



THE SAFETY STOP

COJO's MONTHLY NEWSLETTER

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

ISSUE 43

What's New

Hello and welcome to the **Aug 2014** edition of The **COJO Diving Safety Stop Newsletter**.

July turned into travel month!! It was a fantastic adventure from **Ontario to Newfoundland** and everywhere along the way!! COJO also hosted author and photographer, **Jerry Shine** for an awesome seminar on **Nudibranchs!!**

During June, COJO still managed to run several courses such as the **DAN Oxygen Provider's Course**, **DAN DEMP Course**, **IANTD Advanced Recreational Trimix**, **PADI**

Enriched Air Nitrox and **PADI Advanced Open Water Diver course!!**

Doc Octo was busy diving wrecks this month and could not get a column written so COJO asked him if they could print a re-run for the month since everyone loves his work!! This month's column will be on **Patent Foramen Ovale!!**

COJO is going to lay off the guests for a while because the weather is just too awesome for diving but may start back up in the winter if people are interested!!

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 During July

The summer has been **crazy busy** so far!! Even with **3 weeks worth of excursions** this month, COJO managed the following courses:

- **DAN** – **DEMP Course**
- **IANTD** – **Advanced Recreational Trimix**
- **DAN** – **Emergency Oxygen for Diving**
- **SDI** – **Open Water Instructor Requal**
- **PADI** – **Computer Enriched Air Nitrox**
- **PADI** – **Advanced Open Water**



Photo Credit © Connie Bishop 2014

Courses To Come

During **August**, we will be running the following courses.

- 1 to 2 Aug – **PADI** Advanced Open Water checkout dives
- 3 to 4 Aug – **PADI** Open Water checkout dives
- 7 to 11 Aug – **TDI** Technical Sidemount Diver / Intro to Technical Diving
- 9 Aug 14 – **DAN** Basic Life Support
- 12 Aug 14 – **COJO** Pro Review (Dive Master and Up)
- 17 Aug 14 – **COJO** Discover Diving for Children at Tara Manor, St Andrews
- 19 Aug 14 – **DAN** Basic Life Support
- 20 Aug 14 – **DAN** Emergency Oxygen for Diving Emergencies

We are also getting ready to run the **PADI Dive Master** course starting in **September**. If you would like more information on this, or any, course please email us at cojodiving@gmail.com!!



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Excursions During July

July was absolutely **crazy with travel!!** Joe went to Halifax from 7 to 12 July with work to complete a **Dive Exercise** at the **Royal Canadian Navy, Fleet Diving Unit – Atlantic**. During that exercise, Joe participated in a ton of awesome underwater tasks. He also found time to teach a **DAN DEMP** course in Halifax and finish off an **IANTD Advanced Recreational Trimix** course while there!! Great Job to **Alisha Perron, Joey Postma** and **Zach Johnson** on completing their respective courses!!! Woo Hoo!!

ON the 12th, Joe passed through Fredericton, managed to fill a few tanks, switch to warm-weather underwear and went to **Windsor Ontario** to visit his **Super Son** and **Delightful Daughter!!** They are the two most awesome kids in the world!!



On the way **through, he stopped in Brockville, Ontario for a dive on the Robert Gaskin**. Special Thanks to **Michelle Lucking** and the **Great Lakes Tech Divers** group for the online info to help Joe find his way to Pentine Park where he could hop in!!



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On the 16th, Joe said goodbye to his kids and made his way back to **COJO** and **Connie**!! From there, they loaded the van and moved on to **Cape Breton** to board the **Argentia Ferry for Newfoundland**!!

Once in Newfoundland, COJO hooked up with **Ocean Quest** for the week. They managed **18 dives** throughout the week with **11 wreck dives** and an additional **7 dives of different sites** around the Conception Bay South area!! What an awesome experience. **Ocean Quest** is an absolutely **First-Rate** resort with everything a diver could need or want!!



Photo Credit © Greg Best 2014

Thanks very much to Rick, Debbie and the crew at Ocean Quest!!

While there, **Doc Octo** completed his **200th dive**!! **Woo Hoo**!!
Congratulations Doc Octo!!



Doc Octo after his 200th Dive!!

Photo Credit © Greg Best 2014



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EXCURSIONS TO COME

COJO and the Cubs go to Tara Manor!!

That's right!! On 16 August, members of the **COJO team** are meeting up at the **Tara Manor Inn**, in beautiful St Andrews New Brunswick with the **2nd Hanwell Cub Scout Troop** for an awesome day and night of **Discover Diving** in the Tara's beautiful pool!!! This is going to be an awesome trip!! To top it all off, on the 17th **COJO** will be there to run **Discover Diving** for anyone from the area or that happens to be in the area and would like to try diving in a safe environment for \$25 per person!! **Don't miss out!!** If you are interested in diving and want to give it a shot, come to the **TARA Manor Inn!!**





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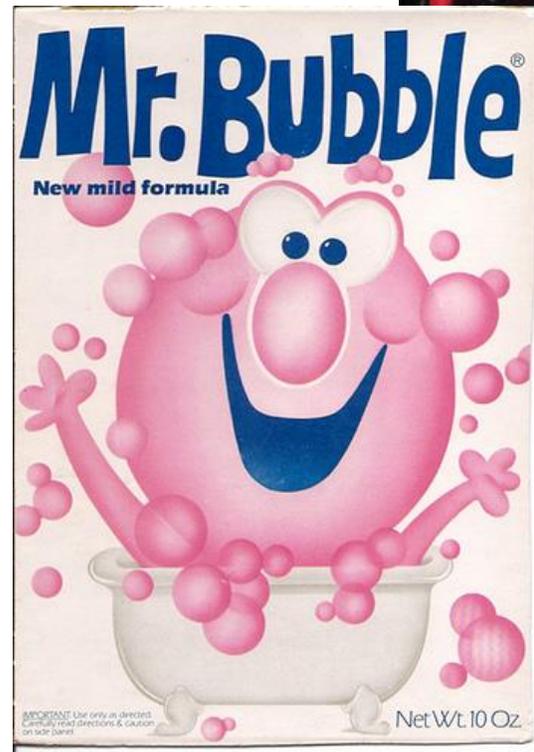
ASK DOC OCTO...



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



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occurred not across your lung tissue but rather across the 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 ovale. Let's 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,



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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.



Photo Credit © Greg Best 2014



Photo Credit © Connie Bishop 2014



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August's Featured Course

Divers Alert Network

Basic Life Support / Emergency Oxygen for SCUBA Diving Injuries Course



Basic Life Support: CPR and First Aid

The DAN Basic Life Support: CPR and First Aid (BLS: CPR&FA) course offers entry-level training in providing basic life support to adults with life-threatening injuries while activating emergency medical services.

This program meets 2010 International Liaison Committee on Resuscitation and American Heart Association guidelines on Cardiopulmonary Resuscitation and Emergency Cardiac Care.



Emergency Oxygen for Scuba Diving Injuries

The DAN Emergency Oxygen for Scuba Diving Injuries course is designed to train and educate interested individuals in the techniques of using oxygen as first aid for a suspected dive injury. In addition, this course will introduce the fundamentals of recognizing diving injury warning signs, response and management. This program also provides an excellent opportunity for experienced divers and instructors to continue their education.

Course Cost:

\$99.00+HST each course

--- or ---

**\$168.30 + HST for both together
(August Only)!!!**



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JULY'S FEATURED PRODUCTS

Hollis

F1 "BAT FINS"

POWER WITHOUT COMPROMISE... The Hollis fin blends graceful movement, power and bulletproof construction. Meet the new standard in diving. Now shipping in standard black or with yellow tip for High Visibility!!



~~\$240.00~~ **\$216.00**



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Photo of the Month

This photo was taken by **Connie Bishop** in July on the **Bell Island Wreck** of the **Saganaga**. This is a picture of Joe and the Resident Lumpfish posing together. This baby has been there for years!!

Awesome picture Connie!!

For this great photo, Connie has one **two free movie passes** to see **The Lego Movie!!** (Joe's Favorite!!)

Great Job Connie!!



Keep sending in those pictures!!



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Other News

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

Our book "Sidemounting for the Recreational Diver" is available either In Store or by e-mail. For information about the most awesome way to dive send a note to info@cojodiving.com !!



Congratulations to "Doc Octo" John Prendergast on completing his 200th Safe Dive!!! Great Job John!!!

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 and we are looking forward to diving with you soon!!

Connie and Joe!!