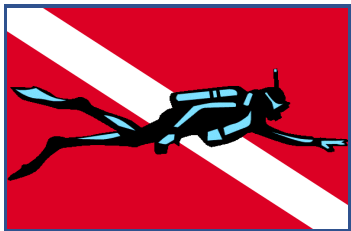


# **After the Safety Stop**

**(Q: What do you do?)**



# After the Safety Stop: Background

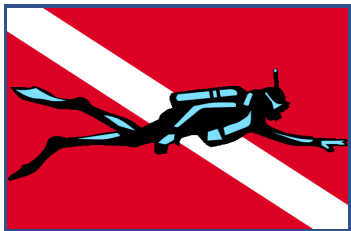
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## Definition:

Decompression – the returning of a subject experiencing increased pressure, e.g. a scuba diver, to atmospheric pressure, usually in a controlled manner.

Therefore, EVERY dive is a Decompression Dive (no matter how deep you go or how long you stay down).



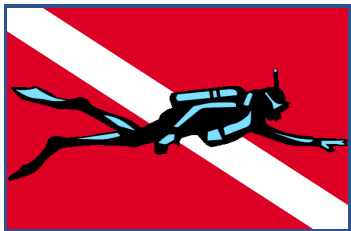
# After the Safety Stop: Background

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Underwater, a diver's body absorbs "compressed" nitrogen from his breathing gas (recall, air: ~79% N<sub>2</sub>, ~21% O<sub>2</sub>). This compressed nitrogen is trapped in body tissues (NB: body fat is an easy target for N<sub>2</sub> storage). As the diver ascends, this trapped nitrogen slowly expands or de-compresses.

The diver's body must eliminate the trapped nitrogen before it expands to the point that it forms bubbles and causes decompression sickness (DCS).



# After the Safety Stop: Background

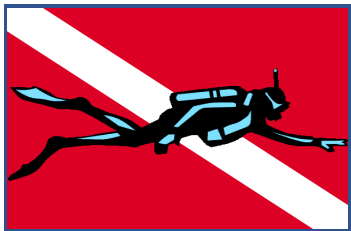
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If a diver absorbs too much nitrogen, he cannot make a normal ascent because his body will not eliminate the expanding nitrogen quickly enough to prevent DCS.

In this case, the diver must pause periodically during his ascent (i.e., make decompression stops) to allow his body time to eliminate the excess nitrogen.

A no-decompression limit is the maximum time that a diver can spend underwater and still ascend DIRECTLY to the surface without the need for decompression stops.



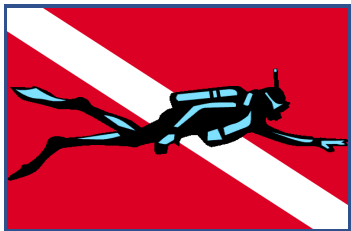
# After the Safety Stop: Background

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**We practice “no-deco” diving (a misnomer, because we’ve already determined every dive is a “deco dive”; a better term would be a “no-deco stop” dive.)**

**However, to minimize any possible effects of expanding nitrogen, we do two things: we ascend slowly; and we do a 3-minute safety stop at approximately 15 feet.**



# After the Safety Stop: The Setup

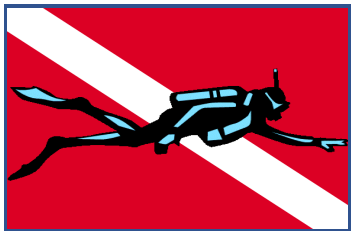
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**The safety stop speaks for itself. Stop and let the nitrogen slowly come out of your tissue.**

**What does it mean to ascend slowly?**

**In the early days, U.S. Navy divers wanted to ascend from their dives and exit the water quickly, but quick ascents were impractical for hardhat divers; thus, they settled on a compromise of 60 feet per minute ( $60 \text{ ft}/60 \text{ sec} = 1 \text{ ft}/\text{sec}.$ ). About 20 years ago the U.S. Navy changed their recommended ascent rate to 30 feet per minute (or  $1 \text{ ft}/2 \text{ sec}.$ ).**



# After the Safety Stop: The Setup

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## Other recommendations:

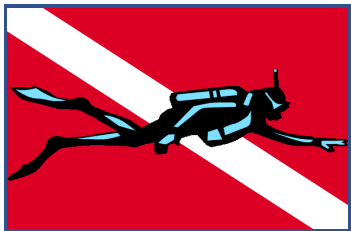
**PADI: 60 feet per minute;**

**NAUI: 30 feet per minute;**

**SSI: 30 feet per minute;**

**NOAA: 30 feet per minute.**

**Consensus (4 out of 5) leans towards 30 feet per minute.**



# After the Safety Stop: The Big Reveal

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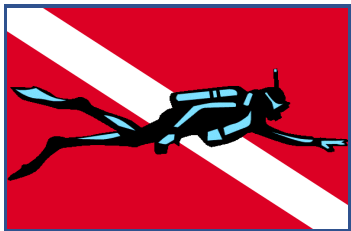
**How long do you take to get to the surface once you've completed your 3-minute safety stop?**

**Do you throw caution to the wind and swim directly to the surface with reckless abandon?**

**OR:**

**Do you slowly ascend the last 15 feet at the same measured rate you have used to get to the safety stop?**





# After the Safety Stop: The Big Reveal

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At the consensus rate of 30 feet per minute, it should take you **30 seconds** to reach the surface from the safety stop.

This is important because the closer you get to the surface the greater the pressure change as you ascend (i.e., the percentage change in pressure from 1 ½ atm to 1 atm is greater than the percentage change from 3 atm to 2 ½ atm). As such, this is the part of the water column where the speed of your ascent is most crucial.