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# Organizing committee

Denys BARRAULT (Sens, France) Hechmi TOUMI (Orléans, France) Pierre PESQUIES (Orléans, France) Eric LESPESAILLES (Orléans, France)

### Scientific committee

Xavier BIGARD (Aigle, CH) Hechmi TOUMI (Orléans, France) Mark HUTCHINSON (USA)

## Confirmed speakers

Pierre ABRAHAM (Angers, France)

Anael AUBRY (Theix, France)

Xavier BIGARD (Aigle, CH)

Bruno CHENUEL (Nancy, France)

Mathieu DOMALAIN (Poitiers, France)

Katharina GRIMM (Johannesburg, South Africa)

Luc JANSSENS (Bonheiden, Belgique)

Nigel JONES (Manchester, UK)

Liz |OY (Salt Lake City, USA)

Jacky MAILLOT (Besançon, France)

Ron MAUGHAN (St Andrews, UK)

Fabrice MICHEL (Besançon, France)

Patrik NOACK (Abtwil, CH)

Scott PALUSKA (Urbana IL, USA)

Liam PHILIPPS (Aigle, CH)

Florence POMMERIE (Bobigny, France)

Phil SKIBA (USA)

# > EDITORIAL

Cycling is likely one of the most popular sports and the most famous bicycle races are followed all over the world. There are more than 1,500 professional riders and more than half a million licensed competitors involved into 186 National Federations and five Continental Confederations. Moreover, several million cycling enthusiasts and more than two billion bicycle users all over the world contribute also to the popularity of cycling.

Many factors contribute to explain the growing popularity of cycling. However, both recreational and competitive cycling are associated with a variety of illnesses and injuries. Several recent papers documented the main features of nontraumatic (i.e. overuse, degenerative) and traumatic injuries (i.e. bicycling crashes involving soft tissues, fractures and concussions) during the several cycling disciplines. Regarding the increased popularity of cycling, physicians must be increasingly aware of the common biking-related injuries, as well as of the major principles of biomechanics, physical training and nutrition applied to cycling.

The present course draft includes didactic sessions that cover the main sports medicine and exercise science issues related to both recreational and competitive cycling, including the several disciplines of road racing, BMX, mountain biking, practiced by women and men.

Scientific Committee (BIGARD Xavier, HUTCHINSON Mark, TOUMI Hechmi)

# Program

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**ITPC** INTERNATIONAL TEAM PHYSICIAN COURSE

Notoc

Day 1 14<sup>th</sup> of May

> CNOSF

1 Avenue Pierre de Coubertin, 75013 Paris

**14h00** General presentation of the ITPC

14h30 Biomechanics of cycling

#### Road cycling

Including guidelines for optimal seat height, pedal position, force application in the power phase of cycling. During these sessions, the potential use of cycling power-meters will be discussed.

Mathieu Domalain (Poitiers, France)

#### 15h30-16h00 • Coffee break

### 16h30 Recent knowledge on physical training applied to cycling disciplines

### Road cycling

Mechanical constraints and physiological qualities required in road cycling. What impact on physical training?

Anael Aubry (Theix, France)

### 17h30 Recent knowledge on physical training applied to cycling disciplines

#### **BMX**

This aim of this presentation is to outline the physiological skills of BMX riders, especially power outputs during very short exercises, and to transfer these data to personalized physical training.

Liam Phillips (Aigle, CH)

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#### > CNOSF

1 Avenue Pierre de Coubertin, 75013 Paris

### 08h30 Nutritional recommendations for cyclists

Several issues will be addressed, including the influence of drinking fluids on endurance cycling performance, the effects of protein supplementation on the physical performance after intensified-volume during cycling training of high intensity, the place of nutritional supplements on performance in cycling. Specific recommendations will be suggested for road cycling, BMX and mountain-bike races. The talk will be focused on practical aspects during training and competition.

Ron Maughan (St Andrews, UK, FACSM, international relations committee)

10h00-10h30 • Coffee break

### 10h30 The UCI medical regulations

*Xavier Bigard (Aigle, CH)* 

### 11h30 Pre-participation screening in cycling

How to prevent sudden cardiac death (SCD)? Luc Janssens (Bonheiden, Belgium)

12h30-14h00 • Lunch break

### 14h00 Pre-participation medical screening

This topic is addressed for both professional riders and leisure riders. Jacky Maillot (Besançon, France)

### 15h00 Iliac artery endofibrosis in Cyclists

Progressive stenosis of the iliac artery is poorly recognized by primary care physicians. It is mainly found in male endurance cyclists who are younger than 40 years of age. Because vascular diseases are unexpected in these athletes, an arterial insufficiency syndrome is often overlooked.

Pierre Abraham (Angers, France)

#### 16h00-16h30 • Coffee break

### 16h30 Over-reaching and over-training prevention

Performance engineering: monitoring training and predicting performance. How to monitor the optimal balance between high training loads and recovery, a constant challenge for cyclists and their coaches. How to improve the monitoring of performance and levels of fatigue.

Phil Skiba (USA, FACSM)

> The conferences center of Orléans

9 place du 6 juin 1944, 45000 Orléans

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### 08h30 Exercise-induced bronchoconstriction (EIB) in cycling

Effects of training, ambient climate conditions, pollution, on the EIB incidence. How to prevent, monitor and treat EIB? Consistency with the antidoping regulations.

Bruno Chenuel (Nancy, France)

### 09h30 Specific health issues in female elite cyclists

Differences between men and women for the intensity and load demands of professional road races. Discomfort, injuries in the perineal region, and saddle-related complaints; how to design novel saddles to decrease pressure in the perineal region and related discomfort.

Katharina Grimm (Johannesburg, South Africa)

#### 10h15-10h45 • Coffee break

### 10h45 The female athlete triad in cycling

Women who train and compete in cycling disciplines, especially road cycling and cross-country are at risk of side effects for health. These include risks of female athlete triad, bone loss, sexual and urine dysfunction.

Liz Joy (Salt Lake City, USA, FACSM)

### 11h30 Overuse illnesses in cycling (road and off-road)

Most reported cycling injuries are related to overuse, due to the repetitive nature of the activity without specific traumatic event. In addition to overuse, important contributors to cycling injury are inadequate bike adaptation and poor technique/training. The most common sites for non-traumatic cycling-related injuries include the knee, hand/wrist, neck/shoulder, and perineum.

Scott Paluska (Urbana IL, USA, FACSM)

12h30-13h30 • Lunch break

### 13h30 Perineal and buttock pain

Fabrice Michel (Besançon, France)

### 14h30 Injuries in cycling, description and prevention

#### Road races

Incidence, etiology and types of acute injuries in road cycling events. What might be the best ways to prevent injury during road races. Florence Pommerie (Bobigny, France)

#### 15h30-16h00 • Coffee break

#### 16h00 Cycling injuries, description and prevention

#### Mountain biking

With the increasing popularity of mountain biking, there has been a corresponding increase in injury. Mountain biking appears to be a high-risk sport for severe spine injuries. The roles played by protective gear, improved technical proficiency and physical fitness on injury prevention will be discussed.

Patrik Noack (Abtwil, CH)

### 16h45 Concussion protocol in cycling

Toward a specific concussion protocol in cycling, including specific regulations for all cycling disciplines (road, off-road disciplines) Nigel Jones (Manchester, UK)

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# MEDICINE OF CYCLING

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