# The 12 Most Common Diving Injuries — And How to Avoid Them



**By Gil Zeimer** 



Raise Your Hand: Divers?
Snorkelers?
Want to Get Certified?

#### Overview: This presentation is on Zeimer.com

Share my background and qualifications

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- Discuss these injuries and show examples

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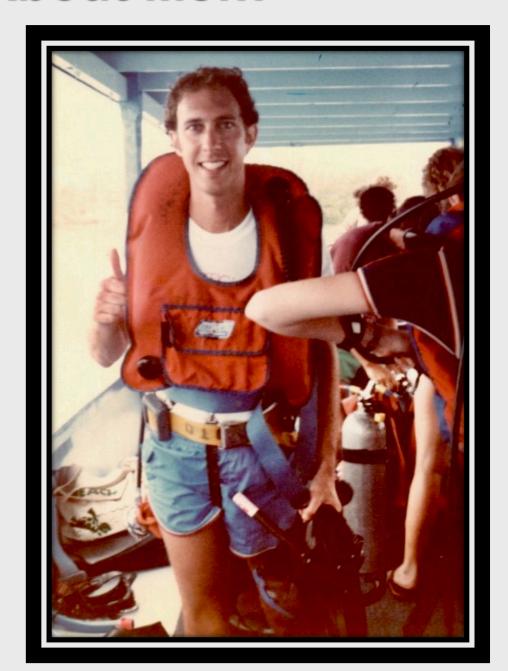
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- Share my background and qualifications
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- Answer questions and provide a link
- Everyone here will learn something today
- Something you learn may save your life

1981:
Grand Cayman,
Resort Course

Viz: 150-200'
Water Temp 82°



1985:
PADI
Certification,
Granbury, TX

Viz: Silty, 2-10'
Water Temp 60°



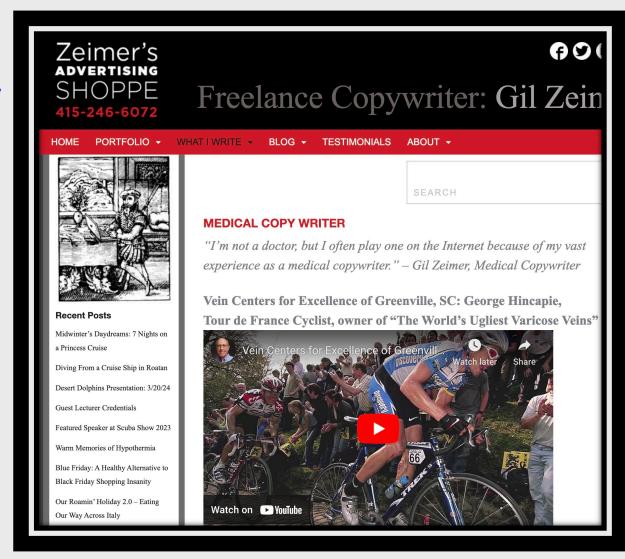
Mostly a warm water diver ever since



Mixed marriage; live in San Rafael; daughter in D.C.

#### My credentials:

- Scuba diver for over 40 years
- Healthcare/ medical writer for 30+ years
- 2x skin cancer survivor
- Life-long hypochondriac



>225 scuba articles, blogs, and newsletters

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#1: Sunburn – Most prevalent / most preventable
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- #2: Stings, Bites, and Scrapes
- **#3: Bruised Toes**
- #4: Bruised Legs
- #5: Lower Back Pain
- #6: Sore Ribs
- #7: TMJ
- **#8: Sinus Barotrauma**
- #9: Mask/Nose Squeeze
- #10: Broken Eye Blood Vessels
- #11: Nitrogen Narcosis ("Rapture of The Deep")
- #12: "The Bends" (Decompression Sickness/DCS)
- I've experienced 11 of 12 per "The 100-Dives Rule"

# The 12 Most Common Diving Injuries: #1: Sun Burn



When U/V radiation is absorbed, it raises your risk of skin cancer

## The 12 Most Common Diving Injuries: #1: Sun Burn

#### **Skin Cancer**

- World's most-preventable & commonly diagnosed cancer
- American Cancer Society:
   More than 9,500 people are diagnosed daily in the U.S.
- 1 in 5 Americans will develop it by age 70
- > 2 people die of skin cancer in U.S. every hour
- Having <u>5 > sunburns</u> doubles your risk of melanoma
- You can get a sunburn in less than 15 minutes

### Basal Cell Carcinoma

- Spreads slowly as pigment-producing cells become cancerous
- Can continue to grow and cause significant destruction



Can be fatal if not treated with Mohs surgery

**Photos: SkinCancer.org** 

#### Melanoma

- 100,000 cases diagnosed annually in the U.S. become cancerous
- Symptoms: New, unusual growth or change in a mole
- Spreads rapidly; related to most skin cancer deaths



The borders of an early melanoma tend to be uneven. The edges may be scalloped or notched.



Having a mole with a variety of colors is a melanoma warning sign



Melanoma evolved and grew outward, upward and inward in a matter of months.



Acral lentiginous melanoma

**Photos: SkinCancer.org** 

### #1: Sun Burn

#### **DAN Alert Diver: 2001**

Lede:

"Besides rising each day, the sun brings its warmth, light — and burning rays — to us."

#### The Sun Also Burns Besides Rising Each Day, the Sun Brings Its Warmth, Light — and Burning Rays — to Us responsible for photodrug eruptions and for exacerbating photosensitive diseases like herpes simplex solar urticaria, polymorphous light eruption and discoid and systemic lupus (see story on lupus, Page 7), among others. A sunscreen's ability to protect against FIVR is lenown as its Son Protection. Factor (SPF), defined as the ratio between the time it takes your skino burn versus how long it takes after applying sunscreen. An SPF of 15 provides 15 times the amount of protection you'd get without using any protection. For example, if your skin reddens after 10 minutes in the sun, your SPF 15 sunscreen would allow you to remain 150 minutes in the sun before burning. For UVA, the degree of protection is defined as the Phototoxic Protective or redhead, you have a two to four Factor, or PPE These values are lower times higher risk of developing skin Barbecurd ribs. Braised shoulders. Baked because the energy contained in UVA legs. These sound like summer grilling choices, but they're really describing. The good news is that 90 percent the effects of the sun on your skin of all skin cancers can be cured if Divers Do It In the Sun - if you don't take procautions with they're detected and treated in time. Because divers are often exposed to the sunscreens and protective clothing. The better news is that lathering on sun for hours at a time while on dive sunscreen, wearing a hat and dorning boats, knyaks, and other non-shaded

Skin cancer is something that all

divers should think about. As the most

the proper clothing can help prevent craft, here are some helpful tips:

. Use a sumblock with a sun protection.

a 30 to 50 SPF will protect you better,

longer --- especially if you choose one

that's sweatproof and waterproof.

skin cancer and sunburns.

50 percent of Americans who live the "sunburn spectrum." Recently

to age 65 will develop skin cancer they've recognized the additive role of

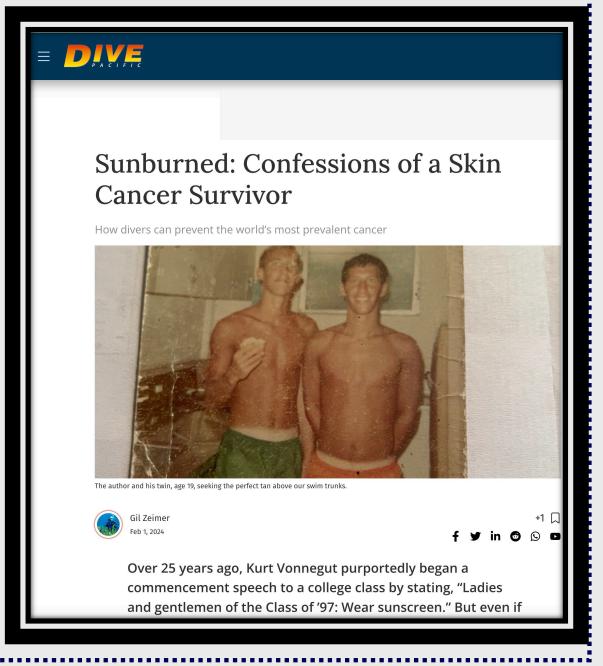
at least conce. And if you're a blonde. longer-wave ultraviolet A (UVA) 1275.

prevalent type of cancer, it will attack one of every seven people annually across the USA. The National Cancer protect the skin against the range of rays known as ultraviolet B (UVB). going to a pool, a beach or on a boat,

### #1: Sun Burn

### Dive Pacific NZ: 2024

Lede: "Over 25 years ago, Kurt Vonnegut purportedly began a commencement speech by stating, "Wear sunscreen."



#### **Prevention Tips:**

- Always wear a broadbrimmed hat, sunglasses, high SPF sunscreen (30-50+), rash guard/dive skin
- "Slip, Slop, Slap"
- Apply s/s every two hours
- Wear RSS on face: it won't fog your mask
- See dermatologist 2x/yr.
- Call if you have questions about a mole, itching, etc.



**Prevention Tips: Reef Safe Sunscreens:** 

https://savethereef.org/about-reef-save-sunscreen.html



**Prevention Tips: "4 Best Sunscreens of 2024"** 

https://www.nytimes.com/wirecutter/reviews/best-sunscreen/



Article updated 4/25/2024

### All kinds of stuff can hurt you:

- Fire Coral, Hydroids, Seaweed
- Lionfish, Scorpionfish, Stonefish
- Jellyfish, Portuguese
   Man 'O War
- Stingrays (Steve Irwin)
- Sea Urchins
- Sponges
- Electric Eels & Sea Snakes
- Mosquitos, No-See-Ums, and Sand Jiggers





DivePacific.co.nz May 6, 2024 article: "I was photographing a nudibranch and decided to adjust my right-hand strobe. I touched a coral with a small part of my middle finger. The pain was instant and intense."





**Jellyfish** 

**Stings** 

#### **Prevention Tips:**

- Don't touch anything
- Wear dive skin, full-length wetsuit, and neoprene cap
- Immerse in hot water
- Call DAN or a doctor
- Ask about antibiotics, antiseptic cream, and anti-inflammatories



# The 12 Most Common Diving Injuries: #3: Bruised Toes & Heels from Fin Chafing





# The 12 Most Common Diving Injuries: #3: Bruised Toes & Heels from Fin Chafing

- Each of your feet contain about 8,000 nerve endings
- They are more sensitive to pain than any other part of your body
- Each kick causes excruciating pain



# The 12 Most Common Diving Injuries: #3: Bruised Toes & Heels from Fin Chafing

### **Prevention Tips:**

- Wear dive booties or thick socks with reinforced toes/heels
- Apply Neosporin
   2x daily after diving
   & Band-Aids to
   promote healing



# The 12 Most Common Diving Injuries: #4: Bruised Legs from Giant Strides

- This can happen once in a while
- Feels like a hard slap
- Heals rather quickly



# The 12 Most Common Diving Injuries: #4: Bruised Legs From Giant Strides

#### **Prevention Tips:**

- Wear a dive skin or a wetsuit every time you jump off a boat
- Practice giant strides from poolside or dock
- Scissors-kick <u>hard</u>
   when hitting the water
   to remain afloat



# The 12 Most Common Diving Injuries: #5: Lower Back Pain from Tank and Weights

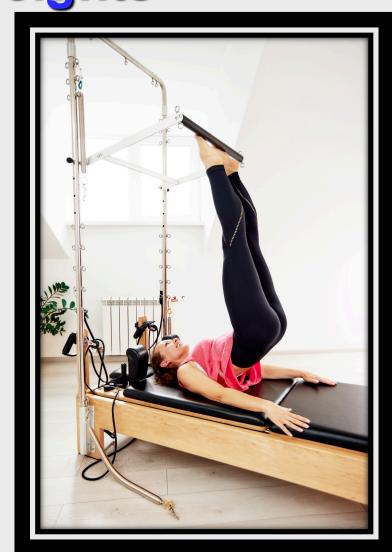
 If you can't easily walk with 40-50 lbs. of BCD, tank and weights, it could be a sign of acute back problems



# The 12 Most Common Diving Injuries: #5: Lower Back Pain from Tank and Weights

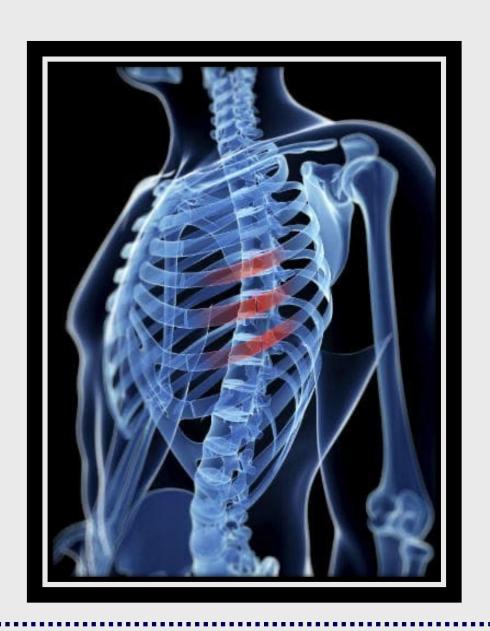
### **Prevention Tips:**

- Make sure your
   BCD is tight, but not too tight to prevent
- Do stretching exercises
- Strengthen your core with Pilates
- See a Chiropractor for treatment



## The 12 Most Common Diving Injuries: #6: Sore Ribs from Your BCD

- When BCD is too tight & fully inflated, it can cause problems like trouble breathing
- It can also cause bruising



## The 12 Most Common Diving Injuries: #6: Sore Ribs from Your BCD

### **Prevention Tips:**

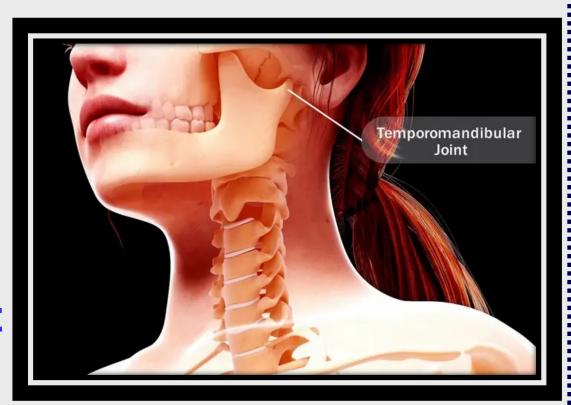
- Make sure your chest harnesses and waist Velcro are tight, but not too tight
- Take deep breaths on boat or shore before diving to test BCD fit



# The 12 Most Common Diving Injuries: #7: Temporomandibular Joint Pain

#### TMJ is caused by:

- Grinding teeth
- Arthritis
- Dislocation of the disk between jawbone & socket
- Chewing gum
- Excessive stress
- Clenching your jaws too tightly when diving



#### The 12 Most Common Diving Injuries: #7: TMJ

#### **Prevention Tips:**

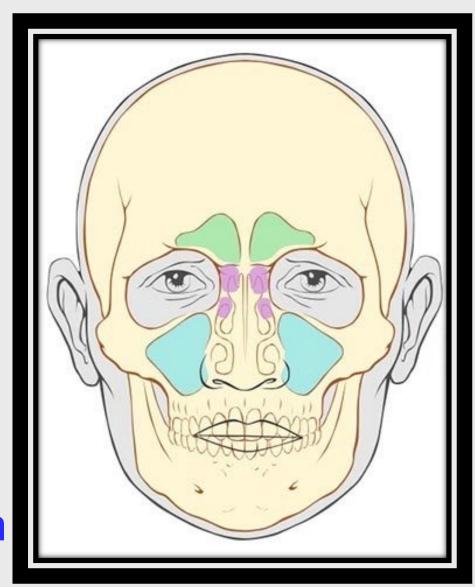
- Don't eat anything bigger than your mouth
- Chew on both sides
- Relax your jaws when diving
- Get massage therapy
- Try jaw-stretching exercises
- Buy a smaller mouthpiece





#### The 12 Most Common Diving Injuries: #8: Sinus Barotrauma

- Common problem with sinuses (can't clear or equalize)
- Symptoms: ear pain, ringing, ear bleeding, dizziness, and sometimes hearing loss
- Often short-term;
   some symptoms
   like a broken eardrum
   don't go away



#### The 12 Most Common Diving Injuries: #8: Sinus Barotrauma

#### **Prevention Tips:**

- If your ears aren't clearing when descending, rise a few feet...
- Hold your nose and blow gently or yawn with each breath
- Then slowly descend
- Be patient throughout your descent



#### The 12 Most Common Diving Injuries: #8: Sinus Barotrauma

**Prevention Tips: Barotrauma Prevention Kit** 



Nasal sprays, ear drops, sinus rinse, nasal inhaler, Sudafed (Pseudoephedrine HCI 30mg), and throat lozenges.

# The 12 Most Common Diving Injuries: #9: Mask / Nose Squeeze

- Mask: When you don't properly equalize air space in your mask
- A facial barotrauma
- Two weeks to resolve
- Nose: Pain & inflammation from sinus membranes from pressure



# The 12 Most Common Diving Injuries: #9: Mask / Nose Squeeze

#### **Prevention Tips:**

 For both: Hold nose and gently exhale or yawn to relieve any pressure on every breath



 Mask should be tight enough to stay on without straps when you inhale; blow small amounts of air through nose to equalize

### The 12 Most Common Diving Injuries: #10: Broken Blood Vessels in Eyes

- Capillaries can burst from a mask squeeze or from rubbing your eyes



# The 12 Most Common Diving Injuries: #10: Broken Blood Vessels in Eyes

#### **Prevention Tips:**

- Apply cool compresses to eyes to relieve swelling, pain, and dryness
- Don't rub your eyes if they itch
  - use soothing eye drops



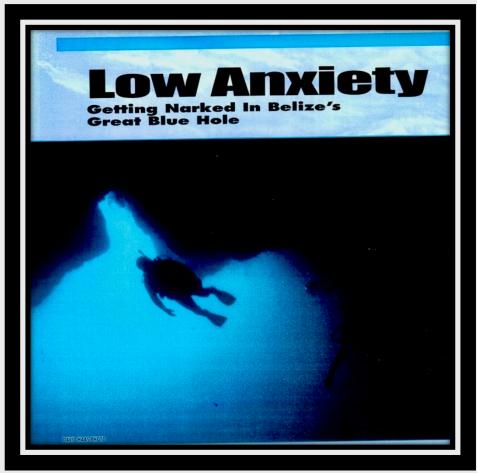
The National Institute of Health definition: "Nitrogen narcosis is a change in consciousness, neuromuscular function, and behavior brought on by breathing compressed inert gasses... It can be fatal... It is also known as inert gas narcosis, rapture of the deep, and the Martini Effect."



Alert Diver: 6/2001

Lede: "What's round, midnight blue, 1,000 feet wide, and over 400 feet deep?"

"The Great Blue Hole of Belize, one of the world's foremost dive destinations. This is a spectacular underwater cavern where I got 'narked', ran out of air, and broke my watch 130 feet below the warm Caribbean surface."



Excerpt from my Alert Diver: 6/2001 "On three occasions at 130 feet in the GBH, I raised my wrist towards my face to read my minute hand. It first read 10 minutes past the hour, then five minutes before, then 20 past. My watch was broken, but I did not realize it at the time because I was experiencing nitrogen narcosis.

"Being 'narked' gave me a slightly wobbly feeling. My thinking processes were hazy. Then, I started running out of air..."

#### **Prevention Tips:**

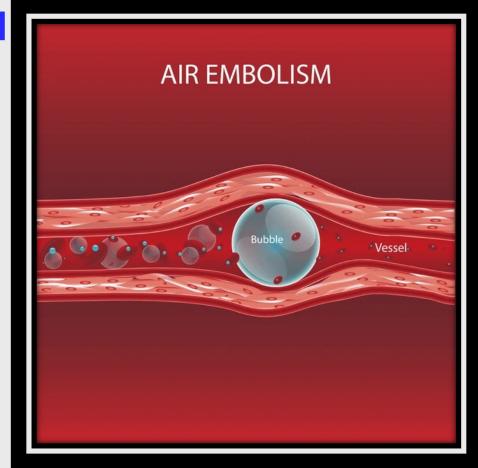
- You may feel slightly drunk or not thinking clearly
- Follow your computer
- Ascend slowly to decompress for a 5- to 10-minute safety stop to eliminate nitrogen from your bloodstream



# The 12 Most Common Diving Injuries: #12: "The Bends" (Decompression Sickness)

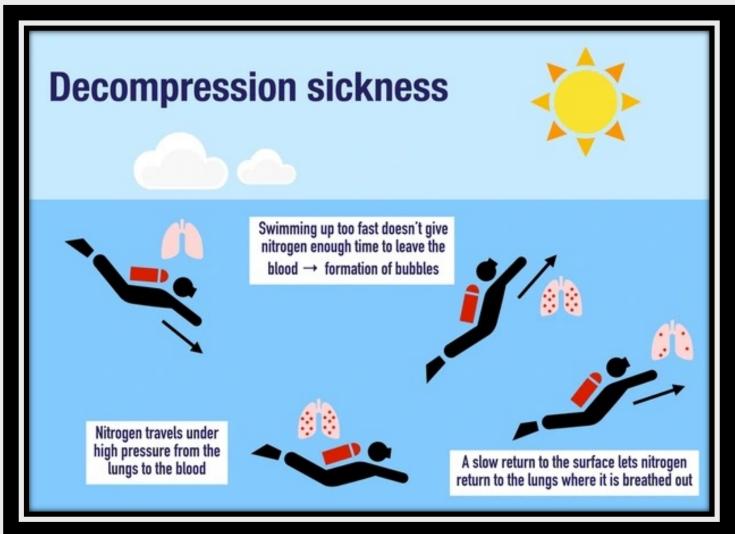
I had a very close call the day before at 130 feet:

- Stuck BC button caused a very rapid ascent
- Could have resulted in nitrogen bubbles
- Minor symptoms:
   joint/muscle pain,
   fatigue, and itchiness
- Severe symptoms: paralysis, extreme pain, or even death



### The 12 Most Common Diving Injuries: #12: "The Bends" (DCS)

DCS can happen to anyone, anytime



# The 12 Most Common Diving Injuries: #12: "The Bends" (DCS)

#### **Prevention Tips:**

Use a dive computer to monitor your profile

Ensure proper decompression with a safety stop

 A study by DAN of 122,000 dives revealed an incidence rate of nearly 7 in 10,000 dives =

85 total



### Recap: The 12 Most Common Diving Injuries

**#1:** Sunburn and Skin Cancer

#2: Stings, Bites, and Scrapes

**#3:** Bruised Toes

#4: Bruised Legs

**#5: Lower Back Pain** 

#6: Sore Ribs

#7: TMJ

**#8: Sinus Barotrauma** 

**#9:** Mask/Nose Squeeze

**#10: Broken Eye Blood Vessels** 

#11: Nitrogen Narcosis (Rapture of The Deep)

#12: "The Bends" (Decompression Sickness)

# Recap: The 12 Most Common Diving Injuries

These conditions and others cause about 200-300 deaths annually among about 6 million active scuba divers worldwide (Quora.com):

#13: Drowning

#14: Embolisms

#14: DCS

**#15: Heart Attacks: About 20-30% of deaths** 

#### https://zeimer.com/my-portfolio/blogging/12-injuries/



#### Questions & Feedback?



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