



Tyndall 2025

# Breathless

## Hypoxia and metabolism assessment through light

Shree Krishnamoorthy







# Population Density

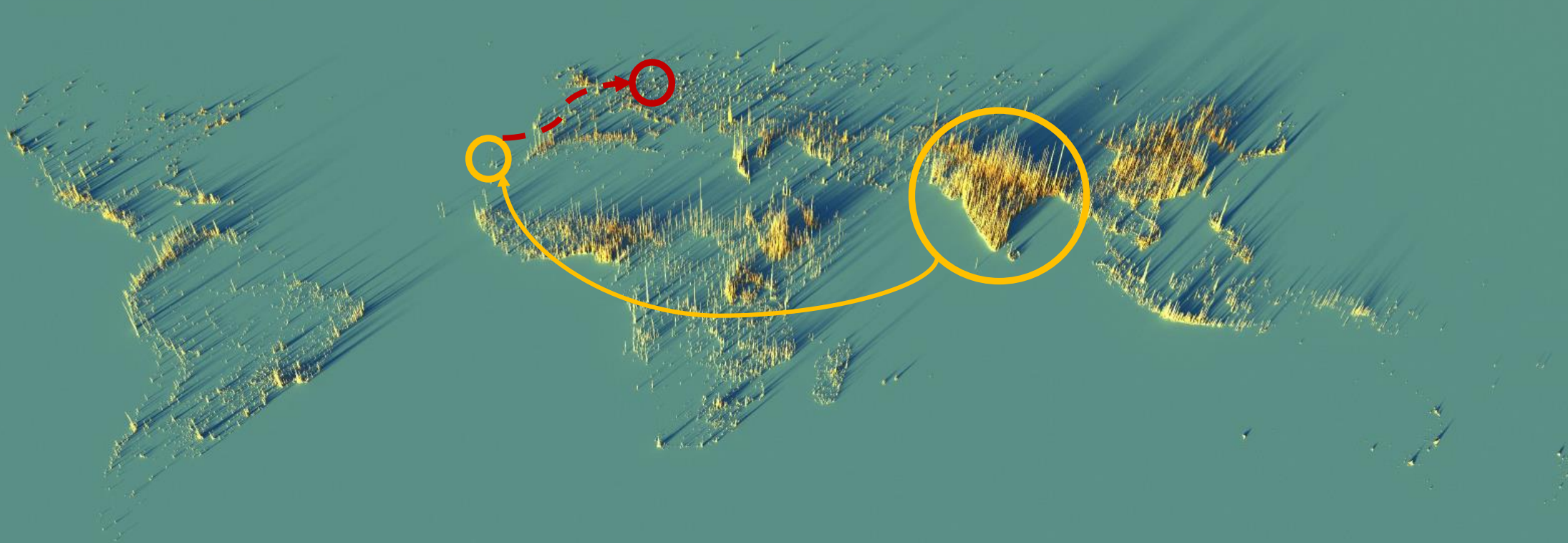
1km cells (roughly) - the big squares are 100km x 100km at the equator. Annotated by Visual Capitalist

Data: GHS-POP, EDU  
Software: Aerialod  
Author: Atlasdata, Red



# Global Population Density

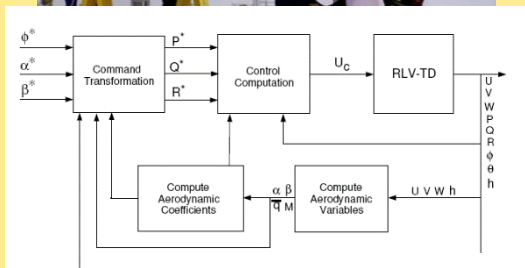
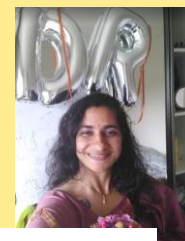
The height of the spikes relates to the number of people living in an area - roughly 2km x 2km







**AVAYA**



2007

2009

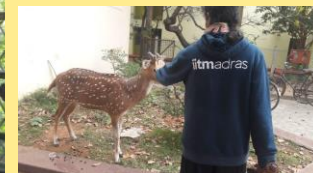
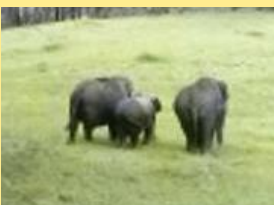
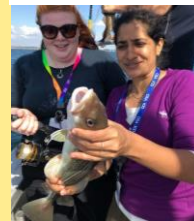
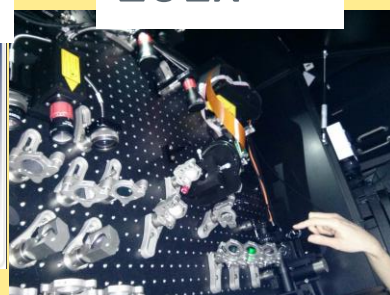
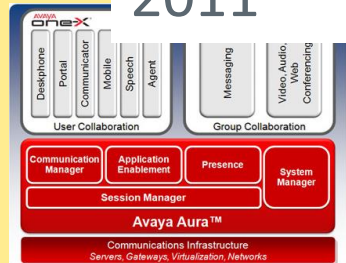
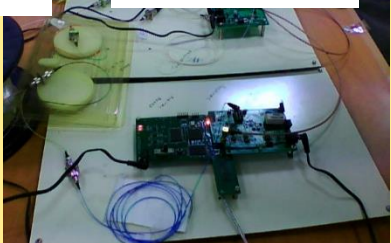
2011

201x

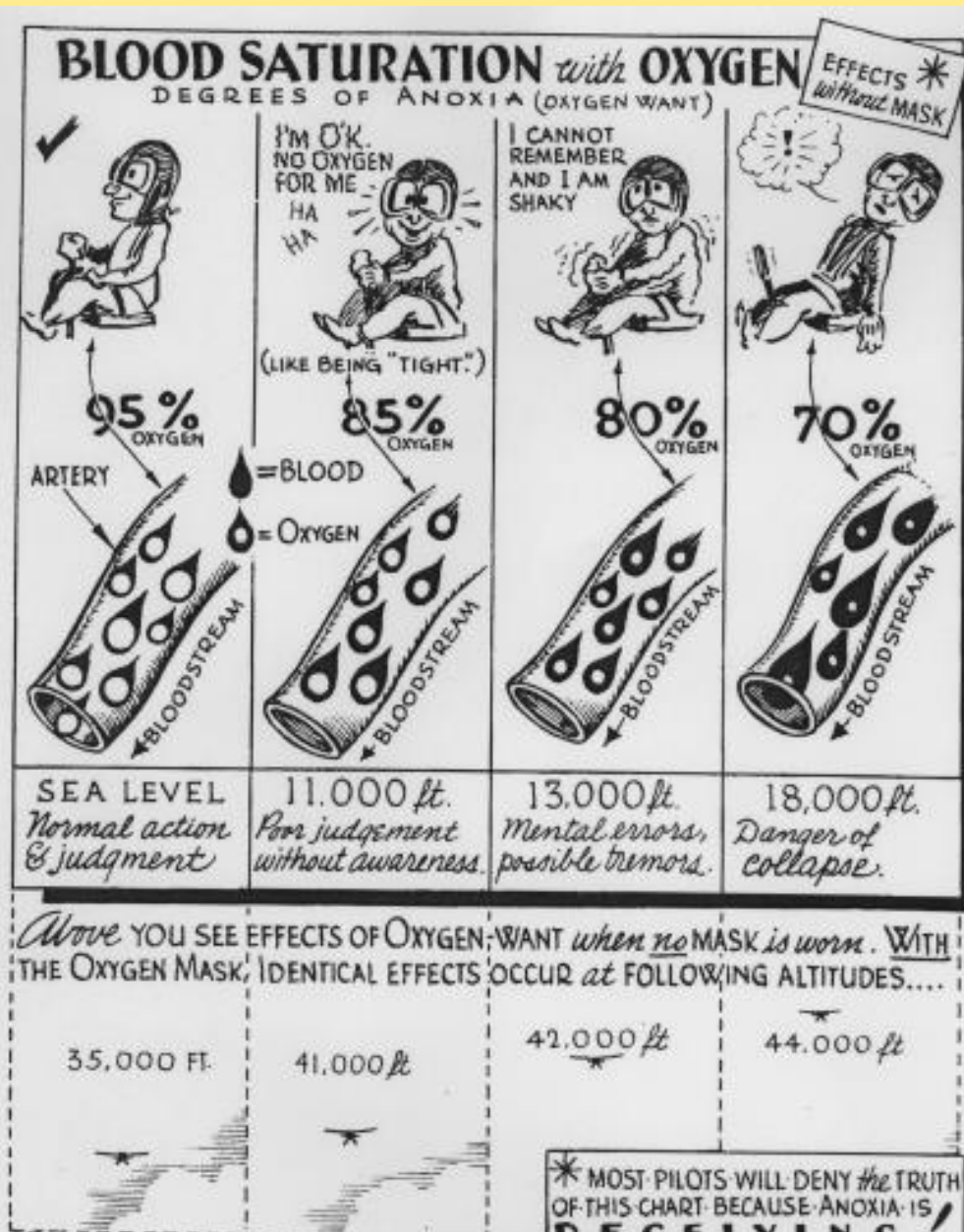
2018

2019

2024





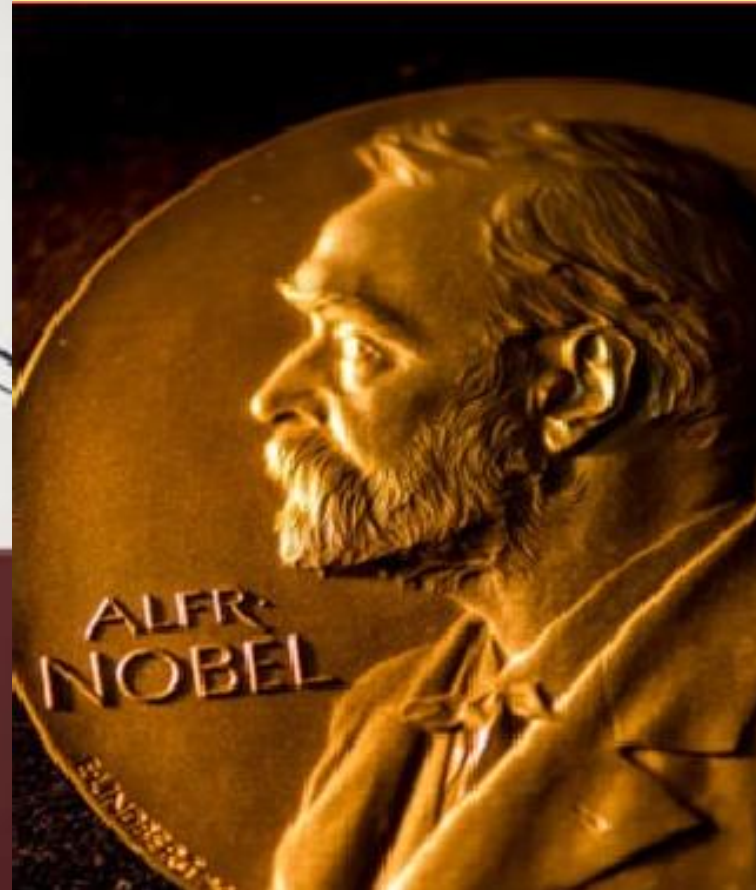
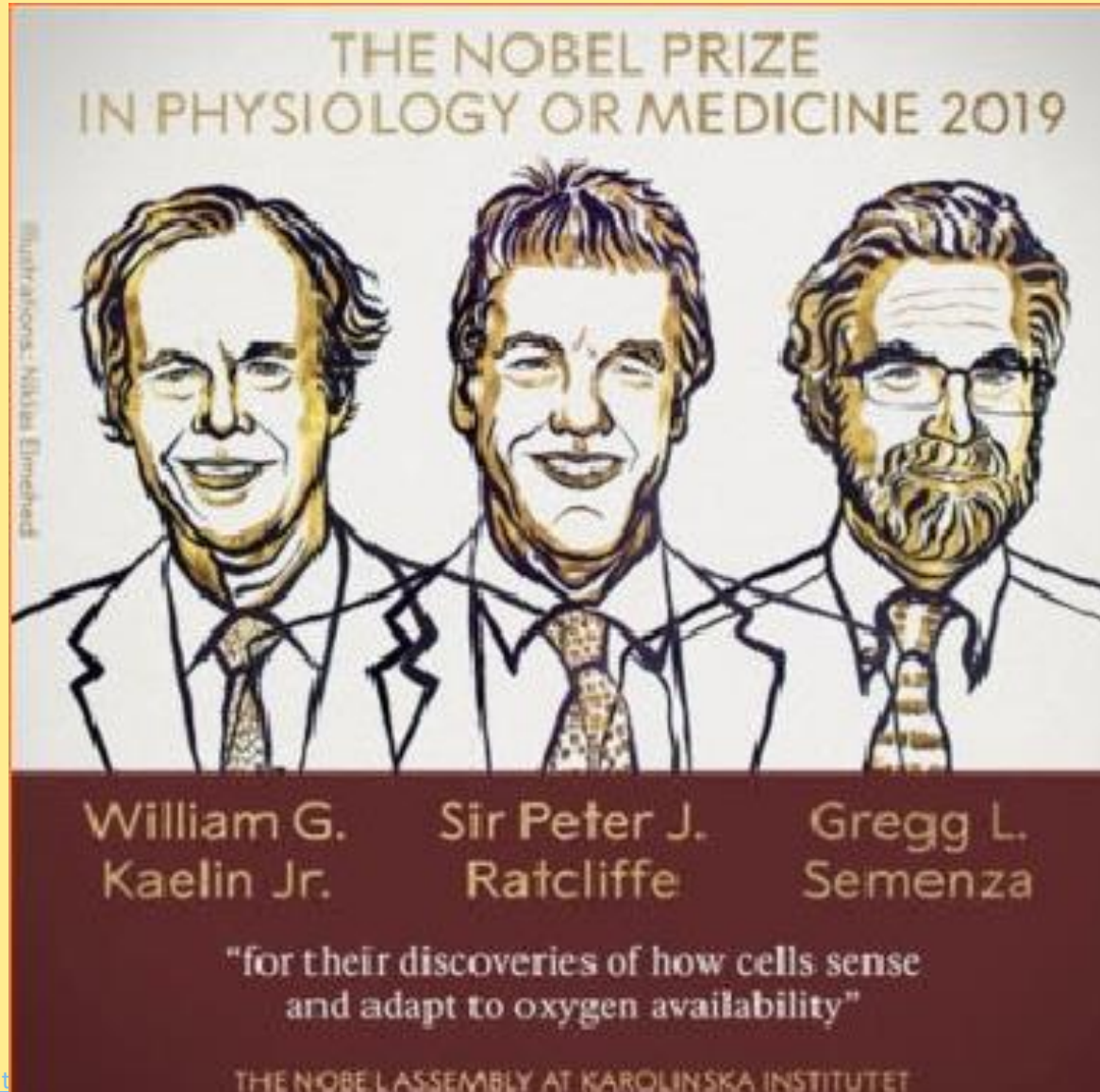


Oxygen



**Hypoxia**

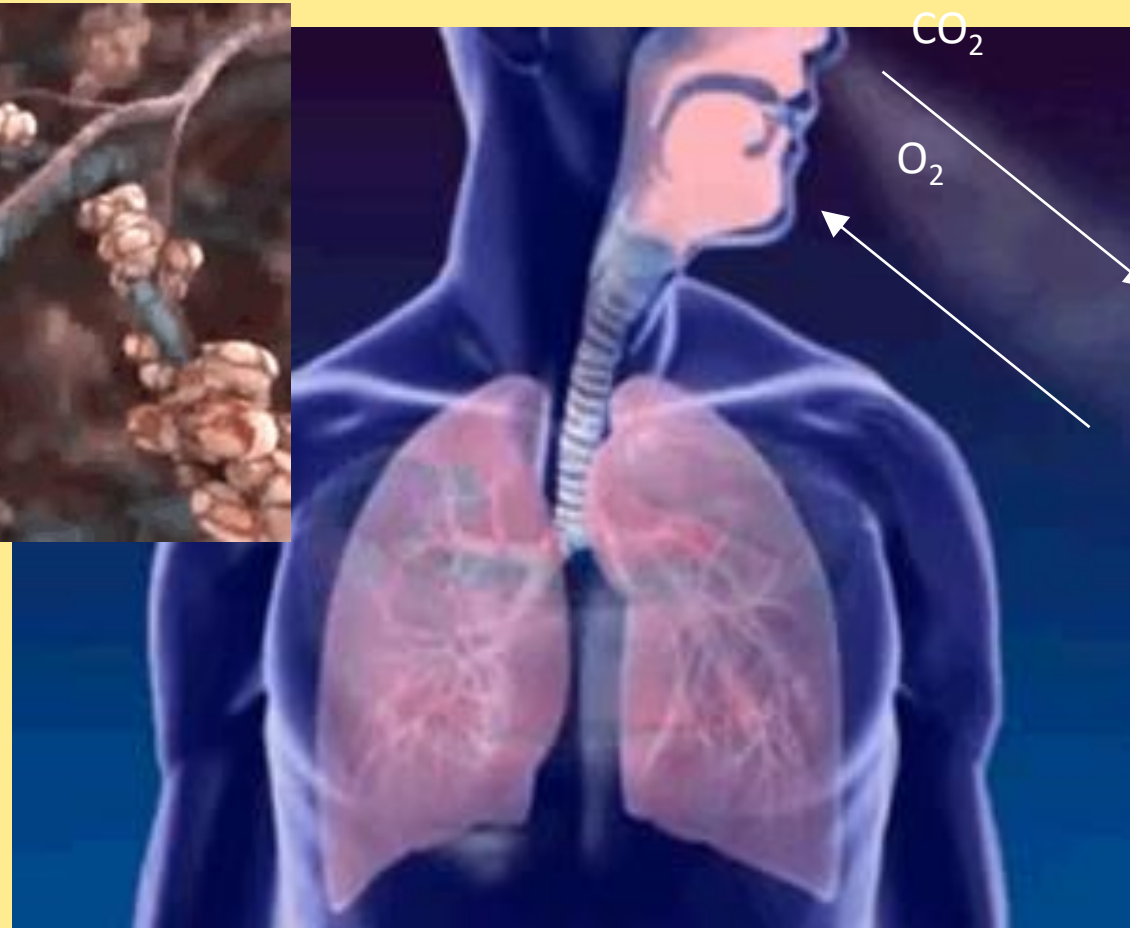
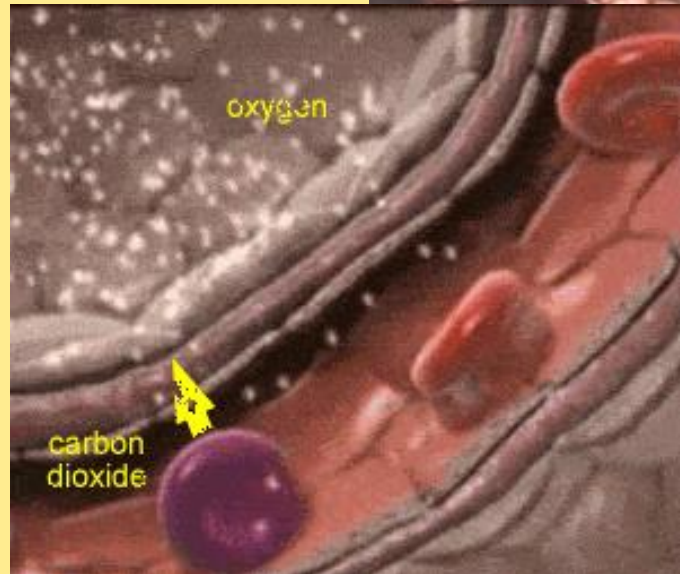
# Hypoxia – current science



• [ht](https://www.nobelprizemedicine.org/)

<https://www.nobelprizemedicine.org/>









14000 ft

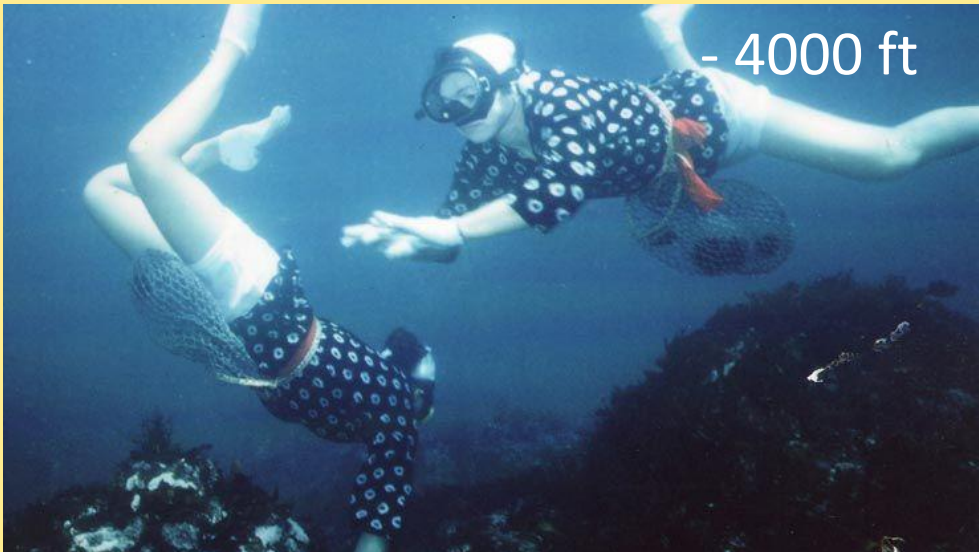
Oxygen



Hypoxia



Adaptation



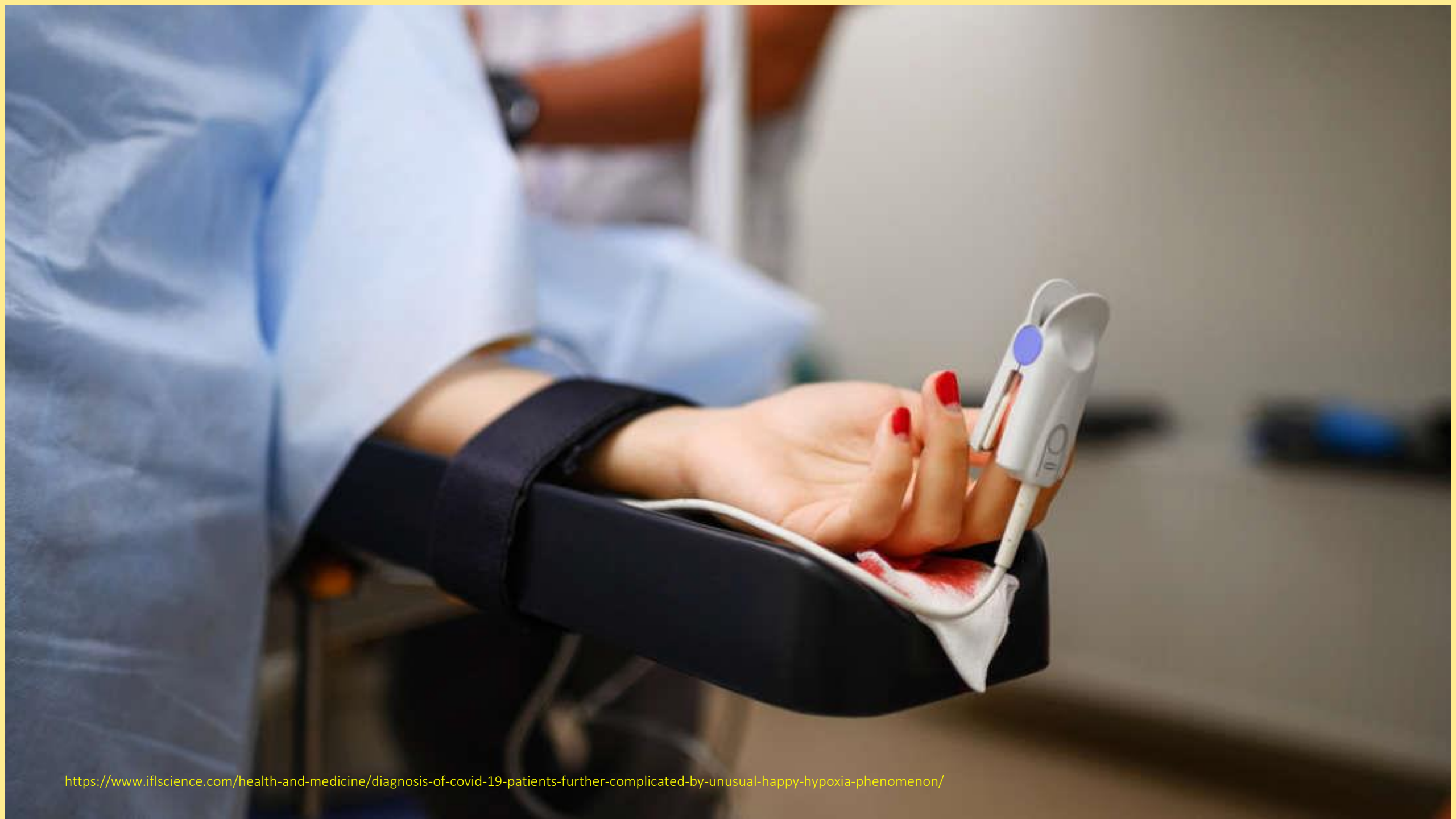
- 4000 ft

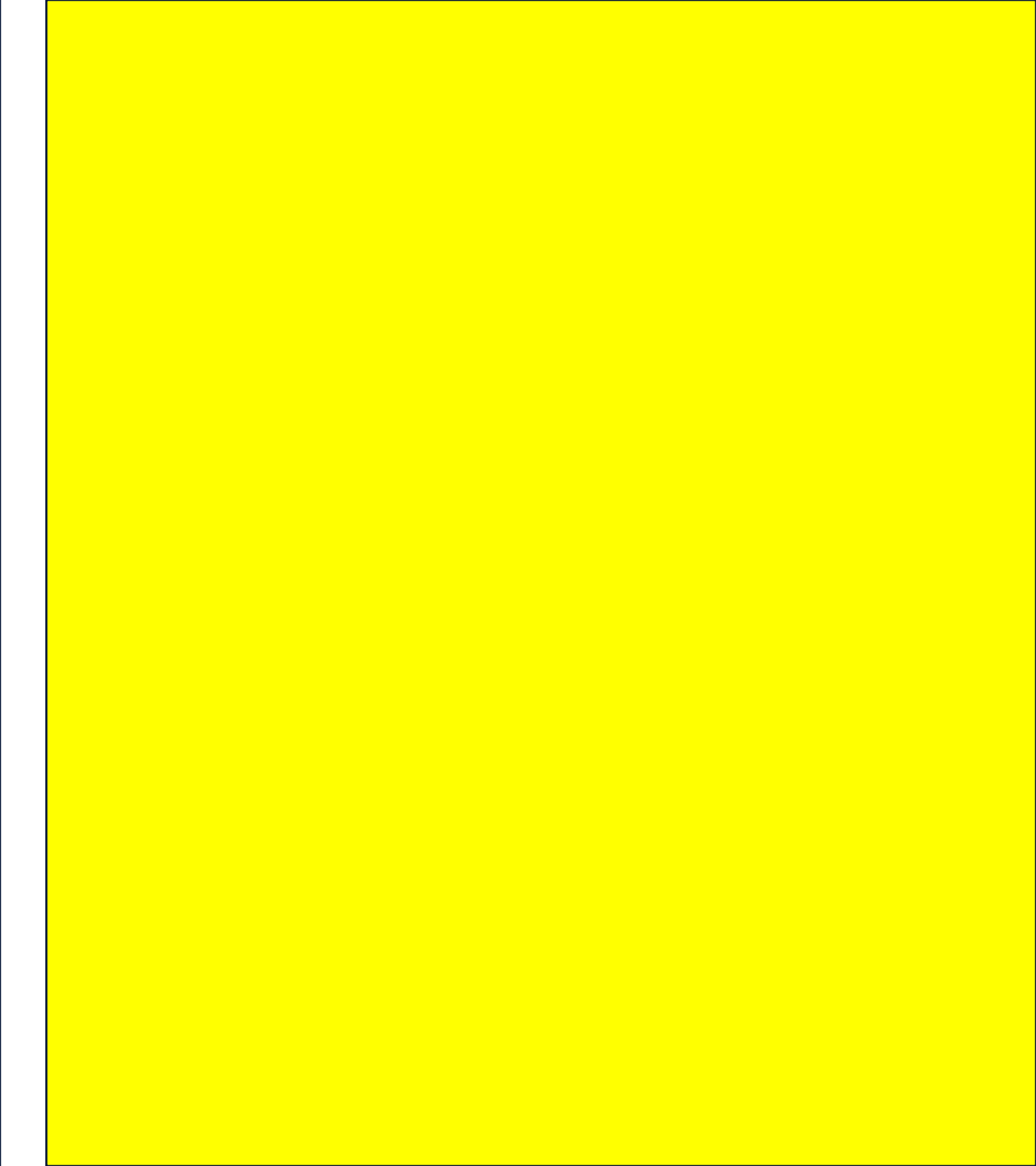
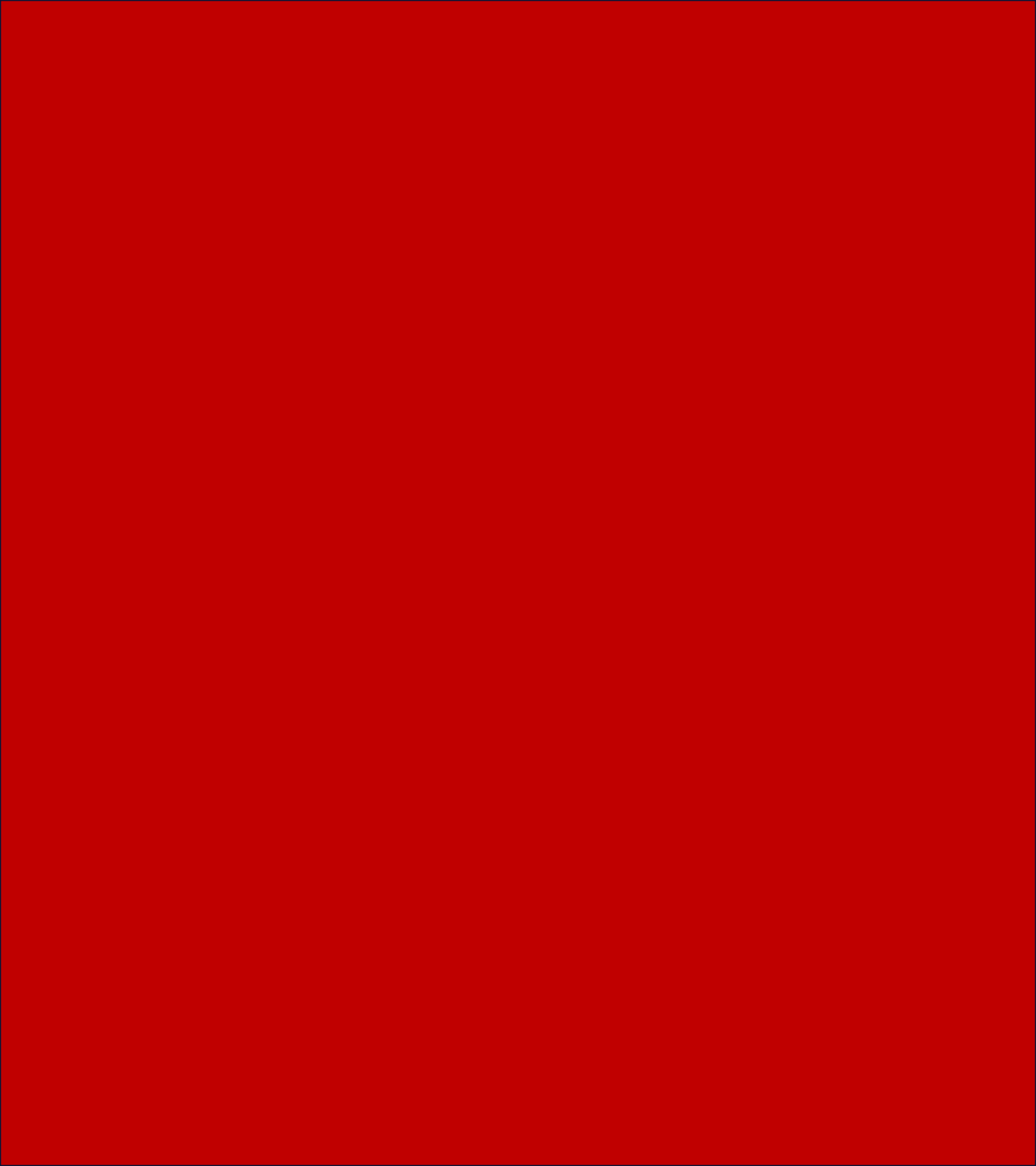


(richalet2021invention) Richalet, J.-P. The Invention of Hypoxia Journal of Applied Physiology, American Physiological Society Rockville, MD, 2021  
<https://www.gototibet.com/blog/why-can-tibetan-people-adapt-to-high-altitude-life.html>  
<https://discovery.cathaypacific.com/ama-divers-of-japan-the-amazing-story-of-these-freediving-fisherwomen/>



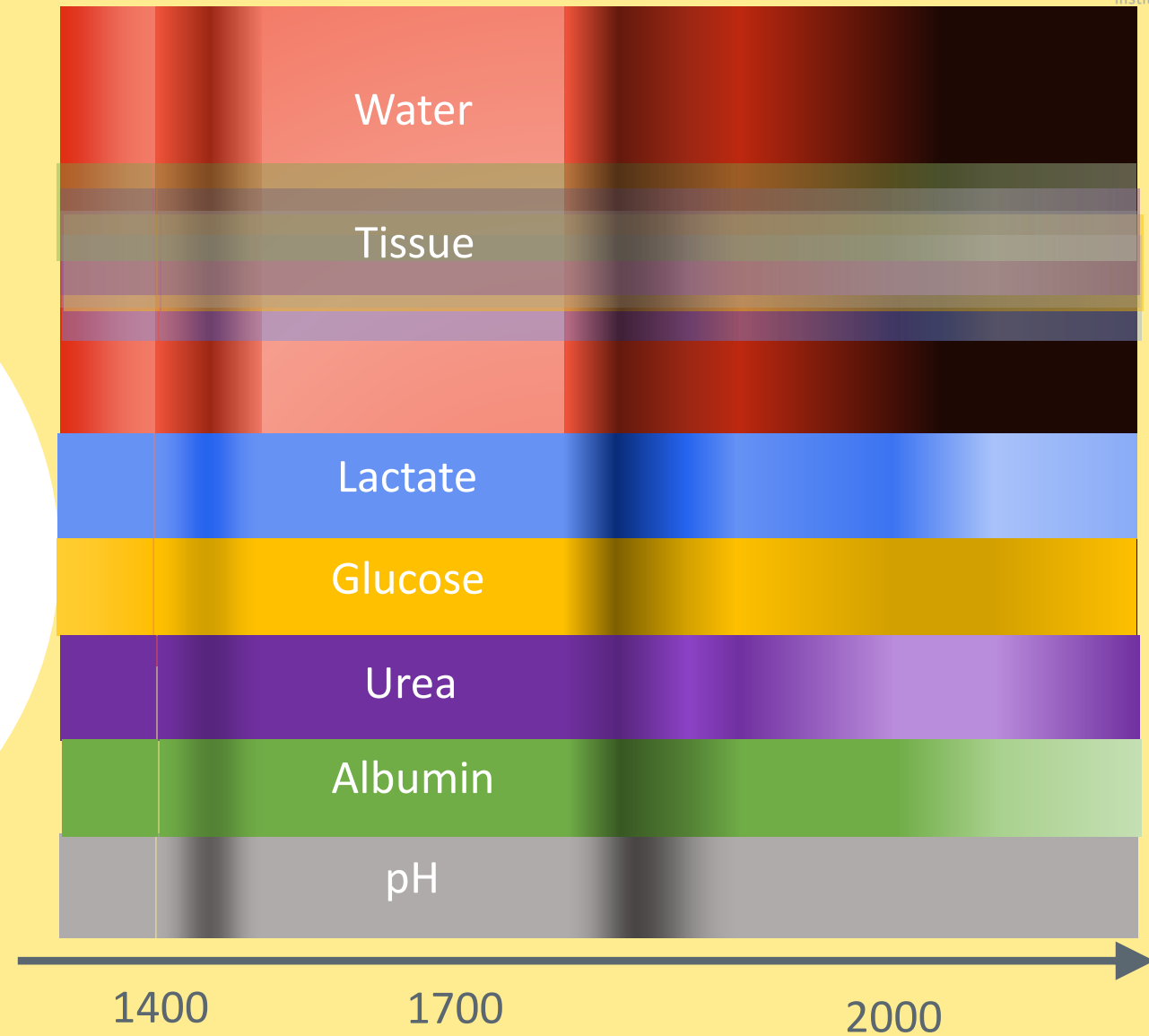
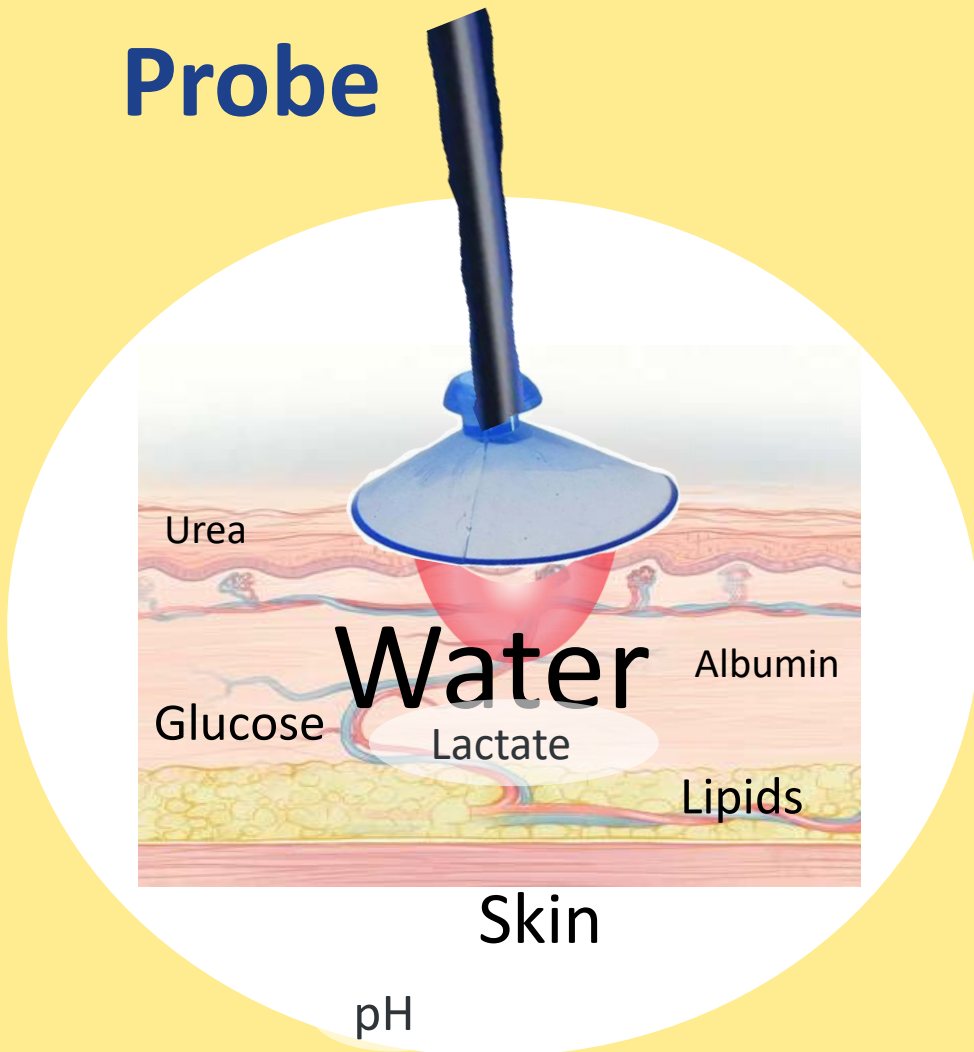








# Probe









#BioPhotonics @TyndallInstitut

**We Are Hiring!!**

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