Results Continued

There was high prevalence of EBV seropositivity for the elite swimmers; however, it was not
Overall, elite swimmers showed inadequate sleep, therefore promoting the use of sleep

Moderate
Seventy URS episodes were recorded, leading to 34 days of missed training.

High

Both TST (p=.001) and TTIB (p=.001) were significantly lower during moderate and high

High -1 Week

High +1 Week

The periodised plan of TL for each week was classified by coaches as low, moderate, and

Figure 1. Number of self-reported URS episodes (a), duration of URS (b), symptom severity (c) and
missed training days (d) for all swimmers over 8-months, presented across three different TLs.
*Denotes a significant difference between TL for the variables marked, when compared to low
intensity training. +Denotes a significant difference between moderate and high TL.

Figure 2. Seven weeks of average relative sIgA (%), 4 weeks preceding and 2 weeks post URS
episode (n = 59).

Table 1. Night-time data for the whole group of swimmers (n = 13), during low, moderate, and high
training loads. *Denotes a significant difference between training loads for the variables marked,
when compared to low intensity training.

Baseline Measurements (Week 1)

Introduction

• Most research suggests that a greater degree of immune suppression and subsequent
increased illness risk occurs during winter and the heaviest training periods.

• Monitoring an individual’s change in salivary Immunoglobulin A (sIgA) throughout a training
programme, could help identify athletes at risk of illness; promoting the use of individual
athlete monitoring.

• Epstein Bar Virus (EBV) has been identified as one of the most likely causes of illness
symptoms (Reid et al., 2004).

• An association has been found between short sleep duration (< 7 hours) and increased
number of illnesses, including cold and flu (Orzech et al., 2014). These findings are empirical
because athletes do not obtain enough sleep, regularly sleeping less than the NR of 7-9
hours of sleep per night.

Objective

• To monitor individual mucosal immunity and identify risk factors of upper respiratory symptoms
(URS), such as training load (TL), mucosal immunity, EBV status, and sleep; providing coaches
with guidance to enable modification of training and/or illness preventative strategies for
elite swimmers.

Methods

• Fourteen elite national and international swimmers (age ± SD: 20 ± 1 years) were observed for
8-months leading into the Commonwealth Games 2018 and Swim Cup Eindhoven.

• The periodised plan of TL for each week was classified by coaches as low, moderate, and
high. When this was compared against swimmer’s perceived weekly TL intensity, it was
significantly correlated (r(34)=.484, p<0.003) and thus used for analysis.

• An adapted weekly illness questionnaire enabled swimmers to record self-reported TL, illness
symptoms, and sleep quantity/quality on a weekly basis.

Results

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Discussion/Conclusion

• The importance of individual athlete monitoring for coaches and physiologists, to identify
those at increased illness risk was highlighted.

• Identification of risk factors associated with URS, such as high training loads, lowered sIgA
and inadequate sleep, may allow for modifications in training or other illness preventative
strategies.

• Overall, elite swimmers showed inadequate sleep, therefore promoting the use of sleep
hygiene strategies and napping would be recommended.

• There was high prevalence of EBV seropositivity for the elite swimmers; however, it was not
a predictor of URS. Low participant numbers could be considered for the lack of significant
findings with EBV serostatus; there is ongoing debate that individual data and trends may be
more useful in elite athletic research, compared to group statistical analysis.

associated with common illness in adolescents. Journal of Sleep Research. 23(5), 133–142.