beans, black gram, and chickpea.
- If you are a non-vegetarian, consuming varieties of fish such as salmon, mackerel, tuna and sardines that include Vitamin D is beneficial.
- Soyabean, lentils, chickpeas, and beans, tofu soy milk with calcium is a good way to restore decreased hormones in women with reference to menopause.
- Have nuts and seeds in moderate quantities. Walnuts and flaxseeds are rich in omega-3 fatty acids and have proven to be quite beneficial in the prevention of osteoporosis. Peanuts and almonds contain potassium which protects against the loss of calcium through the urine.
- Avoid excessive consumption of caffeine and alcoholic drinks. Caffeine has high diuretic properties and it excretes high amounts of calcium in the urine. Coffee, tea and soft drinks decrease the absorption of calcium and contribute to loss of bone density. Alcohol too interferes with the body's ability to absorb calcium.
- Include ghee as a part of daily meals as ghee helps in proper absorption of fat soluble vitamin D and it also acts as bio enhancer for the drugs with poor bioavailability.



How to Increase Bone Strength Naturally

Ayurvedic Management

Ayurveda treatment visualizes the human body as a single unit and this holistic approach has opened many newer methods for treatment. The treatment of Osteoporosis Asthikshaya includes avoidance of etiological factors (Nidana Parivarjana), Biopurification (Shodhana), Palliative treatment (Shamana), Rejuvenation (Rasayana) and Proper diet (Pathyapathya).

Nidana parivarjana: Vata dosha is commonly located in bones and Ayurveda considers increase of Vata as one of the factors responsible for Osteoporosis Asthikshaya. Avoid excessive indulgence in etiological factors responsible for provocation of Vata, vitiation of Asthi, Majjavahasrotas and also the psychic factors.

Shodhana: Panchakarma especially Basti which contains milk (Kshira), Ghee (ghrita) and Tikta Dravya.

Shamana: The main aim of Ayurvedic therapy in Osteoporosis Asthigatvata includes Vatashamak, Tarpak, Brihman, balya and Asthisandhankar treatment.

Research studies suggest that drug like Guduchi, Ashwagandha, Vacha, Dadima have antiosteoporotic and phytoestrogenic properties which strengthen the bone.

Different parts of the plants like *Withania somnifera*, *Cissus quadrangularis*, *Punica granatum*, *Tinospora cordifolia*,

Curcuma longa, *Nigella sativa*, *Melia azedarach*, *Asparagus racemosus*, *Moringa oleifera*, *Zingiber officinale* and *Sesamum indicum* are studied experimentally and found effective in the management of osteoporosis. These should be taken strictly under medical supervision.

All women over the age of 45 years should have a bone density test done. Always remember that screening is an important prevention strategy to prevent bone loss and keep your bones strong. It will lead to early intervention and result in a better quality of life. The frequency for a bone density test depends on a number of factors such as your age, your bone density results and whether you are taking any osteoporosis or arthritis treatment.

If your healthcare provider hasn't spoken to you about your bone health, it is time for you to bring it up! Especially, if you have elderly women in the family, who are now confined to their homes due to the present lockdown and pandemic situation, screening for bone health becomes crucial.

Women being considered the backbone of a family must save their bones at any cost!

Dr. Chitrangana Chauhan, MD (Ayu. Psychiatry), Founder of Ayurveda-The Medical Bliss, Email- drchitranchauhan@gmail.com

Medicinal Plants for Strong Bones

Ankur Kumar Tanwar

Bones act as the foundation behind the body which supports the muscles; protect the vital organs as well as give shape to the body. Bones are the most rigid structure and from birth, the bones grow and become the storehouse of calcium. Every bony part of the body is undergoing continuous changes of breakdown and restoration. The vicious process of bone formation and bone breakdown leads to the maintenance of healthy and strong bones.

Bones contain two specialized types of cells called osteoblast and osteoclast. Osteoblasts are responsible for bone build-up as well as restoration and osteoclasts are responsible for the breakdown. Under the normal healthy state of the human body, the homeostasis of build-up and breakdown are maintained which leads to harmony between catabolic and anabolic processes of bones resulting in strong bones.

Strong bones are the need of the human body age from childhood to old age. Proper nutrition and a healthy lifestyle are a necessity for healthy and strong bones. Calcium is one of the building blocks of bones and the most important part of human nutrition since times. But in the present era of modernization, changes in diet and lifestyle with lack of proper supply of sunlight leads to an imbalance in bone metabolism. Other causative factors behind bone disharmony could be ageing, nutrition, disuse, vitamin D deficiency. After dietary and lifestyle modification, all other causes become nullified except ageing which becomes the most unquestionable cause of bone loss.

Ayurveda the old-age traditional system of medicine describes several medicinal plants which are good for strong bones and help in bone fractures and the healing process.

Cissus quadrangularis

It is an indigenous medicinal plant, grown in India, which helps to increase the healing process of the fractured bone. The herb is called as Harishankar or Hadjod in Hindi and Asthisanghata, Vajrangi, etc., in Sanskrit. Hadjod means that which joins the bones. It has been prescribed as internal and external use in ancient Ayurveda texts as a general tonic for healthy and strong bones. It contains a high amount of anabolic steroidal substances, calcium, phosphorus, ascorbic acid, carotene A, ketosteroid, and triterpenoids. Several studies have proved the osteogenic effect of the herb.



Ficus religiosa

Ficus religiosa, commonly known as peepal is one of the oldest trees, its description is found in Indian literature and holy books such as Arthashastra, Puranas, Upanishads, Ramayana, Mahabharata, and Bhagvad Gita. Its botanical name itself suggests its importance in Hindu and Buddhist religions.

It is known as Peepal in Hindi, Ashwatha in Sankrit and Banyan in English. All parts of *Ficus religiosa* have a balanced nutritional composition. Its fruits are a rich source of macronutrients and micronutrients. Calcium is the most abundant mineral present in fresh as well as the dried fruit. The bark is rich in zinc and iron content. It is used for various illnesses along with bone healing in ancient classics.

Curcuma longa

Curcuma longa (turmeric) is the popular spice of the Indian kitchen and a powerful anti-inflammatory and antiseptic herb useful in easing conditions such as bursitis, arthritis, and back pain. Turmeric contains three principal curcuminoids in which curcumin is the most abundant and possesses multi-faceted therapeutic actions and biological activities. In ancient literature, the use of turmeric with milk and its external application is mentioned in detail. It is helpful in the management of bone disorders as well as for healthy and strong bones.

Boswellia serrata

Boswellia serrata mentioned as Shallaki in ancient classics is one of the herbs for bone and cartilage health. According to classics, Shallaki has potent vata-kaphahara properties. The key constituents of Shallaki are volatile oil, acid resin, and gum. The triterpenoids are the active constituents called boswellic acids which help to preserve the structural integrity of joints, cartilage and maintain a healthy bone.



Andrographis paniculata

Andrographis paniculata, famous as the ‘king of bitters’ is known as Kalmegh in Ayurveda. It has been used by traditional medical practitioners for stomachaches, inflammation, pyrexia, and intermittent fevers. Out of many diterpenoids that have been identified and isolated from it, andrographolide is the most abundant constituent. Research studies carried out show that andrographolide (AP) could suppress osteoclast formation. The formation of new bones and prevention of bone loss caused by estrogen deficiency can be induced by AP, thus improving bone quality and biomechanical properties.



The application and use of medicinal plants for strong bones occurred thousands of years back. Various herbal formulations are described in different ancient literature for strong and healthy bones. Single herbal formulations of Shallaki etc. are now easily available in the market in the form of powder, tablets, and capsules.

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Bone Strengthening Abhyanga



Aswini Mohan L

Abhyanga (the sanskrit name for oil massage) is explained as a therapy in Ayurveda, that one should undergo daily. Abhyanga is not merely a massage or application of oil. It is the systematic application of oil over the body, especially head, ears and foot. Daily Abhyanga for new born babies is recommended for the development of strong bones, sturdier muscles, sharp sense organs and brain along with immunity.

Ayurveda is a time-tested traditional health care system which focuses on preventive as well as curative aspects. “Dinacharya” (daily regimen) like bathing, exercises, oil application and so on as well as “Ritucharya” (seasonal regimen) where the types of diet and regimen to be followed in various seasons are elaborately and scientifically described considering the rate of metabolism in each season. These mainly focus on preventive aspects, so that every cell in the body stays healthy and deterioration is kept in check.

Ayurveda has its base in Panchabhuta sidhanta according to which Prithvi (earth element), Ap (water element), Tejas (fire element), Vayu (air element) and Akasha (space element) constitute the

human beings which is a subtle representation of the cosmos. Tridosha Siddhanta is the backbone of Ayurveda where Vata, Pitta and Kapha are the three humors which are assessed through the functions they perform by virtue of the gunas (properties) they possess. For example, Vata is responsible for any sort of movements (respiratory, circulatory, neurotransmission, musculoskeletal movements etc). Pitta is responsible for metabolism even at cellular level. Kapha is responsible for ensuring stability and unctuousness at all levels in the body.

What is Abhyanga?

Abhyanga is oil application/ oil massage for the entire body. “*Abhyango atra sakala debasya snehaabhyanga*” (Su, Sam.Chi.24/30-Dalhana)

Healthy bones are the foundation of a healthy life. Having strong and healthy bones is necessary at every stage of life. But with the surge in the sedentary lifestyle and unhealthy food habits, people have become more prone to developing bone-related ailments. Special Ayurvedic massages can very well strengthen the bones if performed under expert supervision.

Abhyanga is mentioned as a Dinacharya in Ayurveda. It is also mentioned as a treatment for Vata related conditions. This includes various musculoskeletal disorders, neurological disorders and many other spectra of diseases as well. The context of this article being bone health, we will be focusing on how Abhyanga helps in bone health.

Sense Organs and our Body

As we all know there are five sense organs in our body, among them skin is the largest organ and Ayurveda considers Abhyanga as the best way to nourish skin. Vata is the predominant dosha in skin – the tactile sensory organ and hence Abhyanga should be done on a daily basis as it is the best way to protect skin and thereby Vata dosha in the body. *“Twachyasca param abhyanga tasmāt tam seelayet nara”* (C.S.Su.5/87)

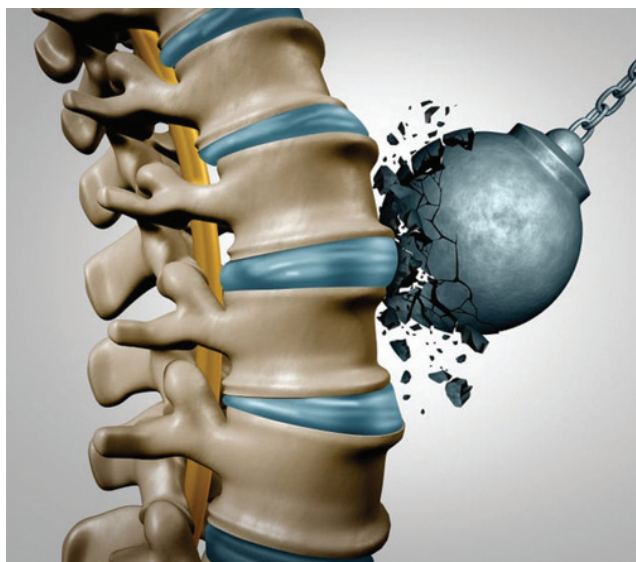
Why Abhyanga is considered as DinaCharya?

One might wonder about the logic behind suggesting oil application on a daily basis for staying healthy. This is explained very beautifully in Sushruta Samhita. A saying goes as *“Sneha saro ayam purusha, pranasca sneha bhuyista”* (Su.Sam.Chi.31/3) which means, the existence of life itself is dependent on unctuousness which is provided by Abhyanga. Abhyanga is said to be done regularly and specifically on Siras, Sravana and Pada (head, ears and feet).

Uses of Abhyanga

“Abhyangam acaret nityam sa jara srama vataha Drishti prasada pushti ayu swapna su twaktwa dardhyakrit” (A.H.Su.2/10)

Daily application of oil retards ageing, reduces



fatigue, subsides vitiated vata dosha, improves vision, and provides longevity, good sleep, good skin sin and a sturdy physique. While considering the treatment aspects it is said that a dry log of wood can be bent by applying oil and giving steam, similar effect can be achieved for bones and joints which are stiff by doing Abhyanga.

“Sushkanyapi ca kashtani sneha sweda upapadanai Sakyam karmanyatam netum kimu gatrani jeevitam” (A.H.Chi.21/5)

Doshas and Dhatus

Just like the tridoshas, saptha dhatus represent the various tissues of the organ systems in our body. These dhatus are very closely interlinked to the tridoshas based on the twenty gunas (properties) that they possess in various permutations and combinations. The seven dhatus are rasa (essence of digestion), rakta (erythropetic tissue), mamsa (muscle tissue), medas (lipid tissue), asthi (bone tissue), majja (bone marrow) and sukra (reproductive tissue).



Vata dosha has its inseparable relation to Asthi dhatu ie, the skeletal system of our body. It is said as “*Tatra asthini sthitau vayu*” (A.S.Su.19/47).

Dhatu Karmas

Each of the saptha dhatus in body play specific functions. The functions of Asthi and Majja dhatu are important while considering bone health. Asthi dhatu karma is as follows: “*Deha urdhwata dharana majja poshanabhyam asthi*” (A.S.Su.19/12) which means it helps in keeping the body erect and gives nourishment to bone marrow. The karmas of Majja dhatu are “*Sneha bala asthi poorana sukla pushtibhir majja*” (A.S.Su.19/13) which means it provides unctuousness, strength, fills bones and nourishes the next dhatu which is sukra. This clearly shows bones and bone marrow are closely interlinked and even the treatment of vata dushti Asthi and Majja dhatu are mentioned together.

Relation between Panchabhuta and Tridosha

Each dosha is constituted by specific Panchamaha bhutas and Vata dosha is constituted by Vayu and Akasha bhutas. “*Vayu akasha dhatubhyam vayu*” (A.S.Su.20/1)

Relation between gunas of Vata dosha and Sneha dravya (various oils)

The properties of Vata are ruksha, laghu, seeta, ghara, sukshma, cala etc. The clinical implication of

this is that if there is Vata vitiation in the body due to improper diet and regimen then the dosha samana can be achieved by using substances having opposite gunas of that particular dosha. In case of oil (sneha dravyas), the properties are said as guru (heaviness), seta (cool), sara (flowing), snigdha (unctuous), manda (sukshma, mridu, drava which are nearly opposite to that of Vata. Hence in various aches and pains related to bones, use of oil gives quick relief.

Concepts of Oils mentioned in Ayurveda

Various oils are mentioned as “Sneha dravya” which means it provides unctious or lubrication for the body. They are extracted from 2 sources: Sthavara Sneha (plant origin) eg: sesame oil, castor oil etc. and Jangama Sneha (Animal origin) eg: muscle fat, bone marrow. They are used internally as well externally (Abhyantara sneha and Bahya Sneha).

Abhyanga in treatment of Vata

Oil massage comes under Bahya Sneha prayoha. In the treatment of Vata dosha, use of Snehas plays a major role. Wear and tear of some machines is prevented by lubricating them. Similarly various similes are mentioned in Ayurveda, one of which says just as the axis of a cart becomes strong and resistant by oil application, by massage human body becomes less susceptible to wear and tear.

The first treatment line of Vata dosha is Snehana. “*Vatasya upakrama sneha*” (A.H.Su.3/1).

In the treatment of Vata vyadhi, Abhyanga is mentioned in Twak asrita Vata (Vata vitiated in skin) as well as in Asthi Majja gata Vata dushti (Vata vitiated in Bones and Bone marrow).

“Babha abhyantaratah snehair asthi majjagatam jayet” (A.H.Chi.21/19).

In diseases of bones and bone marrow, external and internal use of oils is recommended.

When to avoid Abhyanga

Even though Abhyanga is mentioned to be done regularly, it is to be avoided in the following situations.

“Varjyao abhyanga kaphagrasta krita samsudhi ajeernibhi” (A.H.Su.2/10)

Abhyanga is not to be done when there is Kapha dosa dusthi – since the properties of Sneha dravya is similar to Kapha and leads to further vitiation, those who have undergone any of Panchakarma procedures like Vamana, Virechana, Kashaya Vasthi, Sneha Vasthi, Nasya – since the dhatus will be weak and the agni (metabolism) will not be back to normal immediately and finally those suffering from ajeerna (indigestion). This shows that even a normal daily routine has contraindications based on the health and well being of an individual.



Mode of Action of Abhyanga for Bone health

The skin has Bhrajaka Pitta which metabolises the oil applied and the essence is carried through deeper tissues. This is clearly mentioned in the Nibandha

Sangraha commentary of Sushrut Samhita while explaining Abhyanga. Dalhana says that through the skin pores, the oil enters the twak, rakta, mamsa, asthi and majja and subsides the diseases caused by tridoshas. (Su.Sam.Chi.24/30-Dalhana).

As per Ayurveda, massaging with sesame seed oil is very beneficial for the bones. Take some warm sesame oil and apply it on your body. Massage gently for at least 15 minutes, allowing the oil to soak into the skin. Take a bath after 10 minutes. Practice this for a month for effective results.

Modern View

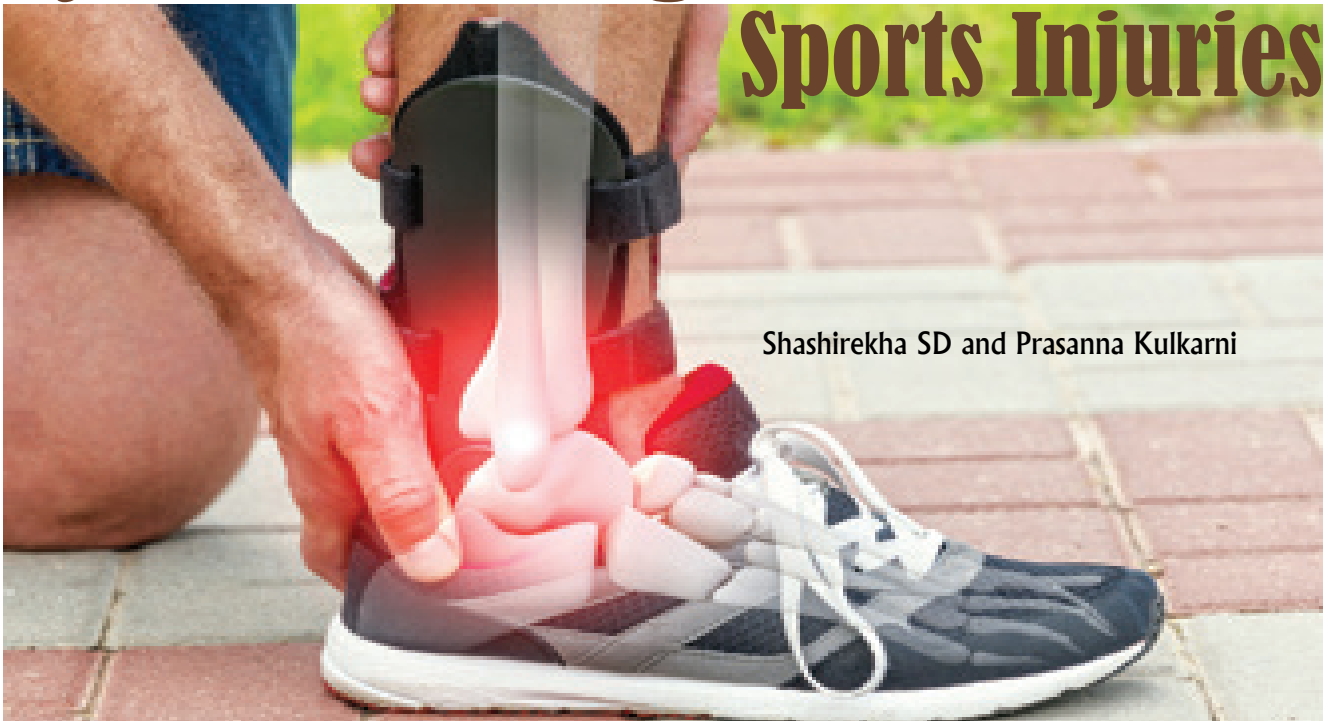
Penetration of molecules in the skin is mainly through 3 routes: through Stratum corneum, sebaceous follicle and sweat ducts. In case of topical drug delivery. Stratum corneum of the skin is lipid rich and hence lipophilic drug is best suited, whose transport is aided by dissolution into intercellular lipids around cells of Stratum corneum. Topical drugs are known to produce systemic effects as once a drug molecule passes through Stratum corneum, it enters into dermis which has a rich supply of blood vessels from where the drug gets absorbed into the general circulation. Since the oils used for Abhyanga have a lipid base, they can enter the systemic circulation and nourish the bones by selective absorption.

Concluding Remarks

Abhyanga as a daily regimen and as a treatment modality specifically helps in the strength of bones and preventing and curing diseases of the bones as it is a Bimhana chikitsa (nourishing therapy). **“Brimbanam samanam tu eva vayobo pitta anilasya ca”**. Brimhana (nourishing therapy) helps in subsiding the Vata dushti as well as Vata Pitta dushti. Judicious use of Abhyanga with condition specific oils definitely plays a major role in maintaining strong healthy bones.

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Ayurvedic Management of Sports Injuries



Shashirekha SD and Prasanna Kulkarni

Having a strong physique has become one of the must to be fulfilled in most of the age groups in the present century. Strong physique may be the desire of many but it is mandatory in athletes as without which they cannot even think of participating in the games. Lucky are those who get trained under professionals but in the realistic situation many of them will land up in injuries ranging from mild sprains to fractures like conditions.

Sports injuries may be casual or can be grave for the athletes as well as the coaches, trainers and healthcare professionals who deal with such sports injuries. Some sports injuries result from accidents whereas some others are due to poor training practices, improper equipment, lack of training or insufficient warmup and stretching. Though any part of our body can be harmed during sports or exercise, that include the musculoskeletal

framework, which incorporates the muscles, bones and related tissues like ligaments, tendons etc. Traumatic brain and spinal cord injuries are relatively rare during sports or exercises.

Sports Medicine is not a single specialty, but an area that involves health care professionals and researchers from a wide range of disciplines. Its aims not only at curative and rehabilitative measures, but

also preventative, which may be the most important one of all. Fortunately, most of the sports injuries are treated excellently in Ayurveda and most of the people who suffer injuries can return to an adequate level of physical activities after an injury. Even better than this is, many sports injuries can be prevented if athletes take the proper precautions for exercises and sports and most importantly adopting certain principles of Ayurveda.

Sports Injuries : Sports injuries are defined as the sorts of injury that happen during sports or any activities. Nonetheless, it is feasible to harm any part of the body when playing sports, yet the term sports injury is normally used to indicate the wounds of the musculoskeletal framework. More normal and less atrocious causes incorporate lifting and pulling movements that strains the muscles and ligaments or injure tendons encompassing the joint. Injury might possibly be acknowledged during action. Distress may foster days after the fact. Repetitive activities like swimming, tennis, weightlifting, volleyball and football could prompt joints torment and tendons injuries. Day by day errands like housework, raking leaves or physical work can likewise prompt shoulder joint pain, knee pain and back pain over the long haul.

An acute injury is a physical issue that happens suddenly and unexpectedly is generally connected with injury like breaking a bone, tearing a muscle or wounding. It very well may be a consequence of falling or colliding with another player during sports. Chronic/ abuse

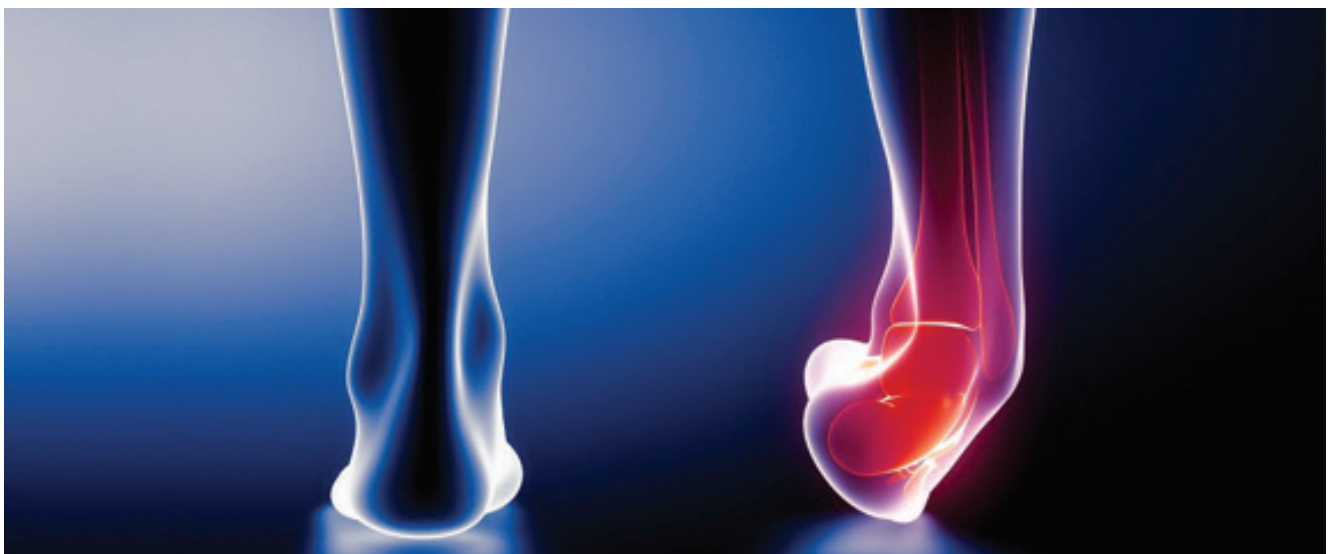
sports injuries outstrip unexpected intense injuries in pretty much every athletic movement, but since these wounds are not immediately disabling, they pull in less clinical consideration than those that reasons an abrupt and sudden loss of function.

The eight usually conceivable athletic-related wounds and their management are as follows:

Strains : Strains are by a wide margin the most well-known of all sports related injuries basically on the grounds that we utilize such countless muscles and ligaments when we exercise or play. These movable parts are susceptible to stretching farther than they ought to, or moving in manners they should not move, leaving them torn, harmed and attaining damage. Normal muscle strains incorporate pulled hamstrings, pulled groin muscles and stressed quads.

Most of the strains are minor and heal naturally with rest. The best way to reduce the risk of strained muscles and tendons is to warm up and stretch before engaging in strenuous activity.

Sprains : Sprains are to ligaments whereas strains are to the muscles. At the point when these ligaments turn in an incorrect manner, they can pull or tear. Ankle sprains are the most regular kind of sprain among competitors, followed intently by knee injuries, wrist and elbow sprains and so on. Injuries can be excruciating, take more time to mend than strains, and at times expect immobilization to secure against additional injury.





Pre-exercise stretches and warmups can help dissuade sprains, just as rehearsing great strategy in the game. Injuries regularly leave the ligament frail and helpless to future injuries, so, on the off chance that you have a background marked by sprain of the knee or ankle for instance, it would be smart thought to help that joint with a support of brace while playing.

Knee Injuries : The knee is an exceptionally complicated joint, and it perseveres through a lot of influence and wear during most exercises. Tears of the anterior cruciate ligament (ACL) are very normal, as are ligament tears, dislocation and fractures. Knee wounds can be painful and debilitating, some of the time expecting a medical procedure to address.

Again, here warm-ups, stretches and proper posture can reduce the danger of knee joint injuries, along with proper padding and bracing.

Fractures : Power bearing and contact sports every so often lead to fractures of the bone (mostly the bones of arms, legs and feet), all of these can be very painful, take immobilization for many weeks to heal and may sometimes require surgical intervention.

Fractures are an intrinsic risk with most strenuous or contact sports, but the risk can be reduced by warming up, wearing the appropriate padding, practicing good technique, work outs to keep muscles strong and flexible, etc

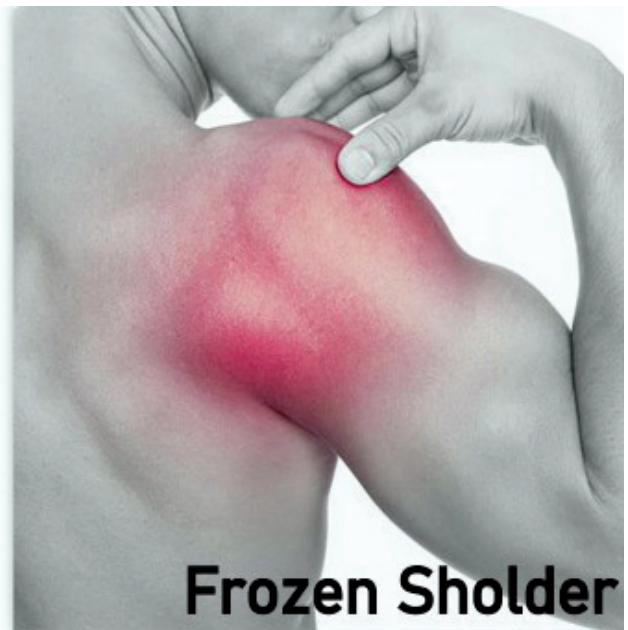
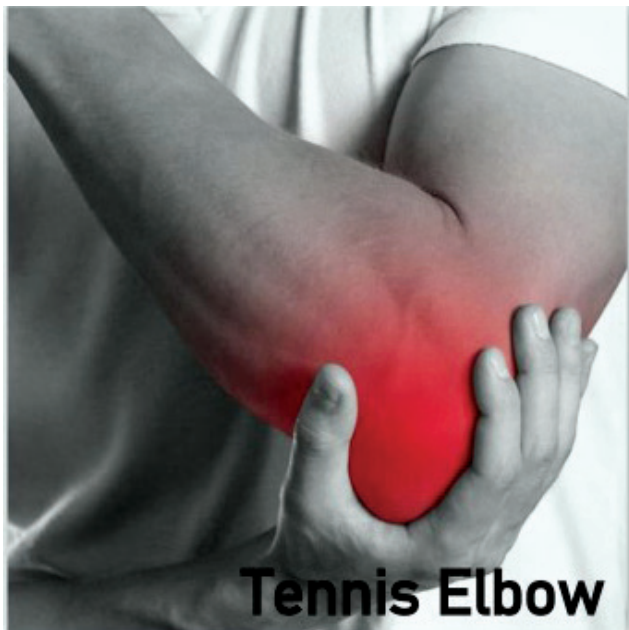
Tennis Elbow : We may not land up in having tennis elbow by playing tennis (golf is also a common culprit). Tennis elbow is one of several injuries by repeated injuries. The ligaments in the elbow may get severely strained due to the overuse and repetitive activity of the upper limbs.

The best way to avoid it is to stride ourselves. To take breaks, always warm up, do any other activity, and do stretch before playing.

Plantar fasciitis/ Shin splints : Plantar fasciitis is an inflammatory condition involving the tendon in the arch of the foot, causing sharp pain with every proceeding step. Shin splints define an inflammation of the muscles in the lower leg caused by repetitive stress by over running, wriggle out, quick stops and starts. These are common with runners, joggers, soccer and basketball players, etc.

Proper stretching and rest frequently are the two best preventatives steps. Our back and spinal column goes through some level of stress with pretty much every sports activity

Back injuries/ Back pain : Over the long period, this pressure may aggregate and can lead to inflammation around the vertebrae and back muscles, in some cases making injuries to the discs and often causing upper or lower back pain. Sometimes an unexpected jarring impact may



likewise make an acute injury to the back. Back treatment protocols may vary generally relying upon the condition, going from rest to exercise ranging from rest to physical therapy to surgery.

The most ideal approach to lessen your danger of back pain and injury is to keep the back muscles strong and adaptable with standard low-sway exercises, warmups and great eating routine.

Concussion : Generally, in physical games or contact sports like football, a concussion happens when an abrupt effect to the head makes the cerebrum sway inside the skull, here and there harming the tissues holding it in place. Blackouts might be gentle to serious, with manifestations going from headache and dizziness to drowsiness and loss of consciousness. Concussions ordinarily heal normally with rest within a week to half a month.

The most ideal approach to reduce the danger of blackout is to wear proper defensive headgear when playing physical games like hockey or football, or when trekking or skating, and so on.

Symptom Based Treatments

Apart from the above specific management, following are the general management of sports injuries: Treatment in sports injuries depend upon two important factors: one is on the severity of the injury and another is the part involved. PRICE is

the first aid towards the sports injuries involving muscles and joints. This is the five steps towards treating injuries involving muscles and joints.

PRICE involves the following five steps-

- **Protection** – of the part from further injuries, probably by using splint.
- **Rest** – to reduce the regular activities and avoiding exercises.
- **Ice** – applying ice pack for 15-20 minutes to reduce pain and swelling.
- **Compression** – After ice packing to reduce the swelling apply compression by wrapping with elastic bandage
- **Elevation** – to keep the affected part raised above the level of the heart.

Depending on the severity and conditions, following interventions are decided by treating physician:

Pain Management : In minor injuries, medicines like Paracetamol, Ibuprofen and other NSAIDS are prescribed apart from following conservative management.

Immobilization : Slings, Splints and casts are used for immobilization of the injured part, which prevents the further injury.

Physiotherapy : Physiotherapy techniques are used to improve the range of motion, improve the circulation and help to normalise the part.

The exercise therapy can strengthen the muscles and prevents the risk of reoccurrence of the injuries.

Surgery : Most of the sports injuries do not require surgical procedures but in case of severe injuries, surgery may be the choice.

Ayurveda approach for Sport Injuries

Ayurveda does have answers for the above conditions. Before applying this science as curative, let's see what Ayurveda has to offer in Sports Medicines.

Sports Medicine in Ayurveda

Ayurveda is a holistic science which aims not only towards curative but also aims for preventive approach. As we go through Ayurvedic literature, we do not get any direct references related to Sports Medicine. But descriptions mentioned in the contexts of Dinacharya, Ritucharya, and Rasayana can be adopted in Sports medicine. Some of the references we get about the Sports injuries are –

- Bhagna – Fracture
- Snayugata vata – Ligament and tendon injuries
- Mamsagata vata – Sprain and strains
- Sandhimukta – Dislocation, subluxation
- Vrana – Wound
- Vranashotha – Inflammatory injuries

Ayurvedic Management of Sports Injuries

Ayurvedic approach towards sports injuries involves holistic way rather than just the symptomatic management. Ayurvedic treatment principle aims at ensuring that the doshas in our body are in equilibrium, correcting the Agni and eliminating the Ama out of the body. The treatment approach in sports injuries can be broadly classified in three steps: ***Prevention, Management and Rehabilitation.***

Selection and Preparation of Persons to opt for Sports as Profession

Before a person chooses sports as his primary or secondary profession, it is advisable for him to know his Prakruti, Sarata, Samhanana, and Bala from an Ayurvedic physician. By analysing these features, one can minimize the future injures.

Persons with Kapha dominated Prakruti are more suitable for the sports where more physical stamina is required. Take for instance Cricket, where a player has to spend more than 6 hours on the ground.

A person with Vata dominated Prakruti can prefer sports where stretching of the extremities are more found like basketball, football, etc as their elongated limbs will support them to play better.

Assessing Dhatu Sarata will also have good impact to identify the right Sara person to right game. Among the Dathusaratha, following are the best suited for the individual based on their expressions.

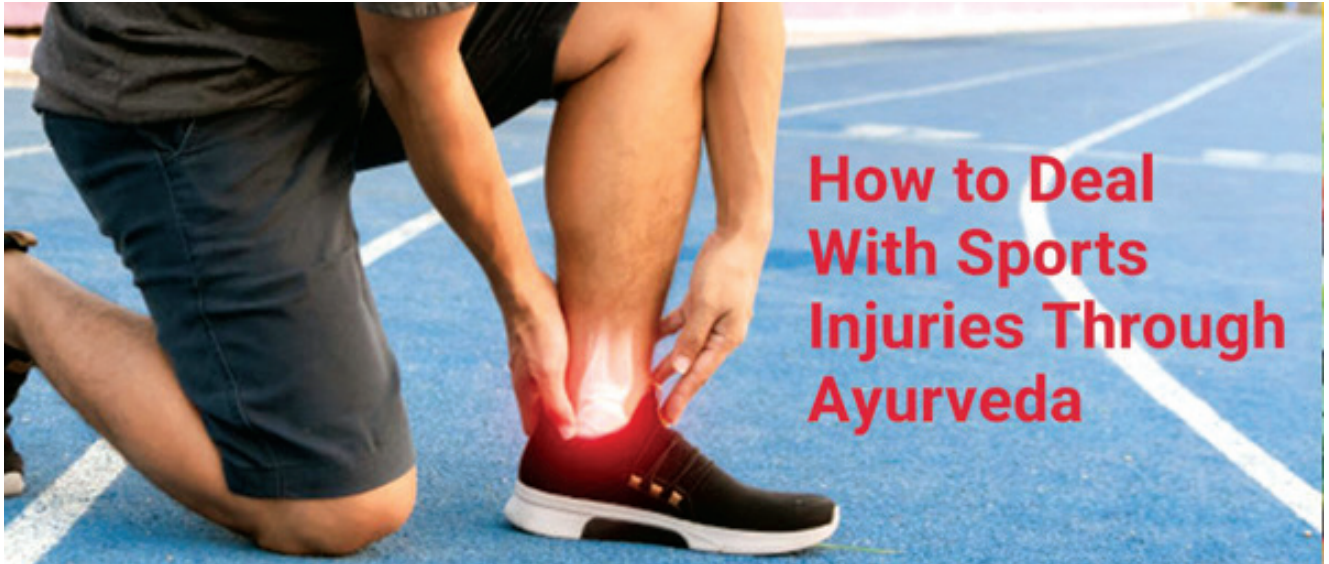
- Mamsa,
- Asthi and
- Majja Dathu Saratha

Acharya Charaka in Vimanasthana has mentioned the above Sara Purusha Lakshanas which are as follows:

- Mamsa Sara Purusha possess
 - Having more immunity
 - Healthy
 - Good strength
- Asthi Sara Purushas are
 - Enthusiastic
 - Active
 - Can withstand any problem
 - Have strong and firm body
 - Longevity
- Majja Sara purusha possess qualities such as
 - Intelligence
 - Strong
 - Bestowed with good health

The person who possesses the above-mentioned Saratha Gunas can be considered fit for selecting sports as their professional carrier.

The fitness of the body is characterised by the symmetrical, well-knit bones and the compactness of the body. This is called Samhanana of the body. Acharya Charaka has clearly explained that the person with a well-developed musculature possess good strength (Pravara Samhanana) and hence can be considered to be fit as a Sportsman.



How to Deal With Sports Injuries Through Ayurveda

Bala is the strength of a person. Of course, the individual with good strength should opt sports as his carrier. A person with moderate strength can increase his strength by adopting certain dietary and lifestyle practices.

Ayurvedic classics mention about the Dinacharyas which are to be followed by the Sportsmen in order to conquer the healthy lifestyle. Some of the Rasayana Dravyas mentioned in the classics can be used as per the advice of the physician as they help in nourishing the Dhatus and provide the overall nutrition. Performing Yoga and Meditation on daily basis keep the Sportsman fit physiologically as well as psychologically. Ayurveda has mentioned Marma Chikitsa and some internal medications to keep the structures patent for some of the major joints which are more prone for injuries during sports. The specific Ayurvedic treatment modalities and formulations can be adopted concentrating on the structures which are more vulnerable in those particular sports the person play.

Managing Sports Injuries through Ayurveda

Management in sports injuries include internal medicine, pain management, lepa, swedana, suitable abhyanga procedures, Shodhana procedures, diet, lifestyle changes, rest, and rejuvenation.

In case of acute injuries, the management of pain and inflammation and to reclaim the activities of the affected area are the main concerns. The

important step is to exactly identify the cause of injury. Ayurveda has comprehensive assessment procedures to determine the location of injury, its nature, and its management options.

Ayurvedic formulations have a wide array of optimal effects, from relieving the pain to healing the injuries. Medications specific to the injury can help to rebuild the tissues, bones, cartilages, etc. and help in complete recovery. Ayurveda has adopted varieties of therapeutic measures for the prevention and cure of injured ones since antiquity. In case of minor injury in sportsperson, Oleation (Snehana) as massage, fomentation (Swedana) with medicated herbs and local Vasti therapy with medicated oil is relatively beneficial. In case of major injury, massage is useful in the management of a person of the soft tissue lesions. It helps in reabsorption of haematoma and stimulates blood flow in the affected parts. Some of the Ayurvedic massages that are highly used as follows:

- **Udvardhana** – It is the upward and downward movements with oils and dry powders, with the help of palm of hand and also fingers.
- **Utsadana**- It is very gentle rubbing especially with medicated oils.
- **Udgharshana** – It is the more forceful rubbing creating greater friction generally with dry powders to strengthen the calf and thigh muscles.
- **Samvahana** – It is the gentle tingling massage with oils, which causes a pleasing sense and reduces fatigue and helps on regaining the vitality in muscles.

- **Mardana** – It is the downward movements of hands while squeezing the muscles after exercise.
- **Peedana and Avapeedana** - Massage in which kneading of individual muscle is undertaken with the help of knuckles and fingers. Peedana is deep kneading.
- **Padaghata** - Massage with feet to is more vigorous and emphasis in greater pressure and crushing effect. Done only after proper ablation, possibly muscles become stronger and stress resistant.
- **Udvestana** is upward movement and Upavestana the opposite.
- **Unvestana and Upavesthana** - Massage applied to the limbs especially over shoulders thighs and waist.

The duration of the treatments, selection of the oils or drugs for the treatment depends on Physician. All the above treatments will not only enhance good blood circulation and nervous stimulation but provides strength and stability to the structures on which they are performed.

- **Patra Pottali Swedana:** refers to the sudation performed by specially prepared bundle of medicinal leaves. It will not only relieve the joint pain but also helpful in removing stiffness of the body, improving blood circulation and improving the functions of joints and muscles.
- **Kativasti/ Prishthavasti:** The treatment which is exceptionally proposed for relieving pain of the upper or lower back. The pouring of the medicated oil in a specific stream transmits through the muscles delivering strain, firmness and lessens intensity of pain. A light massage with the medicated oil increases the benefits of this treatment, giving profound relaxation and comfort. It not just limits the intensity of pain and stiffness by pacifying Vata Dosha yet additionally improves the quality of life of sportsperson.
- **Pichu:** This treatment is helpful for relieving stress and stiffness of joints or back. The warm pads which are soaked in oil initiates a profound good sense of relaxation. A short, delicate and rhythmic massage strokes followed by fomentation of hot

pack further reduces the pressure and improve the healing process and grant smoothening impact. In any event three sittings of Pichu are suggested for maximum benefit.

- **Bandhana:** Bandaging the affected parts of the body is a good choice to manage fractures or injuries and sustaining immobility is significant for a cure. Bandaging with the drugs relives pain and inflammation.
- **Lepana:** The process includes application of medicinal herbs over the affected site. After a while, pressure is applied at specific points of the body. This helps in managing the pain and help in the tissue healing process.
- **Marma Chikitsa:** Marma Therapy is an ancient traditional procedure where the application of pressure on Marma points induces the flow of vital energy (prana) along a complex system of subtle channels called (Nadis) thus helps in curing joint alignment problems. These techniques are done to deliver a free range of movement and play a role in quicker recovery with proper diet and exercises.





Diet : Managing diet is essential to improve entirely from sports injuries – this includes avoiding salty food and heavy food stuff, as well as sugar and citrus food, but increasing the intake of whole grain bread and cereals, proteins including meat and legumes, vitamins and food that enable tissue growth and aids the healing process. Foods that are having Santarpana properties like Ksheera (milk), Masha (black gram) and Jangala Mamsa (meat from animals residing in dry land like goat, sheep) should be preferred. The Agni (digestive power) should always be given at most importance and hence using Trikatu- long pepper, black pepper and ginger in the food will be more beneficial.

Rehabilitation in Sports Injuries

The ultimate goal of rehabilitation is to reduce the progression of the injury, improve the condition and restore the normal functioning of the part. The rehabilitation process starts as early as injuries happen and continues with the therapeutic or the surgical interventions. This process is managed by the multidisciplinary team but the physiotherapist is usually the professional in charge of this process although the process may be started by the physicians or surgeons.

Rasayana Therapy

Rasayana therapy establishes the age, increases the life span, intelligence, memory, complexion and strength of the sports person. Application of Rasayana roots out the morbidity, checks the progress of the disease, restores the strength, nourishes the body and promotes health. The effect of Rasayana extends to nourishment of all the dhatus and the ojas.

- Drugs having muscle bulk building capacity (Brimhaneeya dravya) are widely used to increase the strength of the body. Most commonly used drugs are Kshirini, Rajakshavaka, Ashwagandha, Kakoli, Ksheerakakoli, Vatyayani, Bhadhraudani, Bharadwaji, Payasya and Rishyagandha.
- Drugs that act as vitalizers (Jeevaneeya dravya) like- Jeevaka, Rishabaka, Medha, Mahamedha, Kakoli, Kshirakakoli, Mudgaparni, Mashaparni, Jivanthi and Madhuka are prescribed to meet the purpose.
- Drugs that promote strength (Balya) like Aindri, Rishabi, Atirasa, Rishyaprokta, Payasya, Ashwagandha, Sthira, Rohini, Bala and Atibala are used enhance strength of the sport person.

There are various compound preparations that include above drugs and being widely practiced by the physicians.

Yoga Therapy

Yoga is becoming yet another imperative means for those who look forward to maintain their fitness in a way that counterparts their injury prevention or recovery. Ayurveda depicts the importance of Vyayama in Dinacharya for enhancing the strength of body and to maintain good physical state. Yoga provides-



- Fitness, stability, balance and flexibility of the body
- Enhances focus
- Improves overall physiological improvement

Management of sports injuries through Yoga is a holistic approach and form of healing that includes exercises, breathing techniques, and movements alongwith physio-psychological regimen. Through its comprehensive approach, Yoga therapy assists patients in managing not only the physical symptoms of their riddles but also the causes of their overall pain, discomfort and suffering, leading to a longer lasting assistances in all areas of life.

Yoga poses which are performed in erect posture such as Tadasana, padahastasana, Vrikshasana, Trikonasana Ardhachakrasana, Katichakrasana, etc are beneficial in cases of shoulder and knee and ankle injuries while Yoga poses such Dhanurasana, Bhujangasana, Shlabhasana, etc are performed in lying down posture which are effective in relieving back pain.

The recent developments in the Ayurvedic specialty suggest various medications and therapies which are essential for a sports person. Though Ayurveda does not have any separate branch, the treatments mentioned in the classics play a vital role in treating sports injuries. Ayurvedic treatments offer relief in many of the sports injury conditions such as-tendinitis, ligament strain, callus formation, minor fractures etc. The external therapies found to be treating in pain, inflammatory conditions, healing the injured tissues and other conditions. Immobilization and oil therapies can be adopted in fractures. The Rasayana therapy which boosts stamina can be adopted in sports injuries. Performance enhancement and fitness can be achieved with Ayurvedic medications, therapies and Yoga.

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Have You Tried This?

P. Selvam , Sandeep B Patil and Ashish Wadhvani

Aravindh Herbal Labs (P) Limited
140, Mudangiar Rd, Rajapalayam | Phone: 91-4563-233300 | e-mail: info@aravindhherballabs.com
Evaluated Medicinal Properties of Kabsura Kudineer (KSK)

Inhibits Cyclooxygenase-2

Antioxidant activity

Anti-inflammatory activity

Antibacterial activity

Antidiabetic activity

Stop Covid spike protein bindwith lung AC-2 receptor

Control Lung cancer cell growth

Immune booster

Sources:
P. Selvam, Sandeep B Patil and Ashish Wadhvani (2019). Investigation of Therapeutic activity of Kabsura Kudineer (KSK) Polyherbal formulations. Evidence based herbal medicine, pp. 133-144. ISBN: 978-93-5408-448-5
P. Selvam (2021). Studies on pharmacological action of Kabsura Kudineer (KSK) – A polyherbal formulation. Evidence based herbal medicine – Part-III, pp. 80-92. ISBN: 978-93-5408-448-5

Kabsura Kudineer (KSK), a polyherbal formulation is now widely being used as a therapeutic agent as well as dietary supplement for the treatment of COVID 2019.

KabaSuraKudineer (KSK) is a polyherbal preparation comprising of several medicinal plants such as: Zingiber officinale (ginger, Rhizome), Piper longum (long pepper, Fruit), Syzygium aromaticum (clove, Bark), Tragia involucrata (stinging nettle, Root), Anacyclus pyrethrum (Chamomile, Root), Hygrophilla auriculata (Kokilaksha, Root), Terminalia chebula (chebulic myrobalan, Fruit), Adathoda vasica (Malabar nut, Leaf), Coleus amboinicus (Mexican mint, Leaf), Saussurea lappa (Kushta, Root), Tinospora cordifolia (Guduchi, Stem), Clerodendron serratum (Bharangi, Root), Andrographis paniculata (Kalmegh, Whole plant), Cissampelos pareira (Velvet leaf, Root) and Cyperus rotundus (nut grass, Rhizome).

Yoga for Bone Health

Geetaa Singh

Imagine yourself if you didn't have that scary skeleton!! You would probably be crawling and wriggling like a creepy worm. Love your skeleton, because it supports and shapes your body; protects delicate internal organs such as the brain, heart and lungs. Hence, bone health matter a lot. It is our responsibility to construct healthy bones and nourish them till the end of our life.

Adult human skeleton is made up of 206 bones comprising the bones of the skull, spine (vertebrae), ribs, arms and legs. Bones work with muscles and joints, to hold the body together and help free movement of the body organs. This is called the musculo-skeletal system.

These days, bone disorders are growing and are beginning to strike younger people. The likely causes are the stressed life, skewed lifestyles, unhealthy food habits and lack of exercise. We reach our maximum bone mass at around age 30. After that, it's a matter of maintaining what we have. However, bones are losing mass at a much faster rate than earlier. More than 50% of people consulting me in my yoga studio (Aarya Yoga, Bangalore) are under 40 with a general complain of lumbar back pain, sciatica, cervical spondylitis, knee pain, fatigue, loss of muscle strength in legs, all related to bones and muscles. These people complain that they cannot stand or sit even for one hour. Such a condition is miserable which makes the day-to-day activities hugely burdening. And these clients seek a cure through yoga. Though ironical, I assure it is possible to restore and rejuvenate bone health gradually with regular practice and following a healthy lifestyle.



Uttita Tadasana

So, what is Bone?

Bone is a living tissue made of collagen, reinforced with calcium phosphate and specialized bone cells. Collagen is a protein that provides a soft framework and calcium phosphate is a mineral that adds strength and hardens the framework. This combination of collagen and calcium phosphate makes bone strong and flexible enough to withstand strength. 99% of the body's calcium is in the bones and teeth. The remaining 1% is in the blood. Most bones also contain bone marrow, where blood cells are made. Another important accessory to bones is the cartilage. Cartilage is a connective tissue found in the bone articulations (joints). Bones act as levers; and the joints act as the fulcrums to these levers to produce movement in the body. Cartilage assists in movement over articular surfaces and cushions the joint to move easily without pain by absorbing shocks. There are no blood vessels and nerves in cartilage, hence we do not feel pain from cartilage damage, until it is badly damaged. The nutrients diffuse through the surrounding dense connective tissue and hence, cartilage has a poor ability to heal or regenerate. With age and excessively acidic diet, insoluble mineral salts deposit in cartilage leading to stiffness, brittleness and osteochondritis (inflammation or defective growth of part of a bone or cartilage). There you got it now, why one has to get a knee replacement surgery! Most commonly, it is because of the breakdown of the joint cartilage.

The body is constantly building up and breaking down bone tissue as required. When unused, the bone mass is lost because it is metabolically costly to maintain it. Sex hormones play an important role and largely contribute to stronger bones. Thus in men, the testosterone stimulates muscle mass which increases bone density. However, in women, as a result of decline in the levels of estrogen especially after menopause, aging women suffer from muscle and bone loss. They are then victims to osteoporosis, arthritis and other bone related disorders. When we do not eat right and get enough of the right kinds of exercise, our bones can become weak and even break. Broken bones (fractures) are painful and sometimes need surgery to heal. They can also cause long-lasting health problems. But the good news is that, it is never too late to take care of your bones. Because, bone tissues remodel till the end of life! You can prevent and sometimes even reverse the condition



with proper exercise and diet. Now, smile and get into action.

How do we foster, conserve and restore bone health?

There are many things we can do to keep our bones healthy and strong. First of all, follow a healthy lifestyle, eat a balanced diet, eat foods rich in calcium and vitamin D, get plenty of exercise especially weight-bearing exercises, and keep the right levels of various hormones to keep the bones healthy.

How does Yoga facilitate Bone health?

Yoga is a weight-bearing exercise, in which one has to hold the weight of the body up against gravity. This puts mild stress on the bones keeping them active and strong. Yoga is a holistic approach towards the body and mind, which helps to discipline a person's physical and mental attributes. It relieves stress, stimulates all the internal organs, regulates endocrine



Parshwa Sama-Trikonasana

- Lumbar spine joint complex
- Thoracic spine joint complex
- Cervical spine joint complex
- Shoulder joint complex
- Elbow joint complex
- Wrist joint complex

All most all of the asanas of hatha yoga work on at least 3 to 4 of the joint complexes simultaneously. Essentially, the class should begin with therapeutical movements to prepare the body for rigorous postures to be held in static. The bone and its associated muscles, cartilage and the joints are more flexible when they are warm and/or in an alkaline state. As the body gets warmer, by the therapeutical movements and the asanas, muscles and nerves gets lubricated and the body parts moves freely. In the working model of hatha yoga, the principle of heat, pressure, gravity and circulation operates which increases stamina, strength and flexibility gradually leading to stronger bones and muscles. The sequential asanas of hatha yoga stimulates rapid blood circulation. Holding the postures in static for 20 to 45 seconds creates pressure throughout the body. Graceful movements while shifting from one posture to another works by setting up regions of relative high and low pressure throughout the body, which needs careful planning by the therapists'. This stimulates transmission of information in the form of neuro- and immune-transmitters, hormones and other more subtle agents. These subtle agents in hatha yoga concept are described as energy channels (naadis) and energy centres (chakras) of our body. The right energy channel is Ha (hot, dynamic, energetic, and

system for balanced hormone secretion, improves physical balance and thereby reduces the likelihood of falls in the aged people.

Hatha yoga and bone health

Hatha yoga is a dynamic tool of yoga that maneuvers the practitioner holistically. Generally a hatha yoga class consists of a complete package of cleansing (Shodhana kriyas), therapeutical movements of whole body for joints and muscles (Sukshma vyayama), Warm ups (breathing exercises), Asanas, Pranayama (regulated breathing) coupled with Mudras and Bandhas (gestures and neuro-psycho locks). A yoga therapist must make the practitioner understand the fact that yoga works not only on the musculoskeletal system, but on all other vital systems like psycho-neuro-cardio-pulmonary, endocrine, digestive and reproductive systems. Above all, the level of our spiritual awareness gets upgraded. However, the first system to reciprocate to yoga is our muscles and joints. We must remember that bones are enclosed in our muscles, tendons, cartilage, ligaments and the joints. A group of joints that function essentially as a single unit makes a joint complex. There are nine important joint complexes in our body:

- Ankle joint complex
- Knee joint complex
- Hip joint complex

demanding) and the left energy channel is Tha (cold, calm, effortless, lethargic). Hatha is a Sanskrit word that has two smaller words: Ha the “sun” (solar plexus of our body) and Tha the “moon” (lunar plexus of our body).

The root word ‘Ha’ refers to properties such as “passion, heat, and positivity,” the root ‘Tha’ refers to elements like “cool, receptive, and negativity”. A shloka on Hatha Yoga from Siddha Siddhanta Paddhati by Guru Gorakhnath describes हकार कीर्ततिः सूर्यः ठकारश्चन्द्र उच्यते! सूर्य चन्द्र मसोर्योगात् हठयोगो नगिद्यते !! १/६९ !! It simply means Hatha is incorporating of two extremes together and Yoga (meaning union) is bringing balance among these opposite polarities. The yogic philosophy believes that in each person one of these channels and some of the chakras are more active or inactive than the other. When there is imbalance among these channels and the chakras, there could be lot of physical, mental and emotional imbalance affecting the health including the bone health. The principle of Hatha yoga is to bring equilibrium in the subtle energy channels.

The right energy channel works against the gravity enhancing the stamina, strength and flexibility of the whole-body expending energy; while the left energy channel works towards gravity enhancing the relaxation, balance and conserving energy. For example, the Trikonasana series comprising of 3 to 5 asanas in a series starting with Sama-Trikonasana and then gracefully shifting to Parshwa-Sama-



Parivritta Trikonasana

trikonasana, then to Parshwakonasana to Trikonasana and finally to Parivritta Trikonasana with 30 to 45 seconds in static for each asana puts pressure on joints of neck, shoulder, vertebrae, pelvis, knee and ankles. Along with these, the associated muscles especially, calf, hamstring, quadriceps, and lateral muscles are getting worked up. Even the simplest Tadasana series comprising of 4-5 asanas in a row (Tadasana, Uttita Tadasana, Uttana Tadasana, Triaka Tadasana (left and right) works on joints and muscles of toes, ankles, shoulders, entire spine, wrist and fingers. Simultaneously, intense muscle stretches occur in the calves, abdominals, laterals, biceps, triceps, trapezius muscles. The nerves that terminate in the feet and palms are stimulated. These asanas working against the gravity in the beginning is energy intensive and then with Triaka Tadasana on either side (partial pro-gravity) is relaxing and calming. Moving further with Veerabhadrasana series, which starts with Sama-Trikonasana, followed by all the four Veerabhadrasana postures which even has 2 balancing postures is a bit challenging but very powerful as the postures work on knee, pelvic, shoulder and neck joints. Many more asanas in the standing postures like Vrikshasana, Uttita Vrikshasana, Uttita Hasta-Padangustasana, Utkatasana, Natarajasana are all very good for strengthening bones and muscles. Ardhamatsendrasana, Marchyasana, in sitting with spinal twist; Adhomukhashwanasana, Urdwhamukhashwanasana



Parshwa Konasana

in forward bends; Supta Padangustasana/Parshwa Supta Padangustasana in supine; Shalabhasana, Dhanurasana in prone postures are very useful for bone health as well. The cooling partial-progravity supine series like Uttanapadasana series in which legs are lifted at 90, 60 and 30 degrees, Pawanmuktasana series with single and both legs, Jataraparivartanasana with mild spinal twist works extensively on musculo-skeletal system of spine. All of these postures have to go on static mode for at least 20 seconds once mounted into the final pose and gracefully dismount to relaxative posture or sthithi.

However, care must be taken to avoid intense forward bends (Paschimottanasana, Poorna padahastanasana, Halasana, Titibasana); inversions (Shirshasana, Salamba-shirshasana, Adhomukha-vrikshasana, Karnapidasana, Pinchamayurasana); back bends like, Poorna Dhanurasana, Ekapada raja kapotasana, and intense twists for people having high levels of osteoporosis or other bone related issues.

Different types of pranayama practice (especially slow and long exhalations) help to protect the cartilage and improve joint flexibility by enhancing the cellular respiration in the body. Most of the healing and

rejuvenation happens during this practice. Adopting gentle bandhas throughout the session and certain specific mudras like Prana mudra, Prithvi mudra, Vaayu mudra helps a lot which could be specific to people with different disorders.

To conclude, I must say this: If you want to prevent bone loss, any amount of yoga is likely to be better than no yoga at all. Bone health is greatly improved with a diet high in fresh vegetables, salads and fruits thus allowing a metabolic alkalosis which leaves low levels of insoluble mineral salts in the body and reduces the tendency to deplete mineral from the bones. People with any kind of arthritis have to give special attention to their diet as arthritis is a metabolic disorder to begin with. It would another full article to discuss the diet for such issues. So expert consultation is highly recommended.

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Together, we are everything: Calcium for health



Neevitha Arunprabhu

All we need for the proper maintenance of bone health is “calcium”. But it is found to be useful in the way about how we utilize and make it available for the body. All age groups of human population require calcium as the major mineral to perform various functions in the body. Our physiological system makes use of this important element in large amount for the effective functional benefits. Our body will not be able to synthesis or manufacture calcium; hence it is necessarily important to serve through our daily diet. The improper or reduction in the intake of adequate amount of calcium and sometimes the poor absorption or utilization of calcium leads to several discomforts.

Calcium with other nutrients and its mission:

- The mechanism involved in the bone formation appreciably includes the deposition of calcium. So the soft-bones and long-bones of our body practice

the utility of calcium in the form of salts (Dicalcium phosphate, Tricalcium phosphate and fluorine).

- Vitamin D metabolite in its active form (1,25-dihydroxy vitamin D) helps in transportation of calcium from intestine into blood stream; encourages osteoblast (cells that form new bone) formation.
- Phosphorus with calcium favors bone strengthening benefits.
- Oral health benefits are maintained by calcium to repair enamel, prevent the attack of oral bacteria and reduce development of gum disease as well as tooth decay/ cavities.
- Adequate amount of calcium in the diet prevents obesity. The person who takes enough calcium can be able to maintain normal body weight. If the body is not provided with enough amount of calcium, parathyroid hormone takes away calcium from bone to maintain its level in blood.
- It assists in the prevention of blood pressure and improves heart health.

If the body is unable to utilize calcium properly, the hormone calcitriol when released will do the arterial muscle contraction and raises the blood pressure.

- Calcium prevents dry skin and maintains the natural moisture, as it gets stored in the epidermis they do regulation of sebum production.
- It helps in the regulation of neuronal functions.
- It is essential for blood clotting.
- Calcium works with magnesium for suppression of parathyroid hormone and facilitates the stimulation of calcitonin where it helps in deposition of calcium into bones and thereby prevents osteoporosis.

Calcium in your Daily meal

The excellent sources of calcium can be included in our daily diet. It is advisable to practice the inclusion of five basic food groups in right amount to prevent any disorders. In case of calcium, it is very much important to serve the best source and in addition, we need to be conscious in avoiding faulty food habits. All the nutrients present in our food works efficiently in combination with other to perform the major functions specifically. But some of the components of food like phytic acid and oxalic acid are found to be bind with calcium and inhibits its absorption. Meanwhile, the inclusion of fortified foods to prevent the deficiency conditions can be encouraged. So, what can be included? They are as follows:

- Milk and its products like cheese, yoghurt
- Fortified cereals, fruit juices and soy foods
- Green leafy vegetables
- Beans and peas
- Sea foods and small bony fishes

Meal planning with calcium rich foods

The Recommended Dietary Allowances (RDA) for Indian population by ICMR includes the following data:

Group	Amount of calcium (mg/day)
Men	600
Women	600
Pregnant mother	1200
Lactating mother	1200
Infants and children (below one year)	500
Children (1 to 9 years)	600
Boys and girls (10 to 17 years)	800

There is a high rate of risk in suffering from bone disorders and calcium deficiency among all age groups due to lack of nutrition knowledge and poor nutrition care. Women especially at their elderly stage because of their hormonal disturbances, obesity and less nutritive support, they are believed to be the worst sufferers. Whereas in case of men, the new way of sedentary life style, stress, lack of physical exercises and repetitive usage of fast foods in their daily diet may consider to have high susceptibility than in olden days. Adolescent boys and girls should be guided properly to improve their eating pattern and follow some dietary principles to prevent the deficiency conditions in their early stage of life.

Exercise plays a vital role in utilizing the calcium effectively and they provide a positive impact on the metabolism of calcium by improving the bone mineral density. Little sunshine in the early morning will support bone health by providing Vitamin D.



The gut health with friendly microbes especially the probiotics are proven to be effective in decreasing risk of osteoporosis. Vitamin C helps in prevention of vitamin D deficiency and supports intestinal absorption of calcium.



It is advisable to follow some of the following steps:

- Any plant based vegan diet(veg salad) with chia seeds, sesame seeds will be effective
- When a person suffers from deficiency condition, it is better to quit coffee/ tea and start drinking milk or butter milk
- Use spinach with combination of tofu
- Take avocado in the form of milk shake/ bread spreads
- Mix soy flour, chick pea flour while make rotis
- Use green leafy vegetables in any form at least thrice a week
- Try pumpkin seeds sprinkled in chickko fruit juice
- Boiled black eyed beans can be a choice for evening snack
- Muesli with soy milk/ragi (dosa or roti) can be your breakfast meal
- A fist full of dates, almonds and figs daily
- Make your curries always decorative with coriander leaves
- Take two numbers urad dal/ til laddoo per day
- Try fresh fruit raita in between your meals
- Sprouts in a bowl can be the best choice
- If it is recommended by your physician to take supplements, kindly obey them
- Identify and treat the deficiency conditions at the early stage; never ignore the signs and symptoms

Easy Snack Recipes

Home style Yoghurt with bread

- multi grain bread 2 slices
- turmeric 1 pinch
- chopped coriander leaves 2tsp
- yoghurt 2tbsp
- salt to taste
- chopped onion 1 tsp
- shredded cabbage 1tsp

Mix spice and vegetables with yoghurt; apply it as spread on the slice of bread. Top it with the other slice and bake the bread at 200°C for five minutes. If you want to surprise your kids, sprinkle oregano and add little grated cheese/ paneer in the spread.

Ragi halwa

- Ragi 500gm
- Powdered jaggery 250 gm
- Gingelly oil or ghee 25 gm
- Cardamom powder 1tsp

Soak the ragi grains for 6 hours and grind it well with water. Try to squeeze the extract from the paste. Allow the strained extract to boil, add jaggery. Stir constantly in slow flame; pour in the oil or ghee while stirring. Let the halwa starts sliding from the sides of the vessel /kadai. Sprinkle elachi (cardamom) powder.

Cluster Beans Curry

- Chopped cluster beans-half cup
- Boiled moong dhal- 2 tbsp
- Turmeric powder-1tsp
- Chopped onion & Salt to taste
- (Grated coconut 2 tsp, 2 garlic pods, two red chillies, 1 tsp sesame seeds, little curry leaves-make it into a fine paste)
- Sambar powder-2 tsp
- Oil and mustard for sauté

Take the chopped cluster beans in a pressure cooker; get them steamed for up to one whistle. Do the process of sautéing with remaining ingredients in little oil and mustard.

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Drug Induced Fractures



Iftheqar Mubeen and Bazigah H Mubeen

Everybody is familiar with the word fracture. It is perceived as the breakage or crack in the bone, and the cause is usually a strong blow, generally external, to the bone which has been fractured. This is the general understanding of the word ‘fracture’, although there are some predisposing (risk) factors which play a major role in the occurrence of fractures. One of such factors is the deficiency of calcium due to malnutrition. The other main important reason is the development of osteoporosis or the brittleness of the bone due to the use of certain drugs like corticosteroids, heparin or methotrexate. Of these, corticosteroids or simply steroids are more common as they are widely used by the allopathic doctors in the treatment of many chronic diseases for considerably long duration. Heparin and methotrexate are also said to be responsible for the development of osteoporosis.

Osteoporosis, as the name itself indicates, is the porous bone wherein the bone tissue develops large pores and less bone material. This porous nature of the affected bone can be visualized on observation through microscope. This results in the loss of density of the bone material which makes the bone more brittle and such type of bone is liable to be fractured easily.

The use of steroids is indicated by the specialists generally in the following conditions:

- Chronic, inflammatory diseases like asthma of longer duration, chronic obstructive pulmonary disease, inflammatory bowel diseases like ulcerative colitis (an autoimmune disease of digestive system), etc.
- Rheumatic diseases (diseases related to joints) like systemic lupus erythematosus, which is characterised by a variety of symptoms.



- Graves' ophthalmopathy which is characterized by the different signs and symptoms related to the eyes
- Local symptomatic treatments related to certain skin disorders, painful condition of joints, etc.
- In case of organ transplants to prevent the rejection of the transplanted organ.

Effects of Steroids on Musculoskeletal System

According to the modern medical sciences, the steroids are important group of life saving medicines and are used in treating a variety of health issues and hence sometimes used by allopathic doctors as life-saving medicines, but their use is not free from adverse effects, according to experts in modern medical sciences. Some of the major health issues related with the prolonged use of steroids are osteoporosis, osteonecrosis, steroid induced myopathy, etc. Since we are concerned with bone health in this issue, we will discuss osteonecrosis and osteoporosis.

Osteonecrosis is a bone disorder, also termed as aseptic necrosis, is caused by the death of bone cells and if this occurs near a joint, it results in collapse of the joint surface, resulting in arthritis which results from the irregularity in the joint surface. **Osteoporosis** (also referred as porous bones) of the bone occurs when there is loss of

bone tissue or reduced production bone, resulting mainly due to prolonged use of steroids. This results in the bone becoming weak, leading to fracture which results from minor trauma like bumps, etc.

Unani Concept of Bone Health and Fractures

According to Unani concept, breakage of bone or fracture (*kasr al izam*) is a disorder which is grouped under the disorders of *tafarruq ittesal* (solution of continuity) by the Hakims or Unani physicians. The causes of breakage of bone (*tafarruq ittesal* of bones) are:

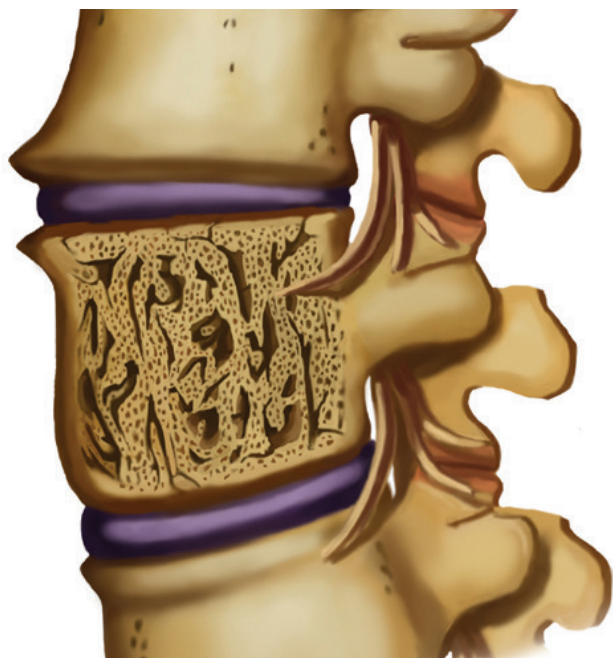
Asbab Sabiqah or predisposing factors or risk factors which include vulnerability of the bone, overuse of the organ which is related to the bone, etc., and the examples include long bones like ribs, other bones like bones of ankle and wrist joint, etc. The bones which are least vulnerable to fracture are the vertebrae, etc. Another important predisposing factor is extremes of age, i.e., during childhood bones are more vulnerable to fractures and similarly in old age also the bones become brittle and break easily. Similarly girls are more prone to fracture compared to boys, which is attributed to loss of calcium through blood during monthly cycles. Elderly women during menopause suffer from calcium deficiency. Certain diseases

like rickets, arthritis, tuberculosis of bone, etc., are predisposing factors for the fractures. Malnutrition plays an important role in making the bone brittle, thus increasing the risk of fracture.

Asbab Wasila or the etiological factors include trauma, strong muscle pull, trauma to the mother's womb during pregnancy which results in fracture of the fetal bones, etc.

Regular Bone Health Assessment for Osteoporosis Prevention

It is very important for those who are on steroid therapy (if prescribed by a specialist and if it is inevitable) to be careful about their bones, joints and muscles to avoid complications which may eventually lead to the fractures.



Patients receiving steroid therapy for considerably longer period should see that the calcium and vitamin D intake should be sufficient, along with a balanced diet.

Smokers and alcohol addicts should be encouraged to quit smoking and drinking for their own sake.

The clinical fracture risk assessment should be carried out periodically which is performed by the concerned specialist among the people at risk of osteoporosis and fractures.

Another important aspect of fracture prevention regimen is to undergo BMD (Bone Mineral Density measurement periodically particularly in those who are above 40 years of age.

Regular periodic radiological investigations (x-ray, etc.,) should be carried out particularly in the elderly to detect any damage to the bone.

Regular joint consultation with an endocrinologist and an orthopedic surgeon is mandatory in those patients who are on long term steroid therapy.

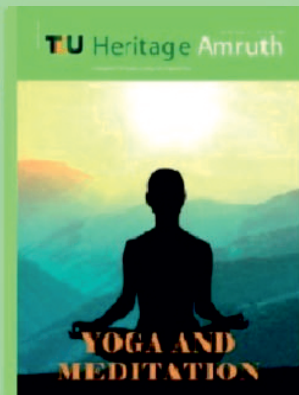
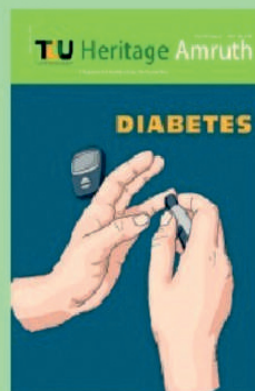
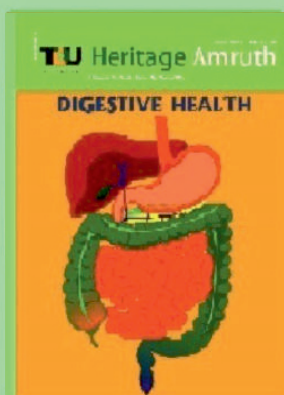
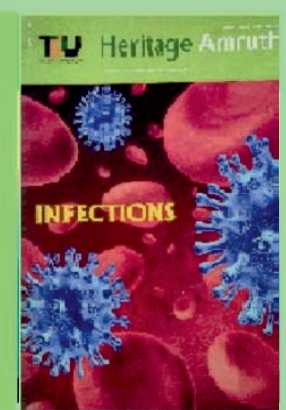
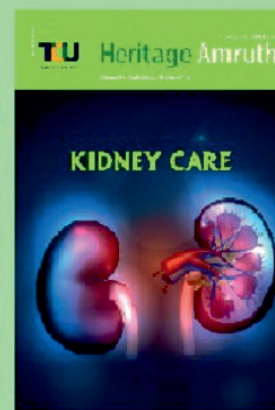
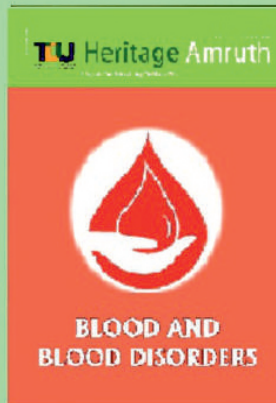
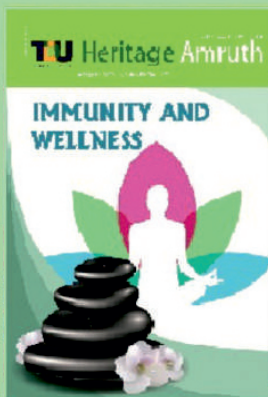
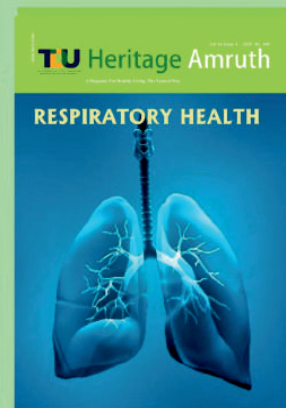
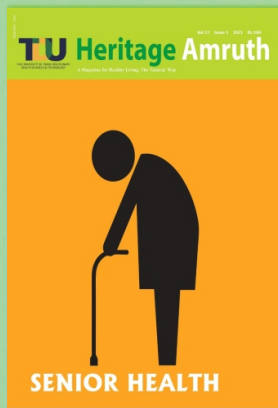
Management of Calcium Deficiency

Calcium is an important constituent in our daily food and the food items rich in calcium should be part of individuals at risk of osteoporosis leading to fractures. The following food items should be included: milk and milk products (yoghurt and curds, milk cream, cheese, etc.), vegetables like beans, lentils, okra or ladies' finger, spinach, moringa leaves and drumsticks, etc., certain fruits like nuts and seeds, etc. Non-vegetarians can consume eggs, different types of fish and meat. The fish liver oil is a rich source of vitamin D which is necessary in the absorption of calcium and prevention of osteoporosis. Daily exposure to ultraviolet rays of sun during morning hours enriches our body with vitamin D.

The following classical Unani medicines which are available commercially can be used in the management of brittle bones due to osteoporosis: Kushta Shankh, Kushta Sadaf, all types of khameeras, particularly khameera marwareed, khameera abresham, khameera gaozaban, etc. these medicines are available at any Unani medicines outlet across all major cities in India and can be taken after proper consultation with an expert.

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