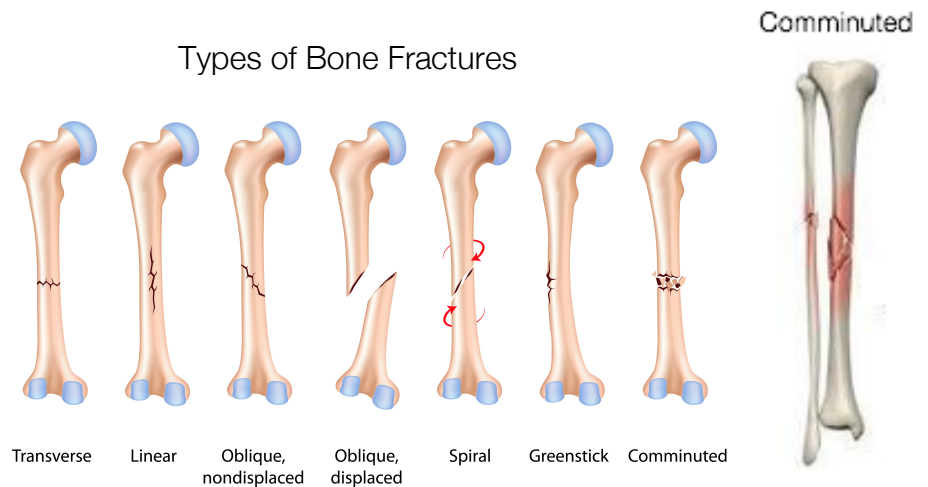


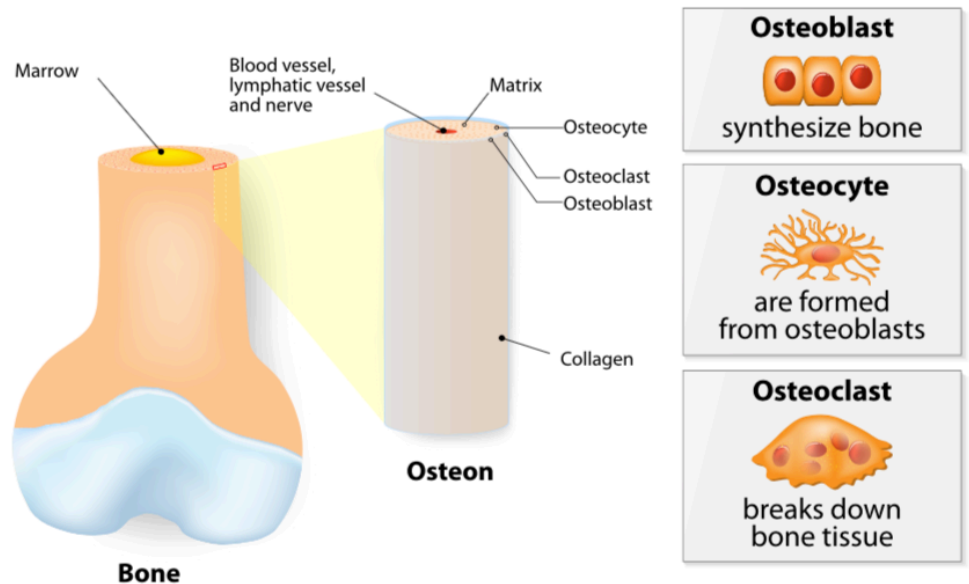
**A bone fracture** is when there is damage in the continuity of the bone. Bone fractures can occur due to a high force of impact that the bone cannot withstand or due to a medical condition that weakens the bone such as osteoporosis or osteogenesis imperfecta. Common types of bone fractures include transverse, linear, oblique, spiral, greenstick, and comminuted. Comminuted can be the most severe as the bone has broken into many small pieces.



## Bone metabolism

Bones contain crystals of minerals (calcium and phosphate) called hydroxyapatite that are bound to a matrix made up of collagen. The mineral part of bone provides support while the collagen part of bone provides the framework. The cells within bone consist of osteocytes, osteoblasts, and osteoclasts. Each type of cell is necessary for the build-up and break down of bone.

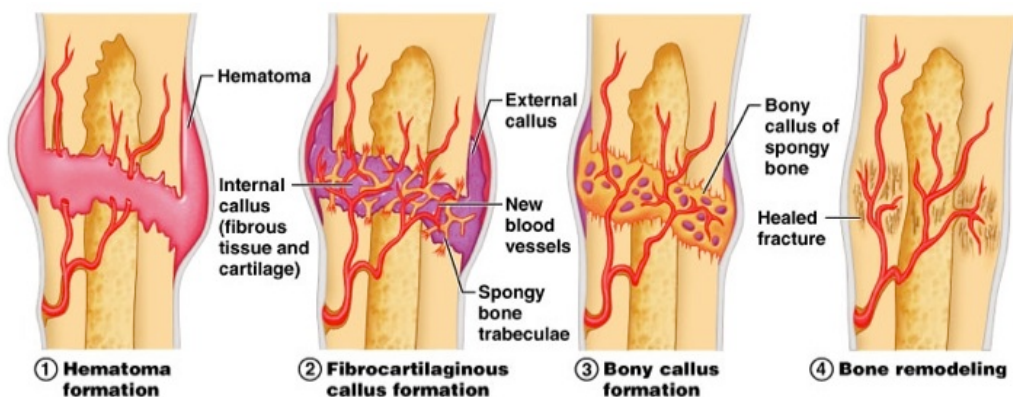
Osteoblasts deposit new bone tissue while osteoclasts resorb bone tissue. Osteocytes are the most abundant bone cell and are derived from osteoblasts. Osteocytes reside in lacuna within the bone matrix and communicate through channels called canaliculi. Through these channels, they can secrete substances that can inhibit or recruit osteoblasts and osteoclasts. This process can be influenced by mechanical stressors, hormones, and the amounts of calcium and phosphorous in the bloodstream.



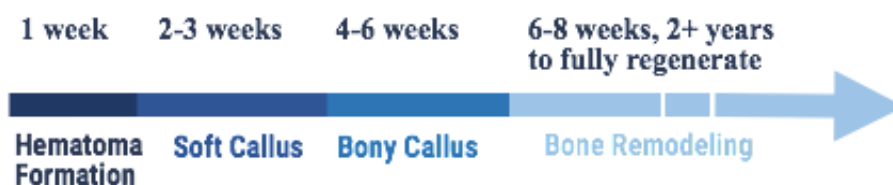
## Bone remodeling process in fracture healing

The bone remodeling process of a fracture occurs in four stages. The early stages of a fracture lack vascularization thus bone formation cannot occur immediately. The first stage occurs instantly following the fracture. A hematoma is formed around and within the fractured area. The hematoma lays the foundation for callus formation which helps in the stabilization of the bone. This period lasts about seven days. Mesenchymal stem cells (MSCs) are recruited from the nearby soft tissues to the area where the hematoma formed. The MSCs are necessary for the generation of the callus tissues, the second stage in the bone remodeling process. Once the MSCs are recruited, the callus formation occurs by the matrix production of type I and type II collagen which forms a cartilaginous tissue that makes up the callus. This stage occurs 2-3 weeks following the fracture. This soft callus is replaced by a harder calcified callus. In the third stage chondrocytes within the callus continue to proliferate leading to a calcified extracellular matrix. This calcified callus is better for biomechanical support but does not fully restore the properties of normal bone and does not occur until 4-6 weeks after the initial fracture. This leads to the fourth and final stage, a second resorption period. In this resorption phase, osteoclasts are

recruited to resorb the calcified callus while osteoblasts deposit new bone tissue. Although this process is started about 6-8 weeks after the fracture, it can take years to fully regenerate the bone structure. It's important for the success of fracture healing that the area contains an adequate blood supply and mechanical stability. Since this process is very long, it's common for fractures to heal in adverse anatomical positions and lead to non-unions.



**Traditional Fracture Healing Timeline:**



**Wellness Recommendations**

The FASTT Patch is recommended to help speed up the fracture healing process by increasing localized blood flow. The FASTT Patch can help repair the injured blood vessels by reducing inflammation to restore the blood flow. It also enhances the blood flow; therefore, the injured area receives more blood supply than usual and will be provided with the proper nutrients necessary for repair. The FASTT Patch also increases lymphatic circulation and helps speed up the breakdown and removal of dead tissues. Additionally, the herbal ingredients of the FASTT Patch trigger osteoblasts to deposit new bone tissue and catalyzes the biosynthesis of compact bone to speed up the healing through increasing local temperature. The osteoblasts are activated at the beginning right after the application of the FASTT Patch, therefore, speeding up the process of the initial three phases. This shortens the healing time and prevents unfavorable lump formation. Due to the enhanced regenerative activity, the bone is fully amended in 17 days with the use of 6 FASTT Patches for recent fractures that have occurred within 1 - 2 weeks. For fractures that have occurred in over 2 weeks, 3-4 weeks of treatment is required to achieve complete healing, a process of bone remodeling which may normally take a couple of years. If the bone breaks into multiple pieces, such as in a comminuted fracture, the surrounding soft tissue can be affected. The FASTT Patch helps to heal the soft tissue around the bone and therefore pushes the bone fragments back into place and reduces the risk of the fracture complications.

**Fracture Healing Timeline with FASTT Patch:**



### **Stress fracture – 8 to 17-day program**

Stress fractures are caused when there is a tiny crack in the bone usually due to overuse. Since they are small, not all stress fractures trigger the bone remodeling process and can cause pain for years. These types of fractures are common in athletes as well as in the elderly, which can frequently become a non-union. The wellness recommendation includes 3-6 FASTT Patches.

### **Non-union fracture – 17 days to 1 month**

Non-union fractures happen when broken bones fail to heal properly. These tend to occur when the bone lacks the correct amount of stability and blood flow. The wellness recommendation includes the FASTT Patch. A continuous one month program with 6 FASTT Patches is recommended to achieve complete healing. If there is a gap between the bone ends, additional treatment may be required. If there is still pain and swelling, 6 WHITEE Patches are required to dissolve scars and achieve complete healing.

### **Post-fracture complication – 8 to 17-day program**

The wellness recommendation includes the WHITEE Patch. For patients who have had a fracture in the past and a lump has formed at the fractured area due to incomplete transformation from callus to bone we recommend 3-6 WHITEE Patches to help accomplish the transformation process and dissolve scar tissues. Patients will experience less pain with the reduction of the lump.

## **Usage Information**

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FASTT Patch

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WHITEE Patch

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- Keep the patch on for 48 hours (2 days) and take a 24-hour break before applying the next one.
- Avoid using ice, ice will slow and interrupt the healing process.
- A heating pad is helpful to dilate the blood vessels of the muscles.
- Use vegetable oil to remove possible herbal residue on the skin.
- Use Aloe Vera Gel if there's skin irritation or use Bitter Formula.
- Use Oxi-Clean or Biz to remove stains from clothes.

<b>Small FASTT Patch</b>	<b>Medium FASTT Patch</b>	<b>Large FASTT Patch</b>
Metacarpals (Fingers) Metatarsals (Toes)	Ulna, Radius (Wrist) Humerus (Arm)	Pelvic Bone (Hip) Scapula Patella (Knee) Ribs Collar Bone

## Selected Case Studies

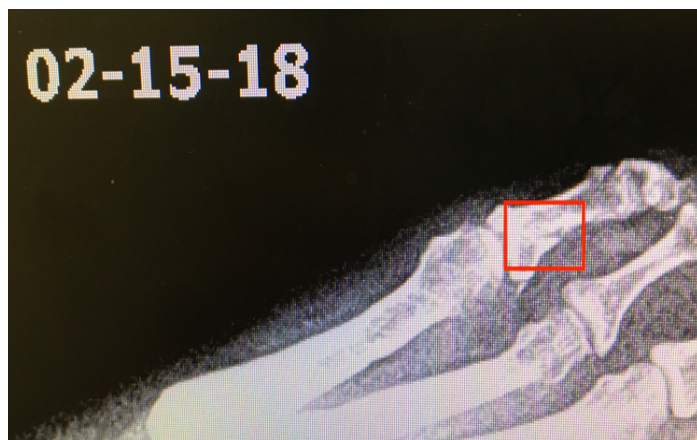
### Case 1: Fracture Recovery Expedited through Natural Products and Diet

Reid Brecke, DC, Sparks, Nevada

A female patient presented with a broken toe resulting from a slip on the ice December 20<sup>th</sup>, 2017. This finding was confirmed with x-ray the following morning. She started a regimen with the Wei FASTT Patches. Additionally, she started on 1 capsule, 3 times daily of the Wei product Martial. This product helps to activate blood circulation in the bones to expedite the healing process of the FASTT Patch. Furthermore, she also added a vitamin product, Intenzyme Forte™ from Biotics Research Corporation, to help reduce swelling and inflammation. Along with these therapies, she increased her calorie and total protein intake to address a nutritional need in her body for further speed in healing.

She continued on a regimen of 5 FASTT Patches total, and 2 full bottles of martial to cover 4 weeks on the protocol. During this time, the foot was placed in a boot, with use of a scooter, occasional pressure, and walking on the foot for 2 weeks. After the 2<sup>nd</sup> week, she started to walk more, continuing to keep her foot in the boot as needed. By January 15<sup>th</sup>, 2018 the patient stated she was not walking with the boot anymore and had started to wean off it the week prior.

The practitioner noted that most of the healing happened in the first 4 weeks and that more recent x-rays are showing slower change during the remodeling phase of bone growth. The patient was happy with the speedy recovery and back to driving, walking and enjoying life. As an additional note, she states that her bone spur has softened and is no longer painful for walking since starting the therapy for her fracture on the same foot.



## **Case 2: Clinical Study on 2 Patients with an Ankle Fracture**

Steven Gershman, DPM, Auburn, Maine

The following describes a clinical case involving 2 female patients who fractured their left ankle at the same time. Both patients were put on the standard immobilization treatment. X-rays were taken intermittently to confirm the bone remodeling process. The patient who added in the herbal FASTT Patch was able to resume her normal activities and achieve complete healing 2 weeks earlier (a 33% faster healing time).

Patient A is a 69-year-old female in good health that fractured her left fibula when she twisted her ankle suddenly at home. X-ray showed a stable non-displaced oblique fracture with good alignment. She was suggested by her physician to be in a walking cast for 6 weeks. She went in to get x-rayed every two weeks. At the end of the 6-week mark, she was still experiencing some pain walking without the cast. Her x-ray showed healing consistent with the clinical understanding of an oblique fracture.

The orthopedic textbook, *Surgery of the Foot* by Roger Mann, MD. (fifth edition), states undisplaced stable fractures of the lateral alveolus can begin immediate weight bearing in a short leg walking cast, which should be left in place for 6 weeks.

Patient B is a 58-year-old female, post-menopausal in fairly good health, that sustained a vertical compression fracture of her distal left alveolus. She fell down the stairs at home jamming her foot into the ground with a high impact causing a comminuted fracture that was more complicated than Patient A. X-ray showed that it was stable and non-displaced.

Her physician also suggested her to be immobilized with a walking cast along with x-rays every 2 weeks. The only difference was Dr. Gershman suggested her to use the FASTT Patch in hopes of catalyzing the biosynthesis of compact bone by osteoblasts to speed up the healing process. Patient B followed a protocol of 9 FASTT Patches over 4 weeks, 2 days on and 1 day off for each patch.

At 2 weeks, the x-ray showed bone callus formation way ahead of the expected normal 4 to 6 weeks. At 4 weeks, the x-ray showed a healed fracture and complete resolution of pain by palpation of the fracture site along with no pain walking barefoot and in shoes. She was discharged with no further care other than instructions on strengthening the muscles and slowly returning to normal activities.

This clinical study indicates that the FASTT Patches can speed up the bone remodeling process and thus allow patients to resume their normal activities when experiencing a fracture.

## **Case 3: Successful Acceleration of Healing of a Collarbone Fracture**

Grace Chang, LAc, Alameda, California

A 71-year-old male patient came to Grace after fracturing his shoulder blade and collarbone falling off his bike. The patient worked at Trader Joes as a bagger and his main goal was to return to work as soon as possible. He started physical therapy which helped reduce some of his pain symptoms but still had problems with his range of motion. Testing showed that his collarbone was broken and there was a one-centimeter overlap of the bone. Grace suggested the patient do acupuncture with 5 medium FASTT Patches and 1 LC Balancer. Within 2 weeks, the patient noticed the bruising and discoloration was reduced and he was able to go back to work without any further disruption in his range of motion.

#### **Case 4: Successful Acceleration of Healing of a Stress Fracture**

John Reynolds, PA, Suffern, New York

A female patient in her 30s was unable to run and felt tremendous pain. One day while she was out running, she noticed her left foot started to get swollen and the top of her foot became red. X-ray results showed signs of a stress fracture. John recommended the FASTT Patch to help accelerate the natural healing process for bones fractures and shorten the healing time. She immediately felt pain relief within 2 days of putting on the first patch. After 5 weeks of treatment, she felt little to no pain and about 50% of the swelling on her foot was reduced. She was able to start walking on a treadmill without pain. The patient had an x-ray which showed a healing response around the fractured area. After another month of treatment, her stress fracture was completely healed as revealed by another x-ray result.

#### **Case 5: Successful Pain Elimination and Avoidance of Surgery of a Wrist Fracture**

Merle Friedman, AP, Brandon, Florida

A 37-year-old male patient was suffering from pain and his right wrist was often swollen in the morning. The patient later found out that he had a wrist fracture identified from an x-ray. The patient consulted with 2 MDs and both of them recommended costly reconstructive surgery involving bone fusion in addition to 4-6 months of rehabilitation. The patient wanted to seek an alternative treatment due to the possible risk of a restricted range of motion even after the surgery. After five weeks of suffering from pain, swelling, inflammation and an inability to use the right hand, the patient sought treatment with Dr. Friedman in June of 2008.

Dr. Friedman applied three sessions of treatment including electric stimulation of the needles at the inflamed areas and homeopathic injections at the acupuncture points (meridians). The patient was also suggested to use FASTT Patches to facilitate the healing process by providing additional blood flow. The patient avoided weightlifting for four weeks to allow to prevent additional stress on the wrist.

After the first session, the patient reported relief immediately. The pain and inflammation had subsided dramatically (80-90%). The two additional treatment sessions were able to further the improvement. Upon completing the program, the pain was resolved completely. The patient was able to return to his normal daily routine and exercising in the gym.