



THE SAFETY STOP

COJO's MONTHLY NEWSLETTER

On Location from: COJO Diving World Headquarters,
158 Garden Grove Road, Lincoln, NB, Canada

ISSUE 33

What's New

Welcome to the **October 2013** edition of The **COJO Diving Safety Stop Newsletter**.

September kicked off the COJO, PADI Dive Master course!! We had classroom from 9 to 13 September and have been working away at the water skills since. The new tribe is awesome and COJO can't wait to have you dive with the new dive professionals!!



COJO is pleased to have **DOC OCTO's** second article!! This one is about PFOs!! It promises to be informative for anyone that was ever wondering. This article talks about PFOs and if they play a part as well as just how big of a part they play in diving. Don't miss it!

September was Pirate month!!! COJO went to **Eastport Maine** for the **Eastport Pirate Festival** and their favorite pirate buddies, Diver Ed and Captain Evil as well as a ton of divers from COJO and Mike and Lynne Staggs from the League of Underwater Superheroes!!

Connie headed to **Les Escoumins** for an awesome dive trip!! She was joined by **Jerry Shine, Diver Ed, Captain Evil, Timur Kholodenko** for some of the best diving ever!! Joe was away with work playing with bears!! Not to fear though, he slept like a baby every night!!

COJO encourages you to send in your pictures for the **Photo Of The Month**. If your picture gets chosen, your picture and name will be published in the Safety Stop and you could win a coupon redeemable for merchandise or services at COJO Diving.

If you would like to stop receiving this newsletter please reply to this e mail with "Unsubscribe Me" in the Subject Line

Thanks and Safe Diving!!
Connie and Joe
COJO Diving



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Courses Completed During September

During **September**, COJO was working on the following courses:

- **PADI Dive Master Course**
- **COJO Discover SCUBA**
- **PADI Enriched Air Nitrox Course**
- **PADI Advanced Open Water Course**
- **COJO Drysuit Orientation**



Congratulations to **Mike MacKenzie** and **Karla Whitten** on completing their Enriched Air Nitrox and Advanced Open Water diver courses!!

Also, a very special congratulations to **COJO Divemaster Claire Leblanc** on completing the certification for **PADI Dive Master**!! Great job Claire!!





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Courses To Come

October is shaping up nicely!!! We are completing a PADI Open Water Diver Course, a **Rescue Diver Course** and a couple great events!! There is still time to get on the Rescue Diver course so don't miss out!!

- **4 to 6 Oct – PADI** Rescue Diver Course
- **TBD in November – DAN** Dive Emergency Management Program



Excursions During September

During September, Connie unfortunately had to travel without Joe. She headed to **Les Escoumins**, Quebec for some fantastic marine life diving with some fantastic divers!! She was joined there by **Jerry Shine, Diver Ed, Captain Evil, Timur Kholodenko** for an awesome weekend of totally crazy, COLD water diving!! Connie dove the marine park in **Les Escoumins** and had a total blast!! She completed **5 dives over two days!!** Awesome place **YOU NEED TO** come out on our next trip there!!



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EXCURSIONS TO COME

NEWFOUNDLAND 2014!!!

That's right, we are planning another trip to **Newfoundland** for July 20 to 27, 2014!!! If you have never been to Newfoundland and haven't been on these wrecks **now is the time!!** If you have been there, nothing more needs to be said!! It is **World Class Diving** and will be a **World Class Trip**.

We are still in the planning stages and we will need deposits quickly to get our spots but this will be the trip of a lifetime!! We will be offering several courses such as **Advanced Nitrox and Decompression Procedures**. Don't miss out!!

We have an information night scheduled for 7 October and as always if you are interested, send a note to info@cojodiving.com for details!!





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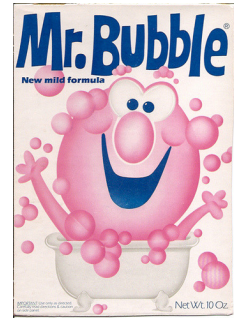
Ask Doc Octo...



Dear Doc Octo,

I'm a cautious diver with tons of experience and I've never had an episode of decompression sickness. Lately however, the other kids have been telling me that I should be checked to see if I have a PFO. They tell me that a PFO will increase my chance of decompression sickness. What is a PFO? Can I get a PFO from kissing a girl? If I do have one what are my risks for decompression sickness? If I did have a PFO should I get it fixed?

Signed Mr. Bubble.



Dear Mr. Bubble,

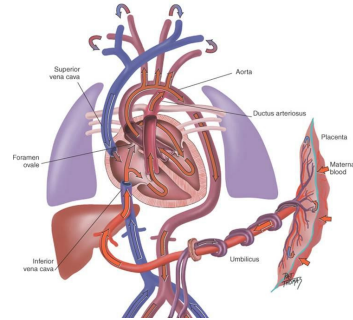
Wow, what an awesome and topical question. PFOs are a fascinating topic and a particularly important one for divers. A PFO is a common cardiac anomaly that increases your chance of serious decompression sickness up to 5 times. However, as you will see, the story is far more interesting and far less clear than just that. First let's discuss what a PFO is and then what the most recent data suggest about their detection and management. PFO is an abbreviation for patent foramen ovale, which is just doctor talk for "open oval hole". Its fun to use Latin. Did you know that the Latin phrase "ubi sub ubi", roughly translates as always wear underwear? A handy phrase indeed. While doctors love Latin, you would have to agree that it does sound more professional to say "Mr. Jones you have a patent foramen ovale" as opposed to "Mr. Jones you have an open oval hole". However, to understand what the foramen ovale is, it is necessary to take you back to the time after you were a "twinkle in your father's eye" and before you drew your first breath. As a fetus your circulatory system was significantly different then it is now. Most importantly for our discussions, gas exchange occurred not across your lung tissue but rather across the



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interface of the placenta and the uterus. Although you may have practiced breathing as a fetus, you were really just moving amniotic fluid in and out of your lungs. Just as an aside, a portion of amniotic fluid is your own urine (true fact). So in retrospect, getting a little squeamish about letting the dog kiss you seems just a bit disingenuous (to the dog at least). Be that as it may, as a fetus it was necessary for blood that was oxygen rich just returning from the placenta to bypass the lungs (which didn't work) and move over to the side of the heart that pumps oxygen rich blood to the body. Think of the foramen ovale as that door in the hotel room that connects to the next room. Remember, you wanted to turn the door knob to see if it was open, but were afraid that the people next door would see you and be creeped out. Ok, now, take a look at this simplified diagram of fetal circulation.



If you're thinking, "Wow, this reminds me of trying to get through Montreal on a Friday afternoon" you're right. The take home message is that the foramen ovale is a door that open one side of the heart to the other. Shortly after birth, once you draw your first breaths, heart chamber pressures change causing the door to shut. The significance of "shutting the door" is that the side of the heart that receives venous blood (coming back from the body) won't let blood leak across to the other side of the heart that pumps blood to the brain, organs, joints and muscles. Why is this important to divers? Well, it turns out that in many dives, even those with conservative profiles, gas bubbles are made on ascent. These bubbles are picked up by the veins and sent merrily off to the heart and from there to the lungs. You can even detect these bubbles with a portable ultrasound device as they pass through the heart. In a perfect world (and likely unknown to you) once in the lungs these gas bubbles are harmlessly removed by great pulmonary gas exchange and blood flow. Problem solved. But wait, what if something happened and bubbles could get around the great lung filter? In this case, bubbles would get pushed into the arterial circulation potentially blocking the flow of blood to the brain or spinal cord. In effect, the bubbles would cause a stroke. Hold on, it gets better. Turns out that patent foramen ovals are very common. In fact, estimates suggest that 30% of us didn't "shut the door" after switching from fetal to terrestrial circulation. Now as you might expect some foramen ovals are "more patent" than others. That is, in some of us the door is open a crack, in others wide open. You should also appreciate that not all DCS is caused by patent foramen ovals. The truth is you can get DCS with a closed foramen ovale, or have a patent ovale and never get DCS. This is where the math comes in. The risk of DCS is about 1 in 5,000 dives with a wide open foramen ovale and about 1 in 30,000 with a closed foramen



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ovale. Lets put those numbers in perspective. The risk of dying from drowning is about 1 in 1100, of getting killed while on a bicycle is about 1 in 5,000 and of being struck by lightning anytime in your life is about 1 in 3000. So, I think you get the picture, DCS is relatively rare. Don't get me wrong, dumb is common, but true DCS is relatively uncommon. Who should be checked for a PFO? Well, if you have unprovoked DCS with brain, spinal cord, skin or inner ear involvement you might consider it. But remember there is already a 30% chance you will have a PFO. Maybe it caused the event and maybe it didn't. In very small trials those with repaired PFOs seemed to have less frequent episodes of DCS. But again, the events of DCS are rare so its hard to know (or get trials big enough to find out). The repair of a PFO is not an innocent exercise either. For example, the risk of stroke during surgery to repair a PFO is 1 in 1,000. That is at about 5 times the risk of getting DCS with a wide open foramen ovale in the first place! Not only does the repair of PFO carry high operative risks, but one estimate is that 10% of those with PFO repairs will develop heart valve problems within a year. Maybe the answer would be that those who have DCS (especially with neurologic events) likely caused by widely patent PFOs should modify their dive practices or give up diving. These are two basic truths; PFOs are common and DCS is not. Risks from the repair of a PFO may be worse than what you are trying to prevent. In summary, dive conservative profiles, and know the numbers before you choose surgical correction of any problem.

Next Week Doc Octo answers the burning question: How fit do I have to be to dive?

Acknowledgments: The discussion of PFO treatment risks and benefits was largely stolen from previously published data (available on request) and information presented by Dr. Simon Mitchell at the DAN 73rd Diving and Hyperbaric Medicine course presented this May.





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October's Featured Course

DAN Diving Emergency Management Provider

A dive emergency is rarely a single event. More often than not, many separate small problems compound to create a much larger emergency.

The **DAN DEMP** program integrates the knowledge and skills from several **DAN** training programs into a single course — at a significant time savings without sacrificing any skills.

After completing the skill and knowledge development portions of this program, the students then bring everything together in a composite scenario.

The **DEMP** course is taught over 2 days and will be taught one weekend in November. The date is yet to be determined but don't miss out, sign up now!!



ONLY \$299.00!!!!



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OCTOBER'S FEATURED PRODUCTS

XS SCUBA Transfill Whip!!

This piece of gear is a must for any diver who wants to equalize tanks. With this whip, a diver can rent High Pressure, SUPER LARGE capacity tanks with any mix and trans fill their favorite tanks for diving without having to ever carry the large ones!! It is absolutely awesome!!

For Sidemounters you can equalize your tanks before a dive to ensure you stay well within your safe gas planning rules!!



ONE WHIP DOES BOTH DIN AND YOKE!!

ONLY \$190.00!!



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Photo of the Month

For October, COJO's own **Connie Bishop** is the winner of the Photo of the Month. This cute picture was taken by Connie at Les Escoumins during the September expedition that she went on without Joe. The main reason for the clarity of the picture is that without Joe there, no one was scraping along the bottom wrecking the vis!! Great shot Connie!! For her awesome picture, Connie wins a free pepperoni pizza and a new cordless drill!!



Keep sending in those pictures!!



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Other News

Congratulations again to **Mike Murphy** on winning the **COJO** Prize for most **REEF** Surveys in New Brunswick for July 2013 handed in!! Mike won the autographed picture by **Andrew Martinez**!!! GREAT JOB MIKE!!!



Our book "**Sidemounting for the Recreational Diver**" is available online or in our store. We kept the costs low and there are some fantastic lessons in it for all divers, not just Sidemounters.



We would love for you to follow us on Facebook. Become a friend of COJO Diving at <http://www.facebook.com/COJODiving>

Come in and visit us at the **COJO Diving World Headquarters!!** We have a beautiful facility with a nice fireplace to sit and warm up at after a cold day of diving. There is always lots of coffee and hot chocolate and Joe usually has fresh popcorn on!!

Thanks!!

Looking forward to diving with you soon!!

Connie and Joe!!