

# Introduction to Scuba (ITS) Users Guide

Attached are HSA's Introduction to Diving, Medical History, Liability Release, and Hazards & Risks forms.

This has taken quite awhile to complete and of course like everything it is a work in progress. To develop this document Gatacre spent 5 days in Colorado at the VA Winter Games assisting HSA instructors (The Colorado Scuba Dudes) giving discover scuba for about 100 veterans with every type disability you can name. During this time Gatacre wrote down everything they were teaching, and forgetting to teach, and back in the office he collated this information into the HSA Introduction to Scuba.

Then HSA conducted three scuba experiences at the Navy Hospital in San Diego and Gatacre continued to refine the document. There had two issues;

1. The vets wanted to know if this was just a scuba experience or were they going to learn something they could apply to becoming a scuba diver.
  - a. So the HSA Introduction to Scuba is comprehensive in education and anyone who completes this training has demonstrated they are a good candidate for scuba training. Additionally they will be way ahead of those who have not completed it.
2. Some of the vets do not have physical disabilities but are suffering the consequences of being in combat. So we had to figure out how to fit them into the program.
  - a. So included are methods for assisting people with physical disabilities so these vets can learn & do something that will help them cope with their combat related problems. Helping others helps the helper.

The Introduction to Scuba applicants will read the HSA Introduction to Scuba before you start training. It is a 10 minute read. Because they read the ITS, and have received their medical & application forms ahead of the training they are ready to start when the instructor begins teaching. At the beginning of the ITS you will have them complete the liability forms and take a short exam to ensure they understand what they have read.

1. Prior to training the candidates receive and complete;
  - a. Medical History Form
2. At the beginning of the ITS candidates receive and complete;
  - a. Course Registration Form
  - b. Liability Release & Express Assumption of Risk form
  - c. Inherent Hazards & Risks of Diving Activities

When you finish their introductory training fill out the last page, sign it and have them sign it. You keep a copy of the last page in your files and give them a signed copy to take with them.

At the end of their training they have actually learned something and if they do not continue on for certification right away they have their experience documented so they can give it to a Scuba instructor when they are ready to start.

# HSA INTRODUCTION TO SCUBA

Candidates Name \_\_\_\_\_ Location \_\_\_\_\_

## 1. Registration

- a. Medical History Questionnaire
- b. Inherent Hazards & Risks of Diving Activities Form
- c. Course Registration, Liability Release & Assumption of Risk Form

## 2. Briefing

This is an Introduction to Scuba so you only need to know a few basic rules, but these rules are IMPORTANT because you are breathing compressed air.

- a. Breathe: This is the first rule, and it is completely up to you. It is very easy, you just breathe all the time, but it is the MOST IMPORTANT thing you will have to do. If you hold your breath you can rupture your lungs, which is **VERY SERIOUS!**
- b. Ear clearing: Your ears may experience some pressure, or even hurt, when you descend underwater. This is normal, and you have probably already experienced this pressure in your ears if you have dove underwater, flown in an airplane, or driven in the mountains.

What has happened is the pressure in your middle ear is not equal to the pressure that surrounds you so you must 'equalize' the pressure in your air spaces. This is commonly referred to as 'clearing your ears'.

To 'clear your ears' simply pinch your nose and 'gently' blow until you feel them 'clear' and return to feeling normal. If you start clearing your ears when you begin to descend and intermittently clear them until you reach the bottom you will probably not have a problem. If your ears begin to hurt, STOP your descent, go up a little until they 'clear', and then begin to descend again.

- c. Hand signals: Underwater we are unable to talk to each other, so we use a few simple hand signals.

Okay: Forming a circle with your thumb & forefinger means either 'are you Okay?' or 'I am Okay'. For sight impaired divers a squeeze to your bicep asks 'Are you Okay?', and you will use the visual Okay sign to answer.

Go up: Close your hand with the thumb pointing up means either 'go up' or 'I want to go up'. It does NOT mean Okay. For sight impaired divers pressure applied to the palm of your hand means 'go up', and you will use the visual up sign to answer.

Uncomfortable: For all divers holding your hand palm down with your fingers together and wobbling it from side to side means 'I'm uncomfortable'.

- d. Sun Screen: Wear sunscreen, you will burn easier around water even if it is overcast!
- e. Protective clothing: For Spinal Cord Injuries (SCI) & Amputees. Keep your legs and feet covered. Pool and openwater environments have hard and abrasive surfaces that can cause abrasions and tissue breakdown for people with reduced circulation caused by SCI or residual limb scar tissue.

### 3. Equipment & Use

We are going to give you a brief explanation of the equipment you will be using so we can talk to each other about it. Sight impaired divers use your tactile senses on the equipment during the explanation. You will be using a Face Mask, Weights Buoyancy Control Device (BCD), Scuba tank, and Regulator to breathe from.

- a. Dive Mask: A diver uses a dive mask for two reasons. The first and most obvious reason is to keep water and chlorine out of their eyes so they can see clearly. The other reason is to keep water out of their nostrils. When water gets in your nostrils, your biology tells you to STOP breathing, and remember we have to breathe all the time on SCUBA! You can breathe with water in your nostrils, but most people have to learn how.

Dive Mask Selection: You need a proper fitting mask so it won't leak. To select the right mask for you, take the mask strap and move it out of the way, place the mask on your face, tip your head back, look at the sky and inhale through your nose then let go of the mask. The mask will stick to your face, listen for leaks and tip your head forward so you are looking straight ahead. The mask should stay on your face and not leak air. You may have to try several masks to find the one that fits you comfortably.

Mask Defog: Dive Masks fog-up for the same reason your car windows do on a cold day. We defog our masks with either our spit, or with defog solution.

- b. Weights: We are approximately the same density as water, so when we relax we float and so we must use weights to sink. Weight: \_\_\_\_\_ lbs.
- c. Scuba Tanks: Tall tanks such as the Aluminum 80 tank are best for those who have weakened trunk strength from spinal cord injury or other sources. The taller tanks provide stability when sitting with your equipment on and can be leaned on for comfortable support.
- d. SCUBA: Self Contained Underwater Breathing Apparatus  
The SCUBA unit consists of; Scuba Tank, Regulator and Console with pressure gauge, depth gauge and compass, low-pressure inflator hose, and Buoyancy Control Device (BCD).

Scuba Tank: Inside the tank is 'regular air' that has been filtered and compressed to fit inside the tank. Tanks usually have 3000 pounds per square inch (psi) pressure inside when it is full. The air inside is dry, so you may experience dry mouth while breathing it.

Pressure gauge: This pressure gauge tells you how much air is inside your tank. Look at your pressure gauge, how many psi do you have? When your tank pressure gets down to 500 psi, you are required to ascend to the surface. This is so you will have plenty of air while swimming to the surface, and for anything you may need to do at the surface before you are positively buoyant.

Depth gauge: This gauge tells you how deep you are in feet.

Compass: This is what you use to navigate underwater, just as you do on land.

Regulator: Attached to your tank is your Regulator 1<sup>st</sup> stage, it ‘regulates’ the compressed air inside your tank so you can breathe it. The Regulator 2<sup>nd</sup> stage is what you breathe from. To use it simply place the mouth piece into your mouth, hold the little bumps gently with your teeth, and keep the flange inside your lips on the outside of your gums. Breathe through it a few times, slow deep breaths. This is what you do the entire time you are underwater, breathe in and out, and never hold your breath.

Buoyancy Control Device (BCD): The BCD floats you in the upright position or on your back at the surface, and controls your buoyancy underwater. The weights sink you and your BCD ‘floats’ you underwater, this is what we mean when we say ‘neutrally buoyant’, you are floating underwater. Your BCD must fit snugly for it to work properly.

Your BCD is attached to your tank with the backpack and a low-pressure inflator hose, so all you have to do is press the inflator button to inflate it, and press the deflate valve button to deflate it. To deflate your BCD you must be upright in the water with the deflate valve higher than the top of the BCD, so hold your inflator over your head and press the deflator button.

Things move much slower in the water than on land, so there is a delay when we move. This means you must inflate and deflate your BCD in small increments to avoid going up or dropping down too fast. We will operate it for you until you see how it works.

4. These are the bits n’ pieces, it seems like a lot to remember, but we are here to remind you, so you will have a safe comfortable experience. We can take care of everything, EXCEPT breathing, you must do that.
5. Water activity
  - a. Transfer from your wheelchair: Be sure to tell those assisting your transfer what method you use, and then have them explain what they intend to do before they assist you.
  - b. Assisted Transfer: ALWAYS instruct the assistants to use a two-person lift. It is safer for you and for those assisting you. One assistant will lift under the arms from the rear, while the other assistant lifts the legs from the front. Be certain to tell the assistants to lift your legs, not drag them, at the knee so your legs bend naturally over the assistants’ hands or arm.
  - c. Balance: ALWAYS tell those assisting you if you have poor balance, and make certain that the assistants understand that you must be securely balanced, have support, or are lying down BEFORE they let go of you.

- d. Point of Entry don Scuba: Make certain there is padding, such as an exercise mat or towel, over the edge of the pool to protect your skin. Transfer onto padded point of entry and don Scuba equipment. Lie down & don your weight belt first. Sit up and put your arms through the BCD shoulder straps, fasten and adjust the cummerbund, buckles and shoulder straps. Always don equipment at the point of entry.
- e. Assisted donning of Scuba: If you are receiving assistance donning your equipment be certain to instruct your assistances to lay you down to don your weight belt, then sit you up to don your Scuba unit. For assistance donning your face mask have your assistant hold the mask still so you can place your face onto it, and then pull the mask strap into place. A neoprene mask strap makes this procedure much more comfortable.
- f. Enter the Water: Put on your mask and inflate your BCD so that you float when you enter the water. Place the Regulator in your mouth and start breathing. Make a modified front roll into the water, twisting so you will land on your shoulder. Remember you have air in your mouth so you can breathe with your face in the water. If you need assistance your topside assistant will roll you gently into the water, holding on to your tank valve as long as possible, to an in-water assistant.
- g. Water activity: Turn onto your back. If you need assistance your in-water assistant will turn you onto your back. Then remove your regulator and check your equipment, adjust weights, BCD fit, and mask. Keep you regulator in your mouth until you are on your back, floating and *COMFORTABLE*.
- h. Breathe without a mask: At the surface take off your dive mask, place your regulator in your mouth and begin breathing, IN THROUGH YOUR MOUTH - OUT THROUGH YOUR NOSE, and gradually submerge your nose underwater while continuing to breathe. Now get your entire head underwater while continuing to breathe in through your mouth - out through your nose. Continue to breathe with your head underwater for 2 minutes.

Remember: When water enters our nostrils we have a biological response to stop breathing, and we know that we must breathe all the time, so this is a very important skill.
- i. Descend at the shallow end: Remember while you are diving, you can always come up, you are not trapped underwater - the surface is just a few seconds away.
- j. Recover and Clear your regulator: Underwater, RECOVER your regulator by reaching back with your right hand until you feel the bottom of your tank, then with a sweeping motion bring your hand to the surface. Your regulator will be hanging over your shoulder where you can easily recover it. CLEAR your regulator second stage by blowing through it. Note: You are going to change your breathing pattern. Start breathing IN THROUGH YOUR MOUTH - OUT THROUGH YOUR MOUTH; continue to practice this for 1 minute. This will keep your regulator clear of water, and your mask sealed to your face.

If you have right arm involvement you can use 'gravity' by getting into the prone position and roll slightly to left. Your regulator second stage will be hanging down and you can recover it with your left hand.

- k. Neutral buoyancy & swimming: Attain your neutral buoyancy - instructors will help you with this diving skill. We will then demonstrate how to swim using fins, breaststroke and sculling with your hands.
  - l. Sight impaired divers be sure to tell your assistant to use your name when addressing you, and to 'guide' you both at the surface and underwater. Be certain that they understand that 'pushing' you in the direction they want you to go is very disorienting.
  - m. Activities: Your instructor will direct these activities. After you become comfortable swimming underwater, go to the deep water and get into games such as turning somersaults and playing catch with underwater toys. This will teach you how objects and you move underwater.
  - n. Breathe from a free flowing regulator: On rare occasions regulators will free flow and the rush of air into your mouth can be disorienting. However it is easy to continue to breathe by controlling the rush of air into your mouth with your tongue and relax and let the overflow of air escape around your lips while continuing to breathe.
  - o. Share air stationary: using an octopus backup regulator as the receiver & donor of air.
  - p. Remove dive mask: while underwater and breathe on Scuba.
  - q. Ascend: Swim to the surface, either along the bottom to the shallow or swim to the surface in the deep end of the pool. DO NOT INFLATE YOUR BCD TO ASCEND, swim to the surface and when your head breaks the surface of the water inflate your BCD to attain positive buoyancy and *COMFORT* at the surface *BEFORE* removing your regulator.
  - r. Deep water Descent: Hold your Inflator over your head and let a little air out at a time and descend until you feel your hair floating on the surface, then exhale & you will descend slowly and be able to stop at any time by simply inhaling.
6. Exit the water:  
Remember for SCI & Amputee divers be sure sensitive tissue is protected by using padding, such as an exercise mat or towel, over the edge of the pool at the point of exit.
- a. Remove your weights - then Scuba unit. Exit the water, with assistance if necessary. SCI divers be certain your in-water assistant supports your legs during the exit.
  - b. Transfer to your wheelchair. Be sure to tell those assisting your transfer what method you use, and then have them explain what they intend to do before they assist you.
  - c. Assisted Transfer: ALWAYS instruct the assistants to use a two-person lift. It is safer for you and for those assisting you. One assistant will lift under the arms from the rear, while the other assistant lifts the legs from the front. Be certain to tell the assistants to lift your legs, not drag them, at the knee so your legs bend naturally over the assistants' hands or arm.



# HSA INTERNATIONAL

## MEDICAL HISTORY FORM

STUDENT'S NAME \_\_\_\_\_ BIRTH DATE \_\_\_\_/\_\_\_\_/\_\_\_\_  
FIRST MIDDLE LAST MONTH DAY YEAR  
ADDRESS \_\_\_\_\_  
CITY/STATE/PROVINCE \_\_\_\_\_ POSTAL CODE \_\_\_\_\_  
COUNTRY \_\_\_\_\_ TELEPHONE \_\_\_\_\_ EMAIL \_\_\_\_\_  
HEIGHT \_\_\_\_\_ WEIGHT \_\_\_\_\_ DISABILITY TYPE \_\_\_\_\_  
HSA INSTRUCTOR NAME \_\_\_\_\_ HSA INSTRUCTOR # \_\_\_\_\_

### Medical History Questionnaire

The purpose of this questionnaire is to determine if you should be examined by a doctor prior to participating in a diver-training course. A positive response to a question does not necessarily disqualify you; it simply means you must seek approval from a doctor before engaging in diving activities.

<input type="checkbox"/> Do you take prescription medication?	<input type="checkbox"/> Heart problems* _____
<input type="checkbox"/> Are you, or could you be, Pregnant?*	<input type="checkbox"/> Heart or blood vessel surgery
<input type="checkbox"/> Are you over 45 years of age?	<input type="checkbox"/> High blood pressure medication
<input type="checkbox"/> Asthma, or wheezing with exercise*	<input type="checkbox"/> Pulmonary embolus*
<input type="checkbox"/> Seizure disorder, epilepsy or convulsions*	<input type="checkbox"/> Bleeding problems _____
<input type="checkbox"/> Frequent colds, sinusitis or bronchitis	<input type="checkbox"/> Ulcers
<input type="checkbox"/> Severe hay fever or allergy	<input type="checkbox"/> Back problems _____
<input type="checkbox"/> Pneumothorax, collapsed lung*	<input type="checkbox"/> Back or spinal surgery
<input type="checkbox"/> Lung disease	<input type="checkbox"/> History of Surgery, description _____
<input type="checkbox"/> Chest surgery	_____
<input type="checkbox"/> Blackouts	<input type="checkbox"/> High blood pressure
<input type="checkbox"/> Diabetes	<input type="checkbox"/> Motion sickness
<input type="checkbox"/> Ear or sinus problems	<input type="checkbox"/> Head injury with loss of consciousness
<input type="checkbox"/> Recurring Headaches or Migraines	<input type="checkbox"/> Drug or alcohol treatment in past 5 years
<input type="checkbox"/> Decompression sickness or diving accident	<input type="checkbox"/> History of Tracheotomy, why? _____
<input type="checkbox"/> Behavioral health, mental or psychological (panic attacks, fear of open/ closed spaces)	<input type="checkbox"/> Physical disability (amputee, paraplegia, etc.)

### PHYSICIAN

This person has applied for training, or is currently certified to engage in the sport of Scuba Diving. Based on a physical examination, your opinion of the applicants Medical Fitness for scuba diving is requested.

Physician's impression:

I find no Medical conditions that I consider incompatible with Scuba Diving.  
 I am UNABLE to recommend this person for Scuba Diving.

Remarks \_\_\_\_\_

\_\_\_\_\_, M.D. Date of Medical Exam \_\_\_\_/\_\_\_\_/\_\_\_\_  
Physician's Signature

Physician Name \_\_\_\_\_ Telephone \_\_\_\_\_

Address \_\_\_\_\_, City \_\_\_\_\_, State \_\_\_\_\_ Zip \_\_\_\_\_

# HSA International

## COURSE REGISTRATION FORM

[ ] OPEN WATER [ ] ADVANCED [ ] DIVE BUDDY [ ] INSTRUCTOR [ ] OTHER \_\_\_\_\_

STUDENT'S NAME \_\_\_\_\_ BIRTH DATE \_\_\_\_/\_\_\_\_/\_\_\_\_  
FIRST MIDDLE LAST MONTH DAY YEAR

ADDRESS \_\_\_\_\_

CITY/STATE/PROVINCE \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

COUNTRY \_\_\_\_\_ TELEPHONE \_\_\_\_\_ EMAIL \_\_\_\_\_

HEIGHT \_\_\_\_\_ WEIGHT \_\_\_\_\_ DISABILITY TYPE \_\_\_\_\_

HSA INSTRUCTOR NAME \_\_\_\_\_ HSA INSTRUCTOR # \_\_\_\_\_

### LIABILITY RELEASE AND EXPRESS ASSUMPTION OF RISK

PLEASE READ CAREFULLY, ASK QUESTIONS IF NECESSARY, AND FILL IN ALL THE BLANKS BEFORE SIGNING.  
CAUTION: READ & SIGN 'INHERENT HAZARDS & RISKS OF DIVING ACTIVITIES' BEFORE SIGNING THIS FORM.

I, \_\_\_\_\_, herby affirm and acknowledge that I have been advised and thoroughly informed of the inherent hazards and risks of Snorkeling, Skin diving and Scuba Diving (hereinafter referred to as 'diving activities'). I fully understand that these risks can lead to severe injury and even death.

I understand that diving with compressed air involves risks of decompression sickness, embolism or other hyperbaric injuries that require treatment in a recompression chamber. I further understand that diving operations and open water diving trips, necessary for training and certification, may be conducted at sites that are remote by time and distance from a recompression chamber. Additionally, I understand that there are also risks involved with dive travel, including, but not limited to, dive boat accidents, and traveling to and from the dive sites. Nevertheless, I choose to proceed with such diving activities and I freely accept and expressly assume all risks, dangers and hazards that may arise from such diving activities which could result in injury, loss of life and property damage to me.

I understand and agree that my instructor (s) \_\_\_\_\_, the facility \_\_\_\_\_, others \_\_\_\_\_, nor the Handicapped Scuba Association, nor its affiliate and subsidiary corporations, nor any of their respective employees, officers, agents or assigns, and volunteers, (hereinafter referred to as 'Released Parties') may be held liable or responsible in any way for the injury, death, or other damages to me or my family, heirs, or assigns that may occur as a result of my participation in this diving course, snorkeling, skin diving and scuba diving activities, or as a result of the negligence of any party, including the Released Parties, whether passive or active.

In consideration of being allowed to enroll in this course, and to participate in snorkeling, skin diving and scuba diving activities, as well as the use of any facilities and the use of equipment, I hereby personally assume all risks in connection with said course and activities, for any harm, injury or damage that may befall me while I am enrolled as a student, including all risks connected therewith, whether foreseen or unforeseen.

I further save and hold harmless said course and Released Parties from any claim or lawsuit by me, my family, estate, heirs, or assigns, arising out of my enrollment and participation of this course including claims arising during or after the I receive my certification.

I also understand that snorkeling, skin diving and scuba diving are physically strenuous activities and that I will be exerting myself during this course, and that if I am injured as a result of, but not limited to, a heart attack, panic, or hyperventilation, that I expressly assume the risk of said injuries and that I will not hold the above stated listed individuals or companies responsible for the same.

I hereby declare that I am of legal age and competent to sign this agreement or, if not, that my parent or legal guardian shall sign on my behalf, and that my parent or legal guardian is in complete understanding and concurrence with this agreement.

I have read and understand this agreement, and agree to be bound by it.

Signature of Participant \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Witness Name \_\_\_\_\_ Signature \_\_\_\_\_

Name of Parent or Guardian \_\_\_\_\_ Signature \_\_\_\_\_

INHERENT HAZARDS & RISKS OF DIVING ACTIVITIES  
READ & SIGN BEFORE COMPLETING THE HSA LIABILITY RELEASE

To SCUBA DIVE safely you need to know a few basic rules & procedures that are very IMPORTANT because you are in and under the water, in the sun, around hard surfaces, and breathing compressed air. These safety rules and procedures will be covered in detail during your scuba-training course.

- a. Breathe: This is the first rule, and it is completely up to you. It is very easy, you just breathe all the time, but it is the MOST IMPORTANT thing you will have to do. If you hold your breath you can rupture your lungs, which is VERY SERIOUS! This is called an Air Embolism and it can cause very serious injuries, even death.
- b. Ears: Your ears may experience some pressure, or even hurt, when you descend underwater. This is normal, and you have probably already experienced this pressure in your ears if you have dove underwater, flown in an airplane, or driven in the mountains. You must 'equalize' this pressure, if you cannot it can cause damage to your ears & sinuses.
- c. Sun: Wear sunscreen, you will burn easier around water, even if it is overcast!
- d. Thermoregulation: Have water and shade available to avoid overheating.
- e. Protective clothing: Keep your legs and feet covered. The pool and openwater environments have hard and abrasive surfaces that can cause abrasions and tissue breakdown for people with reduced circulation (SCI and residual limbs).
- f. Dive Duration: Because you are breathing compressed air underwater your body fluids and tissues absorb more nitrogen than at sea level. This build-up of nitrogen can cause decompression sickness (DCS). DCS can result in from mild to very serious injuries, even death. To avoid this we have 'no decompression limits' set for the time one can spend at various depths, making it easy to avoid.
- g. Hard Surfaces: Place padding, such as an exercise mat or towel, on pool and boat deck surfaces, and on other hard surfaces, to protect the skin, if needed.
- h. Transfer from your wheelchair: Be sure to tell those assisting your transfer what method you use, and then have them explain what they intend to do before they assist you. Be sure to tell them if you have poor balance, and have them lift your legs (not drag them) at the knee, so that your legs bend naturally.
- i. Ascend: Swim slowly, 30 feet/minute, to the surface. Do NOT use a Buoyancy Control Device (BCD) to ascend, swim to the surface, when your head breaks the surface, inflate the BCD, and attain positive buoyancy and comfort at the surface BEFORE removing your regulator. Swimming too fast to the surface can cause an Air Embolism.
- j. Exit the water: Remove your weights, then Scuba unit. Be sure you have in-water and surface support. Exit the water, with assistance if necessary. Your in-water assistant will support your legs during the exit.
- k. Recompression Chamber: A recompression chamber is needed to treat various diving related injuries, primarily Decompression Sickness and Air Embolism.

Participant Name \_\_\_\_\_ Signature \_\_\_\_\_

Witness Name \_\_\_\_\_ Signature \_\_\_\_\_

Name of Parent or Guardian \_\_\_\_\_ Signature \_\_\_\_\_

Date \_\_\_\_/\_\_\_\_/\_\_\_\_