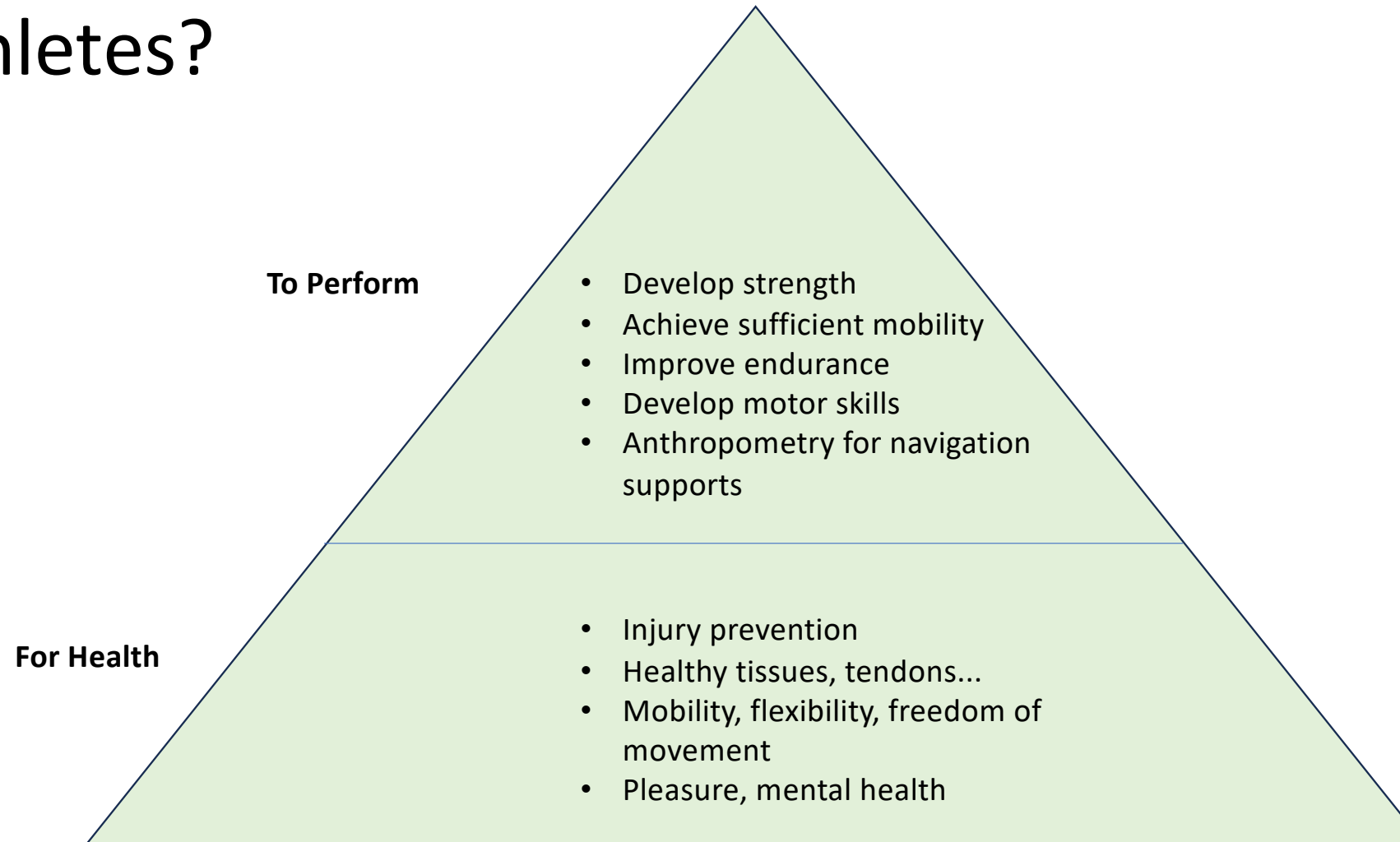


**SWISS SAILING**

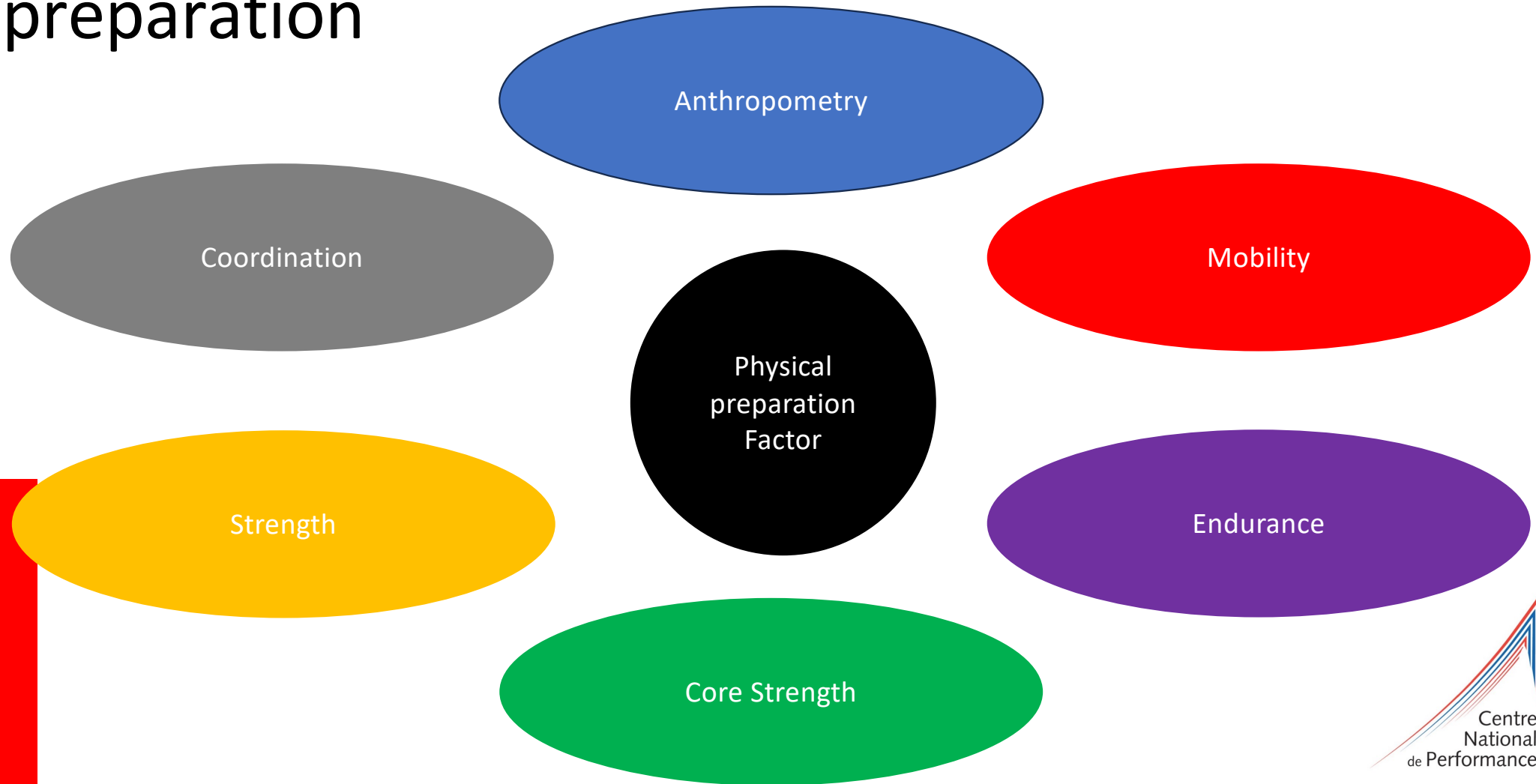
# Physical preparation for sailing



# Why do physical training for water sport athletes?



# Components / Factor of physical preparation



# Physical preparation by age/level

Swiss Sailing CPR 2019-2024 - Annexe 3.1  
Département Youth

Structure de cadres

SOTC /

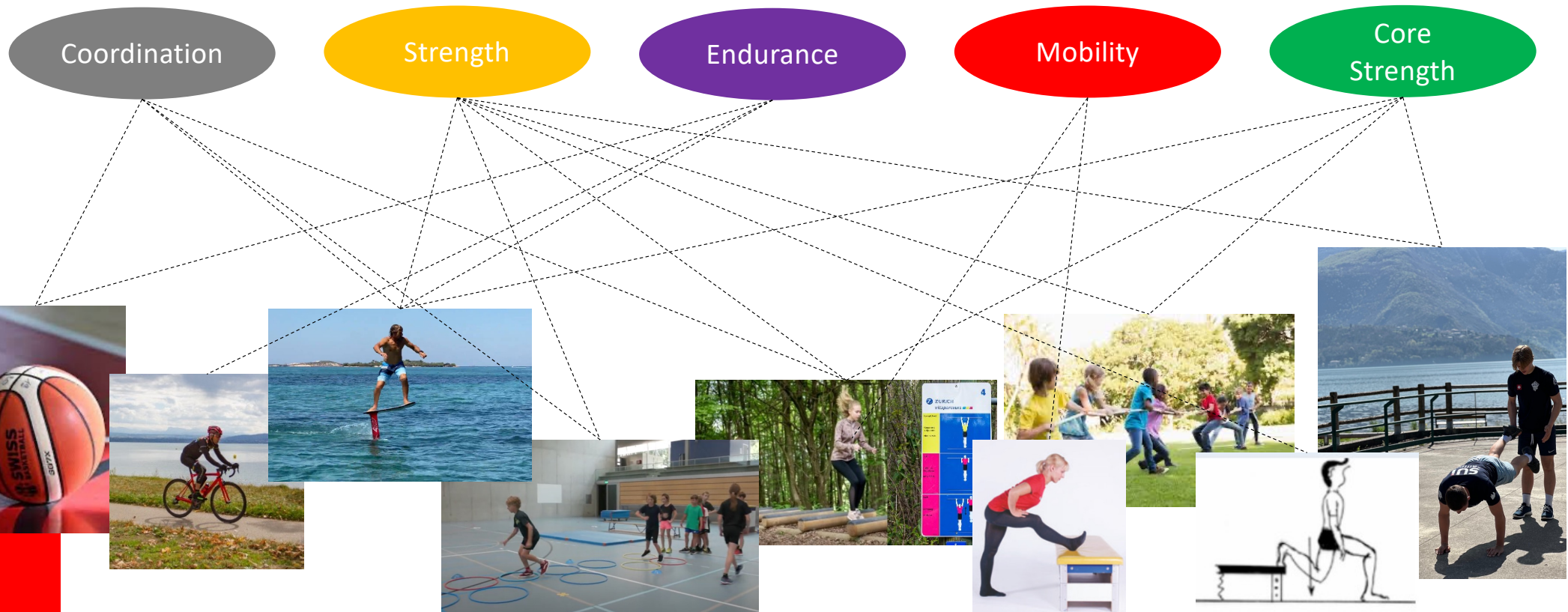
Elite E1-E2-M	SST Elite	Cadre national B & A / Cadre Olympique										E2 Toutes les classes Olympiques		M Cadre Olymp.		E n = 10	
		Cader C										E1 Toutes les classes Olympiques				F	
YouthTeam (T3-T4)	SST Youth Team	OLY Classes - Juniors										T4 49er FX (M+F), 49er, ILCA 7 M, ILCA 6 F 470 mixed, Nacra 17 (mixed) IQFoil (M+F) Formula Kite (M+F)					
		Youth Classes U19 - Accès au CNP Lausanne										T3 29er (M+F), ILCA 6 (M+F) 420, Nacra 15 (mixed) IQFoil 8mt (M+F) Formula Kite (M+F)				N	
Talent Pool (T1-T2)	SST Talent Pool	Début des activités nationales de formation										T2 29er (M+F), ILCA 6 (M+F) 420, Nacra 15 (mixed) IQFoil 7-8mt (M+F) Formula Kite (M+F)				N n = 50	
	Régions	Cadre régional										T1 Optimist, Open Skiff ILCA 4, 29er (open) 420, Nacra 15 (open) IQFoil 7-8mt (M+F) A's youth class				N n = 50	
	Clubs/Classes/Régions	Débuts en compétition										F3 Optimist RS Feva		ILCA 4, 29er (open) 420, Nacra 15 (open) IQFoil 7-8mt (M+F) A's youth class			
	Clubs/Classes	F1-2										Optimist RS Feva		Laser 4.7 & Radial, RS Feva, 420, Windsurf*, Kitesurf*		Sport populaire	
	Âge	9	10	U12 11	12	13	14	15	U17 16	17	U19 18	19	U21 20	21	U23 22	23+	



# Physical preparation by age/level

## Talent Pool T1-T2 (12ans-17ans)

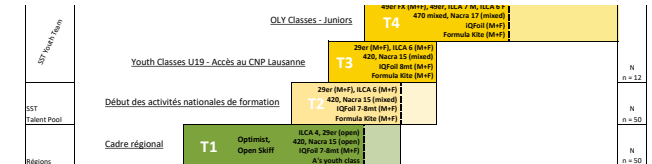
Discover and develop skills through multi-sport and game formats



# Physical preparation by age/level

## Talent pool T1-T2 (12ans-17ans)

Discover and develop skills through multi-sport and game formats

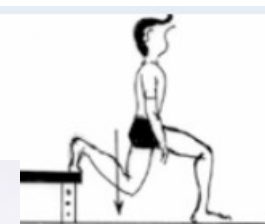
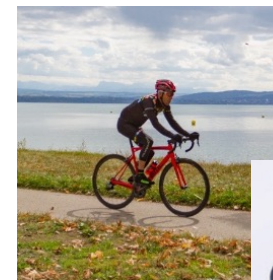


### Played format

- Team sports
- Competitions
- Mini games
- Etc...

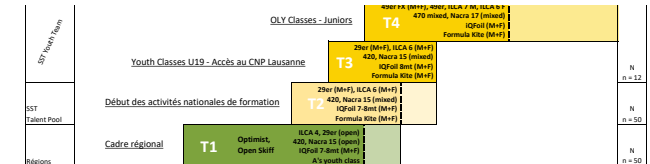
### More formal format

- Bike / Running...
- Circuit Gainage
- Mobility circuit
- Etc.



# Physical preparation by age/level

## Youth Team T3-T4 (15ans-21ans)

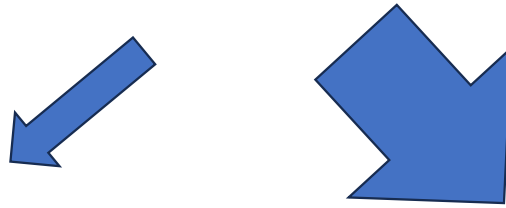


- Learning basic **movements**
- Setting up **routines** (warm-up, cool-down, prevention, stretching...)
- Understanding the basics of **training theory**
- More **precise, detailed training** (training plan)
- Become increasingly **autonomous**

*Some of these aspects are already being implemented at the T2 level.*

# Physical preparation by age/level

## Youth Team T3-T4 (15ans-21ans)



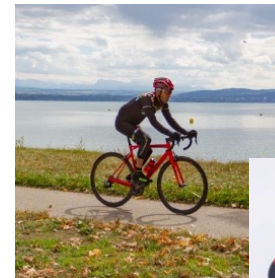
SST Talent Pool	OLY Classes - Juniors	T4	420 (M+F), ILCA 6 (M+F), 420 mixed, Nacra 17 (mixed), IQFoil (M+F), Formula Kite (M+F)	n n = 12
	Youth Classes U19 - Accès au CNP Lausanne	T3	29er (M+F), ILCA 6 (M+F), 420, Nacra 15 (mixed), IQFoil (M+F), Formula Kite (M+F)	N n = 50
	Début des activités nationales de formation	T2	29er (M+F), ILCA 6 (M+F), 420, Nacra 15 (mixed), IQFoil 7-Bare (M+F), Formula Kite (M+F)	N n = 50
	Cadre régional	T1	Optimist, Open Skiff ILCA 4, 29er (open), 420, Nacra 15 (open), Aix youth class	N n = 50

### Played format

- Team sports
- Competitions
- Mini games
- Etc...

### More formal format

- Bike / Running...
- Circuit Gainage
- Mobility circuit
- Etc.



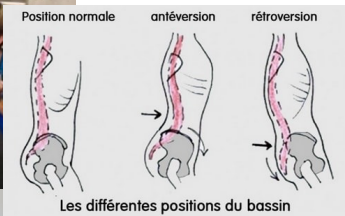


# Physical preparation by age/level

Talent Pool (PISTE)



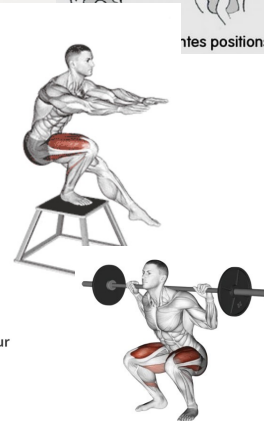
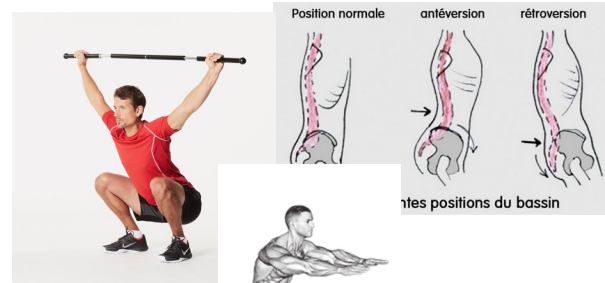
Leaning to train



Youth Team (T3-T4)



Train to Train / Develop



Elite (E1-E2-M)



Train to Perform



# SWISS SAILING

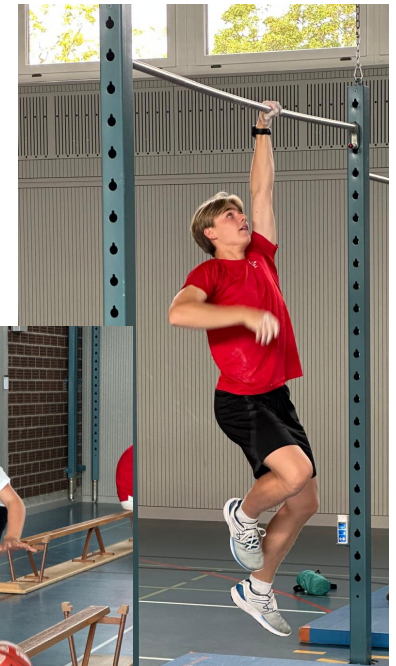
# Physical Tests





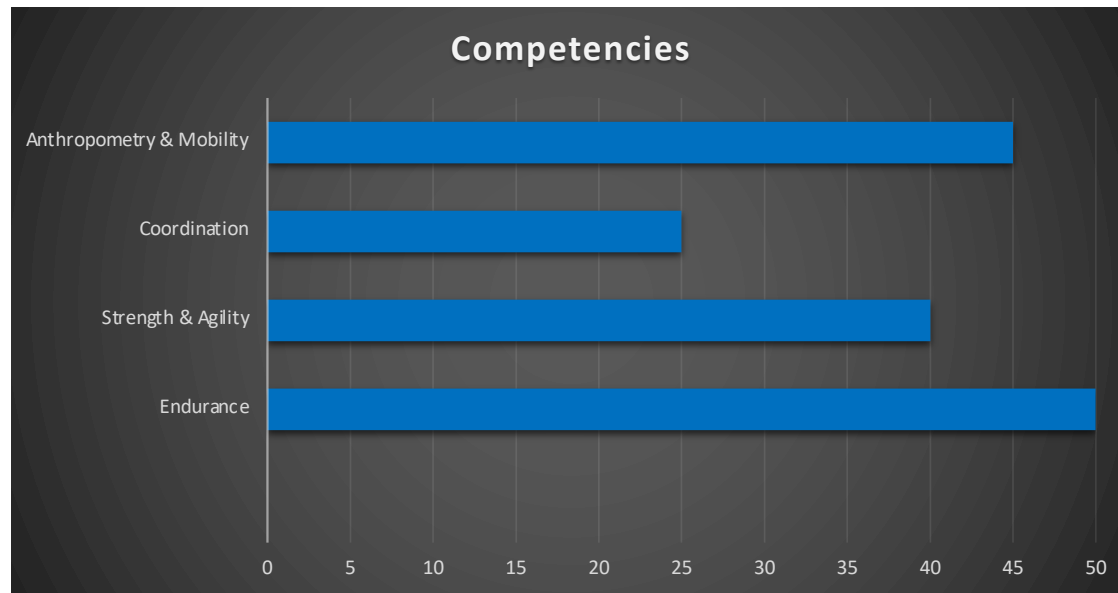
# Physical tests – PISTE (Talent pool T1-T2)

Evaluation through polysportivity



# Physical tests – PISTE (Talent pool T1-T2)

3 half-days to assess around 200 children

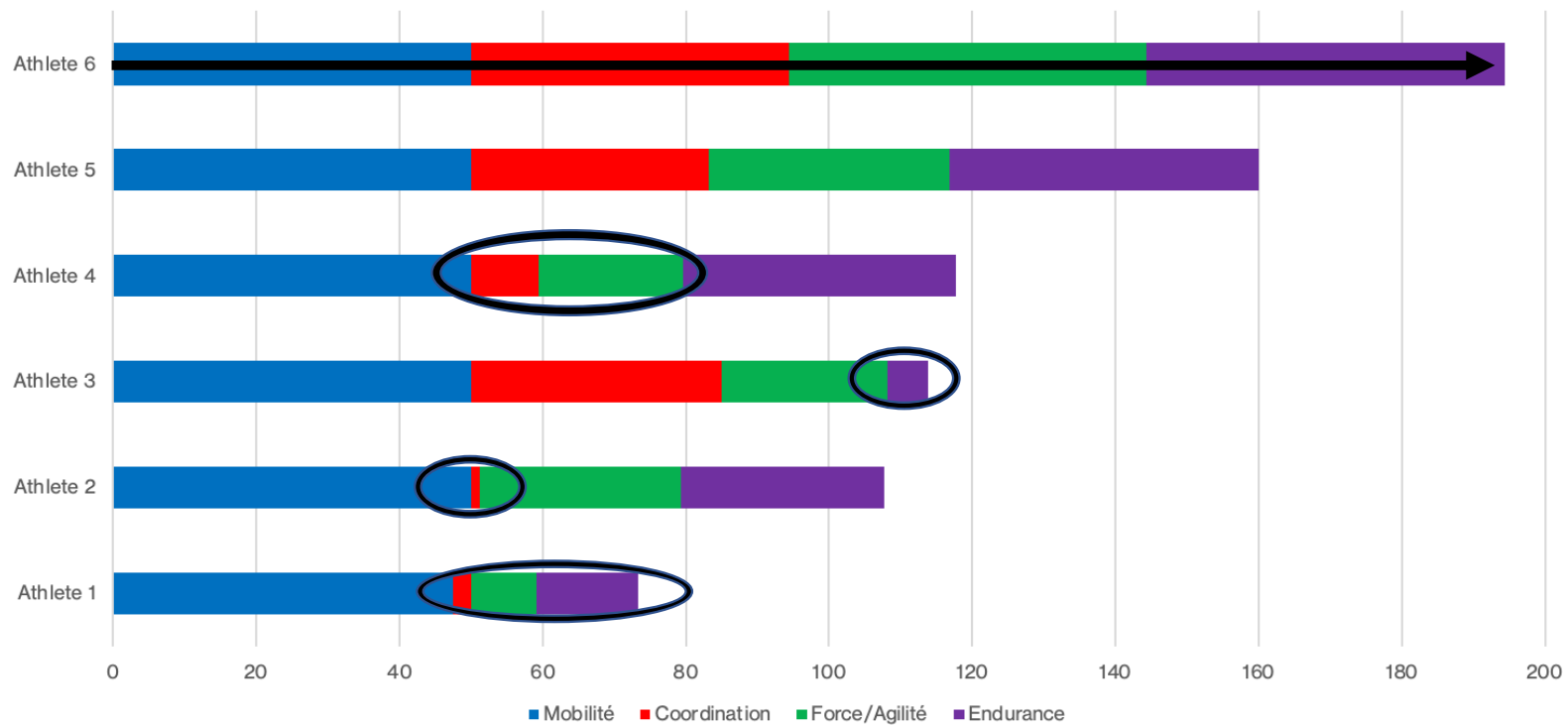


- Max 50 pts per competencies group.
- 200 pts maximum for the complete test battery.



# Physical tests – PISTE (Talent pool T1-T2)

Test results PISTE 2024



# Physical tests – PISTE (Talent pool T1-T2)

After each test year, annual statistics are produced for internal monitoring purposes.

**Table 1 Anthropometry 2024**

	Height (cm)		Weight (Kg)		BMI (Kg/m2)	
	f	m	f	m	f	m
Valid	56	131	56	131	56	131
Mean	156.37	166.63	52.60	55.04	19.94	19.53
Std. Deviation	9.19	11.93	10.77	12.62	2.92	2.57
Minimum	133.80	135.00	28.60	27.70	15.00	15.00
Maximum	179.00	190.00	82.90	84.40	27.00	28.00

**Table 2 Mobility 2024**

	Squat Mobility Test (pts, 0-3)		Shoulder Mobility Test Right (cm)		Shoulder Mobility Test Left (cm)	
	f	m	f	m	f	m
Valid	56	131	56	131	56	131
Mean	2.91	2.93	0.41	0.63	0.93	0.86
Std. Deviation	0.44	0.40	1.9	2.98	3.032	3.91
Minimum	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	3.00	3.00	10.00	20.00	15.00	30.00

**Table 3 Coordination 2024**

	Throw and Catch (pts, 0-3)		Crossing and dribbling (pts, 0-3)		Juggling (sec)		Jumping rope, double jumps (No. reps)	
	f	m	f	m	f	m	f	m
Valid	56	131	56	130	56	131	55	130
Mean	0.46	0.90	0.77	1.38	5.52	7.34	6.44	9.02
Std. Deviation	0.78	1.09	1.13	1.28	7.271	7.72	6.16	7.73
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	3.00	3.00	3.00	3.00	20.00	20.00	34.00	38.00

**Table 4 Strength and Agility 2024**

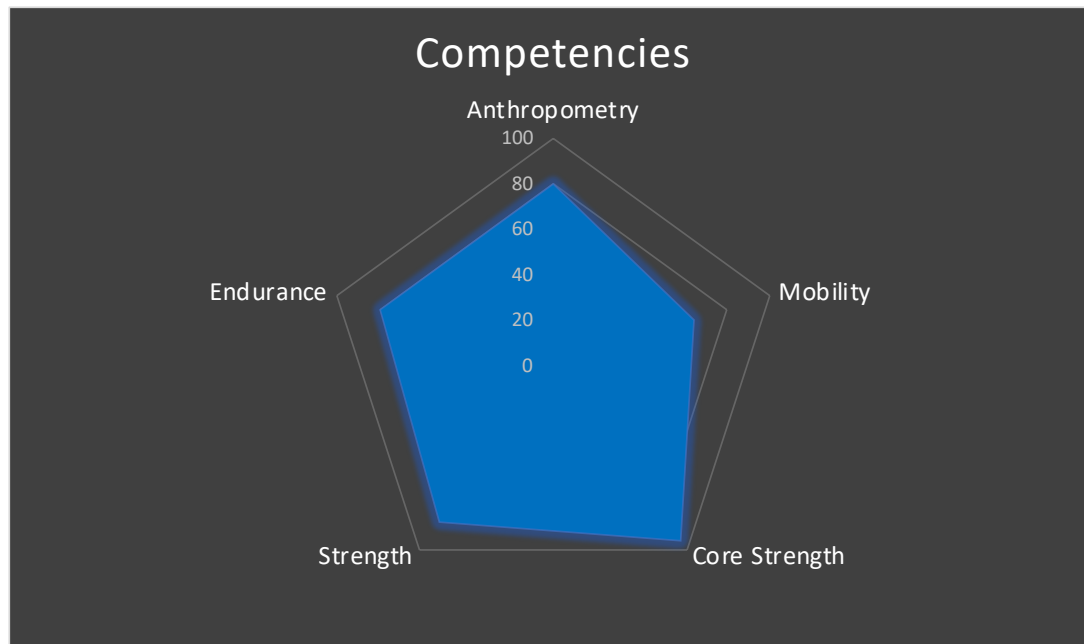
	Hanging Release (No. reps)		Abdominal Strength (No. reps)		Squat One Leg Right (pts, 0-3)		Squat One Leg Left (pts, 0-3)		8 on the parallel bars (sec)	
	f	m	f	m	f	m	f	m	f	m
Valid	54	130	54	130	56	131	56	130	36	94
Mean	34.98	44.09	0.98	3.96	2.12	2.36	2.18	2.36	22.23	19.75
Std. Deviation	21.64	19.53	2.26	3.87	0.76	0.76	0.76	0.74	8.93	8.08
Minimum	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	9.00	8.00
Maximum	60.00	60.00	10.00	10.00	3.00	3.00	3.00	3.00	39.00	40.00
Echec									20	37

**Table 5 Endurance**

	Magic Mile	
	f	m
Valid	54	128
Mean	00:08:11	00:07:09
Minimum	00:06:08	00:04:59
Maximum	00:09:57	00:09:42

# Physical tests – Youth Team (T3-T4)

Around 30 athletes tested each year



# Physical tests – Youth Team (T3-T4)

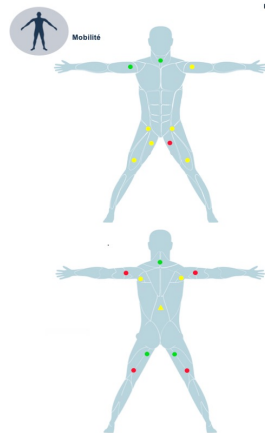
More specific evaluation :

→ Performance evaluation is combined with an **execution score**

- Bodycomposition (%fat)
- Mobility protocol (measurement of joint angles)
- Upper and lower limb strength **with a note of execution**
- Core strength (front, side, back)
- Endurance (incremental test, VMA)



5 YEAR  
GUARANTEE





# Example of a Youth Team athlete on an incremental treadmill test. 2022 vs 2023



Octobre 2022



Octobre 2023

## Endurance

Test incrémental			
FC max	204		
VMA/PMA	14,63	####	🌑

## Endurance

Test incrémental			
FC max	206		
VMA/PMA	18	↑	🌑

	Fréquence cardiaque (bpm)		Vitesse (km/h)	
Z5	195	- 204	13,5	- 14,6
Z4	187	- 195	12,5	- 13,5
Z3	160	- 187	9,4	- 12,5
Z2	152	- 160	8,4	- 9,4
Z1	144	- 152	7,4	- 8,4

	Fréquence cardiaque (bpm)		Vitesse (km/h)	
Z5	200	- 206	16,2	- 18,0
Z4	191	- 200	14,9	- 16,2
Z3	165	- 191	11,0	- 14,9
Z2	157	- 165	9,8	- 11,0
Z1	149	- 157	8,6	- 9,8

# Physical tests – Youth Team (T3-T4)

## Results by competence

Results

Figure 1

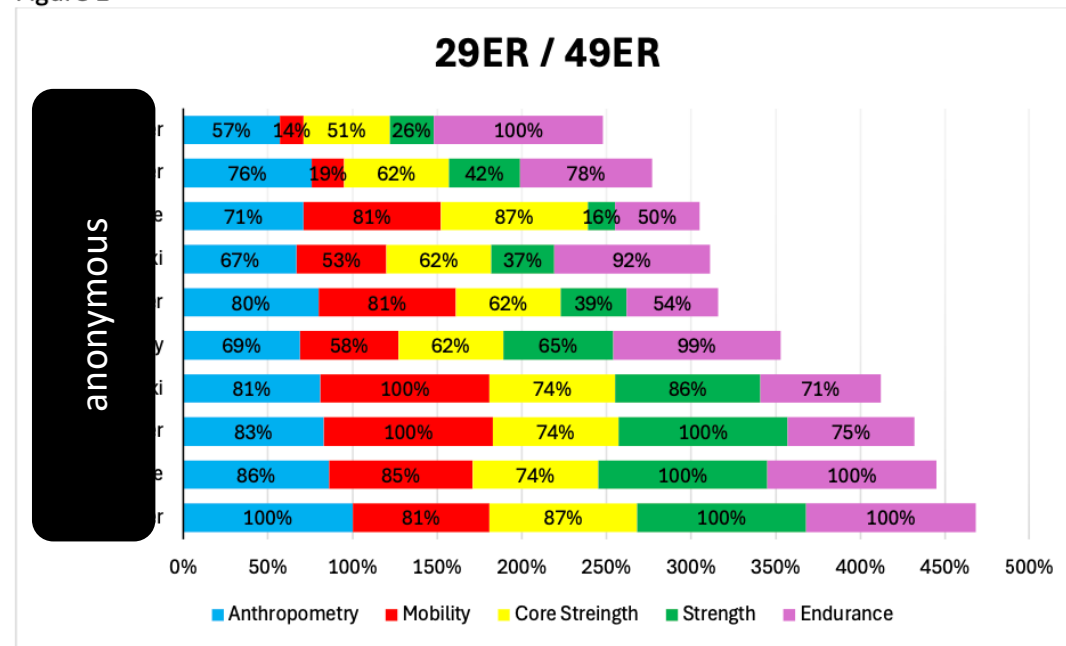


Figure 1: Stacked histogram of each physical condition factor tested for 29er&49er athlete. Maximum number of points per factor = 100. Maximum number of points in the test battery = 500.

# Physical tests – Elite (E-M)

More specific evaluation :

→ More focused on performance

- Bodycomposition (%fat)
- Mobility protocol (measurement of joint angles)
- Upper and lower limb strength
- Trunk strength (front, side, back)
- Endurance (incremental test, VMA and VO2max)



# SWISS SAILING

## Some documents for athletes

**Sport Santé UNIL+EPFL SUI**




### Training recommendations following PISTE tests

**Competence: Endurance**

Sailing is an activity that requires multiple skills. Regattas are generally made up of several heats, sometimes lasting more than 40 minutes each. So it's important that you're able to maintain your effort over a long period of time!


**Training tips**

In addition to your sailing training, try to practice a cardiovascular activity on a regular basis! For example, you could choose to do one of the following activities 1 or 2 times a week:

Running or cycling	Play sports	Vita course
		
<b>Example:</b>	<b>Example:</b>	<b>Example:</b>
<ul style="list-style-type: none"><li>• Pedal/Run 60-90 minutes at an intensity where you are able to talk.</li><li>• Pedal 45-60 minutes on a course with great variations in gradient.</li><li>• If you have access to a pump track, do the course several times as quickly as possible. Don't forget to take breaks between 3-5 laps.</li></ul>	<ul style="list-style-type: none"><li>• Play a basketball/hockey game... at a sustained intensity.</li><li>• 1 vs 1 on a single basketball. 3 times 10 minutes of play interspersed with a 3-minute break.</li><li>• 2 against 2 on one or two basket(s)/goal(s).</li><li>• Etc...</li></ul>	<ul style="list-style-type: none"><li>• Go to your nearest Vita course. Try to log your way around the course and complete the proposed exercises. Find a place that allows you to complete the entire course, if possible without taking a break.</li></ul>

**Sport Santé UNIL+EPFL**

### Warm up before gym session



**SUI** sailing team | **Unil** | **EPFL** | **Centre National de Performance**

**Sport Santé UNIL+EPFL**

### Formula Kite and iQFoil physical preparation



**SUI** sailing team | **Unil** | **EPFL** | **Centre National de Performance**