

# FREEDIVING WEBINARS

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From

[www.freedivers.net](http://www.freedivers.net)

(Aired on TWEETER between January and December 2013)

LINK TO ALL WEBINARS (below you can find link to each episode):

<http://twitcam.livestream.com/user/freediversnet>

## DISCLAIMER:

I'm sorry for all linguistic and logical errors. Please note that this document is not training material itself. These are just notes I made while watching the webinars. I did my best to provide the agenda and timing as precisely as I could, but perception is not always the same, so I could have miss something.

For best results, I encourage you to watch entire episodes. Otherwise you may miss one of those English jokes ;) !

Enjoy,  
Ruby

Episode 1 <http://twitcam.com/detrz>

January 10, 2013

00:00 – Warm up ;)

03:00 – WELCOME & COFEE

05:15 – winter training (wet & dry) – why doing it

General rules of Aharon's training methods

11:45 – Style is the key element (12:00 coffee arrived)

- Water resistance – propulsion vs. resistance – what is moving us ?
- Army Submarines / dolphin experiment proving resistance role to speed in water

15:45 – new Swimmers swimsuits – all records broken, but not surface counts. Swimsuit compress muscles so they don't float.

17:00 – we practice style to minimize our drag

18:00 – kick-kick-glide monofin technique

- Weighting in dynamic

21:30 – Helmet cam ;)

- Video analysis of student's dives
- Weighting first – then style!

25:00 – BI FIN technique

- What happens if your fins are too stiff
- Why soft fins works better???

31:00 – Your trainer is your friend

32:30 – disclaimer – take advice from Aharon and test if it works for you, don't take it as it is.

34:15 –All about Wetsuits

## Episode 2 <http://twitcam.livestream.com/dhv8b>

January 17, 2013

00:30 – Webinar objectives (it is not individual training program)

- General training programs are not effective – we address specific issues here

02:00 – preparation during season when you can't dive in open waters

- Various areas of dry training
  - o Flexibility (squeezes!)
  - o Simple neck exercises

8:15 – MT Yogic exercises

<http://www.freedivers.net/blog/2012/02/basic-lung-stretching-for-freediving-part-1/>

11:30 – tension stops us to go deeper “pressure trigger point”

! Empty lung exercises in 4m pool - will be mentioned later

14:15 – list of classic equalization mistakes

17:00 – how to analyse if Frenzel is correct

22:00 – why Valsalva is a bad idea

~25:00 – why spearo's and everyone else can benefit from making freediving course

26:45 – freediving might be the safest sport on the planet if done correctly !

29:45 – why don't freedive after work alone in the swimming pool

- Why don't rely on safeguards, but only your freedive buddy.
- Signals to be followed by freedive buddy

34:45 – ! snorkel might be deadly device

39:00 – Question – should we exhale 5m below surface during the ascent

43:30 – Rescue

- a lot of fatalities in Spearfishing world

## Episode 3 <http://twitcam.com/do280>

January 31, 2013

00:00 – Question – equalisation

- Valsalva
- Frenzel
- How ear is build and how equalization works

18:45 nice balloon soft exercise

22:00 case study of a good swimmer with equalization problems

- Root cause = consistency of mucus to thick?
- Allergy and its impact on freediving
- DIET! – milk, wheat may cause allergy

34:00 not every diving or throat specialist knows about specificity of Freediving equalization

37:30 Question – sea sickness

- Medicaments / side effects
- Natural medicaments

41:00 Ear care

- Special mixture

48:15 winter training

- Work on style
- 1% increase in style is 1% increase in results
- 20% increase in fitness gives no benefits if invested in poor style
- Hydrodynamics, drag, weights

## Episode 4 <http://twitcam.livestream.com/dqpaa>

February 07, 2013

00:00-01:13 microphone unplugged ;)

01:30 BTV- hands free equalization

9:30 – sound check exercise to learn BTV

11:00 – equalization frequency

15:30 – train BTV involved muscles 300times/day

- BTV visualization
- 19:30 – Diet once again... – cause it matters ;)

23:45 – Winter training

- Style (Hydrodynamics / propulsion)

29:00 – free immersion pulling training machine

- Video analysis
- 31:30 Breath hold - static
- Breath walk
- 34:00 time analysis of deep dive- phases
  - o Effort descent
  - o Point of non-deceleration
  - o Static Glide
  - o Effort ascent
  - o Static Glide
- 39:45 what happens with heart rate during breath walk
  - o Dive reflex of mammals and humans
  - o not important what your heart bit is after the end of ventilation
- 45:00 Flexibility
- No pack and stretch
- 50:00 – a ball: great flexibility equipment and exercises
- 52:00 – yoga exercises
- Odayana ...
- <http://www.freedivers.net/blog/2012/02/basic-lung-stretching-for-freediving-part-1/>

## Episode 5 <http://twitcam.com/dtqbp>

February 13, 2013

00:00 – 14:30 Packing – MUST SEE!

- Pool
- Depth

## Episode 6 <http://twitcam.com/dyutw>

February 27, 2013

- 01:15 – Question on nose clip usage in depth disciplines (swallowing air)
- 05:30 – fluid goggles
- 07:00 – dive without goggles in the sea ;)
- 10:00- Breath walk revised
- Train your DR response
- 14:15 – what is best freediving training - aerobic, anaerobic?
- 19:15 – long training sessions are not suitable – rest is part of the training
- 20:55 – amazing freediving exercise Hill repeats – self torture  
(Short sprints with short intervals to prepare to that)
- 29:30 stretch after dry exercise
- 31:00 – 10’’ ball exercise for monofinners
- 34:45 - dry packing and stretching – don’t do it
- 36:00 – 10’’ ball exercise on the chest – breathing exercise
- 37:15 – conscious stretching for lower parts of body
- 40:00 – strength exercises – lifting weights alternatives
- 45:45 - Tera band
- 48:45- squad jumps for breaststroke
- 49:30 –WHY ONLY 2 REPETITIONS ???
- 52:00 – all Freediving training elements
  - Breath hold – dry
  - Lactic acid- dry
  - CO2-dry
  - Hypoxic tables? Better make intense CO2 tables

## Episode 7 <http://twitcam.com/e37qi>

March 13, 2013

- 00:00 Question – aerobic or anaerobic training?
- 05:30 – Hill repeats revisited
- 09:00 – 50m sprints in the pool, reduced interval
  - Advanced – 3x100m
  - 25m pool Flat out sprints with short intervals
  - 2 x weeks, not more!!!
  - Rest
  - Hydration
- 12:45 Ventilation
  - Normal breathing
  - Hyperventilation definition
  - Breathing – copy infants, copy breath before sleep
- 24:00 Purpose of ventilation – set the mental state
  - Get into the “zone” with minimum time
- 27:00 Question: Mouthfill / cheekfill / BTV – how deep can I go without mouthfill on BTV
  - Flexibility may add meters and help equalization
  - pressure trigger point – end of equalization
- 31:15 – drops with additional weight
  - To build up tolerance to depth and pressure
  - Learn fast equalization
  - Comfort of diving into “unknown” depth
- 39:15 – Question – breathe walk
  - Don’t worry if HR is over 80 at the end of ventilation
  - Pulse check at the end of walk –up to 28BPM
  - Beg of Recovery – up to 115BPM
  - As we train we reduce number of repetitions up to 1 repetition
  - No more than 2 max breath holds / week (dry or wet)
- 47:15 – Yoga preparation exercise - great
  - Good for max attempts
  - Breath as slowly as you can
  - 60 breaths /hour, 5 months
  - 30 breaths before competition, little warm up
  - Keep logbook
  - Count breaths using crises on fingers (1 hand=12)

## Episode 8 <http://twitcam.com/e7nbl>

March 27, 2013

00:00 – Question: DCS in Freediving

- Never Freedive after Scuba (=DCS !) – 24 hours brake

4:45 – specific heart issue

8:45- Scuba/freedive DCS death case and few other cases – be careful after Scuba

- Repetitive 50m freedives
- Very deep no limits dives

18:15 –Question : bi-fin or monofin ?

27 :00- what style for monofin, what stiffness ?

29:45 – Monofin style common mistakes

31:00 – Alex Molchanov monofin video – (anybody found it?)

35:45 – Question - swallowing air

- Common when learning noseclip

38:45 – Logbook

46:00 – does 200m DYN translate into 100m CTW ???

(46:30 – Who did that empty lung DYN of 154m ?)

- Body needs adaptation to depth
  - o Mental
  - o Physical
- Empty lung dives

50:30 – if you go too fast with progress – “Cancel Christmas”

53:15 – Medical Question related to spine

59:40 – Mental training not only for elite freedivers

## Episode 9 <http://twitcam.com/ea0wa>

April 10, 2013

01:30 – Question from Steven Jones – pros and cons of a noseclip

06:30 – fluid goggles

09:15 – how to make fluid goggles

13:00 – remove noseclip when ascending

14:30- Question: aerobic exercises pushing aerobic threshold = freediving sabotage

20:45 – greatest training advice ever: “basically, what works is what works”

and Claude Chapuis: “l'apnée s'entraîne l'apnée” ;)

22:30 – Question – lactic acid in DNF – particularly in arms

- (24:30 – reminder – must have freediving partner)
- Dynamic total empty lungs arms only (or even with static phase in the beginning).
- Then reduce intervals
- 3 flat out empty lungs sprints – reduce interval gradually - 3<sup>rd</sup> should be difficult to complete
- DRYLAND:
  - o Chuck Norris machine for rich people
  - o 30:30 - Tera bands exercise for everyone else
- Special exercise before MAX attempts and competitions:
  - o 30-60 slowest possible, but even breaths:
    - Lay in warm place
    - Breath through nose
    - = we build up Nitric Oxide NO
    - = we get rid of residual CO2 in the muscles
    - = we get into the right brain pattern through breathing
- 38:30 Nitric Oxide experiment was done – beetroot juice proved to be helpful! ~70ml 30min before dive (10%+ ;)

41:00 – How to learn and teach Frenzel – video will be posted on youtube

## Episode 10 <http://twitcam.com/ebz8h>

April 24, 2013

### 01:00 – Mental Training

- proper training includes right amount of stress
- Automate tasks – shift them to subconscious automatic pilot and don't interfere using will (repetitions, repetitions!).
- 13:30 – thinking about end result is non productive. Be committed to the dive, but not attached to results (Buddhism: “non attachment, non aversion”)
- 20:00 – spoiled diver ;)
- 28:00 – competition: keep habits, but don't be too attached to habits and equipment;)
- You are your own product
- 34:45 – Mental vs. Psychological >>> perform in a state of effortless detachment

## Episode 11 <http://twitcam.com/eflez>

May 08, 2013

### 00:00 – Equalization

- Frenzel usually useful up to 40m
- Some people up to 60m
- Below 60m – mouthfill/cheekfill

There is no one technique which works for all – search by yourself

Elements:

- Relaxation
  - o From Confidence (no big jumps in depth – previous dive successful – equalization on the bottom – add 1-2m to next dive)
- Flexibility
- Timing
- Topping out – frequent and small recoveries

21:00 – what is the depth to take mouthfill

- Not the deepest one is best one– take the deepest comfortable one (i.e. 20m, and then top up).
  - o Miss timing on a deep mouthfill is risk of trachea squeeze
- 25:00 BTV – king of equalisation method
- 28:00 – Totally empty lungs TEL exercises – not FRC – why?
  - o Very good practice to find equalization solutions for depth
  - o Many depth dives simulations without risk of DCS
  - o Be progressive and gradual
  - o Up to 8 repetitions
  - o When at least 10m on TEL go to drops
- Drops – head down - with additional weight on the rope
  - o Drops teach you speed of equalization (>1m/s)
  - o Weight to be found experimentally
- 34:15 Key points:
- Relaxation
  - o Coming from confidence
- Gradual methodical systematical progression
- Flexibility
- A point about improper training
- 44:45 Question – can we succeed with BTV with in only one ear
  - o First 2-3 BTV have to be done near surface, start at 60cm
  - o Learn BTV on scuba
- 49:15 Question – how to equalize until mouthfill depth

## Episode 12 <http://twitcam.com/ejhyg>

May 22, 2013

01:00 Question – people diving 55m CTW, but only 30m CNF, using Frenzel – they were stopped by equalization - why?

- CNF applies more stress on upper body compared with CTW
- 6:30 Natalia Molchanova: “Relaxation is the key”,
- But it isn’t just from mental command “Relax” it comes from gradual methodical training which elements / outputs are:
  - o Techniques of equalization
  - o Confidence in breathhold
  - o Confidence in style
  - o Confidence in tactical plan
- 12:00 – Frenzel is not answer for all equalization challenges
- David Kent training study (
  - o 12:45 – total empty lung training – FRC is hard to quantify and to measure
  - o 8 repetitions up to 20m with empty lungs, only mouthfill taken on the surface
  - o 16:45 full lungs drops (Head down VWT) -2, max 3 drops per day (50m) or 1 drop 60m
    - o Pacing of equalization
- 50m FIM static of 1m – instructor at 30m
- 22:00 Mouthfill is done to go beyond Frenzel depths
- 24:00 Tactics:
  - o US: 8 forceful movements / 8 lighter movements / glide
  - o Dolphins: effort movements / kick glide /
  - o W. Trubridge – movements / movements glide, movement longer glide ... / glide
  - o So: 2 stage descent or 3 stage descent
- 26:30 a comment on technology (alarms / analytical devices)
- 28:30 Question on squeezes
  - o No big jumps in training
  - o Gradual incremental methodical approach to depth training
  - o Flexibility
- Control and monitor the tension and get rid of it
- Best dive – is the one on automatic pilot
- 46:30 Question: how can you train equalization in a 4 meter pool
  - o We empty out lungs
  - o No weights
  - o Head down descent
  - o Surface mouthfill

- o On the bottom (still head down):
  1. Blow out mouthfill
  2. Recover mouthfill
  3. Equalize
    - Repeat steps 1-3 until you can – 3 times
- o Other exercise in 4m pool:
  - Empty lungs and no mouthfill
  - We go down to the bottom and refill

- 52:50 Question – how do I train 100m dive in 30m quarry
  - o Begin with gradual deeper and deeper empty lung, surface mouthfill exercise
  - o Monitor speed of equalization
  - o FRC drops to 30m
  - o If you have good partner – static on the bottom (FRC dive ) – max 1minute
- 100m dive – CO2 build up on descent / ascent
- Michael Phelps vertical butterfly kick exercise with weight belt
- 01:00:30 – should I try to pack to improve pool performance?
  - o Dynamic total empty lungs exercise
  - o Start with 3-4 packs, gradually increase

## Episode 13 <http://twitcam.livestream.com/ex1td>

July 03, 2013

00:30 – remote coaching rules

01:30 – FAQ

02:00 – is my performance in static related to CNF results?

08:15 – approach to train static as depth training element

09:45 – why good style is important

1% improvement in style = 1% of results / 10% of fitness improvement not effective if wrong style

13:45 – never too late to improve your flexibility

16:45 – some inventions / variations to the classical style

17:45 – swimmers monofin-like technique after push off

19:30 – is breaststroke really the future of DNF? – Maybe dolphin kicks?

20:45 – when teach what?

- Packing for 20m depth?! – reasons why not

23:00 – spiritual yogic divers ;)

25:00- about usage of yogic exercises

27:15- VEGAN diet – is it necessary for freediving

29:20- key points on freedivers diet (Hydration, Gluten, milk products)

-allergies

32:20 – allergic attack vs. ears equalization

34:00 – DYNAMIC vs. DEPTH – what is the relation?

- Don't assume high DYN is automatically translated into CTW

- Don't go into numbers pursuit

- 40:00 – some good ideas about competitive sport in general

45:15– what progress is reasonable to go to depth (5m steps too big)

-drops/ empty lungs drops

48:45 – explosion of depth diving elements to be separated separately

51:20 – 3 part dive (kick, slower kicks, glide)

53:20 – 30m is a very good depth – starting from around 20m you need to adjust your equalization technique

Some comments about cheekfill (mouthfill)

20m on empty lungs is equivalent of 120m on full lungs (except time, and effort).

59:00 – head down drops to learn equalization

## Episode 14 <http://twitcam.livestream.com/f7xsh>

August 13, 2013

00:00 – question – pregnancy vs. freediving

13:30 – Static+ Breathwalk - superb dry exercise on stress breathhold

- 100m dive phases (simplified)

o Active descent 30s

o Point of non-deceleration (i.e. 30m)

o Free fall (static) 70s

o Turn

o Active ascent 90s

o Last 10m buoyancy (static) 10s

- Total: 120s. Active, 80s. of static

- 20:00 – 2min static + 2min breath walk is good exercise to train to this dive

- (50m dive needs proportionally less)

- Repetitions

o when numbers not big – up to 3 repetitions

o Each time you make mark on land where you walked

o Advanced – you reduce number of repetitions (i.e. 1:30 static + 2m walk)

o Not more than 2 times / week

o Use heart monitor to check pulse (examples of well trained freediver):

▪ After ventilation (80s)

▪ End of static (50s)

▪ End of the walk before the breath (28s)

▪ When start breathing (110s)

o Tachycardia & Bradycardia – timing

o Make notes in training log to discover about your personal Tachy and Brady specifics

o Count double steps

- Question about empty lungs static – is 40s. a good result in the beginning

o Empty lungs static increases quickly – start with 15 sec.

o Use empty lungs as addition to normal training – you don't dive that way

- Question – what breaks between static/breathhold walk?

o This is not interval training!!!

- Attention to breath walks not preceded by static phase – in case of hyperventilation you may fall when standing up

- Question about ventilation proportions (inhale vs. exhale)

- Few words about nutrition and diet



## Episode 15 <http://twitcam.livestream.com/fbc75>

August 27, 2013

01:00 – Pipin record announcement and comments related to this (claim to make 5 dives to 100m in 30min)

- Few cases of DCS known in freediving world
- Multiple dives to 100+ meters a day
- Packing as a factor of DCS
- Packing as a factor of Nitrogen Narcosis
- Are depth records dependent on packing?
- How and why we pack (vertical vs. horizontal position)
- Alexey dive to 129.2 CTW
- Pipin floods sinuses and middle ear at 80+ meters
- Greek sponge divers - burst of eardrum – diving w/o equalization
- Patrick Musimu / Audrey Mestre – wet equalization as well

30:34 – Indonesia free divers' competition

- High volume masks,
- no cheek fill
- parial exhalation
- & BTV
- Results up to 79m

154m DYN FRC – what is the future direction?

- Sea elephants - Mioglobin
- 38:45 – high altitude climbers
- End of the full lungs technique era?! (like hyperventilation, like bi-fin?)
- Beginning of monofin in depth competitions
- Umberto about monofin
- “victorious army doesn’t change its tactics” – but why not?
- These are not always the champions to learn from, but pioneers
- Patrick Musimu film – “waving to my ancestors”  
<https://www.youtube.com/watch?v=2KWx-96w8Xc>
- Article in French “L’appnee” special edition about our ancestors freedivers
- Look in the past – learn about humans in the water

01:00:30 Question / tip for beginner / intermediate divers who struggle with Frenzel and equalization – one ear jams – one ear problem

- o If tongue technique is right, reason may be diet / allergies
- How Allergic attack is being built up with various allergens (milk / gluten)
  - o The allergens we can control is what we eat
- Question: is cardio training applicable for freediving / or which land training is advised
  - o Flexibility, Breath walk, Static

## Episode 16 <http://twitcam.livestream.com/fdzu9>

September 11, 2013

00:00 - Umberto’s comment about monofin (repeated)

02:45 – if you are not world champion – you should experiment !

03:20 – about the static training

- empty lungs / full lungs

04:30 – early mouthfill at 20m

07:30 – stress sensation anatomy

- TAI CHI vs. water pressure

12:10 – breathe walk on empty lungs (without static phase)

14:00 – question – freediving without spleen ?

15:20 – avoid trachea squeezes

20m totally empty lungs equalization issues

17:00 – equalization method without any tongue movement

22:00 – Frenzel demonstration without using front of the tongue

25:00 – increase depth gradually – only when you are able to equalize on the bottom

25:55 – drops – amazing depth training

- 12-13kg weight (no weight on diver)
- Up to 60-70 meters
- Make it without cheek fill top-up
- To get real pressure experience, not simulated pressure
- Learn longer dive
- Get use to narcosis
- Learn speed of equalization
- Maintain single mouthfill to minimum 60 meters

30:45 – question – I do empty lungs in 31 quarry (Zakrzówek ;) ) – can I do other exercises ?

- Empty lungs dives proves to be extremely successful

33:00 – Drops – continuation

- Equalization – practice until it’s quick, easy and you can do it with mouth open
- HEAD POSITION !

35:45 – reasons of loosing mouth fill

37:00 – concentrate on everything, specially on non-concentrating – automatic pilot never fucks out ;)

## Episode 17 <http://twitcam.livestream.com/fguuxx>

October 02, 2013

00:00 – you need faith in your technique and it has to be automatic – that take time

- Drops (continuation)
- Gradually moving weight from rope to belt
- 3:45 stress and mental aspects
  - o Confidence
  - o Every dive don't have to be successful – it's about learning curve mainly
  - o Lot of dives to get there
- 7:15 – french “anti-stress” exercise
  - o About ventilation time (spoiled divers)
  - o 16:15 Claude Chapuis ventilation example
  - o 11:30 – different sea conditions, thermocline etc... - get used to it – train to handle it
  - o Train to manage to deal with the unexpected
- 15:00 Odayana (<http://www.freedivers.net/blog/2012/02/basic-lung-stretching-for-freediving-part-1/>)
- 10 inch exercise ball – to train flexibility
- 17:45 – extend the ribcage
- 21:30 – static training
- 26:30 – again about empty lungs – dive is “empty lung” below 30-40m
- 29:00 ball exercise illustration
- 30:45 – about “general” training program
- Trainer job is to spot issues and fix them

## Episode 18 <http://twitcam.livestream.com/findv>

October 15, 2013

03:30 – question about diving on the wreck & equalization problems

- Looking downwards

11:15 – trachea / lung squeeze !!!

- Stress
- Squeeze is fully avoidable !!!

14:45 – training for pool disciplines

- Pool training to train depth (winter) vs. pure training for pool competitions

19:00 – CO2 exercises

- In order to progress you need a stress, but stress is not making a progress. What makes progress is the body adaptation to certain stress level.
- Too much stress = the wall
- Too little stress >>> no progress
- 22:30 – yogic CO2 exercise analama vilama
  - o Long inhalation & Long exhalation with natural ratio between them
  - o Heart is slowing down
  - o Metabolism is slowing down
  - o Continuous body adaptation to CO2
  - o Start with 15 breaths, adding 1 breath per session
  - o measure total exercise time
  - o “The mind should stay with the breath”
  - o Count breaths using crises in your fingers (12 per hand)
- 36:15 – this exercise is better than CO2 tables

37:15 – Frenzel technique for beginners

- Don't look down
- Don't swallow

41:45 – Question – one ear problem (diet / food allergy – gluten / milk)

- mucus gets thick and sticky = sticky Eustachian tube

## Episode 19

<http://twitcam.livestream.com/findv>

December 04, 2013

### "Thoughts as a result of the accident in VB2013"

05:00 – Overtraining

- We need time for physical adaptation
- Adaptation to pressure / to depth requires time
- 7:45 Depth triggers / tension / equalization issues
- Optimum stress level allows adaptation
- If we don't dare – we don't achieve, if we dare too much, we will pay for it
- 12x50m DYN, short intervals – is it really good CO2 exercise
- It's about Quality of training, not training duration and hardness
- CO2 tables
- Fit exercises
- 14:00 – how to (not) train
  - o Carefully selecting items we focus when we train.
  - o Is swimming training (repetitions) relevant for freediving?
- 15:45 – challenge accepted wisdom
  - o Not necessarily top athletes are to be followed in all their elements so figure out what works for you
- 17:30 –depth training core is analysis

PACKING (Bob Croft invented packing)

- 20:45 – what happens when diving on packed lungs
  - o TENSION
  - o LUNG SQUEEZE
  - o DCS

27:00 – TIME FOR ADAPTATION TO THE PRESSURE

- 28:15 – art of aborting the dive by great champions (Guillaume Néry)
- Lung squeeze is not normal part of the dive
- After Lung Squeeze take brake, then go back in depth and increment slowly
- Training ratio between Empty Lungs vs. Full Lungs = 50% (static, dynamic, walking...)
- Empty lung training – mouthfill should last till around 20/30m.
- Top up mouthfill – the sooner the better
- 42:00 Stretching

49:00 – AIDA RULES CHANGE?

- Deep blackouts
- Lung squeeze