

Competitive Advantage: Sleeping Giants

Are “Zzzz’s” the NBA’s next Big Performance Metric?

#SSAC14

@SloanSportsConf



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Baseball teams beaten by jet lag

TABLE 1 Home team winning percentage depends on the direction of visitor's transcontinental travel

Visitor's direction of travel	No. of games	Games won	Winning %
No travel	712	385	54.1
East→west	194	109	56.2
West→east	175	110	62.9
Totals	1,081	604	55.9

Recht LD, Lew RA, Schwartz WJ. Baseball teams beaten by jet lag. *Nature*. 1995;377:583.

Baseball teams beaten by jet lag

TABLE 2 Linear regression analysis of runs scored

Variable	Parameter estimate	Standard error	P value
Intercept	1.31	0.80	0.10
National or American League	0.03	0.25	0.90
Month	*	*	0.35
Night game	-0.62	0.28	0.03
Coast:			
Home team	-0.13	0.34	0.71
Visitor	-0.15	0.23	0.51
Home team's travel:			
East→west	0.07	0.40	0.87
West→east	0.17	0.40	0.68
Visiting team's travel:			
East→west	0.66	0.40	0.10
West→east	1.24	0.45	0.006
End of visitor's road trip	0.03	0.95	0.47

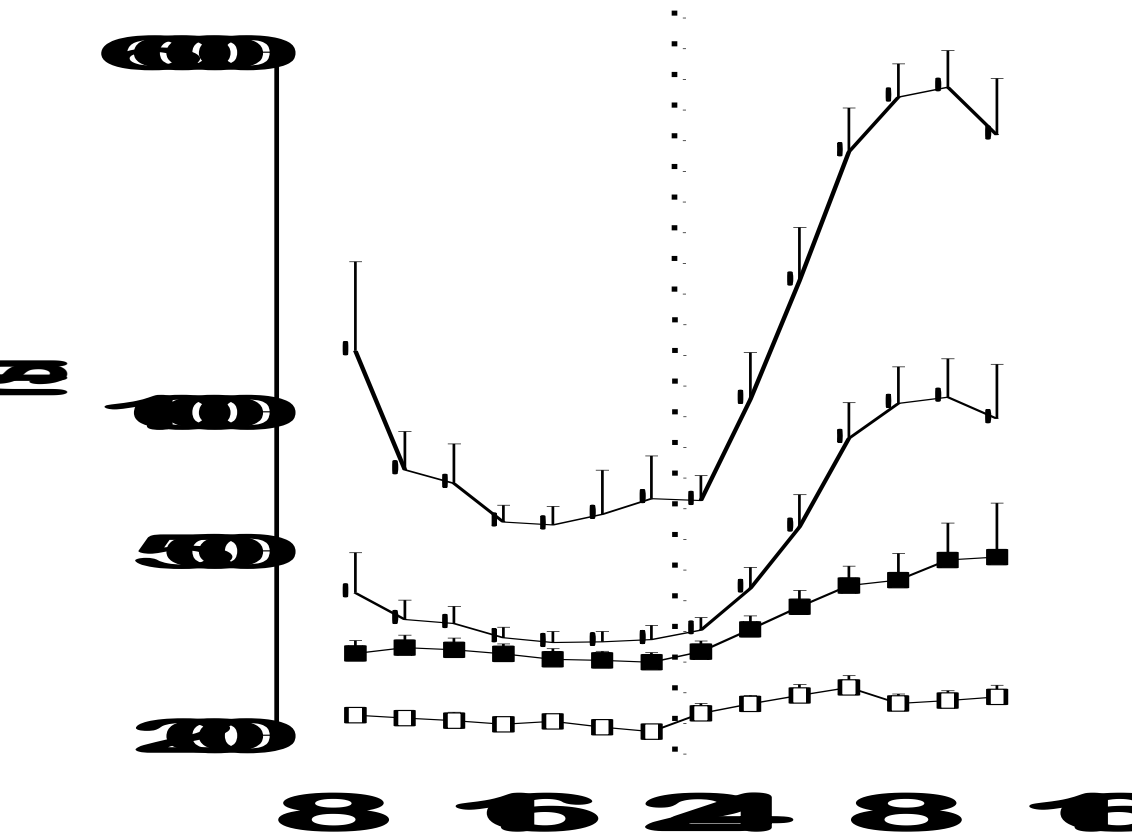
“...the home team could expect to score 1.24 more runs than usual when the visitor had just completed eastward travel (P = 0.006). Home teams also scored 0.62 more runs during the day than the night (P = 0.03). No other factors were significant.”

Recht LD, Lew RA, Schwartz WJ. Baseball teams beaten by jet lag. *Nature*. 1995;377:583.

Performance Impairment in Cognitive Psychomotor Performance

19 hours of wakefulness (at 3 am) induces impairment equivalent to **blood alcohol concentration of 0.05%**

24 hours of wakefulness (at 8 am) induces impairment equivalent to **blood alcohol concentration of 0.10%**



Christian Cajochen, PhD

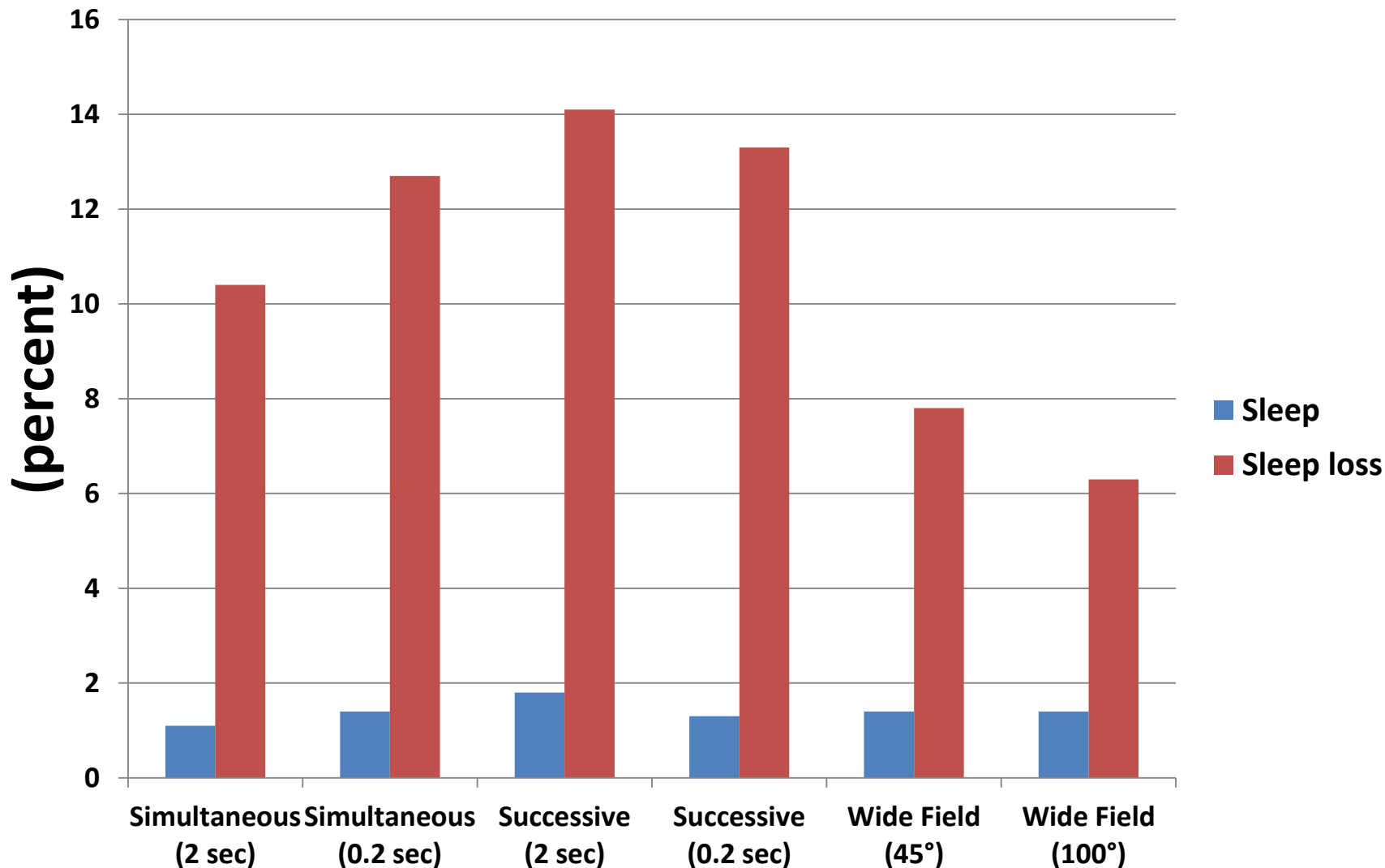
- 19h wakefulness
- 24h wakefulness
- △ 0.05% BAC
- ◇ 0.10% BAC

D. Dawson and K. Reid, *Nature* 388: 235, 1997



Impact of One Night of Sleep Loss on Missed Signals in the Visual Field

Missed Signals in the Visual Field



Sanders, A. F. and W. D. Reitsma (1982). The effect of sleep-loss on processing information in the functional visual field. *Acta Psychologica* 51: 149-162.

Effect of Sleep Extension

	Baseline	End Sleep Extension	P
282 feet sprint (sec)	16.2 ± 0.61	15.5 ± 0.54	< 0.001
Mean days of data	9.2 ± 3.6	6.9 ± 1.2	
Free throws (out of 10)	7.9 ± 0.99	8.8 ± 0.97	< 0.001
Mean days of data	9.2 ± 3.6	6.9 ± 1.2	
Three-point field goals (out of 15)	10.2 ± 2.14	11.6 ± 1.50	< 0.001
Mean days of data	9.2 ± 3.6	6.9 ± 1.2	
Subject self-rating at practices (1-10)	6.9 ± 1.41	8.8 ± 1.06	< 0.001
Mean days of data	8.9 ± 3.5	6.8 ± 1.3	
Subject self-rating at games (1-10)	7.8 ± 1.07	8.8 ± 1.19	< 0.001
Mean days of data	4.2 ± 1.7	3.7 ± 0.5	

College Basketball Players

Mah CD; Mah KE; Kezirian EJ; Dement WC. The effects of sleep extension on the athletic performance of collegiate basketball players. *SLEEP* 2011;34(7):943-950.

Apnea

Understanding and treating obstructive sleep apnea



What Is OSA

Understanding OSA

What Happens During OSA

Symptoms

Risk Factors

Living with OSA

How Does OSA Affect Me

Physical Characteristics

Health Consequences

Personal & Societal Consequences

Associated Medical Conditions

Diagnosing OSA

Getting a Diagnosis

Self-Evaluation

Testing

Understanding the Results

Treating OSA

Treating OSA

Nonsurgical Treatments

Understanding PAP

Surgical Treatments

Impact of Treatment

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SLEEP MEDICINE

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