

THE Sleep



Factor

Story by Karen Fleming-Michael

AS coalition forces traveled through desert and towns en route to Baghdad in April, television viewers witnessed a fraction of the efforts and activities individual soldiers must perform to successfully fight a war.

Operating for long hours, often at night, combat soldiers seldom find time for more than a catnap on hard ground. Support soldiers don't fare much better as they extend themselves to get supplies and services to those who need them. For both groups, exhaustion can be a serious problem.

The Army has long conducted detailed and extensive studies to help understand and alleviate the ill effects sleep deprivation has on soldiers.

"There's nothing heroic about staying awake for long periods of time," said COL Gregory Belenky, lead sleep researcher at the Walter Reed Army Institute of Research outside Washington, D.C. In fact, combat soldiers who deprive themselves of sleep can cause missions to fail, he said.

Historically, battles are won or lost at the small-unit level, due to the interaction — or

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A soldier of the 2nd Brigade, 101st Abn. Div., catches a rare moment of sleep before heading out again into combat. The brigade helped liberate Najaf, Iraq, from regime forces and captured thousands of pounds of weapons, uniforms and protective gear.

SPC David Marck Jr.



SGT Luis Lazzara

Soldiers from the 3rd Infantry Div. sleep in hasty fighting positions in Iraq.

lack of it — between individuals in squads and platoons, said Belenky, a psychiatrist who has studied sleep for the Army since 1984. “If you’re sleep deprived, you’re not going to make good decisions,” he said.

Sleep-deprived battle planners, too, can make poor decisions, said LTC Robert Noback, who studies aircrew health and performance at the U.S. Army Aeromedical Research Laboratory at Fort Rucker, Ala. Members of battle staffs frequently get less sleep than the soldiers in combat, so they’re equally at risk of making bad decisions, Noback said. One bad decision leads to others; tired soldiers will make bad decisions based on poor plans passed to them by tired planners.

The military studies sleep as it pertains to both sustained and continuous operations. During sustained operations, combat soldiers get less than four hours sleep each night for days at a time, which is considered severe sleep deprivation. During continuous operations, soldiers get less than seven hours sleep each night, Noback said.

Both sustained and continuous operations take their toll, but what complicates deprivation is that sustained operations can occur simultaneously with

continuous operations. “So the mixed-up sleep patterns of already sleep-deprived soldiers get even more mixed up,” Noback said.

The regions of the brain best able to process information, judge situations and make logical decisions are also those most affected by lack of sleep, Belenky said. “Degraded activity in these regions of the brain can pose great peril to future combat units,” he said

More and more, combat soldiers will continue to receive an overwhelming amount of information, and they’ll need to be able to process it to make decisions, Belenky said. “You can have a brilliant plan, but unless you have intelligent execution at the lowest level, it won’t work.”

To mitigate some of the effects of sleep deprivation during operations, WRAIR has a team of physicians, physiologists and experimental psychologists who study sleep for the Department of Defense. Findings are

included in peer-reviewed literature, such as the “Journal of Sleep Research,” as well as Army field manuals, including FM 6-22.5, “Combat Stress,” and FM 22-51, “Leader’s Manual for Combat Stress Control.”

In experiments done at WRAIR’s sleep lab, the team learned that people who functioned on minimal amounts of sleep for more than a week required more than three days to recover — that is, to function to their “standard” capacity, Belenky said.

To help commanders determine the consequences of sleep deprivation, WRAIR researchers developed a sleep watch that measures how much sleep a study subject gets and indicates how well the individual is performing and will perform in the future.

Because the amount of sleep needed varies from one individual to another, Army researchers are exploring ways to alter the watch’s current one-size-fits-all presentation.

The sleep watch will be included in the Objective Force Warrior’s “Scorpion” ensemble as part of the Warfighter Physiological Status Monitoring System being developed by the U.S. Army Research Institute of Environmental Medicine in Natick, Mass.

The system will give commanders and medics aggregate information on soldiers’ physical readiness, such as thermal stress, hydration status and cognitive state.

Army researchers have also looked at stimulants to see if they are effective in keeping soldiers awake and able to make sound decisions.

“Stimulants can be very effective, but there’s no set standard for who

NAPPIN' IS GOOD FOR YOU... GETTIN' ENOUGH SLEEP HELPS YOU MAKE SOUND DECISIONS.



During sustained operations, combat soldiers get less than four hours sleep each night for days at a time, which is considered severe sleep deprivation. The Army is working on the problem.

should take a stimulant,” Belenky said. He’d like to see stimulant use and dosage targeted toward individuals, not groups, so a person gets just what he needs to perform — no more and no less.

When looking at different stimulants, it’s not surprising that studies have shown caffeine is an effective aid, Noback said. For caffeine to be most effective, however, regular users need to minimize their caffeine use so that when they need it, caffeine will give them a boost.

In upcoming studies, WRAIR researchers will test caffeine, d-amphetamine and modafinil to see which of the three stimulants produces the best results. The bottom line with stimulants, Belenky said, is that they are “short-term fixes at best. The real answer is to get adequate amounts of sleep and efficiently managed sleep.”

Army researchers also study sleep-

inducing compounds to help circumvent the body’s natural rhythm.

Though highly addictive, drugs called hypnotics do increase sleep length. However, if the user is awakened an hour or two after some drugs’ peak effects, his or her judgment is impaired. If the user is a soldier, that means readiness is impaired.

The aviation community at the U.S. Army Aeromedical Research Laboratory has begun testing zaleplon, a new sleep-inducing compound, to see if its hangover effect is less than the effect of previously tested hypnotics.

“Aviators may fly strictly day missions for long periods and then suddenly be switched to night flying,” Belenky said. They’ve reported they then have difficulty staying awake, said researcher Dr. Pat Le Duc of USAARL. “Finding a safe hypnotic is one way we can mitigate the effects of

interfering with normal sleep patterns.

Le Duc and other researchers hope an upcoming eight-day, seven-night study of 12 aviators will provide answers as to whether a 10-milligram dose taken before an early bedtime will allow subjects to fall asleep faster and get better sleep. The team also hopes to learn if more sleep will increase alertness, lessen fatigue and offset the common declines in performance that typically occur when work begins early in the morning.

The aviators will complete cognitive tests, fly the lab’s simulator, undergo sleepiness and electrophysiological evaluations, and complete questionnaires about their mood.

While waiting for answers to help determine the best stimulant or hypnotic for soldiers in combat, Belenky’s advice on catching Zs is clear-cut. “Take the opportunity to sleep. Naps are wonderful,” he said. He advises commanders to organize their areas so sleep can occur. “I’ve tried to sleep in a big tent, where every 20 minutes someone shook me awake, asking me if I was ‘Smith.’ It got so bad, we ended up sleeping with big signs that had our names on them so we’d be left alone,” he said. 📧

SSG Edgar Soto of the 82nd Abn. Div.’s 2nd Bn., 325th Inf. Regt., naps in a bombed-out building being used by his platoon as a temporary base of operations in Samawa, Iraq.

SGT Kyran V. Adams

