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## FUNDAMENTAL MOVEMENT SKILLS FOR TRIATHLON

STARTING SOON



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## Physical Characteristics - RECAP

- The performance factors in Sprint and Olympic distance triathlon races and its influence on the overall performance have been previously described.
- The biomotor abilities enable athletes to develop the motor capacities to an optimal level for sports performance, and therefore, should be identified and tested in order to define strengths and weaknesses of the athletes' fitness.
- Beside the components of fitness, balance, coordination and flexibility have been shown as important capacities that should also be assessed and trained accordingly to the specific needs of the sport.

# Fundamental Movement Skills for Triathlon

## Basic Motor Skills (BMS)

- 1** Build the foundation
- 2** Guarantee the development of high-performance sport-specific movement pattern
- 3** The gross motor skills underpin the development of the more specific sport skills
- 4** Physical literacy



## Essential Fundamental Motor Skills

### LOCOMOTOR SKILLS

**Run**  
**Jump**  
**Hop**  
**Gallop**  
**Roll**  
**Horizontal**  
**jump**  
**Slide**  
**Swim**

### MANIPULATIVE SKILLS

**Catch**  
**Kick**  
**Vertical Jump**  
**Overhand**  
**Throw**  
**Underhand roll**  
**Ball bounce**

### STABILITY SKILLS

**Balance**  
**Twisting**  
**Turning**  
**Bending**

## Assessment of Fundamental Motor Skill

- The primary purpose of the FMS Assessment is to differentiate between individuals whose skills are developing typically and those whose skills are lacking in development.



Further reference: Ulrich, D. A. (2014). Test of gross motor development (3rd ed.) (TGMD-3). <http://www.kines.umich.edu/tgmd3>

## Stages of Athletic Development

Age		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Tri Category					Tri-Start	TS1		TS2		TS3		Youth		Junior B		Junior C	Senior D		
Sport Focus		Sampling many different Sports									Specialising 2-3 sports			Investment in one sport					
Training Structure		Low Structure					Moderate Structure					High Structure					Athlete led		
Boys	Fundamental Movement Skills	★★★★				★★★													
	Strength & Power										★★★★								
	Agility							★★★★						★★★					
	Speed							★★★★						★★★					
	Mobility	★★★												★★					
	Triathlon Skills	★★				★★★				★★★★									
	Endurance	★												★★			★★★★		
Girls	Fundamental Movement Skills	★★★★				★★★													
	Strength & Power										★★★★								
	Agility							★★★★						★★★					
	Speed							★★★★						★★★					
	Mobility	★★★												★★					
	Triathlon Skills	★★				★★★				★★★★									
	Endurance	★												★★			★★★★		
Tri Category					Tri-Start	TS1		TS2		TS3		Youth		Junior B		Junior C	Senior D		
Age		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

- Adapted from The Youth Physical Development Model
- Strength and conditioning Journal june 2012 Rhodri Lloyd, Jon Oliver

## Specific skills for triathlon

1

Triathlon is a multi-discipline sport consisting of swimming, cycling, running and transitions.

2

The economy of movement of each discipline will play a vital role in the athlete's performance.

3

Apart from the proper technique of each discipline, athletes must possess a series of specific skills for each segment of the triathlon.

4

Any lack of these skills will negatively affect the overall performance of the race.



## SWIM

The aim is to swim in the first group or exit the water as close to the lead swimmer as possible.

Athlete:		Date:		
Phase	Code	Description	Score	Common flaw
Hand entry	HE1	Hand enter into the water at a slight downward angle with the palm facing down towards the water's surface. (finger tip-first entry)	flaw	Fingers pointing up
	HE2	Right arm sequence entry fingers-wrist-elbow	flaw	The elbow contact the water
	HE3	Hands enter lengthening forward in front of the same shoulder with the middle finger pointing the way to the far end of the pool	Serious flaw	Arm crosses over the centre
Catch	C1	The palm of the hand is looking at the bottom of the pool, but with the finger tips angled slightly down	-	
	C2	The elbow is not dropped at full reach	-	
	C3	At the end of the catch, swimmer starts bending the elbow and pressing back on the water with the forearm in a near-vertical position	-	
Pull-Through	PT1	The hand does not cross the centre line and does not move outside elbow width during the whole stroke action	-	
	PT2	High Elbow Pull-Through bent between 100° and 120°	-	
	PT3	The arm exits once it has extended to around 150° of elbow bend. The arm is not fully extended with the elbow locked out	-	
Push	P1	The arm accelerates under the water	-	
	P2	The palm is moved backward through the water underneath the body at the beginning and at the side of the body at the end of the push	-	
		The hand finishes turning backwards	-	

Swim Analysis

DropDowns



World Triathlon has developed a unique Swim Technique Analysis Sheet that can be used as a guideline to run a swim stroke analysis proper.



## BIKE

Cycling usually makes up slightly more than 50% of the duration of a triathlon

Factors which impact race outcomes:



1

Race tactics

2

Physical capabilities

3

Interaction with other triathletes

4

Bike handling skills

## BIKE SKILLS

Pedalling, cadence and gears

Braking and cornering

Climbing and Descending

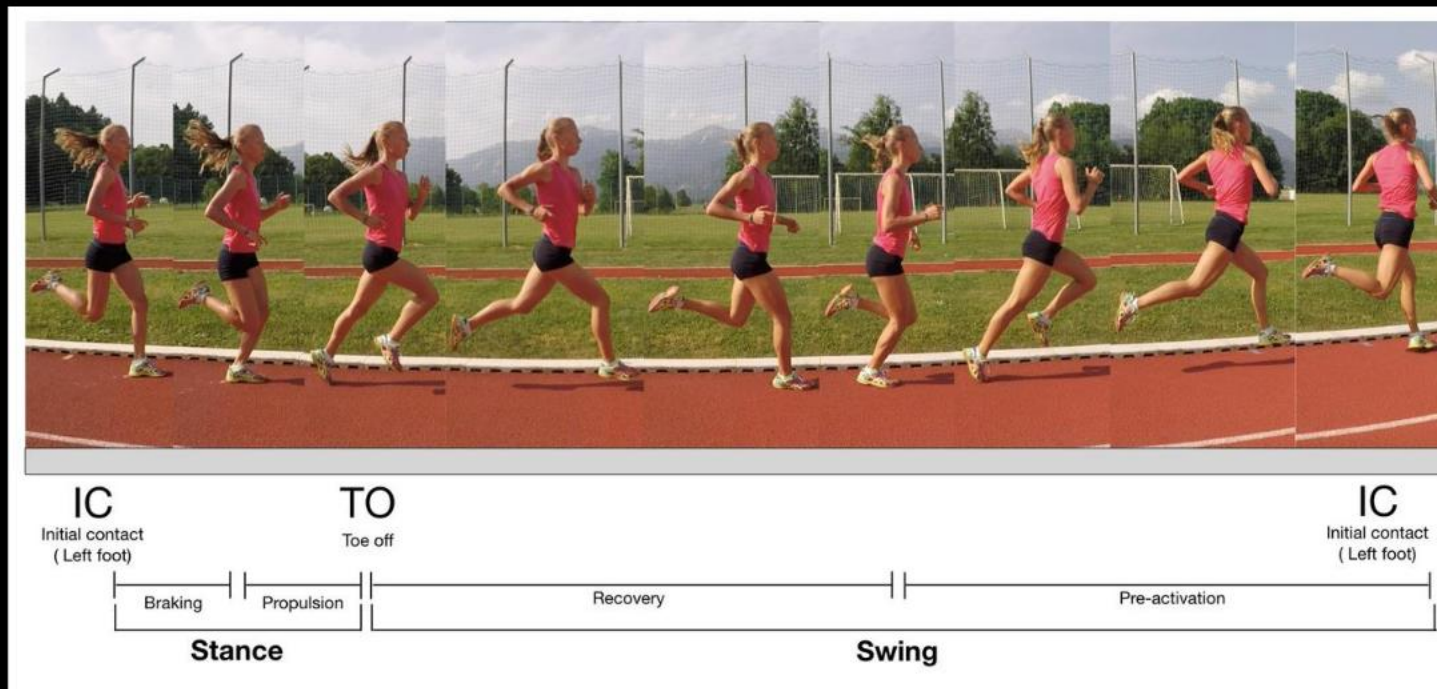
Group Riding

Eating and Drinking

## RUN

When considering running, it comes at the end of the race, and so is often perceived as the discipline that makes the most significant difference to overall performance

Running analysis is the study of the specific movements required for running.



## TRANSITIONS

Transitions require different skills from swimming, cycling, and running. More fine motor skill use is required to perform specific skills.

### T1 - SWIM - BIKE

- Exit the swim.
- Remove cap and goggles.
- Run to the transition area.
- Find transition spot and place cap and goggles near the bike.
- Put on any clothes, if required (most athletes race in their bathing suits, singlets, or triathlon suits).
- Put on the helmet (must be fastened BEFORE touching the bike).
- Put on shoes.
- Unrack bike (unhook it from the bike racks).
- Run or walk the bike to the exit of transition (NO riding in transition).
- Mount the bike at the mount line and begin cycling.

### T2 - BIKE - RUN

- Dismount bike at dismount line (slow down before dismount!)
- Run or walk the bike through the transition to the transition spot.
- Rack bike BEFORE removing the helmet.
- Take off the helmet.
- Change shoes if necessary.
- Put on a hat if necessary (e.g. in the hot sun).
- Run out of transition to begin the last leg of the triathlon (run).



# Take Home Message

- The specific skills needed for a triathlon, range from basic level to more advanced exercises.
- It is the task of the coach to assess them and prescribe the necessary training for the athletes to master their weakest areas.
- It is essential to note that each athlete will need his/her own time for developing specific abilities
- Setting and individual skill profile will help coaches prescribing the right task for each athlete, and therefore, will guide them tailor-making a series of exercises to improve their skills and performance.




# Q & A

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