

# “AN INTEGRATIVE APPROACH”

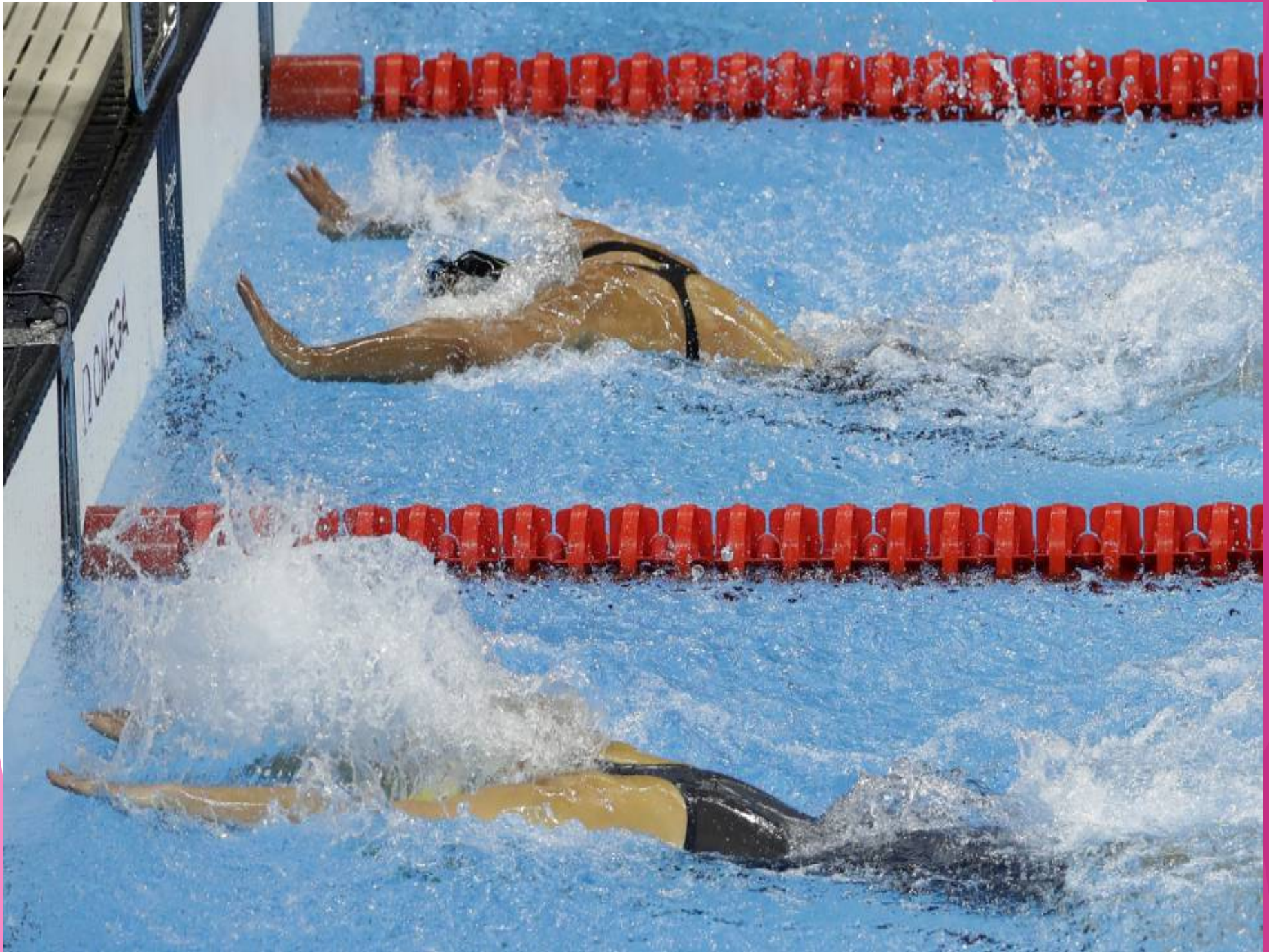
## FOR OLYMPIC SUCCESS

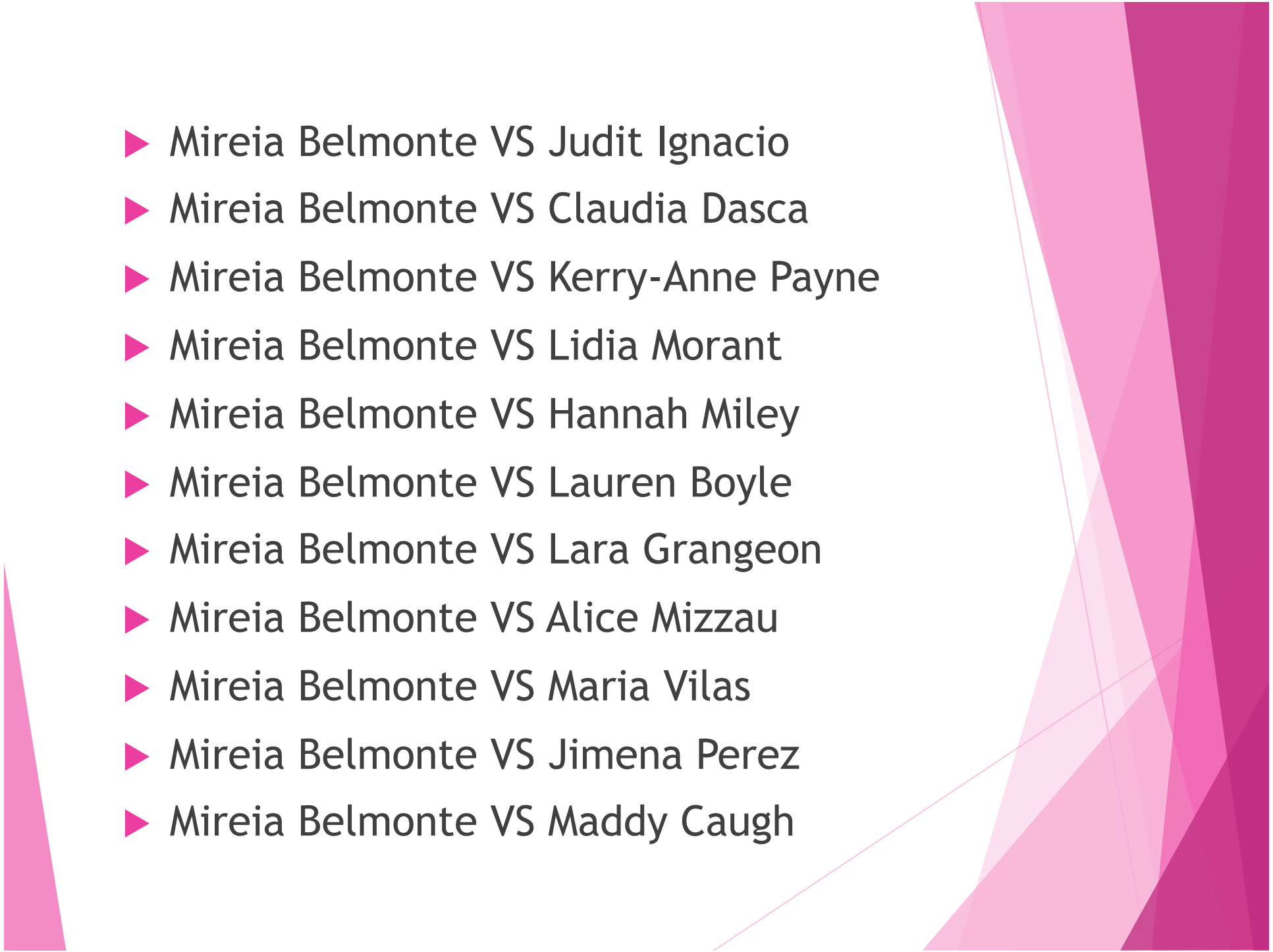
*Fred Vergnoux*  
*Camp Nou, 10th of October 2019*



# Swimming is a Team Sport

- Richi Serres. Mental Preparation.
- Monica Solana. Physiotherapy.
- Javi Arguelles. Strength and conditioning.
- Raul Arellano. Biomechanics.
- Iñigo Mujika. Physiology.
- Miguel Cabezas. Nutrition Molecular.
  
- Blanca, Andreu, Gonzalo, Guillem, Cristina, Firmin, Montse, Vicky, Carmen, Franchek, Piero, Jose, Paco, Edu, Oriol, Patxi, Franck, David, Oscar..
  
- Tim Kerrison, Bill Sweetenham, Stephane Lecat, Eloi Gomez.
- 41 persons involved in the Rio preparation.

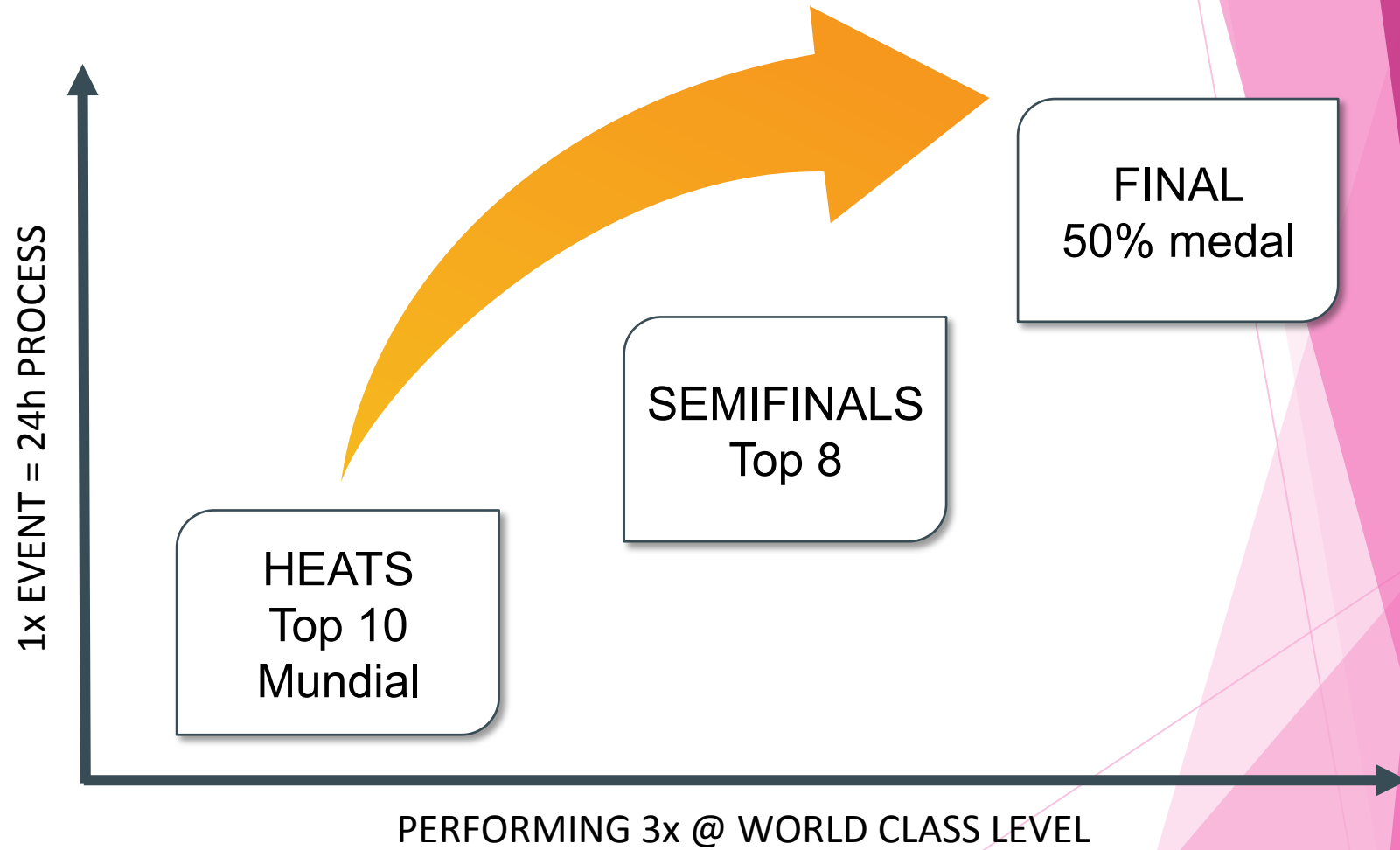


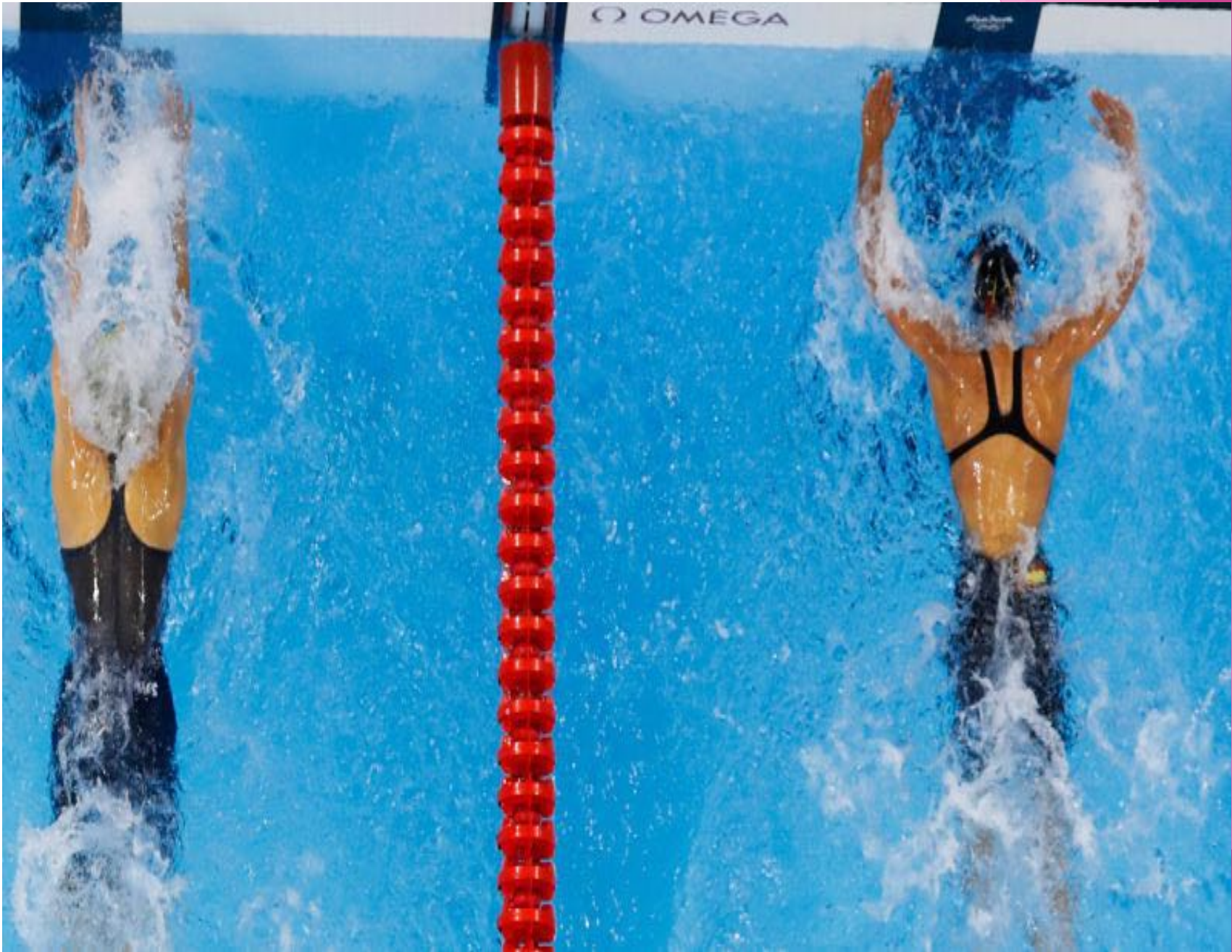
- 
- ▶ Mireia Belmonte VS Judit Ignacio
  - ▶ Mireia Belmonte VS Claudia Dasca
  - ▶ Mireia Belmonte VS Kerry-Anne Payne
  - ▶ Mireia Belmonte VS Lidia Morant
  - ▶ Mireia Belmonte VS Hannah Miley
  - ▶ Mireia Belmonte VS Lauren Boyle
  - ▶ Mireia Belmonte VS Lara Grangeon
  - ▶ Mireia Belmonte VS Alice Mizzau
  - ▶ Mireia Belmonte VS Maria Vilas
  - ▶ Mireia Belmonte VS Jimena Perez
  - ▶ Mireia Belmonte VS Maddy Caugh

## 0.03 ACTUALLY MEANS A LOT

- **Average of 88km/+ training weeks. Train Monday to Sunday.**
- **Mireia's vision of the plan and the important steps.**
- **Mireia's vision about details of improvement (team/individual).**
- **Mireia's dealing with training problems. Having problems is good.**
- **Being tired all time is 'ok'.**
- **Your priority in life is your objective. If you have 2 priorities you don't have any !**
- **Understand and practice the process. Heats-Semis-Final.**
- **The genius touch.**

# Heats - SemiFinals - Final







## **50 Weeks Training**

Phase 1 : 30 weeks

Phase 2 : 20 weeks

## **16 weeks training at Altitude**

**Camp 1** : 3x weeks Sierra Nevada

**Camp 2** : 3x weeks Pretoria

**Camp 3** : 3x weeks Sierra Nevada

**Camp 4** : 3x weeks Font Romeu

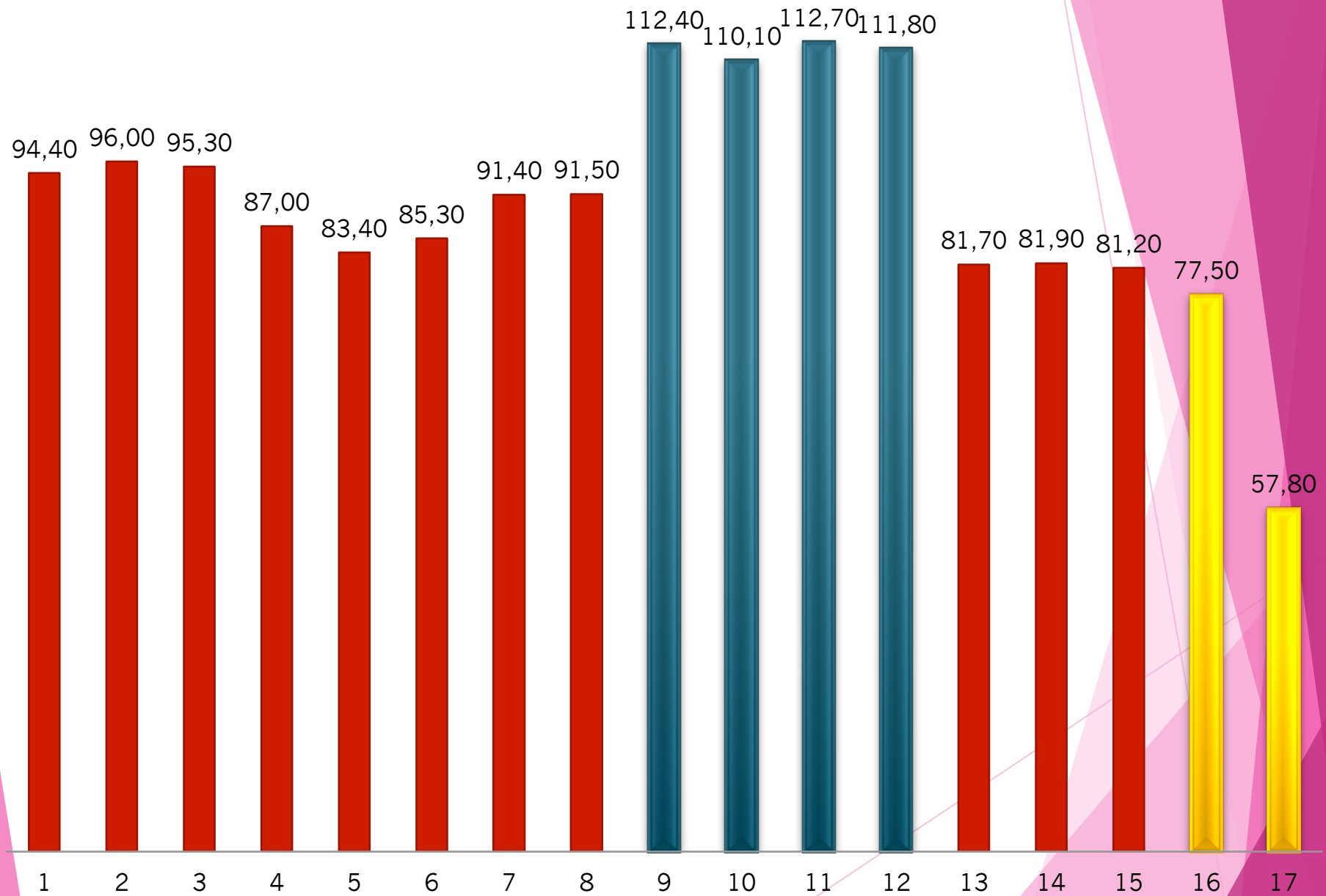
**Camp 5** : 4x weeks Sierra Nevada

**Altitude Tent** : 9 weeks

**Altitude Taper** : 6-9 days



## VOLUME MACRO 2



## 2016 OLYMPIC PREPARATION

FRED VERGNOUX

WEEK	DATES		WEEK JO	COMPETITIONS	LOCATION INFOS
1	28/03/16	03/04/16	18		CAR
2	04/04/16	10/04/16	17		CAR
3	11/04/16	17/04/16	16		CAR
4	18/04/16	24/04/16	15	Ucam / Madrid	CAR
5	25/04/16	01/05/16	14		Font Romeu 24-15th May
6	02/05/16	08/05/16	13		
7	09/05/16	15/05/16	12		
8	16/05/16	22/05/16	11	European Champs	London 16-22nd May
9	23/05/16	29/05/16	10		CAR
10	30/06/16	05/06/16	9		CAR
11	06/06/16	12/06/16	8	Mare Nostrum	BCN+Canet / Setubal PO
12	13/06/16	19/06/16	7		Sierra 13-12th July
13	20/06/16	26/06/16	6	7 Colli	
14	27/06/16	03/07/16	5		
15	04/07/16	10/07/16	4		
16	11/07/16	17/07/16	3	Spanish Nationals	13-17th July
17	18/07/16	24/07/16	2		CAR
18	25/07/16	31/08/16	1		Camp Rio
19	01/08/16	07/08/16	0	JO RIO DE JANEIRO	06th-13th August
20	08/08/16	14/08/16	0		

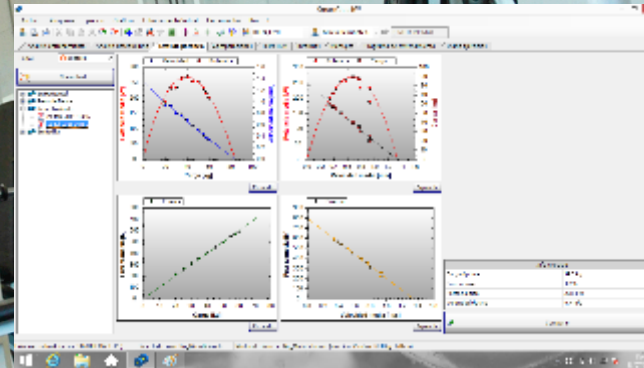


# CAR Sierra Nevada

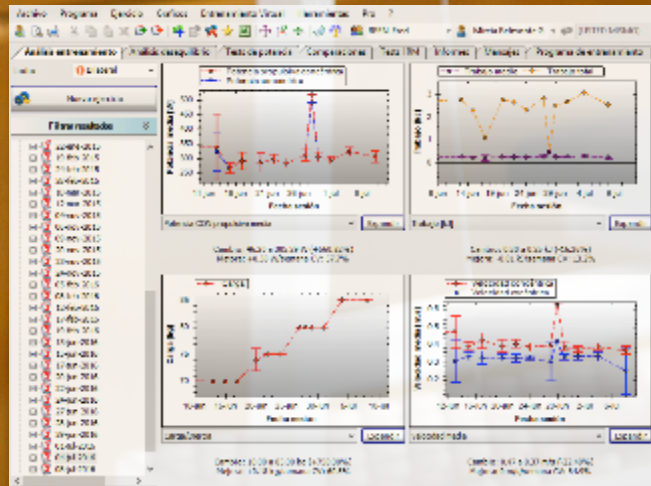
Support from  
Biomechanics Sport  
Performance Analysis  
Department

# Muscular Profiles

- *Individual Muscular profiles: Speed, Power and Force curves.*
- *3 main exercises: squat, bench press and bench pull.*



# Monitoring



- **12 training sessions**
- **288 sets**
- **2880 reps**

# Swim Skills Circuit

*Resistance  
Underwater  
Swimming*

*Specific  
Strength  
Exercises*

*Technical  
Biomechanical  
training*

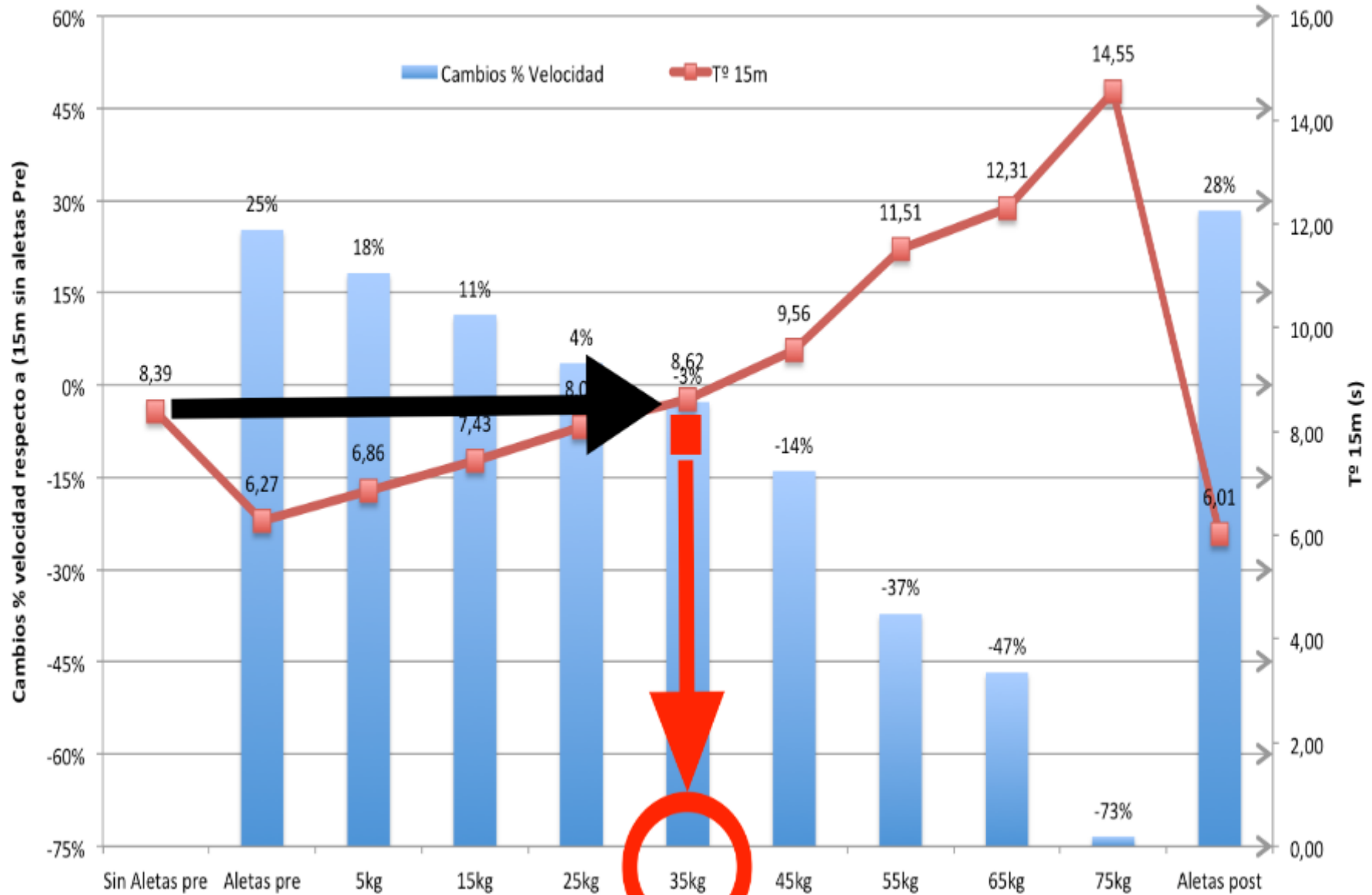
Individual load based on incremental test

Different resistance, stroke and speed

Focused on starts and turns. Video feedback



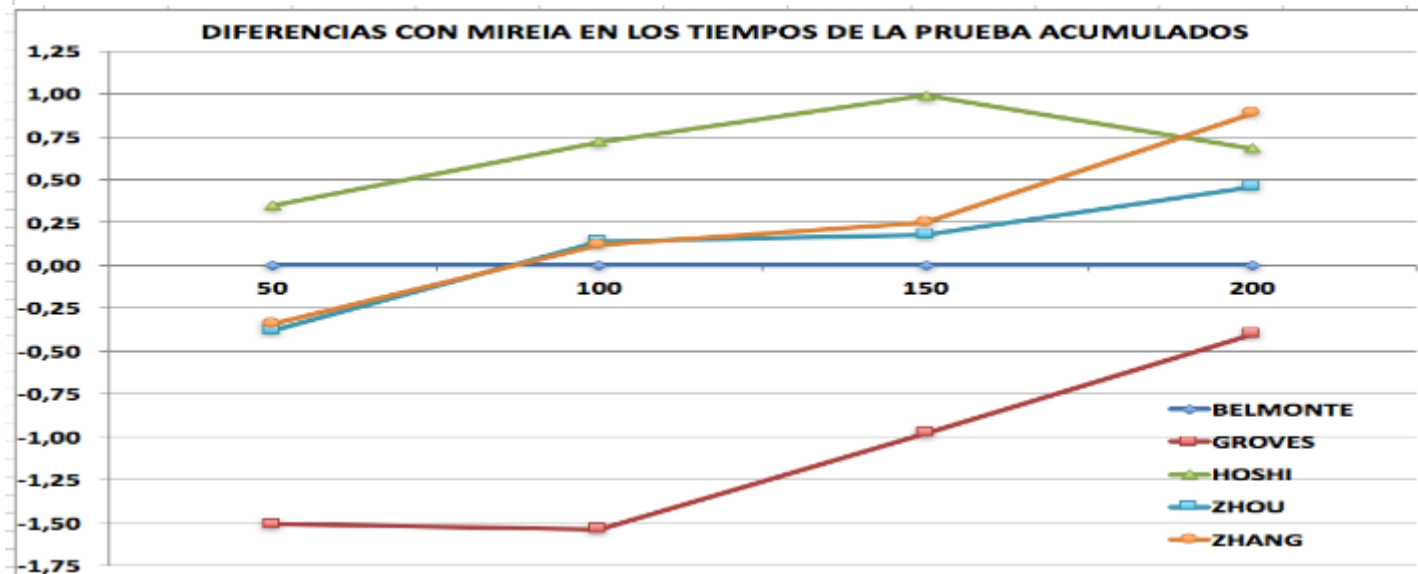
## 15 Subacuático . Tiempos y evolución de velocidad



# 200m Butterfly pre-analysis

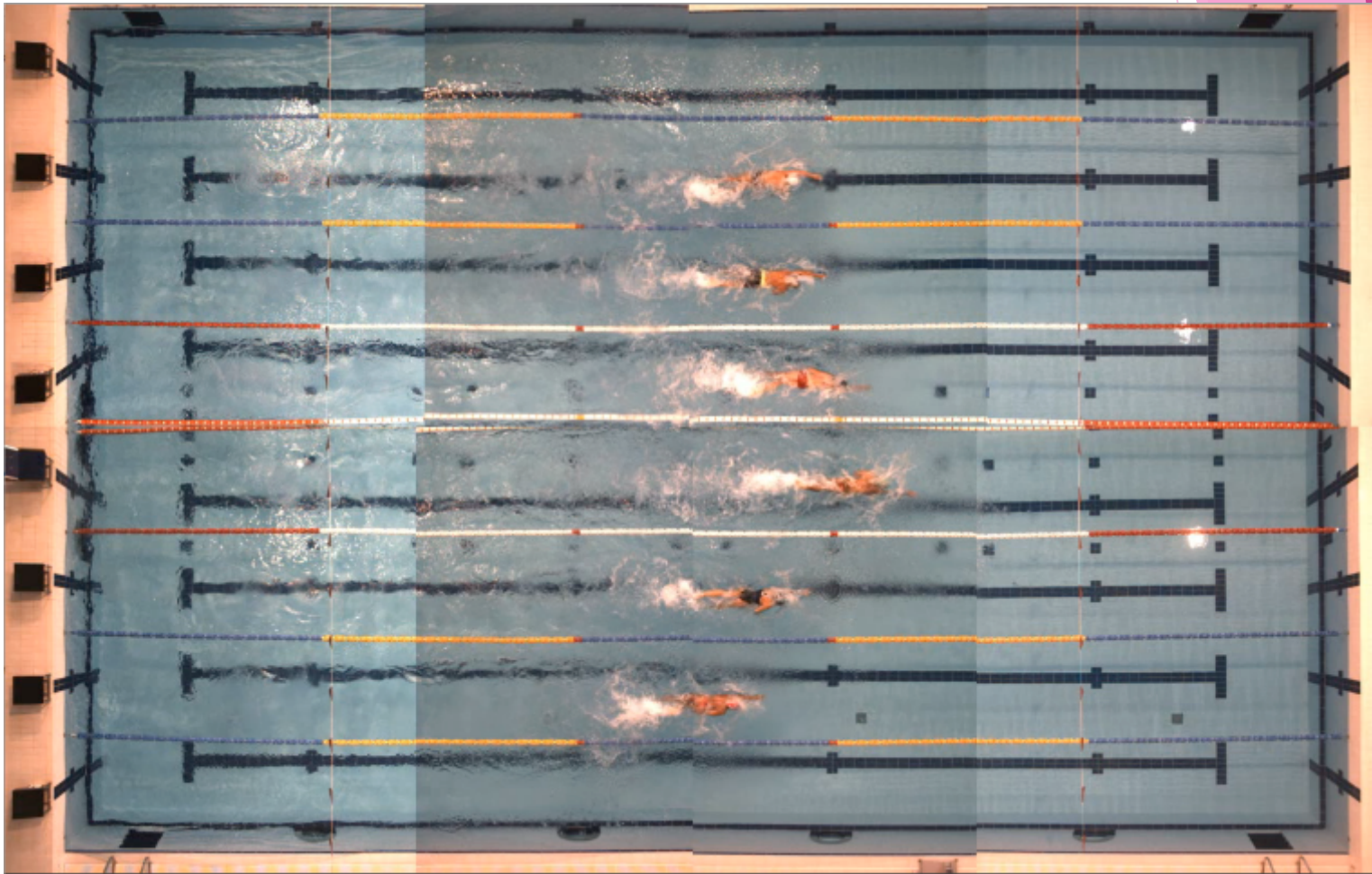
TIEMPOS ACUMULADOS		BELMONTE	GROVES	HOSHI	FLICKINGER	ZHOU	ZHANG	THROSSELL	ADAMS
R.T.		0,67	0,70	0,64	0,72	0,70	0,73	0,81	0,73
50		28,86	27,35	29,21	28,75	28,48	28,52	28,73	29,00
100		60,95	59,41	61,67	60,48	61,09	61,07	61,23	61,17
150		93,42	92,44	94,41	93,68	93,60	93,67	93,89	94,13
200		126,06	125,66	126,74	127,02	126,52	126,95	127,19	127,22

DIFERENCIAS A LO LARGO DE LA PRUEBA		BELMONTE	GROVES	HOSHI	FLICKINGER	ZHOU	ZHANG	THROSSELL	ADAMS
50		0,00	-1,51	0,35	-0,11	-0,38	-0,34	-0,13	0,14
100		0,00	-1,54	0,72	-0,47	0,14	0,12	0,28	0,22
150		0,00	-0,98	0,99	0,26	0,18	0,25	0,47	0,71
200		0,00	-0,40	0,68	0,96	0,46	0,89	1,13	1,16





# Looking Ahead: Training Tools



Effect of changes of race strategies feedback



HPC PRETORIA - SOUTH AFRICA

# HPC PRETORIA

1450m Altitude

University Campus

Multi Sports Orientated

High Level Performance

Pool : 50m x 12 lanes

No video

World class gym

Spinning room

Tracks

Outdoor basic recovery center

Full medical-fisio department

Room :

Dorms / confort -

Individual / confort +

Early training (weather)

Student on site, could be noisy

Outdoor training / January



FONT ROMEU - FRANCE

# FONT ROMEU

1850m Altitude

National training center

High School + University

Ski

Pool : 50m x 6 lanes

Pool : 25m x 4 lanes

No video analysis system

Limited Gym / Outdoor track

Brand new recovery center

Life style

Very small room / basic confort

No science department

Fisio / Medical

Meals : school + university, not necessary adapted to world class



SIERRA NEVADA - SPAIN

# SIERRA NEVADA

2320m Altitude

Multi Sports Center

Ski

No education on site

Pool : 50m x 6 lanes

Video analysis equiped

2x weight rooms

1x strength evaluation Lab

1x biomechanic Lab

Full equiped recovery center

Room / Athlete confort +

On site science

Medecine/Physiotherapy

Biomechanic

Strength and conditionning

Physiology

Nutrition

Meals / Specific needs cover

High-Low training / CAR-Granada



CAR  
Sant  
Cugat

- Doctors
- Physios
- Sport psychologists
- Physiologists
- Biomechanics
- Athlete support
- Research

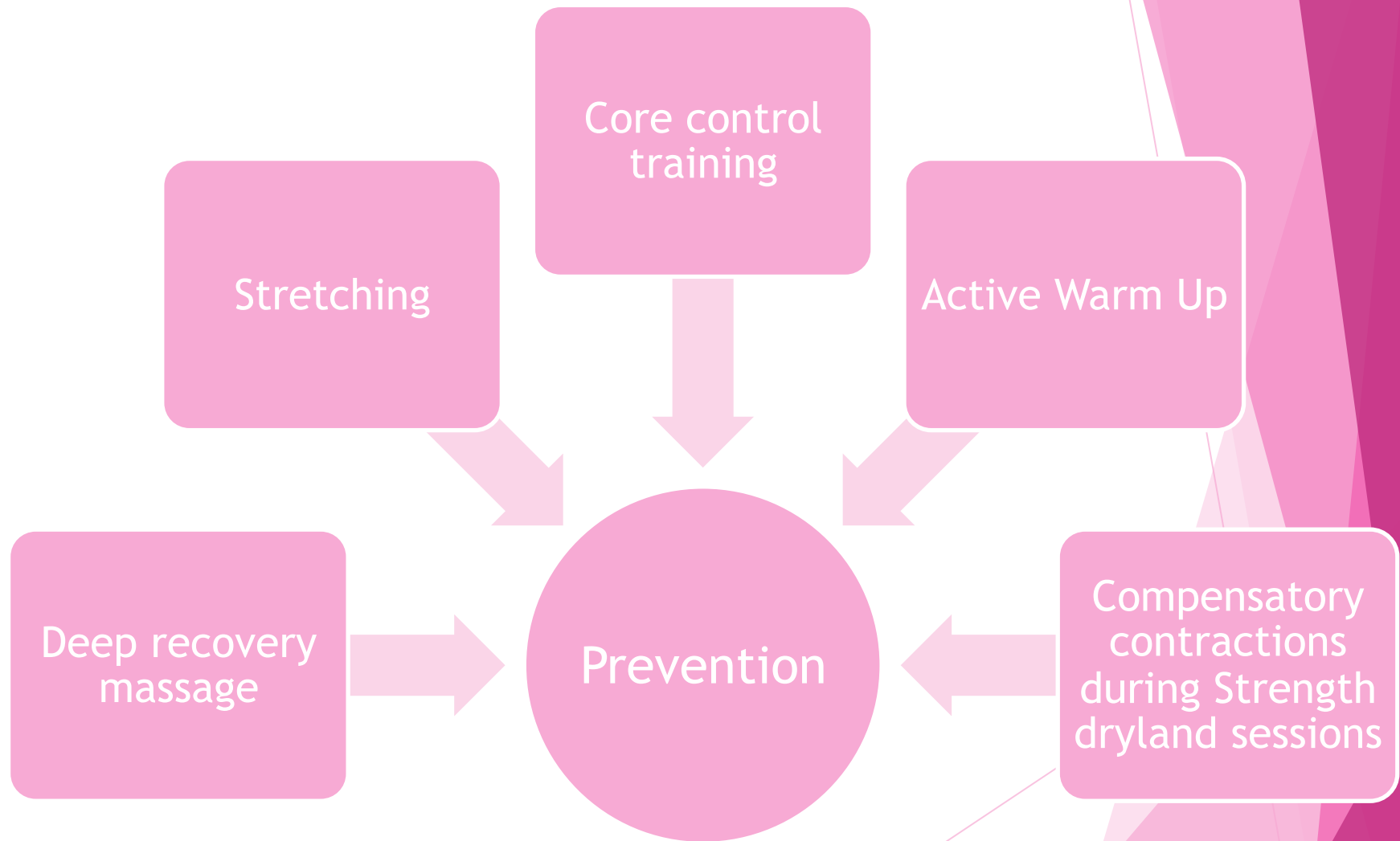


Hospital  
of  
Terrassa

- Sleep patterns study
- Neurology
- ORL expert
- Dermathologist
- Scan and Xrays
- Blood test
- Podologist



# PHYSIOTHERAPY - MONICA SOLANA



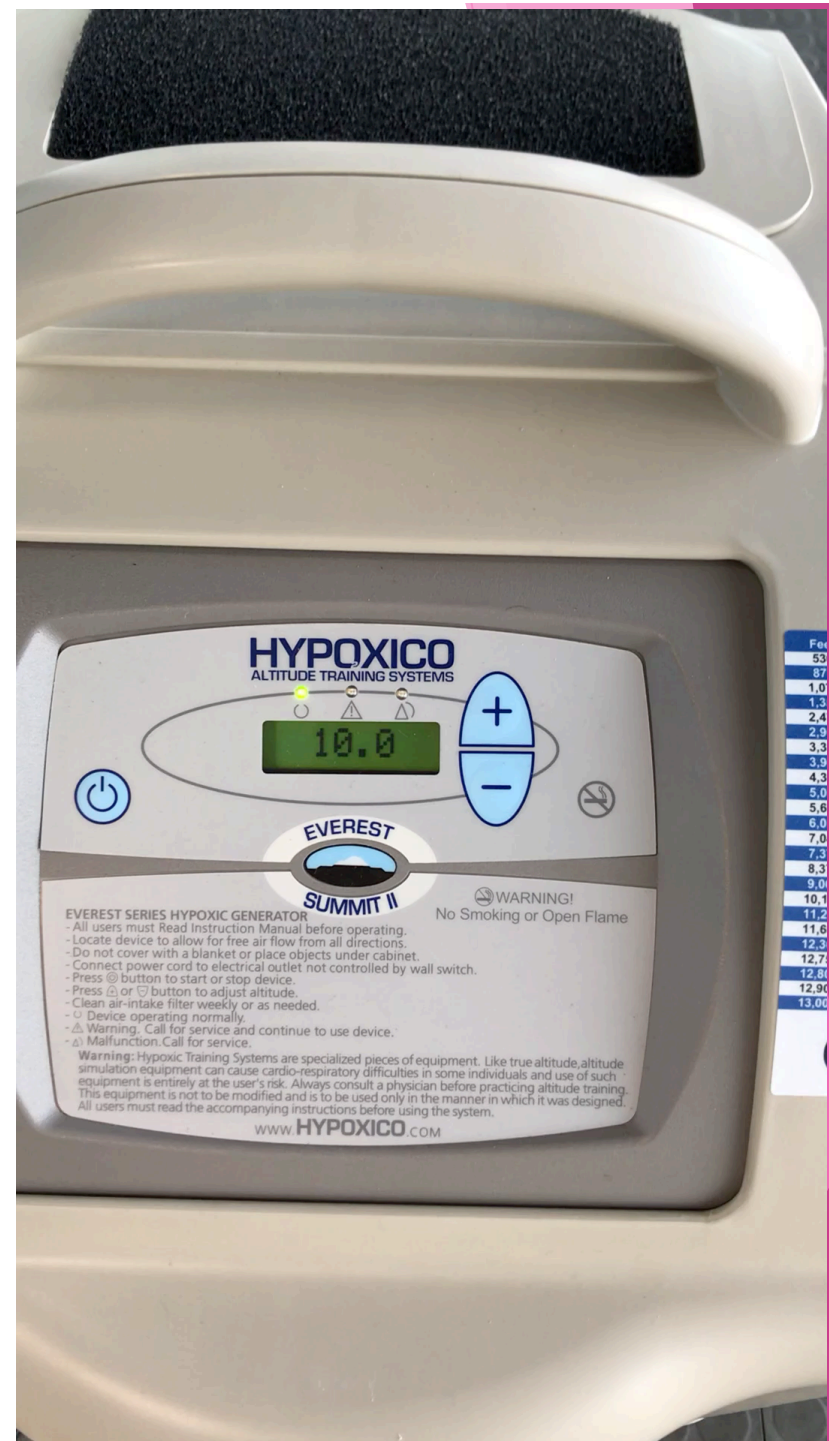
## MOLECULAR NUTRITION - MIGUEL CABEZAS

- Science which studies the effects of nutrients in the body.
- Combo nutritionist and molecular nutritionist / Food + supplements.
- Based on monthly blood analysis. If altitude : analysis prior-during-after.
- Hydration : focusing on electrolytes and less sugar. Ex of Gatorade : contain 50gr of fructose per liter. Insulin resistance, glucose cannot enter the cell.
- Immunology. Probiotics and plants. Avoid being ill.

## PHYSIOLOGY - INIGO MUJIKA

- Daily monitoring. HR, La, Hmg.
- Sleeping patterns. Full study in 2015. Anticipate late swims in Rio. Repeat for morning finals in Tokyo.
- Altitude evolution. Progression during 4 years. Next step : train at 3600m. Intermittant Hypoxic training.
- Constant adjustment of taper phase. Model of Japan. From altitude to the competition.
- Use of hypoxic tent during transition phase and for the first part of the taper.
- Body composition. 10 years data.


















































## MENTAL TRAINING - RICHI SERRES

- Building a visual picture of yourself of max confidence.
- Brainspotting skills in order to avoid possible mental bloc (YIPS).
- Emotional control of extreme situation (Olympic final).
- Positive visualization.
- PNS - Positive Neuro Stimulation. Internal talk.
- Mindfulness activity. Be as aware as possible during the event.
- Practice auto analysis post racing. 'I did'. 'I want'.
- Relaxation skills and recovery tools. White noise (different frequencies)
- Flow state generation skills. How I am and what I have to do, how I feel and what decision I have to make.
- Live 'mental training' during key sets (suit on). Maximum effort by auto involvement, and what type of reward does it mean.

## 2320m SIERRA NEVADA

- \* Train High - Sleep High (THSH)
- \* Train Low - Sleep High (TLSH)
- \* Train High - Sleep Low (THSL)
- \* Train High/Low - Sleep High (THLSH)
- \* Train High - Sleep Higher (THSH+)
- \* Train High/Higher - Sleep High
- \* Sleep Natural/Simulated - Train Low

L	M	M	J	V	S	D
 45mn	 45mn	 45mn	 45mn	 45mn	 45mn	
 2h30	 2h30	 2h30	 2h30	 2h30	 2h30	
 1h30	 60mn	 1h30	 60mn	 1h30	 60mn	
						
 45mn	 45mn	 45mn	 45mn	 45mn	 45mn	 1h00
 2h30 +  30mn	 2h30 + 	 2h30 +  30mn	 2h30 + 	 2h30 +  30mn	 2h30 + 	





# 2016 OLYMPIC TAPER

- \* 3x Camps Sierra Nevada.
- \* Combo Font Romeu + Sierra Nevada.
- \* 4x weeks final Prep @ 3200m.
- \* Nationals + 10x days @ 3200m.



# AVERAGE HOURS PLAYING OUTSIDE



1985 CHILD

2005 CHILD

2015 CHILD

PER WEEK

30

5

?

PER YEAR

1,500

250

?

PER DECADE

15,000

2500



?

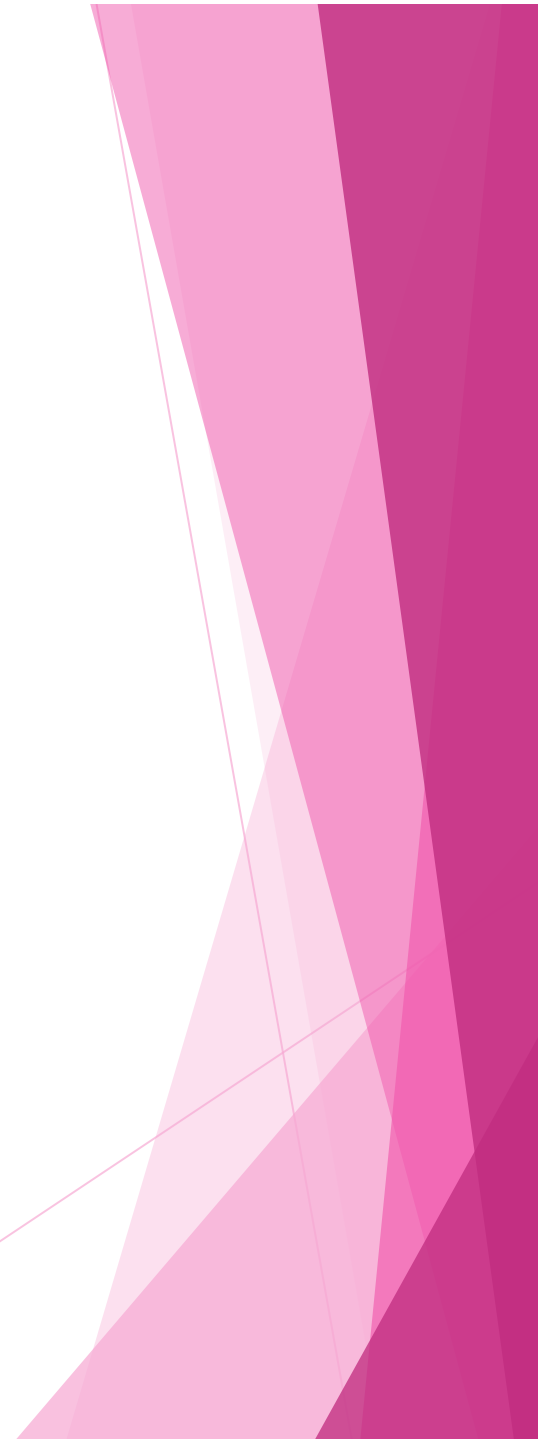
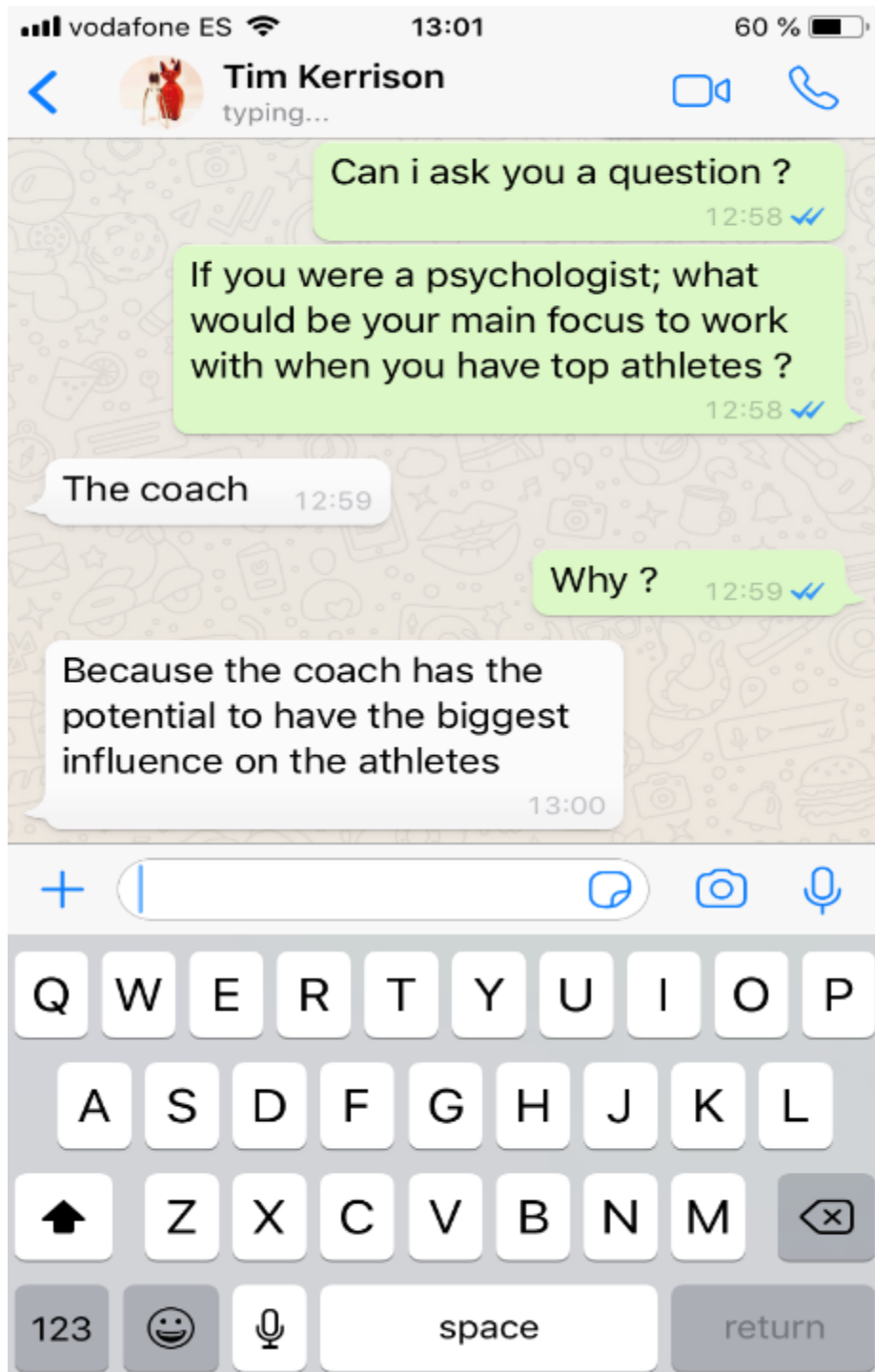
Source: Honore Hoedt, Netherlands (2017).





- You have to be prepared to do more, to commit more, to sacrifice more, and to work harder than anyone else.
- Life balance is important but cannot become an excuse to cut corners, the job must be done.
- To be the best in a competitive environment you have to be 100% committed to the preparation.
- There is no point in doing less, you might still be competitive doing less but you won't win anymore.
- Prioritizing the group before the individual. A group session will often outweigh the benefits of a specific individual tailored training session.
- Respect the hierarchy.

- 
- 
- If you are not winning, probably what you are doing is not right and you need to make changes.
  - When you win it's much more complicated. You must recognize that you are not going to keep winning if you do the same.
  - To keep winning, something is going to have to change. If not you will be quickly be overtaken.
  - If you have a winning formula it's very difficult to identify what needs to change.
  - The most important aspect of what we do : the mindset.



# “INTUITION ?”

- ▶ Intuition is experience.
- ▶ It's taking an expert decision, in an hostile environment. Olympics is
- ▶ The key in our job is to make sure we progress. This goes before the team culture.
- ▶ Tuperwarre mentality.
- ▶ The Tipping Point. Malcolm Gladwell.
- ▶ <https://youtu.be/gVplLrHWerM>





Your  
Comfort  
Zone



Where the  
magic happens

Merci !

