



# ULTRA SPORTS SCIENCE

## Sleep management in ultra-endurance sports

### For athletes, trainers and race organizers

To help you better prepare your ultra endurance events, especially if this is your first participation.

#### **Sleep regulation, how does it work?**

The alternation of sleep and wakefulness is complex, but two main processes for regulating sleep and awakening are distinguished. The first process, called homeostatic, seeks to balance the time spent awake and the time spent sleeping.

The second process concerns the circadian rhythm, which is driven by the biological clock. This "internal clock" is able to keep track of the time of day (the circadian term refers to a 24-hour cycle,). Since the humans are a diurnal species, the circadian process seeks to place wakefulness during the day and sleep overnight. To recharge your battery, imagine this process as an additional solar charger.

The homeostatic process and the circadian process interact with each other from a neurobiological point of view..

Ultra endurance athletes stay awake to continue their race, the abolition of this balance is not without consequence and can therefore generate deleterious effects.

#### **Effects of napping**

Taking naps can limit the appearance of hallucinations. This implies that recovery from performance deficits caused by lack of sleep should be produce quickly, even if the time available for sleep is relatively short.

#### **Have a strategy.**

Individual differences in vulnerability in loss of performance during sleep deprivation are known in the laboratory but little yet in field studies.

However, it seems important that each athlete goes on a race with his own sleep strategy.

Finally, no one should feel weak from taking sleep while running. But the strategy that seems the most effective for performance is based on sleeping longer on the nights the days before the race while sleep deprivation training seems to be harmful for performance.

#### **For the organizers:**

The time barrier is of course that the athletes must reach a specific point (or the finish) before a certain time. Beyond that, they are disqualified and cannot finish the race. On short or medium trails, the time barriers are generally calculated fairly broadly and are mainly used to exclude people who would not have the level required to complete the event in good secure conditions.

In selective races or ultra events, the barriers are tighter and it is therefore often difficult to be able to sleep. However, during long races, some runners have short naps, at the edge of the path or in landscaped areas (tent, mountain refuge).

#### **Our point of view**

- Sleep as much as possible in the weeks before departure
- Start the race with a strategy based on the expected duration and experience.

- Sleep mainly at night and in the early afternoon
- Take naps early in the race from the first night if possible
- Take naps for 8 to 20 minutes maximum. This time of nap is conventionally extended in tests lasting several weeks.
- Respect the idea of keeping meal times like at home (all proportion kept)
- Avoid taking your car for the return directly after the race (let someone drive you or have a rest period before driving home (stop at least every 2 hours, take a nap on a rest area at the first sign of drowsiness)

## SE REPOSER



*Après une longue compétition je m'assure d'être bien reposé avant de rentrer chez moi : « la sieste est une solution ».*