

# International competitions & time difference: Interview with Markus Buck

In sport, good management of jet lag is crucial to maintaining your top performance abroad. Light therapy and chronotherapies are among the simplest and most effective tools to recover efficiently while travelling. Exclusive interview with Markus Buck, Head of Elite Sports at Swiss Aquatics, on his return from Melbourne, where the World short course Swimming Championships were held from 13 to 18 December 2022.

## The importance of managing jet lag

*Medi-Lum: In your career, you have accompanied many athletes and coaches on their way to international competitions. What importance is given to the prevention of jet lag in the preparation of an athlete to aim for the best performance?*

**Markus Buck:** I always had the chance to work with older and very experienced coaches. In Germany it was for example coaches like Bernd Henneberg and Norbert Warnatzsch. Or in Switzerland, for example, Gennadi Touretski. I also studied sports science, specializing in competitive sport. Time difference management is very important, both in the scientific literature and in the practical experiences of expert trainers! Even more so if it coincides with the adaptation or readaptation to altitude conditions. I had my first experiences in this area in 2010 at the World Championships in Shanghai with the German national team. **I quickly realized that it was essential to develop a federation strategy and individual strategies for managing jet lag for each athlete that were scientifically based.**

## Test of light therapy and blue-blocker glasses

*M-L: You recently tested light therapy and sleep goggles to adjust the biological rhythms of the Swiss Aquatics team athletes on their way to the World Swimming Championships in Melbourne. How did these tools help the athletes in their preparation?*

**M.B:** One of the simplest formulas we tried to apply from the start was the time we gave ourselves to deal with jet lag, depending on where the competition was going. In addition,

we worked with hormones and various other behavioural guidelines - the success rate was at best 60%. I like the use of [light therapy glasses](#) in combination with the individual chronoprofiles because it follows the still valid credo "as simple as possible - as complicated as necessary" - **it is extremely simple and has no side effects!** The success rate of jet lag management since we have been using these light therapy glasses is over 80% - very often it has even reached 100%! Athletes are given simple but clear instructions and do not need to change their habits much - after travelling they are able to resume training and competing at full speed in a very short time, but also **fully recover with good sleep! We can now do without hormones, which reduces the risk of side effects.** Rested and successful athletes are satisfied athletes, which satisfies the coaches and has a positive influence on the general atmosphere.

And finally, the great thing is that through collaboration, athletes and coaches are learning more and more about what to do and how to do it, in order to adapt as quickly as possible and in the best possible way - they are becoming "jet lag experts"!

## Observed benefits

**M-L:** *What benefits did you observe in Melbourne, compared to previous trips so far from Switzerland?*

**M.B:** In Melbourne, where there is a 10-hour time difference with Switzerland, the speed of adaptation was impressive – especially when considering that the journey alone took almost 24 hours and was extremely demanding. **Within 5-6 days, all the athletes adapted and recovered their full work capacity,** but also their ability to recover.

## Effects on peak performance

**M-L:** *Light therapy can also improve peak performance. Did you specifically test this strategy to match athletes' performance to the local time of the competition in Australia? If so, what improvements have you noticed as a result of using light therapy?*

**M.B:** For the Tokyo Olympics, we tried to do this because the finals were in the morning, which is unusual for us, and the heats were the night before. **We were very happy with our results.** But to obtain scientifically valid proof, we would need to be able to test the same

competition times once without being hampered by the time difference. This possibility has never existed before and will probably not exist in the foreseeable future.

## One simple and attractive tool

**M-L:** *Chronotherapies usually require adherence to a specific sleep-wake schedule which can be a bit disruptive. Did you find it easy to integrate these tools into your preparation? Did the athletes enjoy using the glasses?*

**M.B:** The chronoprofiles are individualized and, together with the light therapy glasses, certainly represent the smallest intervention in habits compared to other options. This convinced the athletes right from the start. In addition, the cooperation with the time-shift experts is very professional. First there is a general training and then there are individual discussions. The light therapy glasses look good and athletes think it's cool to wear them.

**There are many testimonials from top international athletes who have used the concept successfully, which is also convincing.** In the meantime, we have had several very successful experiences ourselves. That's why it's now easy for us to integrate new athletes or to use these tools with established athletes.

## When to plan an anti-jet lag program

“A journey across up to three time zones does not in principle require any particular adaptation, as the biological clock has a natural capacity to resynchronize itself. **Beyond 3 hours of jet lag, performance and sleep are impacted and recovery is slower**”, explains Bénédicte Wildhaber, occupational psychologist FSP, specialist in the management of biological rhythms and director of Medi-Lum. Many factors will influence the severity of the symptoms and determine the need or not to plan a personalized anti jet lag program: flight schedule and stopovers, direction of travel, length of stay at the destination, chronotype, or the level and schedule of performance expected on site. In high-level competition, all these factors are considered to develop an effective light therapy and sleep schedule.

# Your next flight without jet lag

Are you planning a competition abroad and would like to be supported in dealing with jet lag? We develop easy-to-use programs that are tailored to each athlete and each destination. You will quickly understand how to use your tools to overcome jet lag during your next trips. If necessary, we can also help you develop a study protocol to test the effectiveness of the strategies implemented. Contact our team directly by e-mail at [info@medi-lum.ch](mailto:info@medi-lum.ch) or by phone at **+41 32 710 18 48**.