

If You've Ever Said "This Shift is Killing Me" ... part 3

In part 1 of this series I offered an overview of the impact overnights and rapid rotation shifts have on the brain. In part 2 I took a look at various shift scheduling practices and the thought process behind them. I also called for a national public safety policy discussion related to scheduling practices and the inherent safety issues related to them.

I think it will take a long time and a lot of work from the national level on down to a grassroots level before we see changes to scheduling practices. Where does that leave us, the people on the floor? Science tells us we're going to be obese, sick, and have impaired cognitive function that will take five years to recover from once we leave overnight shifts (there's currently no study on the aftermath of working rapid rotation shifts for an extended period of time).

A dismal outlook at best. So...what do we do? We put together as many puzzle pieces as work for us individually to offset the effects of shift work. None of the suggestions that follow is "one size fits all."

Disclaimer: I've done extensive reading of studies related to the subject. I've interviewed sleep researchers. ***I am not a doctor or mainstream health professional.*** What I am is an emergency services dispatcher who needs to stay healthy just like you do.

Weight management: working overnights means your wake/sleep hours and your circadian rhythm are misaligned. If you work rapid rotation shifts, your circadian rhythm is disrupted. In either case, you've got the "triple threat" ...sedentary job, stress, and sleep/circadian rhythm disruption. *Make no mistake about it, this combination = weight gain.* The best defense is a good offense. If you're new to the job, be aware and take steps to nip the weight gain in the bud. If your weight is already up, be mindful and take it one day at a time.

- In the words of obesity researcher, Dr. James Levine, "Get UP!" Try getting up every hour and work standing up for a period of time, pace, anything for up to 10 minutes every hour to break the sedentary cycle. Comms centers around the country are seeing the value of installing treadmill work stations to give their people the option of walking at a slow pace while working and Oregon is pursuing a study of the effects. The initial response was good, some dispatchers lost weight, most reported feeling better. Find out if this can be done in your center... and make use of it.
- Exercising on a regular basis to meet the minimum federal recommendation for health can be problematic. 45 minutes of aerobic activity 3-5 times a week is the ***minimum in addition to getting up during work hours*** and for those overstretched by their work schedule followed by their obligations at home, that can look impossible to achieve. *But it's important to try.* Can you pick one day a week that, come heck or high water, you devote 30 minutes to yourself for a brisk walk? Try it for a week, then add another day, one day at a time can become a habit that helps you get, or stay, healthy. Is your

schedule regular enough that you can find a fitness class you like once a week? Cycling, dance-based aerobics, swimming, step aerobics...if it's fun for you...DO IT! Budgeting for a class can be a challenge so search online to find workout DVDs that you like...and do them at home. Would a workout buddy help you? Then do that. Whatever works for you is what you should be aiming for. And remember, even the most robust among us gets beat down by the consuming nature of the job and responsibilities at home. Sometimes you do need to rest. Be mindful of what you need.

- Don't forget the strength training. Loss of muscle mass begins for both men and women around age 30. Muscle burns more calories at rest than fat does. Keeping up muscle mass helps maintain your balance and your bone density as you age. Again, if gym fees are an issue check online for workouts like these that combine walking with strength training using your own body weight <http://www.prevention.com/fitness/fitness-tips/14-walking-workouts-to-burn-fat-and-boost-energy/slide/16>

Eating patterns: Notice I didn't say "diet." That word implies it's a temporary thing and also gives rise to feelings of deprivation. The key is to develop healthy eating habits and if you have cravings, be mindful of what drives them.

- If your sleep is disrupted, then you're likely to choose up to 500 calories **or more** to eat each day than if you were getting healthy sleep. Functional MRIs have shown this is because your brain's "survival" function is operating in a more pronounced way than your "higher" or "executive decision making" function. And the disruption of hormones that control hunger and feelings of satiety when you're sleep deprived play a large role in food choices as well. [<https://www.psychologytoday.com/blog/the-athletes-way/201308/insomnia-increases-junk-food-cravings>] [<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3763921/>]
- You're likely to crave simple carbs when you're stressed. Eating simple carbs prompts the release of feel-good chemicals in the brain so you actually do feel better after you eat them. [<http://www.ncbi.nlm.nih.gov/pubmed/8697046>] The feel-good effects are short-lived, however, and the craving comes back creating a vicious cycle. Try waiting out the craving or having a small protein snack. I've found a **small** piece of dark chocolate, minimum 80% cocoa content, will help satisfy my cravings and also curb feelings of hunger. [<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3302125/>]
- A study of mice that were fed off their circadian rhythm showed they gained weight even if they were taking in a normal amount of calories. Try not eating a meal on your overnight shift. [<http://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0110176>] (I don't eat a meal later than 7pm. I keep a couple of protein shakes on hand to have if I feel hungry. If I feel really hungry, then I count out 10 almonds and have them with an 80 calorie piece of cheese.)

- Keep calories in mind. When I hit my 40s my doc said, “Metabolism can drop by as much as 50% in women your age.” This means that 2000 calorie/day figure as a normal intake may well be too much to maintain a healthy weight as you age. A recent study showed if you’ve lost weight, then you need to take in fewer calories than someone who is at the same weight naturally. Essentially, whatever calorie cutting you did to lose weight may be close to be what you take in on a daily basis to maintain your weight loss. [<http://www.drsharma.ca/obesitywhy-is-it-so-hard-to-maintain-a-reduced-body-weight>] There are a number of calorie tracking apps available, find one you like ...and use it.

My own weight loss journey is a work in progress. I participated in a modified fasting program and lost over 20 pounds while I was on 8 hour, dedicated shifts. I had time to work out, I had plenty of sleep, but once I followed the dietitian’s advice to increase calorie intake to a certain level after the program, the weight started creeping back. When I got shifted to rapid rotation shifts, it all came back. The only success I’m having losing weight right now is by continuing to use the modified fasting approach and to try sticking to 800 calories a day. It works, but I find that once I hit my overnight shifts...I can actually gain several pounds over those two days...even with limited caloric intake. Between the reading I’ve done and my own experience I’ve come to the conclusion that weight loss for someone on rapid rotation shifts can be difficult. But I haven’t given up and I encourage you *to keep trying*. We have to try because being overweight to obese brings with it higher risk for diabetes, high blood pressure, heart disease, and some types of cancer. Keep at it, one day at a time, and try not to be discouraged. The disruption of your circadian rhythm is the primary culprit here and you’re battling all of the disrupted hormone releases and brain activity it causes. [<http://sleepcenter.ucla.edu/circadian-rhythms>]

Sleep patterns: If you’re on dedicated overnight shifts, then sleep and circadian rhythm researchers recommend adjusting your circadian rhythm to night hours. Researchers seem split on whether you should stay up in the morning until you have 8 hours to sleep and time to prep to go to work...or go home and go right to bed, immediately to bed, and nothing else. They recommend maintaining whichever approach you choose on your days off shift rotation, too. What does that really look like for someone who has children, animal companions, a significant other getting up to start their day...all, or some combination thereof? Or if you’re working 12 hour shifts or longer? Not easy. Near impossible. But according to Dr. Charmane Eastman of Rush University, even a slight shifting of your circadian rhythm will help offset the effects of working consistent overnight shifts. For a look at her method, which involves scheduled sleep hours and the use of varying intensities of light *during work hours*, go here: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2603486/>

If you’re on rapid rotation shifts, then nap and sleep as much as you’re able when you’re not working. According to the sleep researchers and doctors I’ve interviewed, your body and brain **cannot** recover from the disruption of your sleep and circadian rhythm under this type of shift scheduling. The effects are cumulative, which means they get worse over time, and you **cannot** make up the sleep you lose working these shifts. Do your best to “eat [real] food, mostly plants, not too much” as advised by renowned food journalist, Michael Pollan. Exercise when you can, be aware that being overly fatigued can promote injury so be mindful of what’s happening with your body. Please stay as safe as you can driving to and from work. Which leads to the next item.

Nootropic drugs: Simply put, these are central nervous system stimulators but they are not in the amphetamine class of drugs. Generic names for these are modafinil and armodafinil. Developed to treat narcolepsy, they are used to treat sleepiness associated with sleep apnea and shift work disorder. The list of side effects, like many pharmaceuticals, is fairly long and includes difficulty sleeping which can be one of the effects of having disrupted sleep due to daytime sleeping or circadian rhythm disruption. Consult with a sleep doctor if you have concerns about your symptoms. If they recommend either of these, tell them about *any health condition* you have, *any prescriptions you're already taking*, and primarily don't drive or operate machinery until you find out how they affect you as dizziness, headache, and migraine are common (up to 10%) side effects. "While [they] promote wakefulness by stimulating the brain, the exact mechanism of action by which [they] work is unknown. [medicine.net]

Nootropic supplements: While the word, "nootropic," was coined in 1972, the popularity of these reportedly brain boosting supplements has been growing in the last decade. The products are generally some combination of vitamins, plants, herbs, and amino acids in proprietary blends. Which means the label will tell you *what* is in them but not necessarily *how much* of what is in them. People who use them claim great effects with few or no side effects. Do your research about ingredients as some can be fat soluble and if so, can build to toxic levels in your body. Some are water soluble and if so, you will have...as my doctor once said..."expensive urine." He also said to me, "Some poisons are medication, but all medications are poison." As always, **pay close attention to what your body is telling you if you try these.** Some common ingredients are:

- Bacopa, a plant shown to improve memory, specifically in retaining new information [<http://www.drweil.com/drw/u/REM00050/Bacopa-Dr-Weils-Herbal-Remedies.html>]
- L-theanine, an amino acid found in tea that has been shown to affect brain waves, essentially to a state of mind after meditation. It promotes alertness without anxiety and the NIH did a study to find out what dosing is effective. [<http://www.ncbi.nlm.nih.gov/pubmed/18296328>]
- B vitamins, commonly known for energy promoting properties.
- Rhodiola rosea, an herb said to "increase resistance to stress without disrupting biological function." [<http://www.drweil.com/drw/u/QAA400399/Rhodiola-for-What-Ails-You.html>]
- A-GPC, a "parasympathomimetic acetylcholine precursor" (and that is my favorite new medical term of the day), shown in studies to "[improve] the immediate recall and attention in a group of young adult males (ages 19-38) compared with a placebo. In middle-aged and elderly subjects, GPC supplementation improved reaction time by supporting energy generation and electrical coordination in the brain." [<http://www.smart-publications.com/articles/gpc-the-new-choline-that-enhances-your-mental-function-now->]

Alternative stress relief modalities:

- Meditation has been shown to help offset the effects of mild sleep deprivation. Study participants who went without sleep for 36 hours and then meditated for 40 minutes did better on physical reaction tests (button pushing) than the participants who got a 40 minute nap. Google is a great tool for finding easy ways to learn to meditate, and study participants who were new to meditation did better than those who were practiced at it. By simply focusing on your breath, you can meditate anywhere, any time, right now. This article with embedded video is one of the most brilliant resources I've seen (and I've been studying and practicing yoga and breath work for 44 years): http://www.huffingtonpost.com/entry/a-tibetan-buddhist-masters-simple-guide-to-meditation_us_57850a79e4b07c356cfe8158
- Pranayama, or "breath work," in yogic tradition takes many different forms with different results. From calming to energizing, breath work has an immediate affect and is easy to learn. Google and YouTube are good ways to find videos that demonstrate the practices. Here's one for calming from Dr. Andrew Weil: <http://www.drweil.com/drw/u/VDR00112/The-4-7-8-Breath-Benefits-and-Demonstration.html>
- Yoga, the practice of focusing on holding particular postures and using the breath to overcome the dynamic tension created between brain and body in the attempt, teaches the parasympathetic nervous system how to overcome the stress response of the sympathetic nervous system ...which controls the "fight/flight" response in the body. It takes practice, but it works. [<http://www.yogajournal.com/article/ayurveda/tame-stress/>]

There are a lot of puzzle pieces to put together to stay healthy while doing shift work, as well as staying alert to keep the public and our responders safe. Again, there's no "one size fits all" solution. I advocate making small changes that are sustainable and adding to them over time so that they become habitual behavior that is second nature in your life. I know we love the work, as I love it, too, but we need to take care of ourselves so we can effectively keep giving to our communities.

Author's note: I recently consulted a sleep doctor about my own symptoms related to working rapid rotation shifts and her advice was, "have you considered finding another job." Then she said she would prescribe modafinil for me. Reading the side effects put me off that idea. I considered nootropic supplements but they can be expensive and it appears it takes several months for them to reach peak effect. I'm a casualty of working rapid rotation shifts and with great sadness have decided to leave the fire service to preserve my health and the safety of my responders. This will be my last article for APCO. To everyone on the front line, as a First, First Responder, stay safe, take good care of yourselves, keep up the great work you do every day. With respect and love for all you do, Dani-Jean Stuart.