



A Patient's Guide for Orthopedic Information

Prepared by Barry Blum, MD

This Guide is intended for Alii Health patients to use when they have certain orthopedic conditions. The section on **medications** are meant to enhance your understanding of what doctors may advise for you, as well as the generally available over-the-counter remedies. This is not meant as a substitute for professional orthopedic consultation - and not all our orthopedic surgeons use all these approaches in their own practices.

The **exercise** section can help you to recover from injuries by regaining strength and flexibility. Again, this is not intended as a substitute for professional physical therapy when that is required.

We encourage you to explore these suggestions and discuss them with your own health care providers especially if anything here is unclear or if you are uncertain if this advice is appropriate for your own specific condition(s).

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"OVER-THE-COUNTER" PAIN KILLERS

The most popular pain killers available without prescription ("OTC" or over-the-counter) are aspirin, ibuprofen, naproxen, other NSAIDs, and acetaminophen. Other non-prescription substances used as painkillers include alcohol and cannabis (not legal in all states).

Here's what you need to know about using these medicines in order to have the best results, the fewest side effects or unwanted reactions, and which medicines can or cannot be safely combined.

ACETAMINOPHEN (Tylenol, APAP, Paracetamol, Panadol) is a pain-killer and fever reducer. It does not reduce inflammation. It is safe for most people and does not affect the stomach or affect bleeding. It is processed in the liver and should not be taken by people with liver problems (such as alcoholics). The usual dose is one or two 325 mg tablets every 4 hours as needed. The maximum adult dose is 4,000 mg per 24 hours; and for seniors, 3,000 mg per 24 hours. It can be safely combined with just about all the other mentioned painkillers, even with aspirin, NSAIDs and narcotics.

ASPIRIN (Bayer, St. Joseph) is a pain killer and fever reducer. It reduces inflammation if taken in a high dose around the clock (not recommended). It can cause bleeding problems. Usual pain-killing dose is one to two tablets (325 mg) up to 3 times a day, best taken with food. Because of the risk of Reyes Syndrome (brain and liver swelling), children and teenagers recovering from chickenpox or flu-like symptoms should never take aspirin.

NSAIDs (Non-Steroidal Anti-Inflammatory Drugs. See next section on NSAIDs specifically)

The two most common ones are ibuprofen (Motrin, Advil) and naproxen (Aleve, Naprosyn). Both medicines reduce pain, fever and inflammation. Although generally less irritating than aspirin, they should be taken with food.

IBUPROFEN: The usual dose for mild to moderate pain is one to two 200 mg tablets every eight hours. The usual prescription dose for inflammation is 600 mg three times a day.

NAPROXEN works similarly. The difference is that naproxen lasts twelve hours and ibuprofen lasts only eight. Over-the-counter naproxen (Aleve) is usually taken one to two 200 mg tablet every twelve hours. The usual prescription dose is one 500 mg tablet twice a day.

Other NSAIDs usually require prescriptions. The list includes:

ibuprofen (Motrin, Advil), naproxen (Aleve, Naprosyn), celecoxib (Celebrex), diclofenac (Voltaren), indomethacin (Indocin), ketoprofen (Oruvail), meclofenamate (Meclomen), meloxicam (Mobic), nabumetone (Relafen), oxaprozin (Daypro), piroxicam (Feldene), and sulindac (Clinoril). If one does not work for you, another might be better. All the NSAIDs and their potential risks and side effects are discussed in the next section of this booklet, entitled "Anti-Inflammatory Medicines (NSAIDs)."

ALCOHOL has been used as a painkiller for millennia. The problem is that the dose to kill pain is usually the dose that leaves you nearly unconscious. Because it affects judgment, it is not a good medicine for an injured person to use - it causes mistakes. If taken with prescription narcotics, it can have serious consequences such as overdose and death.

CANNABIS (marijuana) is a prohibited substance according to federal law. It is not prohibited by Hawaii state law for individuals with certain medical conditions, but with the conflict between federal and state law, anyone using cannabis is still vulnerable to legal action. There are two main components in cannabis, cannabidiol (CBD) and tetrahydrocannabinol (THC), plus as many as 84 other cannabinoids. CBD seems to have some significant pain relieving qualities and it does not create the "high" caused by THC. CBD products that are sold legally are not well regulated, but nevertheless, they are often helpful for pain relief. The state of Hawaii currently allows physicians to prescribe cannabis to qualified patients, but only physicians who are specifically licensed may do so. None of the Ali'i Health physicians are so licensed.



Anti-Inflammatory Medicines (NSAIDs)

All NSAIDs are medium strength pain relievers. They are also powerful anti-inflammation drugs if used properly. Inflammation is redness, swelling, pain and local warmth that may be due to injury, to infection, and to certain medical disorders like arthritis, tendonitis, bursitis and all the other “itis” conditions. If that’s your problem, using an NSAID can bring you relief and can sometimes actually cure your inflammation.

For inflammation, Dr. Blum generally recommends taking the medicine as prescribed for one week, every day, whether or not you need it that day. Take it with food. If you have a good response to this treatment, stay on this medicine for a full month. If you don’t have a good response within a week, you can stop because it probably won’t help. After using the medicine for one month, stop or taper the dosage (your choice). If you have unpleasant side-effects (see below), stop taking the drug right away. You should feel better within a day after you stop but if your reaction is severe, tell your doctor.

When you start an NSAID to treat an inflammatory condition like bursitis or tendinitis, it is helpful to take the medicine at the full prescription dose every day for a full week, whether you need it or not that day, to see if it will work for that condition. If it does, and if your goal is cure and not just temporary pain relief, you usually need to keep up that full dose for a month or two before tapering or stopping the medicine. Of course, if you have any untoward side effects at any time, you should stop the medicine.

Risks and Side Effects

All NSAIDs have similar possible risks and side effects. About 9% of patients have some form of upset reaction in their digestive systems (stomach etc.) ranging from minor heartburn to serious ulcers. To reduce that risk it’s best to take NSAIDs with food. NSAIDs act somewhat similarly to aspirin as blood thinners and so should not be used if you take warfarin (Coumadin) or other blood thinners. While NSAIDs are generally OK with your liver, they can affect your kidneys, especially if you have high blood pressure. If you use lithium or methotrexate, NSAIDs can raise the concentration of those drugs in your bloodstream and cause problems. A very small percentage of people get depressed or feel “out of sorts” on these medicines. Those feelings go away as soon as you stop taking the medicine. There have been reports that NSAIDs (but not aspirin) may increase the risk of potentially fatal heart attack, stroke and related conditions. The fact is that most individuals have no problems with NSAIDs and derive significant benefit from using them. If you have any specific concerns, please discuss them with us.

Some good news: If you need to take an NSAID in the future, you may be pleased to discover that you will need it only for a few days instead of a full month to get the desired relief. It’s as if your body has a memory for the medication

The most common NSAIDs are listed below, along with their typical prescription doses for otherwise healthy patients. Please follow the instructions on your own prescription:

<u>Generic (Brand) Name</u>	<u>Typical Prescription Dosages</u>		<u>Maximum safe dose per 24h</u>
ibuprofen (Motrin, Advil),	600 mg	3 times daily	1,800 mg / day
naproxen (Aleve, Naprosyn),	400 - 500 mg	2 times daily	1,000 mg / day
celecoxib* (Celebrex),	100 - 200 mg	1–2 times daily	400 mg / day
diclofenac (Voltaren),	50 - 75 mg	2 times daily	150 mg / day
indomethacin (Indocin),	50 - 75 mg	1-2 times daily	200 mg / day
ketoprofen (Oruvail),	50 - 75 mg	3-4 times daily	300 mg / day
meclofenamate (Meclomen),	50 mg	every 4-6 hours	400 mg / day
meloxicam (Mobic),	7.5 - 15 mg	once daily	15 mg / day
nabumetone (Relafen),	1,000 mg	once daily	2,000 mg / day
oxaprozin (Daypro),	1,200 mg	once daily	1,800 mg / day

piroxicam (Feldene),	10 - 20 mg	once daily	20 mg / day
sulindac (Clinoril),	150 - 200 mg	2 times daily	400 mg / day

*Celecoxib (Celebrex) is different. It is called a COX-2 inhibitor. It may have less frequent and fewer stomach and bleeding side-effects than the other NSAIDs (COX-1 inhibitors) but it can still cause problems.

It is always unwise to combine two or more different NSAIDs. To do so increases the likelihood of side effects. Stay with one at a time. (It is OK to take NSAIDs if you're taking low-dose aspirin.)

Besides cortisone, the NSAIDs and aspirin, there are a number of supplements used for inflammation. Most patients find these less potent than the prescription medicine. They probably also have fewer side effects. Some of these are: bromelain, chondroitin, fish oil, flax, ginger, MSM (methylsulfonylmethane), quercetin, and turmeric. You may wish to try some of these. There is little scientific evidence for or against their use.

Disclaimer: Any and all of the medicines mentioned in this Guide can have unexpected reactions, side-effects and results that can cause problems that range from mild to serious and even to death. Allergies, unanticipated drug combinations, reactions, and also non-treatment can lead to problems as well. In providing this information, our office makes the best effort to educate patients about everything relevant. Nevertheless, we all understand that despite best attempts, this information may still be incomplete. We invite you to ask us questions and encourage you to do your own research as well.



Topical Ointments, Creams and Gels for Arthritis and Pain

For painful conditions in bones or joints, one form of treatment may be with creams, ointments, gels, rubs, sprays, patches, tapes, etc.

1. NONPRESCRIPTION ANALGESIC BALMS (sometimes called “liniment”):

These usually contain oil of wintergreen, oil of menthol or camphor. Some cause a feeling of warmth, some cause coolness. These are mild skin irritants that cause the skin to get somewhat reddened and warm, thus bringing heat to the areas. As counter-irritants they may also distract your mind from the pain.

Common balms are: **ASPERCREME, BEN GAY, DEEP HEAT, ICY-HOT, JOINTFLEX ICE, MENTHOLATUM, SALONPAS, and TIGER BALM.** Some of these brands come as tapes and patches.

CAPSAICIN CREAM: Derived from hot peppers. Used properly (3-4 times a day), this drains the nerve endings in the skin that convey pain in the areas, and thus can reduce pain.

DMSO LIQUID OR GEL: Dimethyl sulfoxide, original popularized as “horse liniment,” is an industrial solvent that passes through intact skin. It has been used as a pain reliever and anti-inflammatory agent. It can also carry more potent medications (and other substances including germs) through the skin and into the body. It is not a “cure” for any medical condition and can interfere with other important medications but may offer some relief.

2. PRESCRIPTION ANTI-INFLAMMATORY TOPICALS (CONTAINING DICLOFENAC = VOLTAREN):

Diclofenac is an NSAID (Non-Steroidal Anti-Inflammatory Drug) not unlike Aleve and ibuprofen. Using it topically is less risky than taking it orally, but reactions are still possible (see previous section on NSAIDs).

VOLTAREN gel (diclofenac 1%)

PENNSAID liquid (diclofenac 2% with DMSO)

FLECTOR patches (diclofenac)

3. PRESCRIPTION AND NON-PRESCRIPTION ANESTHETIC CREAMS:

The more potent anesthetic creams and ointments (needing prescription) generally contain lidocaine (Xylocaine) or other anesthetics, sometimes combined with NSAIDs or other substances. They are usually short-acting.

4. HOT OR COLD PACKS -- or sometimes a combination of the two -- can provide relief for sore muscles and joints. Which is best? Most commonly, ice is used for the first few days – up to a week after injury. After that, switch to heat. For safety, keep a towel between the heating pad and your skin. Sometimes ice for 10 minutes followed by heat for 15-30 minutes, used twice a day, is even more effective.



INJECTIONS

A common form of treatment for orthopedic conditions may involve an injection either into a joint, a tendon, near a nerve, or elsewhere. The material injected usually includes an anesthetic (to numb any pain) and some form of cortisone (to treat inflammation). Other substances are also used for injections, usually for arthritis. These are sometimes referred to as visco-supplementation. And finally, there are biologic substances being used for injection that include stem cells or PRP.

Cortisone:

A form of cortisone, usually prepared to be thicker and less watery so as to be more long-lasting, is often used for injections into and near different joints to reduce the pain and inflammation of arthritis, tendonitis and bursitis. It is usually mixed with an anesthetic so that the injection is less painful. This form of treatment is often effective for many months or longer. While cortisone injections cannot cure arthritis, they can actually cure bursitis and tendonitis, sometimes permanently.

However, cortisone can weaken the tissues into which it is injected, especially if it is used too often. A tendon injected with cortisone one too many times may rupture. Skin injected with cortisone can lose its natural pigment.

Most orthopedic surgeons will limit the number of cortisone injections into any one area of the body to three time in a year.

Your adrenal glands produce the steroid hormone called cortisol. It's a natural cortisone and it helps your body respond to stress or danger, increases your body's metabolism of glucose, controls your blood pressure, reduces inflammation and is also needed for the fight or flight response which is a healthy, natural response to perceived threats. It works by stopping the release of molecules that cause inflammation. This also stops your body from having an immune response. This may be desirable when the intention is to prevent your body rejecting an organ transplant but it can reduce your body's resistance to invasion by germs (bacteria, viruses, etc). If you take cortisone over a period of time, it will suppress your own body's production of natural cortisone. Used in excess or for too long it can cause thinning of the bones (osteoporosis), abnormal fat collections, acne and other serious conditions. Used properly, cortisone can save a patient's life, relieve serious pain and inflammation, relieve itching caused by insect bites or hives, and much more.

Visco-Supplementation injections:

The most commonly used viscosupplementation injections in the USA are Synvisc, Supartz, Euflexxa, and Orthovisc. They are all a little different. These medicines consist of a gel-like fluid called hyaluronic acid which is injected into the knee joint. Hyaluronic acid is a naturally occurring substance found in the synovial fluid inside your joints. It acts as an anti-inflammatory and lubricant to enable bones to move smoothly over each other and as a shock absorber for joint loads. People with osteoarthritis have a lower-than-normal concentration of hyaluronic acid in their joints. The theory is that adding hyaluronic acid to the arthritic joint will facilitate movement and reduce pain. This procedure is not effective for everyone but when it works, it can last for six months or more. The medicine does not

stay in the joint for that length of time, so we assume that its initial presence in the joint creates some form of reduction of inflammation that does last.

The scientific evidence for the effectiveness of this treatment is not that strong and there is not good research on comparing the different viscosupplementation medicines available, but most of our patients have reported excellent results.

Stem Cells and PRP:

Stem Cell Therapy and Platelet Rich Plasma (PRP) therapy are both regenerative medicine treatments. They encourage your body to use its natural abilities to heal injuries or other types of tissue damage or inflammation. How and whether or not these therapies work is still open to question.

Adult stem cells are found in most tissues in the adult body. In our clinic, stem cells are usually extracted from your own pelvis bone but can also be extracted from your own fat, and are then concentrated in a centrifuge and injected into one of your joints.

Platelet rich plasma (PRP) therapy uses the liquid portion of blood (plasma) which includes a higher concentration of platelets — the part of your blood which contributes to blood clotting and healing.

These therapies are considered experimental, they are expensive, and we recommend that you discuss these options with one of our orthopedic surgeons directly.



KNEE STRENGTHENING EXERCISES (The ABC's)

These exercises are designed to strengthen your quadriceps muscles (the muscles in front of your thigh) without irritating your knee joints or straining your back.

Lie down on your back on the bed or floor. When you exercise your right knee, keep your left knee bent to protect your back. Lift your right leg about a foot off the bed/floor, and keep that right knee locked as straight as possible. Your toes should be pointing straight up. While holding your right leg suspended about a foot above the floor or bed, use it as a pencil and draw the letters of the alphabet in the air. The letters should be about a foot in height. Keep the right knee locked straight.

Spell the entire alphabet with one leg. Then switch legs (don't forget to keep the opposite knee bent).

Do the entire routine three different times a day: perhaps first before you get out of bed, then mid-day, then at night before you fall asleep. Start barefoot. When you get strong enough to do the whole alphabet easily, do it with shoes on. You may also repeat the exercise routine with your foot turned out 45 degrees. That makes it more challenging.

FOR "EXTRA CREDIT"

After completing the above, repeat the routine with the leg you are exercising turned out 45°. This specifically strengthens your VMO (vastus medialis obliquus) muscle.

IF YOUR BACK IS REALLY SENSITIVE

Instead of lying down flat on your back, lie down but support yourself on your elbows, or use pillows so that the small of your back is on the bed/floor, but your shoulders, neck and upper back are supported at about 45 degrees.

SWIMMING AS AN EXERCISE

Swimming offers the benefit of exercise without impact. The flutter kick is an excellent alternative to the alphabet exercises described above. You may do it with or without fins. Keep your knees straight as you kick.

DO NOT DO THIS EXERCISE

Do not do the exercise where you sit on the edge of a bench with your knees bent down, with weights on your ankles, and you then straighten your knees from fully bent to fully straight. This irritates the knee joints. Also avoid deep knee bends. Both exercises might be OK for healthy knees, but not for knees that hurt.

IF ANY OF THESE EXERCISES CAUSE INCREASED PAIN (KNEE OR HIP), OR IF YOUR KNEE DEVELOPS PROBLEMS SUCH AS LOCKING, GIVING WAY OR SWELLING, PLEASE NOTIFY YOUR ORTHOPEDIC SURGEON PROMPTLY.



ANKLE/CALF STRENGTHENING EXERCISES

“ROCK ‘N’ ROLL”

Stand with your feet apart (shoulder width) and hold onto something nearby for balance. You may be barefoot or wearing shoes (on both feet). Carry most of your weight on your uninjured leg.

Then, rock forward and backward on both feet, putting the weight on your toes, then on your heels, then on your toes, etc. Start with both feet on the ground, carrying most if not all of your weight on your uninjured leg at first, and mimicking the same movements with your injured leg but with no weight on it.

Rock forward and backward 20 times in a row. Do this routine 3 times a day.

Each day, shift a little more of your weight onto your injured side as you perform these exercises.

Eventually you’ll be able to put all of your weight onto your injured side as you rock back and forth 20 times. When you achieve that goal, you’re “cured.” In most cases, this will take about a month to achieve.

OTHER CALF STRENGTHENING EXERCISES

Walk around your home on your heels for about 1 minute. Then walk around on your tiptoes for another minute. Do this routine 2-3 times a day or more. You may do this barefoot or wearing shoes.

Walking in soft dry sand also strengthens your ankles and calves. Avoid the pebbles and rocks.



HEEL CORD STRETCHING EXERCISES

For ease of explanation, we will start with the right leg first.

Put your hands forward onto a low platform in front of you (table, sink, car door). Put your right leg behind you, knee straight, keeping that foot and heel planted flat on the floor at all times. Place your left foot in front of you, knee slightly bent, for support.

Lean forward onto the table in front of you, like doing a push-up, bending your left knee further. Keep your right knee straight and your right heel on the floor. You will feel stretching in your right calf. Then straighten up.

Move your right foot about an inch backwards. Repeat the same process: lean forward bending your left knee, keeping your right knee straight keeping your right heel planted flat on the floor. You'll feel even more stretch in your right calf.

Move the right foot another inch backwards. Repeat the same process (always keep your right heel flat on the floor). This time, when you've leaned forward and your left knee is bent and your right ankle is really stretched, bend your right knee (keeping your right heel flat on the floor). Now you'll feel stretching lower down in your right calf. Hold it for a moment. Then straighten up.

This whole process takes less than 45 seconds to accomplish. Next, switch the positions of your legs and repeat everything to stretch your other leg the same way.

This exercise program should be performed 3 - 5 times a day.

ANOTHER WAY TO STRETCH YOUR HEEL CORDS

Stand on your toes (the ball of your foot) on the edge of a curb or a step with your feet a little apart. Your heels are unsupported. **Hold on to something secure with a hand for balance.**

Gradually sink down on your heels, stretching your calf muscles. Once you are stretched, hold that position for a few moments. Don't bounce. Do this gradually, and repeat it a few times. Then do it again several more times in the day.

Think in terms of "silly putty" or Turkish Taffy. If you pull too quickly, you'll tear it. If you pull slowly, you'll stretch.



A Few Simple Shoulder Exercises

It is sometimes necessary to immobilize the shoulder after injury. For many injuries, there needs to be time for healing before it is safe to start moving the joint. But that can get you stiff. Shoulder pendulum exercises are often the first exercises prescribed by the orthopedic surgeon because they are safe for many conditions. **These exercises should NOT be started until your orthopedic surgeon or physical therapist prescribes them for you.**

Pendulums:

- With the hand of your uninjured arm, hold onto a nearby surface for balance and support, like a desk or table.
- Hold a light weight (1-2 lbs or a can of beans) in the hand of your injured arm.
- Bend forward letting the arm of your injured shoulder dangle down towards the floor. Bend forward as far as you can.
- Sway your body so that as your arm dangles downward, it moves in a circle.
- Imagine that your arm is an elephant's trunk and you're swinging it gently in a circle.
- Do this for about a minute bending as far forward as possible. Then circle in the opposite direction.



Wand Exercises:

- Lie down flat, face up. OK to use a pillow.
- Hold a stick, like a broom handle, with both elbows straight and your hands together over your belly at the center of the stick. Using your hand on your uninjured side for assistance, slowly raise the stick upwards until your arms are pointing straight up (if possible).
- Keep moving the stick further upwards going up over your head and back, and go as far as you can.
- Your goal is to bring the stick all the way up until your arms are above you, flat on the bed or floor, above your head - and then slowly bring the stick back down..
- Do these movements slowly, twice.
- Next grasp the stick with each hand at shoulder width. Do all of the above again.
- Finally, grasp the stick with your hands wide apart from each other. Do all of the above again.

Angel Wing Exercises:

- One of the most valuable exercises to relieve certain kinds of shoulder pain (like bursitis and tendinitis) is to strengthen your wing muscles (your rhomboids and trapezius), the muscles that pull your shoulder blades backward. This is also good for improving posture.
- Bend forward, holding onto a table top or desk with one hand for support. Hold onto a weight (5 lbs, maybe more) with one hand. Pull upwards 10 times slowly. Then do the other arm.
- Now, still bent forward, hold onto the weight. Keeping your elbow stiff and straight, pull the weight out to the side until the arm is parallel to the floor. Do that 10 times. Then do the other arm.
- You can do these exercises with both arms at the same time if you wish.

You can also do the Angel Wing Exercise using a rubber exercise band. Hold each end of the band in front of you. Pull sideways to stretch the band. You can do this first with your elbows bent; then with your arms straight out in front of you, elbows straight. Do this exercise 5 times in a row slowly, twice a day.

Don't do any of these exercises if they cause you pain.



Tennis and Golfer's Elbow

- **Tennis Elbow** refers to an inflammation of the lateral epicondyle, the bump on the outside of the elbow.
It hurts to lift something with the hand held palm down.
- **Golfer's Elbow** refers to inflammation of the medial epicondyle, the bump on the inside of the elbow.
It hurts to lift something with the hand palm up.

These conditions may be caused by a minor injury leaving your muscles too weak to do what you want them to do, but too strong for you to stop trying. The condition can often be cured by doing certain specific exercises:

Rest your forearm along your thigh (or on a table top) with the wrist and hand free, hanging in front of your knee,

Palm facing down for Tennis Elbow / Palm facing up for Golfer's Elbow.

Hold a weight (1-3 lbs) in the hand and lift it (bending at the wrist) 50 times in a row, twice a day.

Another way to do this, exercising both elbows at the same time, for both Tennis and Golfer's Elbow, is to use an "Exer-Stik*" (or equivalent device) as follows:



- Hold the Exer-Stik in both hands in front of you. Keep your elbows bent about 90°
- Twist one way, then the other, 50 times in a row, twice a day
- Set the tension (by tightening the screw at the end of the device) so that you can do 50 twists, but more would be too uncomfortable

After a week of exercising, you should expect to feel worse than ever before. After two weeks you should feel cured. Keep doing the exercise for at least a month so that the condition doesn't return.

*Our office doesn't carry the Exer-Stik but you can search on Google for the device or something similar.

Here are some other things you can do to help heal the condition,
or make it hurt less while you're doing these exercises:

- **Ice** is usually helpful, applied to the sore spot at your elbow. Sometimes, 5 minutes of ice followed by 15 minutes of heat is even better.
- **Analgesic balms**, like Ben-Gay, Tiger Balm, Deep Heat, etc., can help.
- **Anti-inflammatory medicines** can help. These are usually needed to be taken regularly for a full month to get the best result.
- **Tennis Elbow straps** (worn just below the elbow) can often help you to feel better – at least temporarily.
- If these measures fail, you might respond favorably to a **cortisone injection**.



EXERCISES FOR THE WRIST FOR RECOVERY AFTER FRACTURE OR INJURY

1. SQUEEZING A BALL

Hold a tennis ball in your hand and squeeze it about 100 times a day. For 50 of the squeezes hold the ball in the palm of your hand; for 50 of the squeezes grip the ball with your finger-tips.

2. ROTATIONS

- a. Keep your elbows tucked to your sides at all times.
- b. Rotate your hands slowly so that your palms are face down, then face up, then face down, etc. Do this for about 5 repetitions.
- c. Do both hands at the same time.
- d. Remember to keep your elbows tucked against your sides.
- e. As time passes and this becomes more comfortable, force these movements using the muscles in your injured forearm.
- f. Eventually you may begin to use your uninjured hand to assist your injured wrist to rotate further.

Do it this way: Grasp your forearm just above the place on your wrist (i.e. closer to the elbow) where you broke the bone. As you also use the internal muscles of the injured wrist to rotate, use the uninjured hand to further force more rotation.

Your goal is to be able to fully rotate the palm until your hand is flat facing upward (supination); and be able to fully rotate it down with the palm facing downward (pronation).

3. UP-DOWNS

Do this exercise with your elbows tucked against your sides. Hold your palms facing downward.

First, please notice that when you bend your wrist and hand upward (this is called **extension**), your fingers naturally curl; and when you bend your wrist and hand down (this is called **flexion**), your fingers naturally straighten. Try this first with your uninjured hand.

Now, using both hands at the same time, bend your wrists and hands upwards. Force it, using your own muscles (allowing your fingers to curl). Then bend your wrists and hands downward. Force it (allowing your fingers to straighten). Do this for about 5 repetitions.

Do a set of each of these exercises in the morning; at mid-day; and in the evening. Take about 5 minutes for each session. It should not hurt; just feel like you're overcoming stiffness.

If your doctor tells you that you are mostly healed but you are still wearing a removable splint:

You may usually start exercise #1 (squeezes) while you are still using your wrist splint and then continue them after you have stopped using the splint.

You may usually start exercise #2 (rotations) while you are still using your wrist splint but you will be limited until you can remove the splint for exercising.

You won't be able to do exercise #3 (up-downs) while you are wearing your wrist splint. Wait until you are permitted to remove the splint for exercise 3.