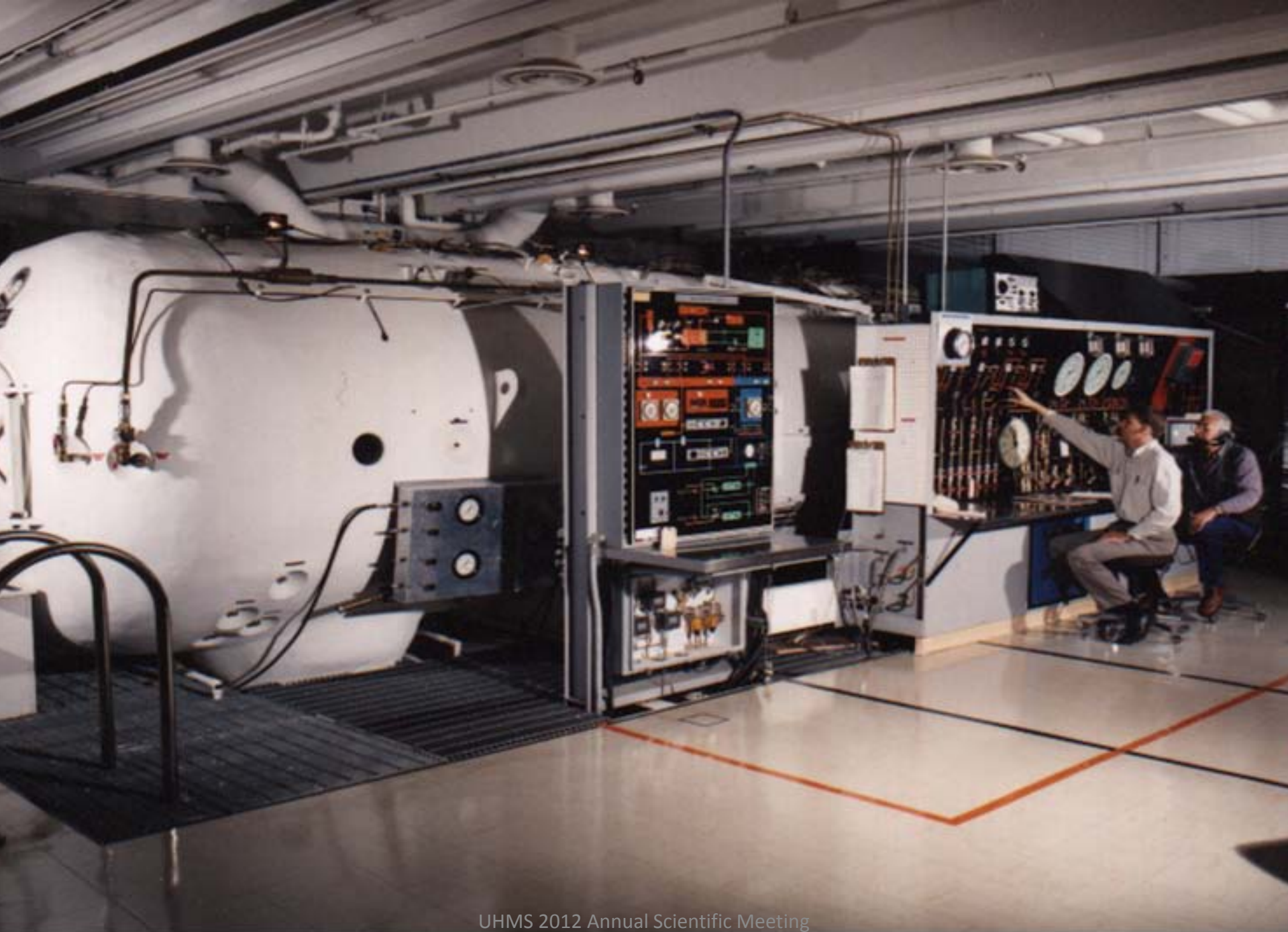




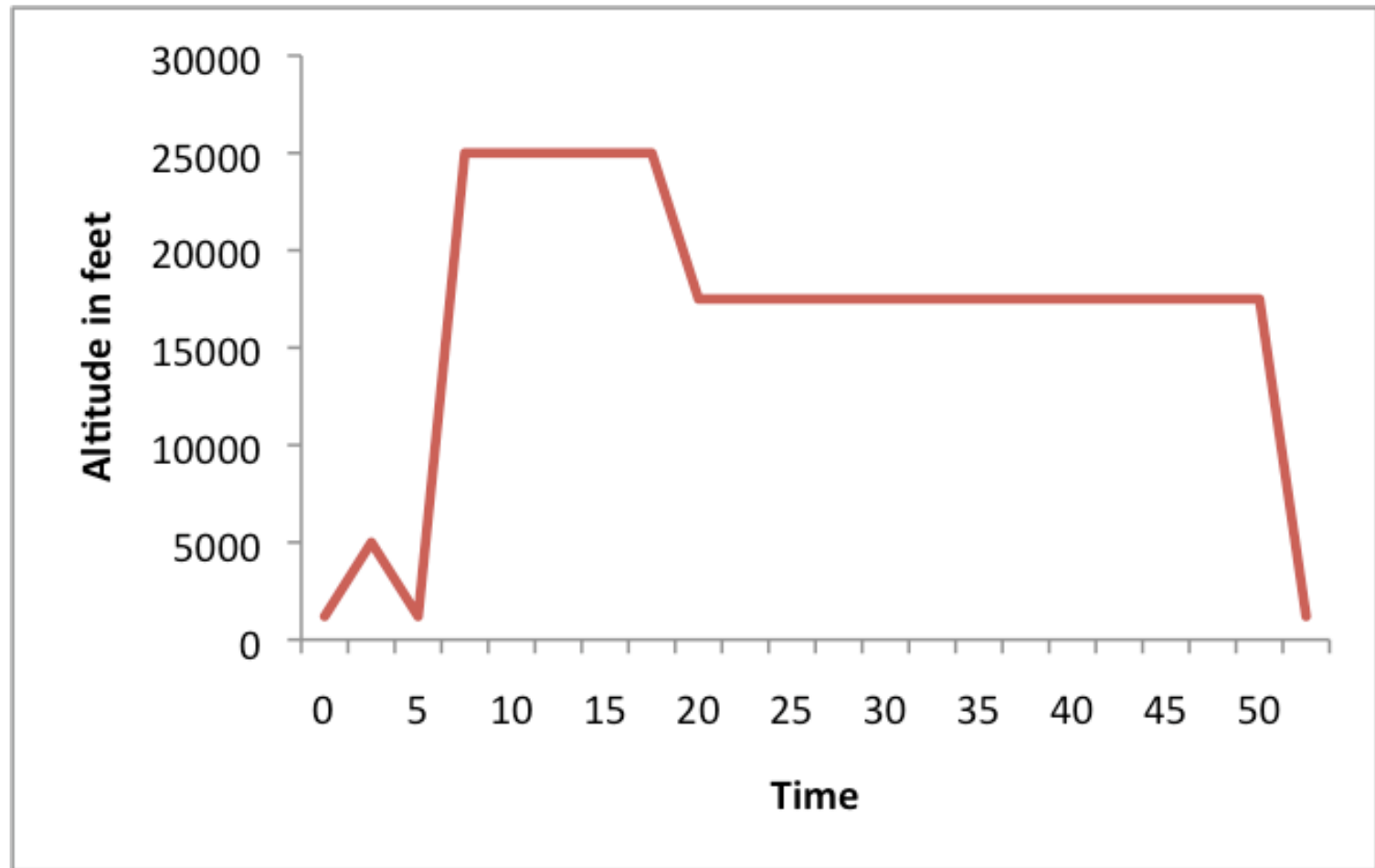
Are altitude exposure tables needed?;
Retrospective longitudinal analyses of hypobaric exposures and incidence of DCS





UHMS 2012 Annual Scientific Meeting

High Altitude Indoctrination





UHMS 2012 Annual Scientific Meeting

Time of Useful Consciousness

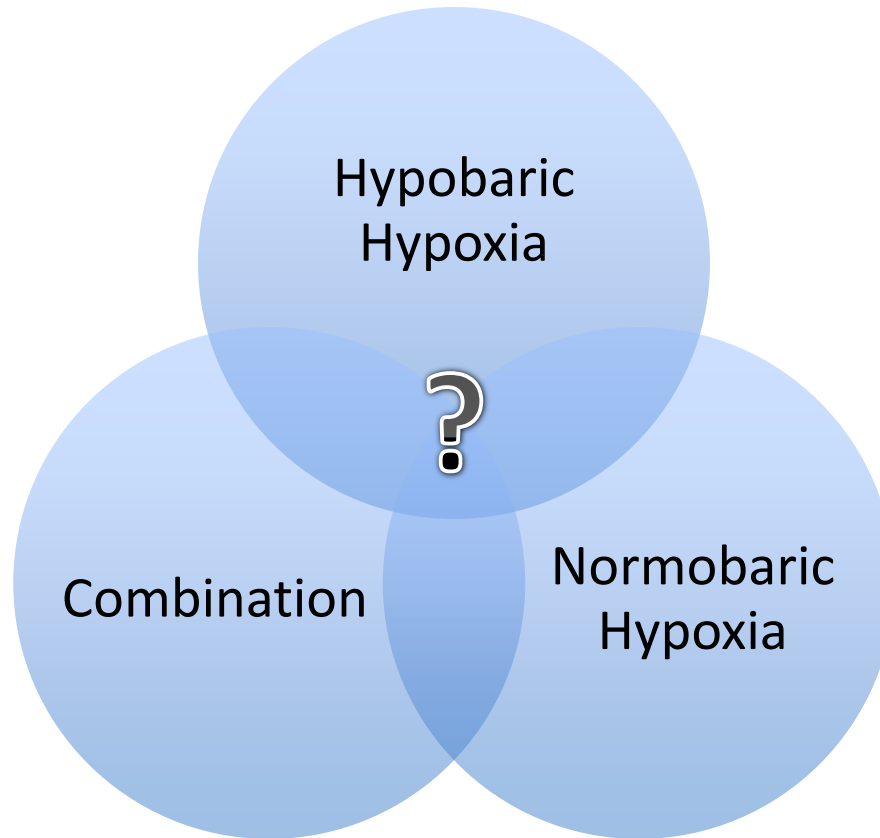
John Ernstring

- 15k 30 min
- 25k 3-6 min
- 30k 1-3 min
- 40k 15-20 sec
- 50k 6-9 sec



Wirth 1990-1991 Say... what's a mountain goat going
way up here in a cloud bank?
UHMS 2012 Annual Scientific Meeting

Concern over risk of DCS



Concerns with using hypoxic mix

- Is normobaric hypoxia the same as hypobaric hypoxia – Study completed spring 2012 currently being analyzed.
- Reverse training?



UHMS 2012 Annual Scientific Meeting

Table 1: Descriptive Statistics for Variables of Interest

	# of Flights	20k'	25k'	17k' after 25k'	02 Pre-Breathe for 25k'	Ascent to 20k'	Ascent to 25k'
# of Flights (# of Ss)	97(483)	46(183)	51(300)	34(210)	39(238)	46(183)	51(300)
Min Time	-	2:09	1:00	6:59*	25	2:00	6:53
Max Time	-	14:36	15:30	28:50*	53	12:05	15:24
Mean Time (SD)	-	5:06(2:40)	11:20(3:48)	20:38(5:15)*	32.87(6.01)	4:04(1:52)	8:59(2:01)

*: Data obtained from 23 flights

Table 1: Descriptive Statistics for Variables of Interest

	# of Flights	20k'	25k'	17k' after 25k'	02 Pre-Breathe for 25k'	Ascent to 20k'	Ascent to 25k'
# of Flights (# of Ss)	97(483)	46(183)	51(300)	34(210)	39(238)	46(183)	51(300)
Min Time	-	2:09	1:00	6:59*	25	2:00	6:53
Max Time	-	14:36	15:30	28:50*	53	12:05	15:24
Mean Time (SD)	-	5:06(2:40)	11:20(3:48)	20:38(5:15)*	32.87(6.01)	4:04(1:52)	8:59(2:01)

*: Data obtained from 23 flights

Table 1: Descriptive Statistics for Variables of Interest

	# of Flights	20k'	25k'	17k' after 25k'	02 Pre-Breathe for 25k'	Ascent to 20k'	Ascent to 25k'
# of Flights (# of Ss)	97(483)	46(183)	51(300)	34(210)	39(238)	46(183)	51(300)
Min Time	-	2:09	1:00	6:59*	25	2:00	6:53
Max Time	-	14:36	15:30	28:50*	53	12:05	15:24
Mean Time (SD)	-	5:06(2:40)	11:20(3:48)	20:38(5:15)*	32.87(6.01)	4:04(1:52)	8:59(2:01)

*: Data obtained from 23 flights

Table 1: Descriptive Statistics for Variables of Interest

	# of Flights	20k'	25k'	17k' after 25k'	02 Pre-Breathe for 25k'	Ascent to 20k'	Ascent to 25k'
# of Flights (# of Ss)	97(483)	46(183)	51(300)	34(210)	39(238)	46(183)	51(300)
Min Time	-	2:09	1:00	6:59*	25	2:00	6:53
Max Time	-	14:36	15:30	28:50*	53	12:05	15:24
Mean Time (SD)	-	5:06(2:40)	11:20(3:48)	20:38(5:15)*	32.87(6.01)	4:04(1:52)	8:59(2:01)

*: Data obtained from 23 flights

Table 1: Descriptive Statistics for Variables of Interest

	# of Flights	20k'	25k'	17k' after 25k'	02 Pre-Breathe for 25k'	Ascent to 20k'	Ascent to 25k'
# of Flights (# of Ss)	97(483)	46(183)	51(300)	34(210)	39(238)	46(183)	51(300)
Min Time	-	2:09	1:00	6:59*	25	2:00	6:53
Max Time	-	14:36	15:30	28:50*	53	12:05	15:24
Mean Time (SD)	-	5:06(2:40)	11:20(3:48)	20:38(5:15)*	32.87(6.01)	4:04(1:52)	8:59(2:01)

*: Data obtained from 23 flights

Table 1: Descriptive Statistics for Variables of Interest

	# of Flights	20k'	25k'	17k' after 25k'	02 Pre-Breathe for 25k'	Ascent to 20k'	Ascent to 25k'
# of Flights (# of Ss)	97(483)	46(183)	51(300)	34(210)	39(238)	46(183)	51(300)
Min Time	-	2:09	1:00	6:59*	25	2:00	6:53
Max Time	-	14:36	15:30	28:50*	53	12:05	15:24
Mean Time (SD)	-	5:06(2:40)	11:20(3:48)	20:38(5:15)*	32.87(6.01)	4:04(1:52)	8:59(2:01)

*: Data obtained from 23 flights

Table 1: Descriptive Statistics for Variables of Interest

	# of Flights	20k'	25k'	17k' after 25k'	02 Pre-Breathe for 25k'	Ascent to 20k'	Ascent to 25k'
# of Flights (# of Ss)	97(483)	46(183)	51(300)	34(210)	39(238)	46(183)	51(300)
Min Time	-	2:09	1:00	6:59*	25	2:00	6:53
Max Time	-	14:36	15:30	28:50*	53	12:05	15:24
Mean Time (SD)	-	5:06(2:40)	11:20(3:48)	20:38(5:15)*	32.87(6.01)	4:04(1:52)	8:59(2:01)

*: Data obtained from 23 flights

Our Conclusion

- Keep our current protocol
- Further validated by;
Altitude Decompression Sickness Risk
Assessment Computer (ADRAC) developed by
the Air Force Research Laboratory (AFRL),
Brooks City-Base Texas

Acknowledgements

- Deyar Asmaro (MA, BA. Hons)

Vanier Canada Graduate Scholar (CIHR)



Government
of Canada

Vanier Canada
Graduate Scholarships

Gouvernement
du Canada

Bourses d'études
supérieures du Canada Vanier

Canada

- James Mayall

Environmental Medicine & Physiology Unit