

2023 MONTHLY HBOT WEBINAR

TOPIC: Barotrauma

Presenter: CHI Health

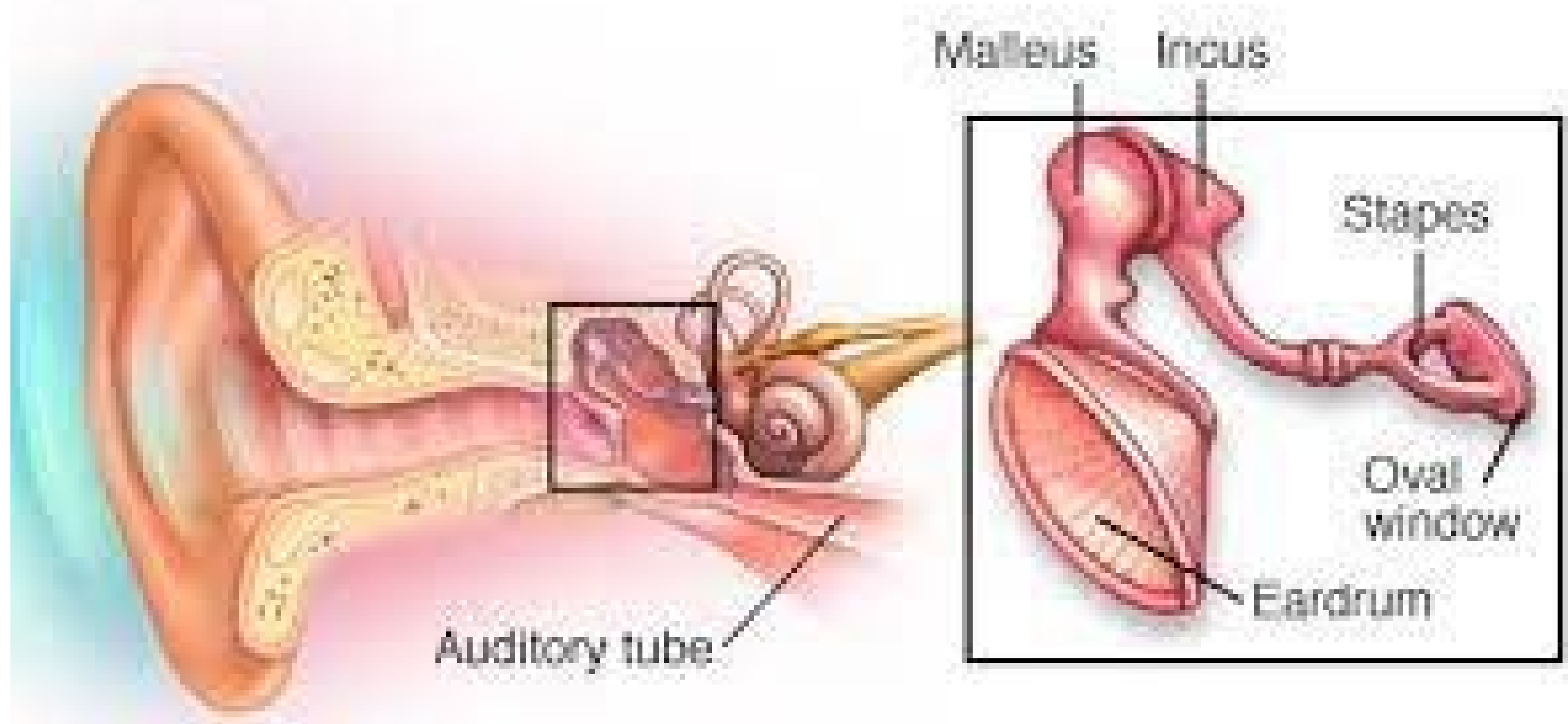
the ears

The inner ear is made up of 3 small bones that help transmit sound.

- Hammer - attached to the eardrum.
- Anvil - Which in the middle of the chain of bones.
- Stirrup - attached to the oval window (membrane covered opening) that connects the middle ear to the outer ear.

The middle ear is connected to the back of your nose and upper throat through the auditory canal, that opens and closes to equalize pressure differences.





© MOOD FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH. ALL RIGHTS RESERVED.

What is barotrauma?

Physical damage of the ear tissue on the inside of the ear. Caused by the auditory tube not being able to open and close under a certain pressure properly, resulting in damage to the eardrum.



causes

Any pressure difference of the inside of the ear and the outside of the ear's environment.

- Scuba Diving
- Airplane travel
- Hyperbaric therapy
- Explosive blast



symptoms

- Ear pain
- Odd feeling of un-normal pressure
- Dizziness
- Hearing loss
- Bleeding from the ear
- Ringing in the ear
- Some pain in the face



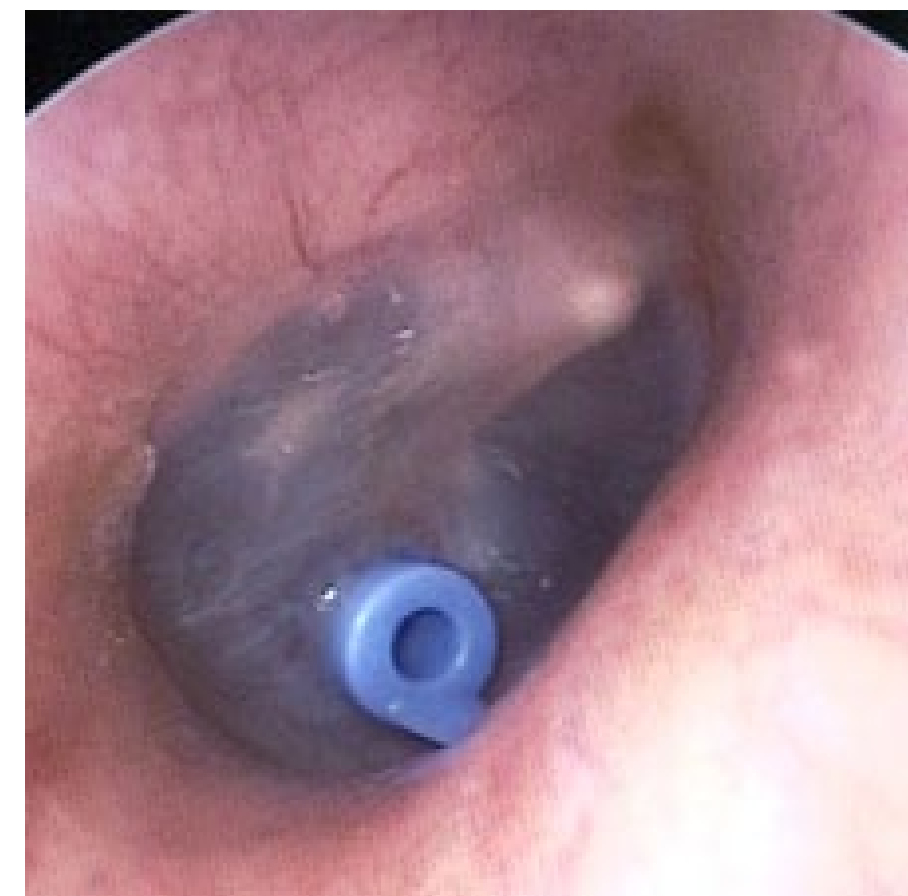
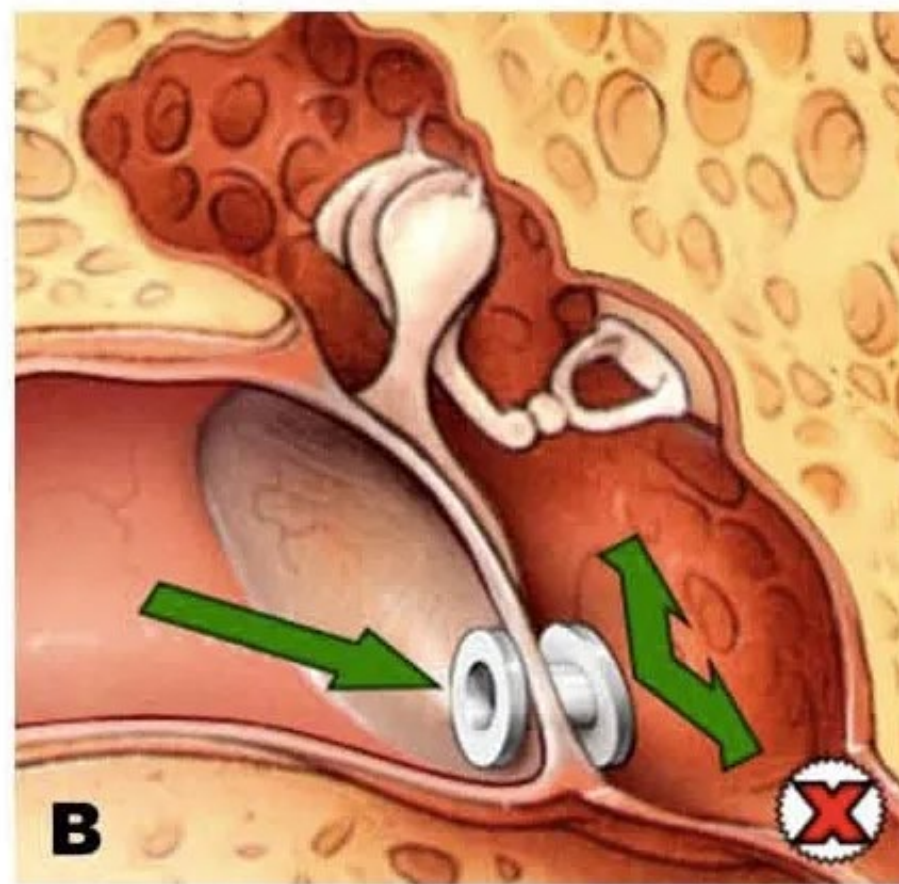
diagnoses and treatments

Going to the ENT to do a historic medical review, physical exam, and hearing and balancing test.

Most ENTs will place tubes by making a small incision of the inner ear to ensure there is no more problems in the future. (also called myringotomy tubes or tympanostomy tubes)



Tubes through an otoscope



Barotrauma in hyperbarics.

Because of the pressurization in hyperbarics, barotrauma is very common. If this does not get resolved in a patient's first few dives they can end up having hearing loss, nausea, vomiting and may no longer want to proceed in hyperbarics.

We can prevent barotrauma in hyperbarics by assessing the tield of the ears before the dives, pressurizing/depressurizing the patient **SLOWLY** and education them on clearing their ears.



Other types of barotrauma

Any trapped air space is subject to barotrauma.

- Sinus cavities
- Pleural space (pneumothorax, is the result of pulmonary barotrauma)
- Tooth squeeze

Teed classification of aerotitis media

Grade	Otological signs
0	Subjective symptoms. No otological signs
1	Tympanic membrane diffuse redness and retraction
2	Slight haemorrhage and retraction
3	Gross haemorrhage and retraction of the membrane
4	Free blood or fluid in the middle ear
5	Perforation of the tympanic membrane



serena group rule

3 tries and you're out!

Patient can slowly be placed under pressure and try to clear their ears 3 times. If they cannot, usually they will have to see the ENT.



QUIZZ



question 1



Physical damage of the ear tissue on the inside of the ear,
caused by the auditory tube not being able to open and close
properly resulting in damage to the eardrum defines

-----.

Answer 1



Ear barotrauma

Question 2



True or false?

If a patient is having ear pain, you should continue to pressurize them.

Answer 2



False - lower the pressure and walk them through clearing their ears, by attempting the equalizing techniques. If they can't clear their ears, bring them out and assess the next steps. If they do clear their ears, repressurize. You can do this 3 times.



THANK
YOU



Next Month



April Hyperbaric Safety Webinar



Topic: To Dive or NOT To Dive



Presenter: Henry Ford



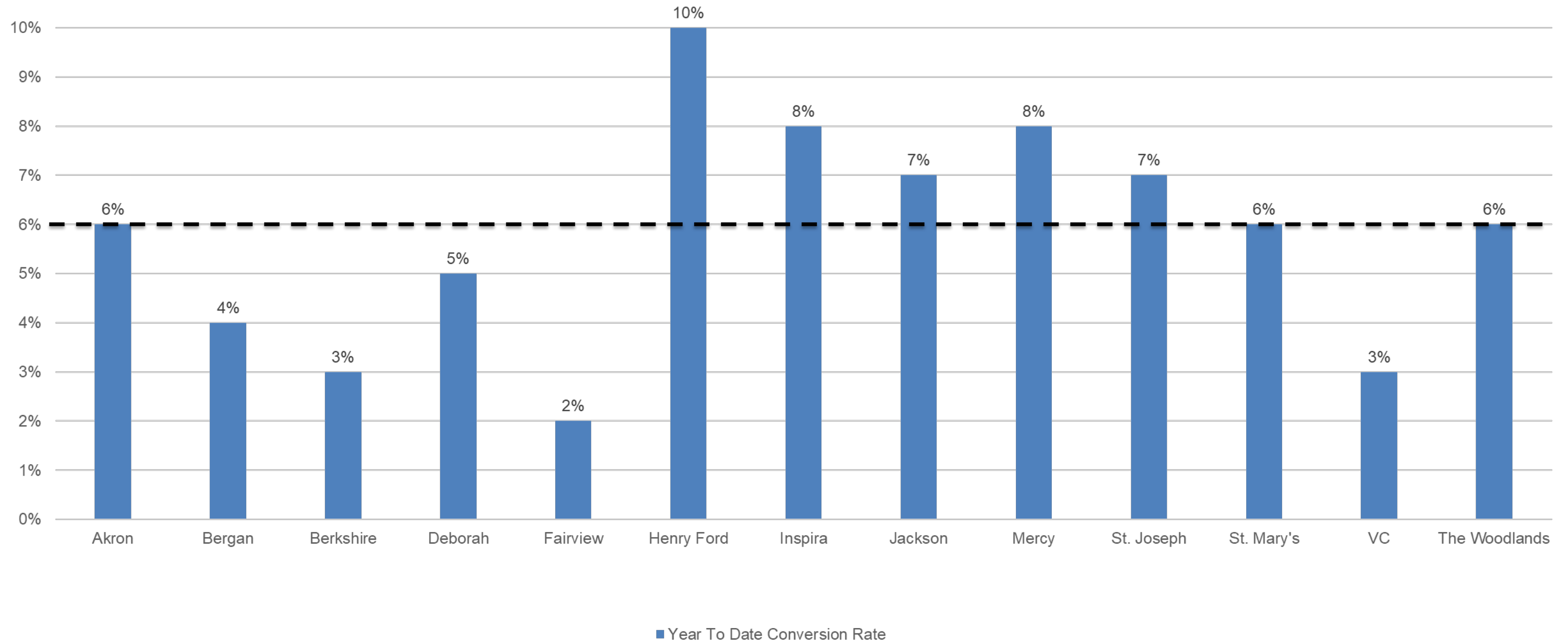
Date: 4/18/2023, 12 pm est.



Round Table



Conversion Rates (rolling 12 months)



February 2023 Total Dives

