Teaching Surf Instructors to Teach

National Surf Schools and Instructors Association Instructors and Coaches Training Manual

Injuries and Accidents Part 8

Surf Related Injuries

Surfing Related Injuries

Surfing is physically demanding, involves repetitious paddling, and is often hazardous, particularly for beginners. In addition, with surfers continually pushing advanced board designs to their limits under ever more challenging conditions, the chances of injuries have increased dramatically. Another problem is the massive increase in numbers of surfers in the water. Many of these surfers are beginners with low skill levels, or those who don't understand the safety aspects of the sport. This chapter deals with various ways surfers can injure themselves while enjoying the sport.

Overview of Injury Types

Lacerations to the head, lower leg and foot are the most common injuries, usually caused by contact with the surfer's own or another surfer's board or fins, with the ocean floor, or with beach litter, including fish hooks. The next most common injuries are soft-tissue injuries, ranging from contusions to acute strains or sprains to the lumbar and cervical spine, shoulder, knee and ankle. Fractures occur frequently. The head is the most common location, mostly involving the nose and teeth, and ribs that get broken.

Eyes and ears are vulnerable. Eye injuries can result from direct trauma but surfers also suffer chronically from excessive UV light reflecting from the water surface, the drying effect of the wind, and exposure to salt water. The surfer's ears can suffer in two specific ways: firstly, a 'wipeout' can perforate or collapse an eardrum; and secondly, a chronic condition called "Surfers Ear" may develop involving bony growths within the external ear canal as a result of 'cold water, spray and wind rushing in and out of the canal. When this happens, the tissues are stimulated to produce excessive bone growth. This results in a constriction in the diameter of the ear canal and a consequential decrease in hearing.

- Acute musculoskeletal injuries often result from wipeouts. Hitting the bottom, a reef, rock or sand, can cause injury. Common injuries include:
- Over-flexion of the cervical or lumbar spine
- • Forced shoulder depression and contra-lateral flexion of the cervical spine resulting in traction to the brachial plexus
- Landing on the point of the shoulder causing trauma to the acromio-clavicular joint or in adolescents fracture to the clavicle or the shoulder being forced into anterior subluxation.

Acute knee and ankle, ligament and joint surface injuries often result from excessive strain while dropping in on a wave. When standing on fast, steep waves, a surfer's feet can leave the board and then hit the board again at the bottom of the wave. If the surfer lands off-center, it will put excessive rotational or medial/lateral force through knees or ankles.

Finally, sun exposure and skin cancer risk are inherent dangers of the sport. In fact, skin cancer, cancer that forms in tissues of the skin, kills more surfers than does drowning. It is considered the #1 cause of death in surfers.

Pulled Muscles

These injuries are soft tissue injuries, the same injuries that are very common in most, if not all sports. They are normally the result of overextending oneself with some physical task. Examples of common soft tissue injuries would include things like hamstring tears, sprained ankles, pulled calf

muscles, strained shoulder ligaments, a corked thigh, etc. A sprain refers to a tear or rupture of the ligaments, while a strain refers to a tear or rupture of the muscles or tendons.

What to Do

Once you've taken a few moments to make sure the injury isn't life threatening, it's then time to start treating the injury.

- Look for things like swelling, bruising, deformity and tenderness.
- Stop the injured person from moving.
- Ask questions like; what happened?; how did it happen?; what did it feel like? ..where does it hurt? ..have you injured this part before?

Document the injury and what you did while it's fresh in your mind. Remember, the sooner treatment gets started the more chance the injured person has of a full and complete recovery. The longer the delay, the worse it's going to be.

Muscle Aches/Spasms

Muscle aches and spasms are common surfing problems but not necessarily caused by injuries. Here is an inexpensive treatment technique. Buy a package of Dixie Cups. Fill a dozen or so with water and put in the freezer. Once frozen taken one out and cut out the bottom. Then have someone apply the ice to the affected area by pushing up like you would do with the old-fashioned pushup ice-cream cylinders. At first it's cold, then tingly, then when it's numb you're done. This can be done as often as required. It works and no side effects.

The R.I.C.E.R. Regime

The most effective, initial treatment for soft tissue injuries is the R.I.C.E.R. regime. This involves the application of (R) rest, (I) ice,

(C) compression, (E) elevation and obtaining a (R) referral for appropriate medical treatment.

When a soft tissue injury occurs there is a large amount of uncontrolled bleeding around the injury site. The excessive bleeding causes swelling that in turn which puts pressure on nerve endings and results in increased pain. It is exactly this process of bleeding, swelling and pain which the R.I.C.E.R. regime will help to alleviate. This will also limit tissue damage and help the healing process

It is important that the injured area be kept as still as possible. If necessary support the injured area with a sling or brace. This will help to slow down blood flow to the injured area and prevent any further damage.

Finally, the most importantly, the application of ice to the injured area will have the greatest effect on reducing bleeding, swelling and pain. Apply ice as soon as possible after the injury has occurred.

How to Apply Ice

Crushed ice in a plastic bag is usually best. However, blocks of ice, commercial cold packs and bags of frozen peas will also work. Even cold water from a tap is better than nothing at all. However, when using ice, be careful not to apply it directly to the skin. This can cause "ice burns"

and further skin damage. Wrapping the ice in a damp towel generally provides the best protection for the skin.

The most common recommendation is to apply ice for 20 minutes every 2 hours for the first 48 to 72 hours. These figures are only a guide. Take into account that some people are more sensitive to cold than others. Also be aware that children and elderly people have a lower tolerance to ice and cold.

Finally, people with circulatory problems are also more sensitive to ice. Remember to keep these things in mind when treating yourself or someone else with ice.

Ear Problems - Earache

An earache can be a sharp, dull, or burning pain. The pain may be temporary or constant and is caused by a buildup of fluid and pressure behind the eardrum, in the area called the middle ear. The middle ear is connected to the nasal passages by a short narrow tube, the Eustachian tube. The Eustachian tube allows normal fluids to drain out of the middle ear, and helps keep the pressure in your ear equalized.

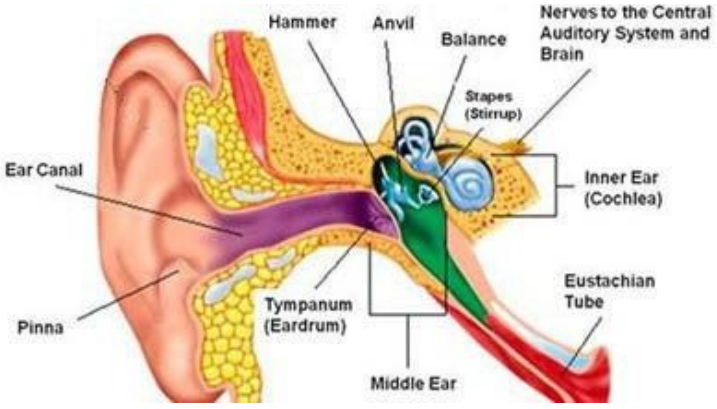
A cold or allergy can block the Eustachian tube due to inflammation and the buildup of secretions. Closing of the Eustachian tube prevents the normal flow of fluid from the middle ear. The fluid begins to build up, which can cause stuffiness, pain, hearing loss, and an ear infection.

Ear pain in adults is less likely to be from an ear infection. What adults perceive as ear pain may actually be coming from another location, such as teeth, throat, or other locations. This is called "referred" pain.

Ruptured Eardrum

A ruptured or perforated eardrum is an opening in the tympanic membrane (eardrum). The tympanic membrane separates the outer ear from the middle ear. The membrane vibrates when sound waves strike it, and this starts the process that converts the sound wave into a nerve impulse that travels to the brain. The eardrum also acts as a barrier to keep outside material (such as bacteria) from entering the middle ear. When the eardrum is perforated, bacteria can easily travel to the middle ear and cause an infection.

Eardrum damage can occur from acoustic trauma such as direct injury or barotrauma (pressure-induced damage such as being slapped by a wave). Foreign objects in the ear are another cause of a perforated eardrum.



Ear infections may cause a ruptured eardrum as the pressure of fluid in the middle ear increases. Conversely, a ruptured eardrum can cause ear infections because the eardrum is no longer intact, and bacteria can enter the middle ear.

A ruptured or perforated eardrum usually heals by itself within 2 months. The goal of treatment is to relieve pain and prevent infection. Warmth to the ear may help relieve discomfort. You must stay out of the water and keep the ear clean and dry while healing. Cotton balls should be placed in the ear while showering or shampooing to prevent water entering the ear.

Courtesy of Doc's Proplugs

Surfer's Ear

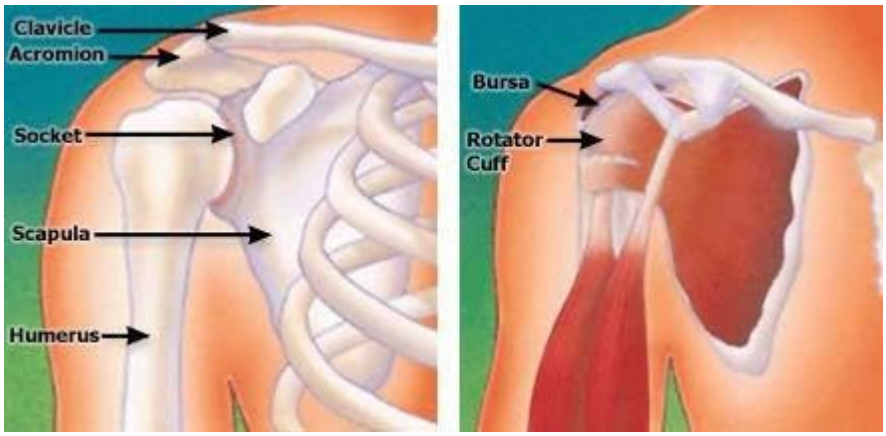
Exostosis (surfer's ear) is characterized by bony growth within the ear canal caused by persistent irritation of the bone by cold and water. Cold or warm air blowing into a wet ear lowers the temperature due to evaporation which then stimulates bony growth. Also the skin's surface is cooled by conduction, radiation and convection which causes heat loss that triggers bony growth.

Earplugs are available that protect the ears from surfer's ear by keeping a warm pocket of air in the canal and keeping cold water out without impeding hearing and balance.

Anyone with severe narrowing of the ear canal can avoid frequent water blockage by wearing earplugs. Severe exostosis can be prevented from progressing by wearing earplugs and reinforcing consistent warmth by wearing hoods, hats and hair-bands especially when sleeping at night. Once severe exostosis develops it requires drilling,

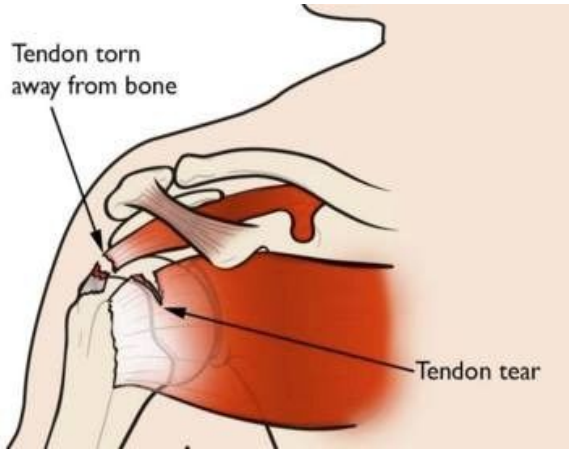
Doc's Proplugs, invented by Dr. Robert Scott, are the official earplug of the USSF National Surf Team and endorsed by the International Surfing Association

Shoulder Problems - Rotator Cuff



The shoulder joint connects the upper arm to the upper part of the body. It consists of three bones: the clavicle (collarbone), the scapula (shoulder blade), and the humerus (upper arm bone).

Many different ligaments (rubber band-like structures that attach bone to bone) are involved in stabilizing the shoulder joint, particularly in the front. The muscles of the rotator cuff stabilize the back of the shoulder joint. These muscles help to keep the head of the humerus in place against the shoulder blade. The rotator cuff is comprised of four muscles.

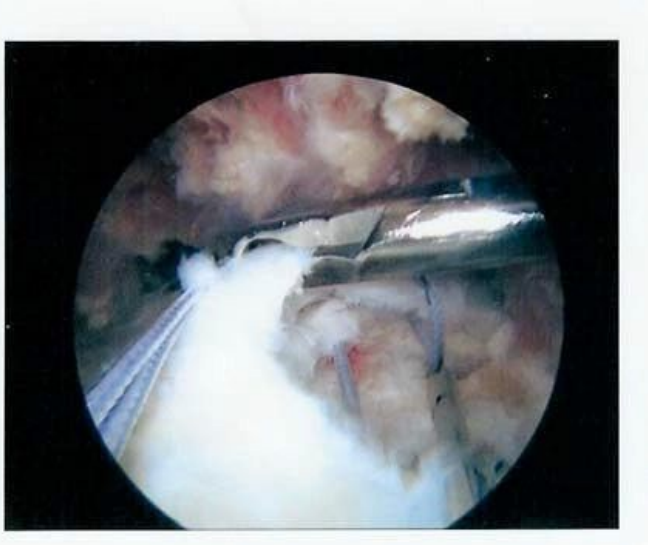


A rotator cuff injury is an injury to one or more of the four muscles in the shoulder. This shoulder injury may come on suddenly and be associated with a specific injury such as a fall (acute), or it may be something that gets progressively worse over time from activities such as paddling that aggravates the muscle (chronic). Even holding on to a board through a wave or carrying a heavy board onto the beach can cause injury.

The type of injury can range from an inflammation of the muscle without any permanent damage, such as tendonitis, to a complete or partial tear of the muscle that might require surgery to fix it.

- **Chronic tear**
  - Found among people in occupations or sports requiring excessive overheadactivity (examples: painters, baseball pitchers)
  - Variations in the shoulder structure causing narrowing under the outer edge of the collarbone
- **Acute tear**
  - Sudden powerful raising of the arm against resistance, often in an attempt to cushion a fall (examples: heavy lifting, a fall on the shoulder)
  - Injury usually associated with a significant amount of force if person is younger than 30 years
- **Tendinitis**
  - Degeneration (wearing out) of the muscles with age
  - Repetitive trauma to the muscle by everyday movement of the shoulder

PARTIAL TEAR BICEPS TENDON



COMPLETE TEAR ROTATOR CUFF

When an injury occurs, it is often useful to immobilize the shoulder as soon as possible. It's difficult to carry a sling in your first aid kit but a leash is a very effective tool for immobilizing a shoulder. The picture, courtesy of OMNI, shows the proper way to configure a leash for shoulder immobilizing.

When to Call the Doctor

In some cases, shoulder pain can be a symptom of other illnesses such as a heart condition. Otherwise, call the doctor when:

- Pain from a rotator cuff problem is worsened with movement. If you have unexplained shoulder pain that is not affected by movement, you should call the doctor.
- If shoulder pain lasts more than two days

- If shoulder problems (pain) do not allow you to work
- If you are unable to reach overhead to get an item in a cabinet above shoulder level, for example. If you are unable to surf, paddle, or swim without pain

Surfer's Myelopathy - Rare Spinal Injury for First-Time Surfers

Unlike most sports injuries, surfer's myelopathy is not the result of an obvious accident or trauma. Instead, it seems to be a mechanical problem that starts in the blood vessels surrounding the spine. It normally affects an adult beginner who goes surfing for the first time, develops low back pain or numbness, comes out of the water, feels that their legs are weak, and then can't urinate well. Over the next hour or so, they have varying degrees of weakness. Finally, they can't walk, becoming paralyzed from the waist down. The most frequent clinical feature of the condition is bladder or bowel dysfunction

When the spinal cord is hyper extended -- as when a surfer arches back on the board -- it can interrupt the blood flow to the spine. One

theory holds that frequent repetition of this motion causes a kink in the blood vessel, much like kinking a garden hose. The spinal cord is starved of oxygen, causing a condition sometimes referred to as a "stroke to the spine." Many patients do recover, primarily through intense physical therapy.

There have been a number of reported cases of this condition since 2004. A paper on the topic by Thompson, Pearce, Chang, and Madamba stated: "Surfer's myelopathy is a nontraumatic paraparesis/paraplegia that affects first-time surfers. Although most patients have a complete or near-complete recovery, complete paraplegia has occurred." Understand that acute hyperextension-induced myelopathy can occur not only during surfing but also during other activities.

Conditions to look out for include: Loss of bladder or bowel control, muscle weakness, unusual tiredness, tingling and numbness, increased reflexes in their extremities, conditions that worsen over time, loss of motor skills, issues maintaining balance when walking in a straight line or rising from a sitting position. Please refer to our Conditioning and Warm-up chapter for specific warm-ups.

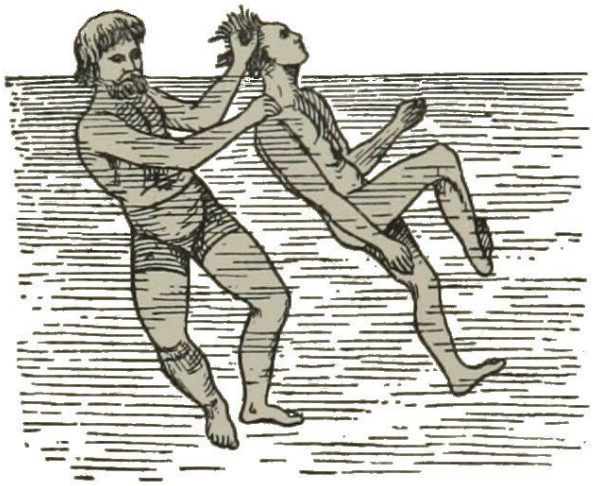
Liability litigation has recently focused on both schools and on instructors who do not follow "recognized industry" standards of instruction regarding warm-ups and who don't recognize the symptoms immediately. The best advice for a NSSIA certified instructor is to follow our recommended warm up and teachings approaches and also tell the student to sit up rather than laying down on their board while waiting for a wave. Also have the surfer go immediately back to shore and seek medical attention if they feel unusual stiffness or pain in their backs or numbness in their legs or feet. A quick response means a greater chance of recovery. This approach protects both the instructor and the school.

It is NSSIA policy that if an instructor identifies ANY signs of Myelopathy in a student, immediately end the lesson and return to the beach. If the student has a responsible adult with them, recommend they see a doctor immediately. If not, notify emergency personnel. Better to error on the side of safety then have a student suffer permanent injury.

Near-Drowning

Near-drowning is when a person is in danger of drowning. Each year, almost 8,000 people die from drowning. Seventy percent of all near-drowning victims recover; 25% die, and 5% have brain damage. Causes can include leg or stomach cramps, fatigue, and alcohol or drug use, a heart attack,

stroke, seizure, and a marine animal bite or sting may have occurred. As a surf instructor, you are in position to be the first person, and maybe the only person on the scene to render help. All NSSIA certified surf instructors are first aid and CPR certified, and the situation has occurred where NSSIA certified instructors have been able to make multiple rescues in difficult conditions.



Proper position if no board

Signs and Symptoms

- A person is in the water with signs of distress. He or she can't stay above water, swims unevenly, signals for help, etc.
- Blue lips or ears. The skin is cold and pale.
- Bloated abdomen. Vomiting. Choking.
- Confusion. Lethargy.
- The person does not respond or can't breathe.

Treatment

Immediate medical care is needed for near-drowning.

- Shout for help! Send someone to call 9-1-1!
- If it is safe and possible, try to reach the person as quickly as possible and immediately pull him or her to safety.
- If you must swim to the person, be sure you are strong and capable enough to fully make the
- rescue, particularly if the surf is rough and you do not have a board readily available. Approach the person from behind in a calm manner. Grab a piece of the person's clothing. Or, cup one hand under the person's chin and then help them to shore.
- If you have a board, paddle just to the side of the person where they can reach out and grab your board first, or so you can reach to them and pull them to the board. Help them onto your board in front of you.
- When getting the person out of the water, support the head and neck if you suspect a neck injury.
- Use Rescue Breaths and CPR, as needed. If you suspect a spinal injury, use the jaw thrust instead of chin-lift for rescue breaths.
- Once out of the water, keep checking the person for a response. Give first aid, as needed
- Put the person in the Recovery Position. Immobilize the person as much as possible. If the person is vomiting, clear his or her mouth of it.
- Remove cold, wet clothes. Cover the person with a blanket, etc.

CPR

Note that if the person is unresponsive or can't get air in or out, do the Heimlich maneuver before you start the CPR. Also, note that CPR requirements tend to change regularly. Check for updates when you renew your certification

Blow

Tilt the head back and listen for breathing. If not breathing normally, pinch nose and cover the mouth with yours and blow until you see the chest rise. Give 2 breaths. Each breath should take 1 second.

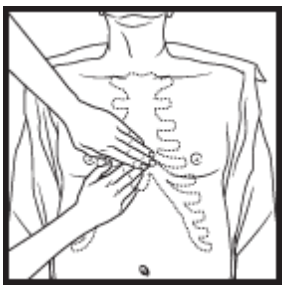
Pump

If the victim is still not breathing normally, coughing or moving, begin chest compressions. Push down on the chest 11/2 to 2 inches 30 times right between the nipples. Pump at the rate of 100/minute, faster than once per second.

CONTINUE WITH 2 BREATHS AND 30 PUMPS UNTIL HELP ARRIVES

NOTE: This ratio is the same for one-person & two-person CPR.

In two-person CPR the person pumping the chest stops while the other gives mouth-to-mouth breathing.



Surfer's Foot

A common ailment among surfers and something not quickly cured. The foot starts burning and gets really itchy. A couple of days later the skin cracks and can nearly stop you from walking. It can cause a serious amount of pain.

It's not a fungus. In most cases it is an allergic reaction to booties. Switch to using nylon bootie socks.

Leg and Foot Cramps

Leg cramps are sudden, involuntary, intense muscle pains usually in your calf, foot or thigh. The oxygen supply to the peripheral nerves is decreased, leading to nerve tissue damage. This causes burning pain, unbearable tingling, and ultimately numbness.

The nerve cells in your feet are literally suffocating and dying off as you read this because they are not getting enough oxygen from the blood If you have sciatica, it disturbs your whole side up and down. Charlie horses are horribly painful.

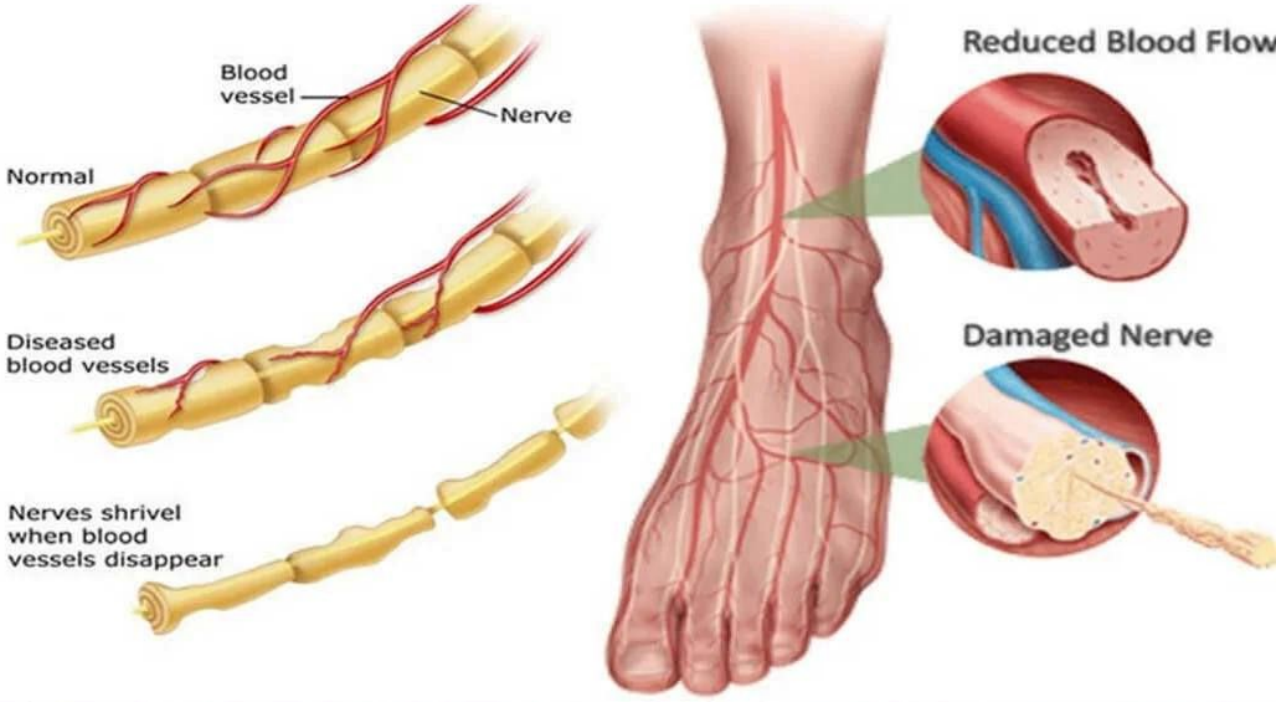
Surfers, particularly older surfers, can get cramps from too much high-intensity exercise, particularly n colder water. Basically, you are overusing your muscles. Lack of magnesium in your diet can also cause a problem. Sometimes, leg cramps happen for no reason, but other times, they could be a sign or symptom of a health condition. "Secondary" leg cramps are a symptom or complication of a more serious health condition.

What to Do

You want to get rid of a leg cramp the moment it strikes. If in the water, straighten your leg out and then flex it and go in immediately.

On the beach:

- Massage: Use your hands or a roller to massage the muscles.
- Stand: Get up. Press your feet against the floor.
- Walk: Wiggle your leg while you walk around.
- Apply heat: Use a heating pad or take a warm bath.
- Apply cold: Wrap a bag of ice in a towel and apply it to the area.
- Take pain medications: Take ibuprofen or acetaminophen to help with the pain.
- Elevate: Prop up your leg after the cramp starts to feel better.



MRSA Infections

MRSA stands for methicillin-resistant staphylococcus aureus. It is a bacteria that can cause infections in various parts of the body. Most commonly it causes mild skin infections that at first appear as pimples or boils, but it can also seriously infect existing cuts or scrapes. The pimples can

quickly turn into deep, painful abscesses that require surgical draining. Sometimes the bacteria remain confined to the skin, but they can also penetrate into the body, causing potentially life-threatening infections in bones, joints, surgical wounds, the bloodstream, heart valves and lungs.

Although staff infections were once easily treated with antibiotics, over decades some strains like MRSA have become resistant to the antibiotics once used to treat them.

When to Seek Medical Advice

Keep an eye on minor skin problems — pimples, insect bites, cuts and scrapes — especially in children. If wounds become infected, see your doctor.

Signs and symptoms of a wound infection

- Redness, warmth and tenderness of the wound
- Pus — a yellowish-white fluid that may have a foul smell
- Fever

Ask to have any skin infection tested for MRSA before starting antibiotic therapy.

Some drugs that treat ordinary staph aren't effective against MRSA, and their use could lead to serious illness and more resistant bacteria.

MRSA was once rarely seen outside the hospital setting, but it is now seen spreading in community settings such as schools, locker rooms and gyms. Recently, MRSA has been found in sand and water of public beaches along the coast of Washington and southern Florida. There are a few simple measures to take to protect against MRSA, particularly in the event of possible exposure. Brush off all the sand when getting out of the water and shower as soon as possible. Cover any existing cuts or scrapes before digging or playing in the sand. Be sure to observe cuts or scrapes and consult a health care professional immediately if they appear to be infected a few days after a trip to the beach.

Unfortunately, even after it is cured, MRSA can re-appear. It is also possible to transmit the infection to others. Never share towels and make sure your wetsuits and rash guards are washed after use.

Because of the persistence of MRSA in both ocean and lake front beaches, NSSIA strongly recommends all instructors have either showers or water jugs available fro students to rinse off after their lessons. Additionally, do not give a lesson to someone with an open wound, and get anyone with bleeding out of the water and their wound cleaned and sterilized immediately. If a MRSA infection gets into the bloodstream it could mean a death warrant.

Surf School Equipment Protection

The primary method of protecting students against getting MRSA infections from rashguards or wetsuits is by disinfecting. Bleach is the safest and least expensive way to clean your equipment using the following approach:

- **Wetsuits**
  - On Beach - After removing (wetsuit is inside out), spray lightly with mix of 1 tablespoon of Clorox® Regular-Bleach per gallon of water. Let stand 2 minutes. Then rinse in ocean before hanging on rack. dry.
  - At Shop - Rinse/hose again in clear water before hanging to dry and storing.
- **Rashguards**
  - Rinse and squeeze in plastic tub with mix of 1 tablespoon of Clorox® Regular-Bleach per gallon of water. Let stand 2 minutes then rinse in ocean before hanging on rack.

Melanoma Skin Cancer

Surfers are constantly exposed to the sun's UV rays. Long sessions, poor protective measures, and UV rays magnified by the water up to 50%, make surfers highly prone to extensive skin damage and deadly skin cancer.

There are several types of skin cancer. Skin cancer that forms in melanocytes (skin cells that make pigment) is called melanoma.

Skin cancer that forms in basal cells (small, round cells in the base of the outer layer of skin) is called basal cell carcinoma. Skin cancer that forms in squamous cells (flat cells that form the surface of the skin) is called squamous cell carcinoma. Skin cancer that forms in neuroendocrine cells (cells that release hormones in response to signals from the nervous system) is called neuroendocrine carcinoma of the skin.

Of all of the various skin cancers, melanoma is known to be the most deadly if not caught in its earliest phases. Melanoma makes up 5% of all skin cancers and results in 71% of all skin cancer deaths. The first sign of melanoma is often a change in the size, shape, color, or feel of an existing mole. Most melanomas have a black or blue- black area. Melanoma also may appear as a new mole. It may be black, abnormal, or "ugly looking."

Thinking of "ABCD" can help you remember

what to watch for:

- Asymmetry—The shape of one half does not match the other.
- Border—The edges are often ragged, notched, blurred, or irregular in outline; the pigment may spread into the surrounding skin.
- Color—The color is uneven. Shades of
- • black, brown, and tan may be present. Areas of white, grey, red, pink, or blue also may be seen.
- Diameter or Evolution—There is a change in size, usually an increase, or change in color. Melanomas are usually larger than the eraser of a pencil (1/4 inch or 5 millimeters).

While the "ABCD" is helpful in alerting you what to watch for, be advised that some melanomas can look much like an ordinary mole that has just become darker or a little thicker. Modern treatment for melanomas to ensure all of it is removed and that it hasn't spread to other organs is a wide excision of the mole (usually one centimeter in every direction around the mole) and dissection of lymph nodes nearest the melanoma. The wide excision usually requires a skin graft and takes months to a year or longer to fully heal. The lymph node removal causes pain for approximately a month and swelling for up to six months. Shown is the healing wound from the wide excision of a 6mm melanoma four months after surgery. The surgery and treatment is much less radical for melanomas caught in the earlier and smaller stages. The best advice is for people who spend a lot of time in the sun is to have regular dermatology checkups and make use of free skin cancer screenings offered at health fairs and clinics.

Scientists do not yet know exactly what causes melanoma skin cancer. However, we do know that certain risk factors are linked to this disease. Too much exposure to UV (ultraviolet) radiation is thought to be the biggest risk factor. The main source of UV is sunlight. The amount of UV exposure depends on the strength of the radiation, how long the skin was exposed, and whether the skin was covered with clothing and sunscreen. Many studies have linked melanoma in the trunk, legs, and arms to frequent sunburns (especially in childhood).

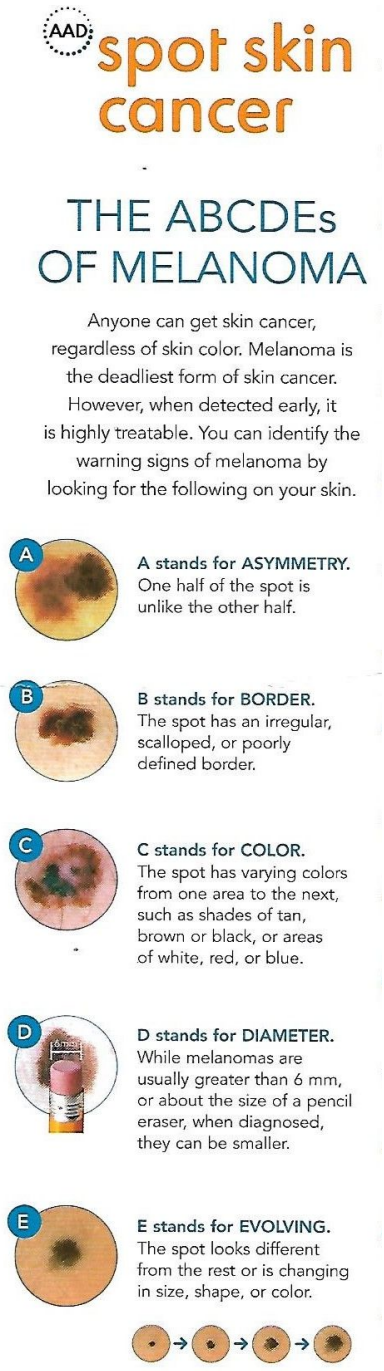
Sunscreen use reduces squamous-cell cancer; however, evidence for melanoma and basal-cell carcinoma is less clear. For example, melanoma risk may be related more closely to exposure intensity (i.e., sunburn) than the cumulative exposure. Persons using sunscreen may prolong sun exposure, thereby inadvertently increasing intensity and, thus, melanoma risk.

Before paddling out, consider this:

- Skin cancer is the number 1 cancer in California, exceeding the sum of breast, prostate, lung, and colon cancers.
- One in five people will eventually develop skin cancer.
- UV rays from the sun cause 90% of all skin cancers and they are considered a major human carcinogen with the same classification as tobacco smoke and asbestos.
- 80% of UV rays easily penetrate clouds, and are most intense from 10am - 4pm, Spring through Autumn. UV rays are still dangerous to surfers with darker skin tones.

Skin cancer is PREVENTABLE!

- Place a barrier between you and the sun.
- Check the weather report for the UV Index. The higher the number the more intense the UV rays are.
- Wear sun protective gear
  - o a long sleeve wetsuit or a rashguard and long boardshorts
  - o a wide brim hat (if possible)



- Wear sunscreen/block and lip balm. Look for
  - Broad spectrum UVA/UVB protection
  - SPF of 30 or greater
  - Waterproof
  - Zinc Oxide or Z Cote contain
  - Sunscreen for ports to reduce eye irritation
- Apply one ounce (a shot glass) to all exposed areas - not just your nose, remember your: forehead, ears, back of hands, neck, lower legs, feet AND bald spots!
  - 15 min before entering the water
  - Even when it's cloudy
  - And re-apply every 30 minutes
- Early detection is the best prevention.
- Get checked by your doctor at least once a year.
- Perform a self-exam at least once a month.
- Contact your doctor if you find something suspicious.

Sun Screen and Tanning

The NSSIA strongly recommends providing sunscreen to students. However, while surf instructors must make sure their students do not overexpose themselves and receive sunburns during a lesson, it is important that they understand the entire story about sun tanning.

Remember, Protect the Skin each and every time you hit the surf.

The Skin Cancer Foundation recommends sunscreen SPFs of at least 15, which block 93 percent of UVB rays. While SPFs higher than 30 block only 4 percent more UVB, they may be advisable for sun-sensitive individuals.

Rash guards with a high SPF rating also help protect against cancer. They also protect against rash caused by an allergic reaction to the use of certain types of surfboard wax, minimizes sliding around on surfboard from body oils, sunscreen or sunblock.

The production of pre-vitamin D3 in skin varies depending on several factors including skin type, weather conditions, and sunscreen use. Excessive exposure to sunlight does not result in a vitamin D overdose because pre-vitamin D3 and vitamin D3 are photolyzed to biologically inert chemicals before they can build up to dangerous levels.

Researchers from the Moore's Cancer Center at the University of California, San Diego (UCSD) concluded that increasing the intake of vitamin D3 could easily prevent skin diseases, including 16 types of cancer. According to one of the researchers, Dr. Mercola,: "The evidence is quite clear; your likelihood of developing deadly skin cancer from sun exposure is nowhere near as high as you have been led to believe in the past. The benefits of normalizing your vitamin D levels far outweigh any risk someone may have from optimal sun exposure."

Anti-tanning campaigns have most likely caused more disease than they prevented. The only risk of UVB comes from overexposure. This can be greatly minimized by avoiding sunburn and eating a healthy diet, rich in antioxidants. The recommendation to never go out in the sun without wearing sunscreen, however, is simply misguided advice. Slathering on sunscreen will effectively shield a

person from the sun's inherent health benefits because their body will not synthesize vitamin D properly.

It's also important to remember that one can develop sun damage even with sunscreen. Sunscreens don't stop the damage from occurring, they simply treat the burn. Damage will still occur on a cellular level.

The amount of antioxidants in a person's skin plays a major role in the development of sunburn. The more antioxidants taken in, the lower the risk of sunburn. Foods containing effective antioxidants that boost "internal sunscreen" include whole fresh vegetables and fruits. Vitamins A and C are also vital since cells use these vitamins to regulate both light absorption and protection against overexposure.

Safe Tanning Guidelines

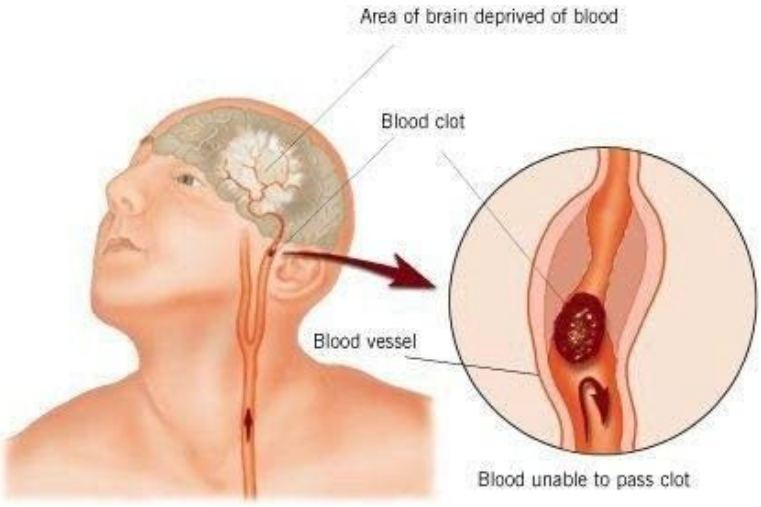
If skin is unused to the sun, it is important to build up sun tolerance gradually at regular intervals, at least 10 minutes initially to 2 hours in length depending on skin pigment. Stay out just long enough so that the skin turns the very lightest shade of pink. It's best to start early in the year, in the spring and early summer. Intermittent overexposure can increase the danger of skin cancer.

Early morning is the best time to sunbathe if a base tan has not been built up because an individual is less likely to burn in the mild morning sun than later in the day. Additionally, it's best to sunbathe when the temperature is below 64 degrees Fahrenheit to prevent overheating.

Sunburn Treatment

Unfortunately, once a burn happens, treatment is necessary to remove pain. Vinegar poured on the burn area will help alleviate pain. Also, moisturizing burn cream such as Alovera works well to both cool the burning and promote healing. If the burn has caused blistering, both a burn cream and a first aid jell will be necessary.

Stroke's Happen



Strokes happen on hot days at the beach. Watch for someone walking in the sand and falling – the person may assure everyone that they were fine. They may also say they just tripped over a sand hump or a stick on the beach. While they may appear a bit shaken up, and the person may continue on with their lesson or beach activities, they may also have just suffered a stroke. Their condition may worsen later on when it's too late to prevent further damage. While some people don't die from strokes; they often end up in a helpless, hopeless condition instead.

Most Neurologists claim that if they can get to a stroke victim within 3 hours they could totally reverse the effects of a stroke. The trick is getting a stroke recognized, diagnosed, and then getting the patient medically cared for within 3 hours, often a difficult period for responding.

Symptoms

Sometimes symptoms of a stroke are difficult to identify. Unfortunately, the lack of awareness by laymen generally spells disaster for the victim. The stroke victim may suffer severe brain damage when people nearby fail to recognize the symptoms.

Remember the 1st Three Letters - S.T.R. Any bystander can recognize a stroke by asking three simple questions of the victim:

S *Ask the individual to SMILE.

T *Ask the person to TALK and SPEAK A SIMPLE SENTENCE (Coherently) R *Ask them to RAISE BOTH ARMS.

If he or she has trouble with ANY ONE of these tasks, call emergency number immediately and describe the symptoms to the dispatcher.

Some other signs include:

- Ask the person to 'stick' out his tongue. If the tongue is 'crooked', if it goes to one side or the other, that is also an indication of a stroke.
- If the person repeatedly says something that makes no sense or has nothing to do with what's going on.
- If the person’s smile is not asymmetric - the smile will not be the same on both sides.

Head Trauma

Unfortunately, surfers are often hit in the head by their board or by others who lose their board. A concussion is a traumatic brain injury caused by a sudden jolt, blow, or bump to the head. Although concussions are not that hazardous but they can develop some symptoms that need immediate medical help.

Common complaints are neck pain but other symptoms include:

- Mild to severe headache
- Loss of memory around the events that caused the injury.
- Blackout and a complete loss of consciousness.
- Speaking problems
- Dilation of pupils
- Feeling stunned or dazed.
- Confusion, clumsy movement, and a loss of balance.
- Nausea, dizziness, and vomiting.
- Sensitivity to light, headache, and blurred vision
- Hearing problems including unable to locate the source of a sound.

In most cases, the dizzy spell will pass within a few minutes or hours as the brain recovers. Intense dizzy spells that disable all movement are known as vertigo.

Some people confuse a contusion with a concussion but they are very different. A concussion particularly affects the brain while contusions are just bruises. Contusion might develop on your head but they are not usually that serious and tend to subside within several days. The after-effects of concussions are typically temporary but can result in problems with memory, coordination, balance, and concentration.

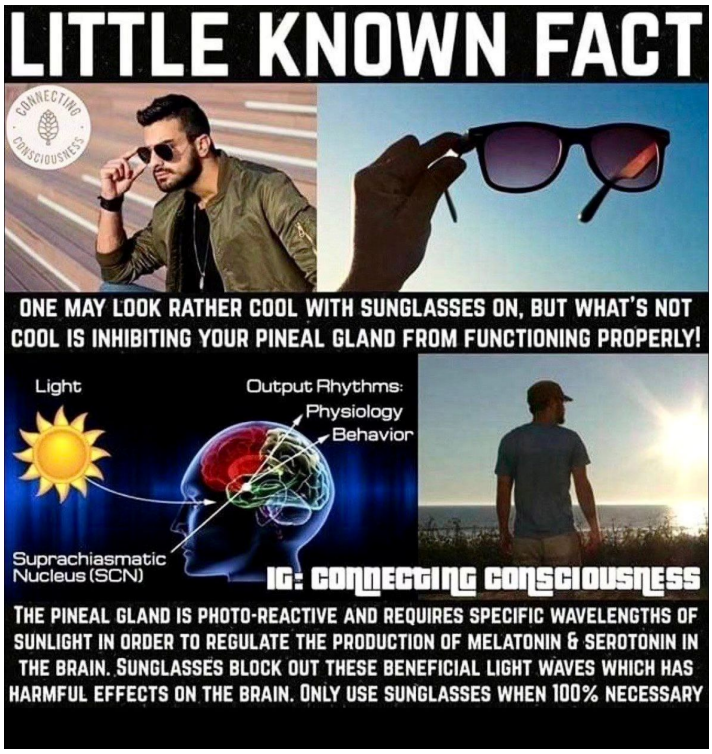
Concussions can be tricky to detect. Though a person may have a visible bruise or cut on his head but you are not able to see a concussion. Symptoms may not be visible for weeks or days after having an injury or accident.

You are an instructor, not a doctor. If your student receives a sever blow to their head and loses consciousness, becomes nauseous, or has severe neck pain or a headache, it is the NSSIA's position that you recommend they go to a doctor. Do not continue their lesson.

Pterygium Conjunctiva

Pterygium is a growth on the eye, usually associated with excessive exposure to sun, wind, low humidity, or dust. Surfers are prime candidates for pterygium. A pteriygium (ter-rij-ee-um) commonly grows from the nasal side of the eye, sometimes extending as far as the pupil.

They are more common among equatorial populations and are twice as more likely to occur in men than women.



Sunglasses – What you should know

Sunglasses are mobile suicide. On a sunny day, specific wavelengths of sunlight are filtered into the eyes. This feeds the pineal and pituitary glands and lets the brain know it's sunny. The skin then prepares for direct sunlight and prepares to produce vitamin D. Wearing sunglasses starves the pineal gland and deceives the brain into thinking it is cloudy, which prevents the skin from preparing itself for sun exposure. They also steal your energy by blocking the absorption of ultraviolet rays. This is one of the main reasons why people get skin cancer. Not because of the sun but because of the sunglasses. We don't fully understand how the pineal gland works.

What Color are Your Sunglasses? It Matters for Your Eye Health

Story by Kristina Byas

Whether you're on the beach or working outdoors, it's important to properly protect yourself under the sun. In addition to sunscreen, it's good to wear sunglasses outside to protect your eyes from the sun's UV rays. But sunglass lenses can come in many different shades, including brown, gray, green and more. What does this mean?

The color of your sunglass lenses plays a significant role in visual comfort, glare reduction, color perception and overall eye protection. Taking lens color into account as you hunt for your next pair of shades will allow you to take advantage of the many benefits sunglasses have to offer.

Here's more on lens color and how different tints affect the way you see the world while safeguarding your eyes.

Best Prescription Sunglasses: Brown or amber

Darker tints, like brown or amber, are common and work well for everyday use, REI reported. Brown offers a multitude of benefits that make it such a popular color. It helps protect your eyes by cutting through glare and preventing eye strain. It also enhances warm colors and brightens your vision.

Moreover, according to VSP Vision Care, the high contrast provided by these lenses ensures that objects appear more defined and sharp even at a distance. This makes them an excellent option for sports and outdoor activities that require clear vision and heightened visual acuity, such as hunting and golfing.

Yellow or orange

Yellow or orange-tinted sunglasses are perfect for moderate- to low-light conditions, per REI. They can be helpful in foggy, hazy or overcast weather because they enhance contrast and clarity. This color also makes it easier to focus your eyes on moving objects, Hiking and Fishing reported. Gamers, pilots, hunters and winter athletes gravitate towards this tint.

Blue or purple

Blue or purple-tinted sunglasses help reduce glare in bright, sunny conditions and environments, per Hunting and Fishing, so they minimize discomfort caused by bright reflections. They also improve color and contour perception, according to Frames Direct. These qualities make them perfect for water sports and snow activities as well as wet or misty conditions.

Green

Green-tinted sunglasses are suitable for a variety of situations. They improve color perception and contrast, reduce glare and also help brighten shadows. That makes them helpful for sunny outdoor activities like golfing, fishing and hiking -- but they're just as effective in low-light or partially cloudy weather.

Pink or red

Pink or red-tinted lenses are ideal for depth perception, according to Hunting and Fishing. This color is also a popular choice for winter sports because it offers great contrast against white backgrounds. Additionally, these lenses can be beneficial for individuals with light sensitivity or certain eye conditions, providing a soothing effect and easing eye strain.

Gray

Gray sunglasses provide a neutral color perception and reduce overall brightness without distorting colors, according to VSP. They are versatile and suitable for a wide range of situations, making them ideal for everyday wear. In bright sunlight, they minimize glare and eye fatigue and provide comfort to the eyes. They remain just as helpful in cloudy or lower-light weather. Wear them for outdoor activities like running, cycling and beach outings, or while driving.

Other specs for your specs

When considering sunglasses for eye protection, there's still more to think about beyond color and

style. For example, lens coating, lens material and frame material. Polarized lenses reduce glare, while mirrored or flash coatings enhance visual comfort. However, the most critical factor is UV protection, ensuring sunglasses block harmful rays that can lead to certain eye conditions, such as cataracts or cancer. A combination of these factors, tailored to specific situations, helps determine the best sunglasses for optimal eye safety and comfort.

Hernias

Hernias are common events for surfers, particularly older surfers or older students learning to surf. A hernia occurs when the contents of a body cavity bulge out of the area where they are normally contained. These contents, usually portions of intestine or abdominal fatty tissue, are enclosed in the thin membrane that naturally lines the inside of the cavity. Any condition that increases the pressure of the abdominal cavity may contribute to the formation or worsening of a hernia. Besides surfing, activities that can cause a hernia include lifting a heavy board and coughing.

When to Seek Medical Care

All newly discovered hernias or symptoms that suggest a hernia should prompt a visit to the doctor. Hernias, even those that ache, if they are not tender and easy to reduce (push back into the abdomen), are not necessarily surgical emergencies, but all have the potential to become serious. If the person already has a hernia and it suddenly becomes painful, tender, and irreducible, again go to the emergency room. Strangulation (cut off blood supply) of intestine within the hernia sac can lead to gangrenous (dead) bowel in as little as six hours. Not all irreducible hernias are strangulated, but they need to be evaluated. An instructor who hears a student complain about a possible hernia, or has a student with an existing hernia, needs to be aware of the potential serious injury if the lesson proceeds.

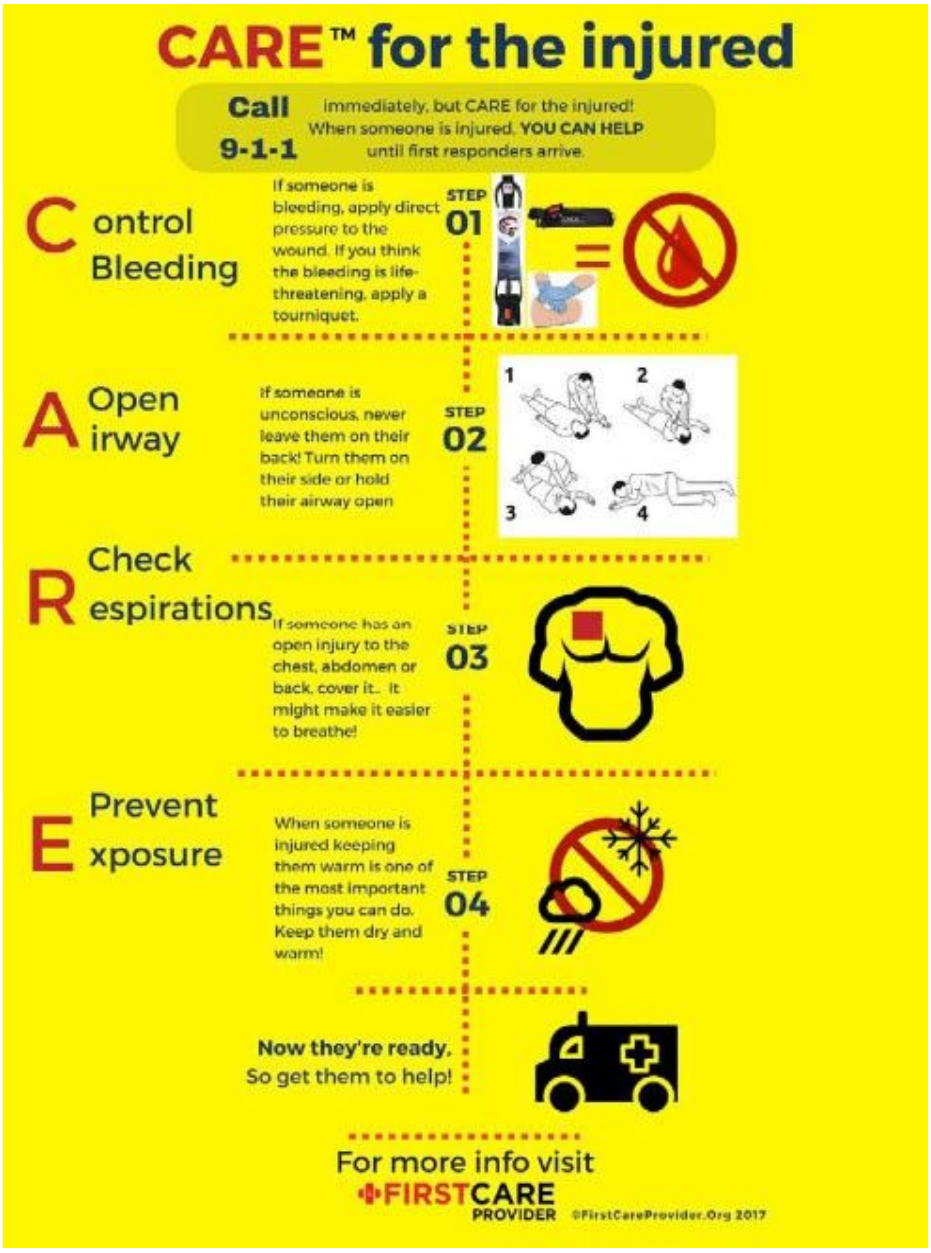
Surf Camper Toenail Injuries

Injuries at surf camps often occur due to toenails being too long. Wit usually happens when campers, especially beginners that are not used to being in the water for extended periods, have long toenails on their big toes. The nail get soft from being in the water so when they go to stand up the nail grabs the soft surfboards and bends the toenail backwards. To avoid this problem, remind parents in their enrollment forms to have their kids nails trimmed before surf camp. It is also advisable to keep a nail clipper handy in your first aid kit.

Emergency Medicine Research Study by the Royal Melbourne Hospital, Victoria, Australia.

A cross-sectional survey was taken of surfers at eight Victorian beaches between February and May 2003 that analyzed acute injury and chronic disability sustained while surfing during the preceding 12 months. Significant injuries were defined as requiring medical attention or time off surfing/work. 646 surfers were enrolled (90.2% male, median age 27 years, median years of surfing 10). 145 surfers sustained 168 significant acute injuries in the preceding 12 months (0.26 injuries/surfer/year, 95% CI 0.22-0.30). Most were caused by striking a surfboard or another surfer (45.2%, 95% CI 37.6-53.1), "wiping out" (36.3%, 95% CI 29.1-44.1) or striking the seabed (17.9%, 95% CI 12.6-24.7). Injuries, including lacerations (46.4%, 95% CI 38.8-54.3), sprains (28.6%, 95% CI 22.0-36.1), dislocations, (10.7%, 95% CI 6.7-16.6) and fractures (8.9%, 95% CI 5.3-14.6). Body parts most frequently injured were the lower limb (45.8%, 95% CI 38.2-53.7) and the head/face (26.2%, 95% CI 19.9-33.6).

Surfing injuries that were treated in Victorian emergency departments over a six year period revealed a similar pattern, although there was a greater proportion of head/face injuries (42.0%, 95% CI 36.0- 48.1, p = 0.001). 20 surfers reported long-term effects from acute injuries, mainly unstable/stiff/painful joints. 136 surfers reported chronic health problems not related to acute injury including chronic/recurrent otitis externa and exostoses, muscle and joint pain/stiffness and pterygium. Significant injury while surfing is not uncommon. Although head injury accounts for a considerable proportion, very few surfers wear protective headgear. Greater use of protective headgear should be considered.



More on Trauma

Trauma presents unique challenges to the rescuer. When trauma happens, time is critical; therefore, it's best to have an easy to follow, validated procedure in place. The steps presented below in the First Care Provider®

continuum of care enable rescuers to react quickly and effectively address traumatic injuries in the proper order of severity.

Background

Since 2013, the First CARE Provider model has successfully educated the public on recognizing and treating life-threatening injuries in emergencies. In 2015 the government's Stop The Bleed© program was launched after the Hartford Consensus described uncontrolled hemorrhage as "the most significant preventable cause of death in the pre-hospital environment." Subsequent public trauma programs have focused primarily on hemorrhage control. Yet recent events demonstrate that situational awareness, recognition of injury, and rapid evacuation are equal to hemorrhage control in minimizing mortality from trauma. Use the R.A.C.E. and C.A.R.E. acronyms to remember what to do when trauma occurs.

Control Bleeding Three Bleeding Types

Capillary Bleeding Indicators:

1. Slow, Even Flow

Venous Bleeding Indicators:

1. Steady, Dark Flow
2. Dark Red Color

Arterial Bleeding Indicators: (Most Severe)

1. Spurting Blood
2. Pulsating Flow
3. Bright Red Color

Bleeding Control Tools

Gloves

When possible the use of high-visibility, nitrile gloves should be worn by the rescuer when performing first aid for bleeding injuries. Due to the surf environment this may not be possible. If it is possible, it is recommended to use a textured-grip, nitrile glove to aid the rescuer.

Cutting Tool

Trauma Sheers are the most commonly known cutting tool that can assist the rescuer with clothing, or wetsuit removal to expose and treat injuries. It is recommended that a stainless steel Klever Kutter® or similar tool be used for surf rescue because it is faster and more efficient than trauma sheers.

Tourniquets

Limb Tourniquets are safe, and effective medical devices that can control bleeding. Below are some facts about tourniquets.

- Everyday operating rooms across the world use tourniquets to perform surgery.
- The FDA classifies tourniquets as Class 1 medical devices that are low-risk.
- The use of a tourniquet does not mean you will lose a limb.
- Once applied a tourniquet should only be removed or repositioned by a medical professional.
- Improvised tourniquets such as surf leash cords have a 75% - 84% failure rate.
- The use of a pre-hospital marine tourniquet significantly decreases your liability risk and exposure.
- Application of a tourniquet to a limb should be as High & Tight up on the limb as possible.
- A limb tourniquet functions by compressing the artery of the injured limb against a single bone of a limb.
- Tourniquets often hurt when applied correctly.

Tourniquet Damage Continuum

Limb Tourniquets Recommended For Surfing

The Surf environment requires the use of Maritime Tourniquets or Tourniquet Water Sport Leashes whenever possible. High and repetitive exposure to saltwater, abrasion, and UV rays requires tourniquets to be made to marine specifications. In addition, the application of a tourniquet must be able to be performed by anyone regardless of size or strength. Traditional tourniquets are not designed for marine use, and their proper application may be slower, more difficult, or not possible for some.

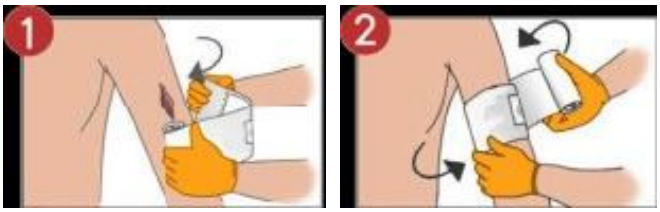
Maritime Tourniquets are designed to facilitate application when you and the device are wet and bleeding, and they come in a variety of forms like wearable, or as part of your leash.

Sterile Gauze

Sterile gauze can be used in conjunction with direct pressure to help control moderate bleeding injuries where a tourniquet is not indicated or needed. Sterile gauze comes in compressed and non-compressed forms. Vacuum-sealed compressed gauze is preferred because of its lower profile and durability.

Emergency Trauma Dressings

Emergency trauma dressings also known as pressure dressings come in a variety of forms and configurations. They are meant to apply pressure and control moderate bleeding, and work well in conjunction with sterile gauze.



Place pad on wound & wrap elastic bandage around limb or body part. Wrap tightly and connect.

Open Airway

See CPR information Recovery Position:

Check Respiration's

There are many reasons why a person's respirations may require first aid. If the pleural cavity around the lungs is punctured by the nose of a surfboard it is possible that the surfer will develop a tension pneumothorax, which is a life-threatening condition. The application of a chest seal may be required to help them breathe and prevent worsening of their condition while help is on the way.

Prevent Exposure

Keeping an injured person warm and dry is the last step in the CARE™ process. Therefore, it's recommended to have an accessible emergency blanket in your trauma kit at all times. Mylar blankets, also known as space or rescue blankets are inexpensive, small, and effective at keeping someone warm.

Trauma Summary

There are numerous mechanisms of injury that can cause trauma to a surfer. The trauma information above is meant to provide an overview of care for immediate action. First aid skills are best taught and retained in a hands-on classroom setting by a certified First Care Provider™. It is recommended that you attend a course and practice your skills regularly.

Sunglasses

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Story by Kristina Byas

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Yellow or orange

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Summary of Injuries for Surf Schools

For surf school injuries, the most common are bruises, busted lips and noses. Face injuries can be avoided by properly covering your head and face. Students can also sometimes get a broken ankle from jumping off in shallow water and landing on a sharp object or small rock. Always tell your students fall backwards and not to jump off feet or head first.

The most dangerous student injury comes from a pearl dive. About 50% of all spinal injuries come from people diving into shallow water. Tell students that if they fall headfirst to be sure to keep their hands out in front of them. This is one of the best reasons to get your students to go right or left from the beginning. Granted it's a bit more difficult, but it's part of real surfing, and they will get longer, more fun rides, plus it's safer. When they go right or left they tend to roll instead of pearl diving. If they fall backwards, tell them to put their hands over their head. Finally, tell them to cover their face with their elbows when they come out of the water so they don’t get hit in the face with their board.

Note: Surfer's Myelopathy is covered in the instruction Chapter. Only potential recognition is available to the surf instructor.

Injuries where Blood is Exposed

If during a lesson a student is injured and you get blood or other potentially infectious materials in your eyes, nose, mouth, or on broken skin, immediately flood the exposed area with water and clean any wound with soap and water or a skin disinfectant if available. Report this immediately to your employer and personally seek immediate medical attention.

There are a number of steps that the instructor should follow that are governed by US Code. Fortunately, injuries will usually occur in salt water and this will help decontaminate the immediate area prior to any exposure you may receive.

U.T. Department of Labor - Occupational Safety & Health Administration

1910.1030(h)(5)

Part Title: Subpart: Subpart Title:

Standard Number: Title:

Occupational Safety and Health Standards Z

Toxic and Hazardous Substances 1910.1030

Bloodborne pathogens.

Contaminated Sharps means any contaminated object that can penetrate the skin including, but not limited to, needles, fishhooks, fiberglass, broken glass, and sharp rocks.

Decontamination means the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Exposure Incident means a specific eye, mouth, other mucous membrane, non-intact skin, or potential contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Handwashing Facilities means a facility providing an adequate supply of running potable water, soap and single use towels or hot air drying machines.

Occupational Exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Parenteral means piercing mucous membranes or the skin barrier through such events as penetrations, human bites, cuts, and abrasions.

Source Individual means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee.

Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other blood borne pathogens.

All surf school employers must create and maintain an Exposure Control Plan that instructors can follow when blood is exposed. Of significant interest to instructors is that all instructors shall enforce hand washing provisions that are readily accessible to employees. All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.

Broken glassware that may be contaminated shall not be picked up directly with the hands.