



Z ★ C O A C H



*Knowledge, strategies and tools to achieve peak performance and safety
through optimal sleep and alertness*

Everyone seeks a competitive advantage that will enhance their opportunity for success, whether achieving peak performance or maximum safety in life's endeavors. People expend tremendous effort, time and expense in pursuit of these objectives, yet ignore or minimize critical and basic factors that can make a significant difference. Work schedules, 24/7 operations, and travel across time zones pose unique human physiological challenges that include the disruption of sleep and the internal body (circadian) clock. The resulting fatigue can create performance risks that increase errors, incidents, and accidents.

To address this critical performance and safety issue, Alertness Solutions has created Z-Coach[®], an innovative, comprehensive online program that offers state-of-the-art scientific knowledge, practical strategies and tools to enhance sleep, alertness, performance and safety. Individuals in an organization can access Z-Coach 24/7 for maximum flexibility and tailor the program to their specific interests and needs. Z-Coach includes the following components:

- 1) *ZProfile*. In 5 minutes, provides a portrait of an individual's sleep need, habits, schedule, etc.
- 2) *Risks/Costs*. A short (12-minute) introduction to fatigue-related performance and safety risks
- 3) *Sleep Basics*. A 45-minute module on the basic physiological fatigue factors: sleep, sleep loss, sleep disorders, and circadian rhythms
- 4) *Alertness Strategies*. Practical information on 10 scientifically validated fatigue countermeasures that can enhance sleep, alertness, and performance
- 5) *Quizzes*. Tests of Sleep Basics and Alertness Strategies knowledge acquisition
- 6) *Sleep Skills Training*. Good sleep habits and environmental factors to promote sleep
- 7) *Awake at the Wheel*. Guide, interactive exercises and 32-minute audio program on drowsy driving
- 8) *Tools*. Instruments for self-evaluation of sleep and alertness
- 9) *Exercises*. Interactive exercises to apply Z-Coach information in an individual's daily life
- 10) *Resources*. This section includes web links, scientific papers, relevant books, and videos



Official sleep coach program provider
of the 2008/2010/2012 U.S. Olympic Team

For more information about Z-Coach[®], go to: info.z-coach.com



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Z-Coach Benefits

- comprehensive program and ongoing resource, not one-time class
- 24/7 access for maximum flexibility to accommodate any schedule
- consistent information for all personnel
- self-paced, individuals can tailor to their interests and needs
- efficient, consistent, cost-effective for new hires and recurrent activities
- ongoing updates and new content
- Program approach addresses individual differences and complexity of issues
- straightforward, low effort implementation
- email notification to initiate Program
- easily expanded/extended to more personnel and sites
- user tracking: logins, quiz scores, progress, usage
- personalized welcome letter/logo for organization
- privacy, confidentiality of online Program
- provided by external, private, third-party
- based on world-class scientific/applied expertise

Z-Coach Value: the potential to . . .

- increase knowledge to A-level education
- enhance sleep quantity and quality by 20%
- use strategies that boost performance by 34%, alertness by 54%
- improve productivity by 17%
- expand safety margin: reduce errors, incidents, and accidents
- decrease absenteeism, increase presenteeism
- improve health, reduce healthcare costs
- reduce drowsy driving risks/costs
- use countermeasures that effectively manage sleep loss
- address an acknowledged safety issue
- implement a shared responsibility approach to issues
- address organizational responsibility/liability
- implement proactive rather than reactive efforts
- enhance communication/collaboration on complex issue
- demonstrate organizational and industry leadership

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Enhancing safety and performance through optimal sleep and alertness.

For over 10 years, Alertness Solutions has provided innovative and effective solutions that enhance safety, performance, and health in diverse settings. By delivering practical, scientifically based strategies, Alertness Solutions has improved the lives, safety, and productivity of individuals, organizations and systems all over the world. Using a solution-oriented approach to create relevant and cost-effective outcomes, Alertness Solutions provides opportunities to enhance safety and performance in our 24/7 global society.

Alertness Solutions' scientists blend extensive scientific expertise developed from outstanding academic training and research with real-world operational knowledge refined during years leading the internationally-recognized NASA Fatigue Countermeasures Program. The unique combination of scientific expertise, operational knowledge, NASA experience, and an outcome-driven business approach allows Alertness Solutions to create tailored solutions that make a difference.

Over the past decade, Alertness Solutions has worked with over 150 world-class organizations in diverse industries, including all modes of transportation, healthcare, public safety, manufacturing, and energy. Other activities have involved public policy and regulations, accident investigation, and legal matters. Elite law enforcement, military, and athletic groups have used Alertness Solutions' expertise to enhance performance and safety in extremely challenging circumstances. Some representative highlights of Alertness Solutions activities include:

- Created industry-leading model Alertness Management Programs with BP (British Petroleum), Union Pacific Railroad, NAV Canada (air traffic services), Greyhound, and JB Hunt trucking
- Hilton Hotel activity to improve the sleep environment of U.S. Olympic athletes (program generated 500M media hits/exposures)
- Innovative JetBlue effort demonstrated the effectiveness of an Alertness Management Program to enhance sleep and performance
- Projects with British Airways, Hilton Hotels, Johnson & Johnson, Ryanair, Embassy Suites, Emirates Airlines, Gulfstream, Bombardier Aerospace, and U.S. Dept. of Veterans Affairs
- Co-developed and currently teach a two-day National Transportation Safety Board course on examining human fatigue factors in an accident investigation
- Air New Zealand study quantified the sleep and performance benefits of vacation travel
- Use NASA data collection methods in studies of pilots, bus and truck drivers, travelers, air traffic controllers, healthcare providers, and business executives
- Created and provide "Z-Coach[®]": comprehensive, online program to enhance performance and safety "The official sleep coach program provider of the 2008/2010/2012 U.S. Olympic Team"

Every organization and individual seeking to enhance performance and safety will benefit from the practical and effective strategies provided by Alertness Solutions. Your organization can reduce fatigue-related risks and costs, increase your competitive advantage, and create proven value by applying Alertness Solutions' innovative expertise.



Biographical Sketch **Mark R. Rosekind, Ph.D.** **President and Chief Scientist**

Dr. Mark Rosekind is internationally recognized for translating complex sleep and circadian (body clock) science into practical and effective strategies that enhance performance, safety, and health. Over the past 25 years, Dr. Rosekind has conducted scientific research in leading academic institutions, directed the award-winning efforts of the NASA Fatigue Countermeasures Program, and now leads an innovative scientific consulting firm that creates successful solutions for diverse organizations.

Dr. Rosekind obtained his undergraduate degree with honors from Stanford University, his Ph.D. from Yale University and completed a postdoctoral fellowship in sleep and chronobiology at Brown University. He then began his professional career as the Director of the Center for Human Sleep Research, a component program of the Stanford University Sleep Disorders and Research Center. After Stanford, he went on to lead the NASA Fatigue Countermeasures Program at the NASA Ames Research Center. For a year and a half, he also served as Chief of the Aviation Operations Branch, in the NASA Ames Flight Management and Human Factors Division. After seven years as a Principal Investigator at NASA, Dr. Rosekind founded Alertness Solutions and has been President and Chief Scientist since 1998.

Over the course of his career, Dr. Rosekind's research, publications, presentations, and programs have involved diverse groups and settings, including all modes of transportation, healthcare, public safety, manufacturing, energy, military, elite athletes, and special operations groups. He has worked extensively with the National Transportation Safety Board (NTSB), has contributed to global policy and regulation efforts, and addressed fatigue in legal matters. Dr. Rosekind's activities have resulted in many groundbreaking and successful changes involving world-class organizations.

An engaging and passionate speaker, Dr. Rosekind provides over 30 presentations a year to a wide range of groups around the world and has published over 125 scientific and technical papers. He is a frequent contributor to television, print, radio, and online media and is known for translating complex science into accessible and meaningful information.

Dr. Rosekind's many contributions and accomplishments have been acknowledged through numerous honors and awards. For example, he is the recipient of the NASA Exceptional Service Medal and five other NASA Awards. The Flight Safety Foundation honored him with their Outstanding Achievement in Safety Leadership Award and their Business Aviation Meritorious Award. Dr. Rosekind is a Fellow of the World Economic Forum and the first to provide sleep and alertness presentations in Davos, Switzerland at the annual meetings in 1999 and 2000.

Integrating extensive scientific expertise with real-world operational knowledge, Dr. Rosekind uses a constructive, flexible approach to address complex challenges created by the demands of our 24/7 society. By providing innovative and practical strategies, Dr. Rosekind has contributed to significant enhancements in performance and safety for organizations and individuals in diverse settings throughout the world.



Enhance performance, safety, and health: decrease fatigue risks and costs

Every human is physiologically challenged by sleep loss and circadian disruption created by everyday demands. When we lose required sleep or disrupt our internal body (circadian) clock then our alertness, performance, safety, health, mood, and productivity can be significantly impaired. Unfortunately, we do not accurately assess our abilities, rating ourselves much better than our actual alertness and performance. Whatever your task, these impairments put you, and those around you, at risk and create significant performance and safety costs. What price are you paying for not obtaining optimal sleep, alertness, and performance?

Performance impairments: 20 – 50%

- judgment, reaction time, memory, attention, communication, mood
- impairments can be equivalent to alcohol use

Safety risks include:

- 23% higher risk of injury on night shift
- 2x greater risk of accident or error on rotating shifts
- accident risk increases 50% over four successive night shifts
- 37% of Americans report nodding off at wheel while driving
- 41% of law enforcement officers report falling asleep on night shift
- 49% of resident physicians report nodding off while driving
- up to 80% of pilots in NASA surveys report nodding off in the cockpit

Health risks include:

- 1/3 of adults annually report some sleep disturbance
- majority of sleep disorders undiagnosed and untreated
- 15% increased risk of obesity associated with disturbed sleep
- 32% increased risk of hypertension associated with disturbed sleep
- 124% increased risk of congestive heart failure associated with disturbed sleep
- 464% increased risk of anxiety or depression associated with disturbed sleep

Organizational costs include:

- increased errors, incidents, and accidents
- increased absenteeism, reduced quality-of-life
- reduced operational efficiency and productivity costs up to \$4,000/employee
- increased health care costs

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