

## #58 (STEVE JAMES)

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### Jerry Ratcliffe:

Reducing Crime features conversations with influential thinkers in the police service and leading crime and policing researchers.

Dr. Steve James served for over 20 years in the British military before earning a PhD and becoming one of the US's foremost experts on the effects of fatigue and sleep deprivation on law enforcement. He outlines a range of practical ways police officers can manage their sleep, coffee and stimulant intake, seasonal changes and overtime.

### Jerry Ratcliffe:

Welcome to Reducing Crime. I'm Jerry Ratcliffe.

My guest for this episode is Professor Steve James. Steve served for over 20 years in the British Army as a soldier and officer with multiple deployments in Cyprus, the former Yugoslavia, Northern Ireland and Afghanistan. Being the overachiever that he is, he added to his bachelor's degree from Trinity College Dublin with a master's in PhD from the university where he's now an assistant professor in the Department of Translational Medicine and Physiology, Washington State University. His 2015 PhD dissertation was on the effects of fatigue and distraction on driving performance in police officers, and he's since gone on to become one of the country's leading experts on his use of sleep fatigue and safety for law enforcement. Given the recruitment crisis is currently pushing what few officers seem to be still left on the job to work longer and harder, you can probably see why I thought fatigue and the need for sleep was an important officer wellness topic for the podcast.

Often in collaboration with his wife, Professor Lois James, Steve's has attracted funding from the National Institute of Justice, National Institute of Occupational Safety and Health, Office of National Research, DARPA and the Department of Defense. He's also been published in leading journals across both criminology and medicine.

Now, we made the mistake of scheduling our chat the day after the Axon party at the annual conference at the International Association of Chiefs of Police in Dallas. If you've never been, let's just say that Axon are quite convivial hosts and it is rather easy to be generously over served at the bar, but we rallied and our chat covers the contributions of our mutual friend and his longtime mentor, Brian Vila, how much sleep you need, how to manage shift work, and

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how to regulate your coffee and Red Bull intake. We also touched on Dunning Krugers, Google it, cockblockers... don't Google it, at least not from a work computer, and sympathetic arousal.

You probably don't know what that is, but I bet you're intrigued.

**Jerry Ratcliffe:**

Yeah. How's it going? Working hard and drinking hard, right?

**Steve James:**

Oh, yeah.

**Jerry Ratcliffe:**

I think it's brutal to put you on at 8:00 this morning.

**Steve James:**

Well, and the funny thing is that, and I kind of said if you turned up for an 8:00 AM session after the Axon party, you're not the room I need to be speaking to about fatigue, so it's everyone who's not here that I need to be speaking to.

**Jerry Ratcliffe:**

Right. Yeah. All these people who are barely functioning today and rolling around. Yeah. Yeah. I got to start off by asking you the obvious question. Where's Lois?

**Steve James:**

Lois is presenting at a veteran's conference up in Halifax, Nova Scotia.

**Jerry Ratcliffe:**

It's a weak excuse, but we'll put up with it.

**Steve James:**

But I'm a poor facsimile for her, and I spend my days saying, oh yeah, I'm Lois James's husband. Like, oh, now I know who you are.

**Jerry Ratcliffe:**

Yeah, great. Isn't that weird? There are a bunch of academic couples kicking around... the Brantinghams is one of the most obvious ones, and it's just this sort of inevitability about it that whenever I'm hanging out with you, it's always, it's everybody comes up and says, where's Lois?

**Steve James:**

Yes. It's like I'm a person too [laughter]. But as a husband, I'm super proud that she is as accomplished as she is. But...

**Jerry Ratcliffe:**

Yeah, I mean, you've got this great team going over in Washington state, right?

**Steve James:**

Yes.

**Jerry Ratcliffe:**

It's yourselves. Is Brian retired?

**Steve James:**

Brian's retired. He's very open about this. He's stood on large stages and said it. He unfortunately was diagnosed with early onset Alzheimer's and he kind of wanted people to know that because he's so passionate about the science, that it's hard for him to disengage, and he didn't want people to think that he just didn't care anymore. Right.

**Jerry Ratcliffe:**

He's a lovely man. I mean, I thought...

**Steve James:**

He's wonderful.

**Jerry Ratcliffe:**

He's so committed to this field and to officer safety, and yeah.

**Steve James:**

And it was born out of his own personal experience of that when he was a street cop, a gang sergeant in LA back in the late seventies, early eighties, and he realized when he was burning the candle at both ends, whether or not it was work or going to grad school, that he wasn't the type of cop that he wanted to be. That fatigue was really detrimental to his performance and his safety. So he sort of started this personal journey of understanding how fatigue affects policing performance and literally wrote the book Tired Cops.

Brian is the godfather of police fatigue research, and he was the director of crime control at NIJ. Not only did he kind of start the discipline within the sleep field of specifically looking at cops, he also made sure that the investment was there. We all have these great ideas. We all have these passion projects, but unless a funding agency is going to pay for it, it's very difficult to get work done. It's sad that money has to drive what we do, but research can be expensive.

**Jerry Ratcliffe:**

It is the way, and in the end, the universities make it that way. I mean, they have an altruistic goal, universities, but I think people often forget the bottom line is if they go bankrupt, nobody's learning anything.

**Steve James:**

Right. For sure.

**Jerry Ratcliffe:**

If they're going to carve off time when you're not teaching, then they have to make that up in somewhere else.

**Steve James:**

Teaching. What's that? I'm in that ideal position where I've got a tenure track position, but I've got 90% research.

**Jerry Ratcliffe:**

Wonderful. And you're married to Lois?

**Steve James:**

Yes.

**Jerry Ratcliffe:**

Where is Lois, by the way? I meant to ask.

**Steve James:**

Yes. She's still in Nova Scotia.

**Jerry Ratcliffe:**

So you came into this field in a very different route.

**Steve James:**

I did.

**Jerry Ratcliffe:**

I mean, I know that you were in the British Army for many years.

**Steve James:**

Yes.

**Jerry Ratcliffe:**

And you spent some time in the regiment for those in the know, but you spent the majority of your time, I think, in the Royal Irish regiment.

**Steve James:**

Yes. I commissioned into the Royal Irish, and I loved everything. I loved being a soldier to put it in American terms, being enlisted. I did that for almost a decade and then commissioned into the Royal Irish. I know you were in one of the other.

**Jerry Ratcliffe:**

I spent six years in the, well, I was in the Reserves. It doesn't count. Yeah, I was commissioned into the Royal Engineers. But how many tours did you do?

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**Steve James:**

So I did six in Belfast, two in Yugoslavia, and then one in Afghanistan, and then I did two years over in Cyprus. We were outside the wire live armed every day doing some security work for other assets. I loved every minute of it. Jerry, I don't know how you feel about this, but working with cops, you sometimes have to prove your metal. You have to prove that you're worthy of interacting with this community and have their own rights of passage and academies and so on.

**Jerry Ratcliffe:**

Well, I think they even pay attention to things like back in the day when I was in the Met, people wouldn't just say, oh, you're in the Met Police. But if you're in the know, they would ask where you were because where you got posted to Orpington in Kent. Well, that's very sweet down there.

**Steve James:**

Correct.

**Jerry Ratcliffe:**

And if you were in Brixton, it was a whole different ballgame.

**Steve James:**

Yes.

**Jerry Ratcliffe:**

It's like people would look at your shoulder and they would know where you were posted and it would tell you something about the experience that person had.

**Steve James:**

Yeah. It's interesting because I actively, especially having spent so long in Northern Ireland, I don't wear any clothing that has any military reference to it. I don't have any stickers on my car.

**Jerry Ratcliffe:**

No.

**Steve James:**

Outside of working directly with law enforcement and military organizations over here, I downplay what I did because it's just our culture, right? Especially with the threat of the IRA back in the day, actively targeting off-duty soldiers and so on.

**Jerry Ratcliffe:**

It amazed me when I came to this country that people were really obvious who were soldiers, who were ex soldiers, who were police officers, who were ex-police officers. FOP number plates (license plates)? Nobody in Britain would do that in a million years. Please break into my car and set it a light, ideally with me out of it.

**Steve James:**

Back home, they wouldn't care if you were in it or not.

**Jerry Ratcliffe:**

No, that's right.

**Steve James:**

But I did some work on a DARPA project for the Defense Advanced Research Project Agency. DARPA wanted to develop training for young soldiers and Marines to build true trust and legitimacy with local nationals overseas, but without having specific Afghan awareness or a Iraq awareness or wherever the next hotspot is, basic skill sets. And as part of that, I went and did a number of courses with the US Marine Corps, and one was the Enhanced Combat Hunter course over at Camp Lejune.

And I was talking with the officer commanding, let's have a walk through the car park and look at the back of the decals in all of their windows, and kind of wrote these profiles of the Marines and went in back into the classroom like who's got three kids, a dog, and served in this tour. And we're like, you can start profiling people. And it's like, it's just a different culture that we grew up in compared to over [here]. And don't get me wrong, I appreciate and I admire that American culture is so proud of their service, kind of jealous at some, we don't get military discount back home. The fact that America does at least attempt to honor their veterans and their service personality is a great thing. But from a security point of view, I'm like at what cost?

**Jerry Ratcliffe:**

The thing about the Irish problem—the Troubles—is that nobody here really has a good understanding of it. They don't have a good conceptual understanding of what it's like. I worked Royalty and Diplomatic Protection in Central London right through the middle of a provisional IRA bombing campaign. It's a very different kind of security situation than anybody here is really used to.

**Steve James:**

Can I swear on this podcast?

**Jerry Ratcliffe:**

Oh, yeah. I fucking hope you will.

**Steve James:**

Well, not really swearing, but at one point I was literally a professional cockblocker for the Queen. And what I mean by that is the IRA used to have a tactic of employing attractive women that would bring young soldiers home from bars. When they got back to the women's apartment, there'd be two IRA guys there with whatever. So I literally had a job where I had to go to bars, we called it "Shark Watch" back in the day, with a group of young soldiers, stay sober and was armed and say, no, you can't go home with that girl. Like I'm the most popular guy, that was my job at times. So.

**Jerry Ratcliffe:**

That's fantastic. But with all these tours, I mean there is something about deploying, it's a whole different environment and you must have some personal experiences, not in policing, but certainly in the military. You bring to your research some experience of how fatigue can drive changes in behavior that are detrimental to performance. Right?

**Steve James:**

Absolutely.

**Jerry Ratcliffe:**

Having gone through military training myself, I know that we always used to do a lot of weapon work when we were tired because they just want to get into that muscle memory that you just fall back on it when you have levels of exhaustion.

**Steve James:**

And it's a really important point that you're making. A fatigued brain can do something that's rote or anticipated particularly well. What we suffer from is vigilant attention. So we can't see changes in our environment when we're fatigued, and we also find it difficult to notice changes in the stimulus that's coming in. So it's why you can do something when you've been on the job for 18, 19, 20 hours and you think that you're okay because you can do that stuff that you're used to, manipulating weapon systems, whatever it happens to be. But what we're really bad at is noticing changes.

**Jerry Ratcliffe:**

Are you talking about our situational awareness of what's around us?

**Steve James:**

Yes, absolutely.

**Jerry Ratcliffe:**

Is that external to us, but also our own deterioration, our own capacity?

**Steve James:**

Yeah. Then there's a little bit of, not controversy, but kind of good scientific tension in the community about whether or not this is an actual identifiable phenomenon or not, but there's kind of this local sleep and use case dependency circuits that we use, cognitive circuitry that we overuse, will go offline independently.

**Jerry Ratcliffe:**

I have no cognitive circuits that I overuse. Most of mine are painfully underused [laughter]

**Steve James:**

Right. Well, that's actually a safe place to work in because if we are maximizing our cognitive effort just getting through the day, we've got no capacity. So when we look at training police officers or military folk or whomever, what we should be aiming for is the optimum or the criterion level of performance at the least cognitive overhead.

**Jerry Ratcliffe:**

So Dunning Krugers have just got it nailed down then basically.

**Steve James:**

Yeah. So they don't like to hear this, but police officers are humans too. They are limited by the same biology as the rest of us. We don't have as much research as we would want on the impact of sleep deprivation, long shifts and so on, specifically with police officers. But we do have about 120 years of industrial medicine in this field. Police officers are humans too, and they are bound by those biological limitations that we have, and we sleep at a cellular level like our body functionally changes when we're awake or asleep.

**Jerry Ratcliffe:**

So we can't just man up and muscle through.

**Steve James:**

No. What we end up doing is sacrificing safety, performance, and ultimately we sacrifice health. John Violanti out of SUNY Buffalo, if your listeners are not familiar with his work, they absolutely should be. He's a retired New York state police officer himself. Decade after decade, he's been working with Buffalo PD then showing that just being a police officer can take up to a decade off your life's expectancy.

**Jerry Ratcliffe:**

That's cheery to know.

**Steve James:**

I know. And that's when we don't pay attention to the corrosive nature of the job.

**Jerry Ratcliffe:**

What's his name again?

**Steve James:**

John Violanti.

**Jerry Ratcliffe:**

Okay. So what I'll do for listeners is if you come to [reducingcrime.com/podcast](https://reducingcrime.com/podcast) and look for the episode with Steve James who's with me, I'll provide links to his work for you.



**Steve James:**

You. He's a giant in the field of morbidity and mortality for law enforcement.

**Jerry Ratcliffe:**

So in policing, what are we doing wrong?

**Steve James:**

This is where I'm going to maybe show some of my own personal bias, and maybe this isn't as evidence-based as it probably should be, but I truly believe...

**Jerry Ratcliffe:**

Yeah. But you have an informed opinion.

**Steve James:**

Yeah. I truly believe that most, if not the vast majority, the vast, vast, vast majority of police officers come to work on a daily basis wanting to serve their communities, do good. There's very, if any, people who are in the profession for the wrong reasons.

**Jerry Ratcliffe:**

Right.

**Steve James:**

When we have a well-balanced officer who is looking after their stress management, looking after their fatigue, being mindful, has the knowledge and training that they require to do the job, we get the type of policing that American society is asking for.

So for me, when it comes to police reform, the first place we need to start with is the raw material, which is the police officer. And as human beings, we require sleep. We do not do well under stress. The stress response to things is an adaptive response to get us out of trouble. It's not a place to live in. If we look at the animal kingdom and we look at animals that have fight or flight responses. When the wildebeest go to the watering hole and they lose Billy on Monday and Bob on Tuesday, by Wednesday, they're looking for a new watering hole. [laughter] The herd moves. But police officers are paid and asked to constantly go back to those places where they are put at a higher level of risk and stress than a normal human being should be exposed to.

**Jerry Ratcliffe:**

I did over a year's worth of field work in Kensington in Philadelphia, which is one of the biggest open air drug markets. You just see people who are running into compassion fatigue. It is just orders of magnitude more exhausting to be there than it is to police in other environments in this country.

**Steve James:**

Absolutely. And coming from a military background, policing just runs counter to how I understood things worked. We would train for six to nine months for a six-to-nine-month deployment and come back, recover and train again. Police officers train for four to six months for a 30-year deployment. This is going to sound derogatory, and I don't mean it to, but we're kind of giving them the amount of training we expect of a college athlete or a high school athlete, but then expecting them to perform at Olympic levels.

**Jerry Ratcliffe:**

It's interesting that the military have managed to escape what is the general approach - certainly seems to be emphasized in the United States - that we want high levels of public service and no intention of paying for it. We want the smallest level of taxes, but I would like exceptional service from my government and public service. And you're not going to get it if you don't pay for it. For people who are in the job, what are they doing wrong in terms of managing their sleep and their fatigue and what impact is it having on them?

**Steve James:**

So the first thing I would suggest to anybody is to listen to your body.

**Jerry Ratcliffe:**

At 56 mine just creaks ... a lot.

**Steve James:**

We have a lot of validated tools and sophisticated ways and wearable devices that are research grade and so on. But I could just ask an officer, are you satisfied with your sleep? And that'll get me halfway to the answer I'm looking for.

**Jerry Ratcliffe:**

But I'm an academic and I haven't had the right amount of sleep I should have had for about 15 years.

**Steve James:**

True.

**Jerry Ratcliffe:**

And that it can't be the stress of the job because I'm an academic. It borderline counts as a job for crying out loud.

**Steve James:**

It's a different type of stress. But the first thing is listen to your body. The second thing is stop filling it full of chemicals. There's no substitute for sleep. The most amount of Red Bull or Monster or any or Bang or whatever it happens to be, it's snake oil.

**Jerry Ratcliffe:**

Are they detrimental?

**Steve James:**

They are. They've been linked to higher rates of negative cardiac events.

**Jerry Ratcliffe:**

So not just go easy on them, but actually cut them out.

**Steve James:**

Cut them out. If you're doing it because you like the feeling and like the taste, that's one thing, but they're not actually improving your performance.

So my colleague Devin Hansen did some caffeine dose response trials. So we sleep deprived people. One cohorts on a placebo tablet, one gets 200 milligrams every four hours, one gets three, one gets four, and so on. Caffeine is the best supplement that we have, the safest and the most effective supplement right now for mediating the effects of fatigue on performance. But after about 200 milligrams, which is about a single shot of espresso or a one shot or a drip coffee from Starbucks or wherever, every four hours after that, the return on investment in performance is negligible. The other thing that's important is you should take it when you need it and the more, and I'm just as bad as anyone else, I like the taste of coffee, so I tend to drink it all day, but doesn't have an effect of alerting me when I need it.

**Jerry Ratcliffe:**

I'm just trying to manage that coffee to bourbon transition time of the day. It seems to be creeping earlier and earlier.

**Steve James:**

That's where the Irish have the world fixed because we added the two together and call it an Irish coffee.

**Jerry Ratcliffe:**

Beautifully done.

**Steve James:**

So why sacrifice one for the other?

But the other thing is to understand not only do we build up a tolerance and we should use it judiciously when we need it, but also understand that it takes time to metabolize. If you drink a cup of coffee, it's going to take 30 to 40 minutes for that caffeine to hit your bloodstream. Good friend and colleague of mine who was a full bird colonel in the US Army developed a caffeine delivery, chewing gum. You can buy it on Amazon, it's called *Be Alert*, but it was developed for the Army. Now it tastes awful, right? You're not eating this stuff for fun.

**Jerry Ratcliffe:**

It doesn't sound great.

**Steve James:**

But the caffeine gets delivered instantly. So if you are a night shift officer and you are judicious with your coffee, instead of grabbing a Monster, maybe just keep a pack of this gum in your pocket.

**Jerry Ratcliffe:**

But to be fair, has military food ever been good?

**Steve James:**

You know how bad it is for us when we're trading our stuff for MREs, right?

**Jerry Ratcliffe:**

Oh my God, no.

**Steve James:**

My platoon sergeant on my last tour, he was over in Iraq earlier and he got dropped into what would be described as a FOB now.

**Jerry Ratcliffe:**

That's a Forward Operating Base for people. So it's right up there on the bleeding edge.

**Steve James:**

On the edge. But they dropped him with a pallet load of rations with a single menu. They had the same thing to eat every day for six months.

**Jerry Ratcliffe:**

Jesus.

**Steve James:**

So he was a little sensitive to food when by the time I got to work with him.

**Jerry Ratcliffe:**

You were just talking about watching the caffeination. What are some of the other things we can do to minimize the fatigue?

**Steve James:**

One of the basic things, they're just looking at our sleep hygiene. And what that is really is about creating the conditions that are conducive to good sleep when you have the opportunity to sleep. First thing, we like to sleep in cold, dark, quiet environments. Put your AC down. I know this is not going to save the planet, but might add at least a few years to your life, but drop the temperature in your room to about 65 degrees. We actually like to sleep in a cool environment. Invest in a couple of nightlights. You and I, Jerry, we're starting to age and as men, we have prostate issues and whatnot.

**Jerry Ratcliffe:**

Not yet, but I'm familiar with the inevitable. It's just around the corner.

**Steve James:**

Just around the corner. Needing to go to the restroom in the middle of the night is a common occurrence for men our age. Put in a path of nightlights so you don't have to turn a light on. So when you are disrupted, your sleep is disrupted. Don't turn on a light to go get water, to go to the restroom, and don't pick up your cell phone. Not just for the light that it emits into your eyes, but you get cognitively like, yo, I'll just answer this.

**Jerry Ratcliffe:**

That little dopamine hit. Just quick look at Facebook or Twitter.

**Steve James:**

Yeah, so I know a lot of officers are on call and so on, and back in the day when they had pagers and whatnot, it was easy, right? No one picked up one of those for fun.

**Jerry Ratcliffe:**

No, that's right. Showing your age mate... pagers. That's like one after a carrier pigeon turning up.

**Steve James:**

Before we got as politically correct as we are now, we did used to say, because we don't have a TV in a bedroom, I recommend do not have a TV in your bedroom. And we used to say that the bedroom's for two things, sleeping, and I can't wait to find out what the other thing is. [laughter] But I mean, you should create an environment in your bedroom that is conducive to sleep. So especially if you're on graveyard shift, make sure you invest in blackout curtains or blackout blinds. If you live in a neighborhood that has a lot of environmental noise, block it out with white noise.

**Jerry Ratcliffe:**

White noise machines. Yeah.

**Steve James:**

Because as humans, we can condition ourselves to noisy environments. What we are really bad at sleeping through, and this is a safety mechanism that our brain is those sudden interrupted, the dog barking.

**Jerry Ratcliffe:**

I'm at the Lorenzo Hotel here in Dallas at the conference, and it's right next to the freeway and it's not the cars. What wakes me up is motorbikes. Really loud motorbikes going past.

**Steve James:**

Yeah, no, it's those sudden interrupting noises that we get pulled out of sleep and it's like, well, of course. If there's a saber-toothed tiger growling at the front of our cave, we need to know about that. So.

**Jerry Ratcliffe:**

You mentioned graveyard shift. Back when I was a cop back in the 1980s and into the 1990s, my whole career was spent doing shift work and the transition from one shift to another was always just dire. I mean it would knock you out for days. Are there good ways to manage that or do we just... I mean it felt like it took years off my life. It probably did.

**Steve James:**

It absolutely did. And it shows sitting across from you. Yeah.

**Jerry Ratcliffe:**

I mean, look at me. I'm only 23 years old. It's brutal.

**Steve James:**

The short answer is that we are diurnal animals, which...

**Jerry Ratcliffe:**

Okay, you have to explain that word because that sounds like I've got prostate problems.

**Steve James:**

It is. No, it's familiar with the term nocturnal. So bats, mice, so on, creatures who are mobile and functional at night sleep, during the day. We're the opposite. We are biologically designed at a cellular level to operate during the day and sleep at night. And anything we do counter to that comes at a cost. Now, can we lessen the pain that creates? Yes. If there's a couple of different options that agencies around the nation do, some have static shifts. So you bid for your shift at the end of each year for the next calendar year. I've met patrol officers who have got 18 years on night shift, and that is corrosive. At the extreme other end, you have agencies that do rapid rotation.

**Jerry Ratcliffe:**

You do two days of that, three days of that, couple of days off or week and nights. It's all over the place.

**Steve James:**

And from a biological point of view, that's probably preferable as long as you're rotating forward. And what I mean by that, you're going from an early to a late day to a night. The absolute worst thing you can do is go from nights to days and then off. So rapid rotation is okay as long as it is rapid. So two or three days followed by two or three mids, followed by two or three nights.

**Jerry Ratcliffe:**

Interesting.

**Steve James:**

That is sustainable.

**Jerry Ratcliffe:**

So that's something that organizations can help work towards. Are we getting a better sense of what is an optimal way to manage a job that's 24/7 from an organizational perspective?

**Steve James:**

I would say that the agency that did it the best, and I haven't kept up with them, so I don't know if they still did it, but my mentor, Brian Vila, we spoke about earlier, and a great medical doctor, sleep physician, Chuck Samuels, who's worked with Canadian Olympic squads and RCMP and so on, they worked with Calgary PD up in Canada. And from my understanding from the project, the union negotiated with the executives that if they met these criteria, they could set this shift schedule. And what they ended up based on the health and wellness of their members was that day shifts, work twelves, mid-shift work, tens night shift work, eights, but they all got paid as if they worked four tens and they sort of rotated every three months. US labor law doesn't allow you to get paid for hours you don't work and those types of things. So there, it's messy. But the really unsatisfying answer for your listeners is it all depends on the pace of life within your jurisdiction. If your call volume is high, it's something different.

**Jerry Ratcliffe:**

Should you have shorter hours then?

**Steve James:**

Shorter hours, yes.

**Jerry Ratcliffe:**

But you end up working more days.

**Steve James:**

That's the problem. So there's a trade off because consecutive nights get more and more dangerous. So if you did eight hours but had to work five of them to make a 40 hour work week, the fifth shift is incredibly dangerous. So one of the areas we'd recommend is sticking with four tens.

**Jerry Ratcliffe:**

I was wondering if there's an optimum pattern. Organizations obviously are wanting to look to minimize their liability.

**Steve James:**

You would think that, right? If you're going to steal, steal from the best, and I stole blatantly from Geoff Alpert's work, right?

**Jerry Ratcliffe:**

Veteran drinker of the policing circuit. Yes.

**Steve James:**

So his work on willful neglect around pursuit driving started shaping the way the agencies thought about their pursuit policies because we're shifting the liability from the individual officer to the agency. And for your listeners, the basic principle here is that as the scientific evidence mounts that a practice that your agency is allowing, then that is willful neglect.

**Jerry Ratcliffe:**

And I think that's increasingly where we're going to see, I think inevitably a real explosion in evidence-based policing. Because I think if we're going to move from being a job to a profession, we are going to have to load some of these things. And I think eventually police chiefs here and everybody's going to have to get on board because at some point people's going to turn around and say, there's a lot of evidence that this is really bad practice.

**Steve James:**

And I'm unfortunately getting involved in more and more arbitrations, expert testimony and so on around this issue where fatigue is a causal factor or at least a contributing factor in many really negative police community interactions.

**Jerry Ratcliffe:**

10 hours. Four tens is an optimum. The best of the worst.

**Steve James:**

It is. It's the least bad option.

**Jerry Ratcliffe:**

So you know what? I think in policing today, we'll take that, right? We'll count that as a win.

**Steve James:**

I was joking with my audience this morning. Bad guys, offenders, have circadian rhythms too. If we could just convince everyone to only commit crime during the day, things wouldn't be a problem. And that's kind of where the science meets reality, right? Policing is a 24/7 occupation where you don't have control over the community need for the most part. So there's never really one good answer of what is the right shift. I can often see what's the wrong shift. There's an agency down in California a few years ago said, Hey, we've done this amazing new shift pattern. I want you to have a look at it. And we've mathematical models to see if they make sense or not. And it's what aviation uses is these mathematical models.

**Jerry Ratcliffe:**

Which is one of the businesses that I highlight on a regular basis as a fantastic system that just continues to incrementally learn the best way to do things. It's fantastic.

**Steve James:**

But they also have a lot of both government and industry investment in that. So it didn't come cheaply.



**Jerry Ratcliffe:**

So what were they doing in California?

**Steve James:**

Sorry. So they sent me this shift schedule where they said, oh, we're broken our agency into two and we're running four tens like you say you we should. But the other half of the agency are running three 13 and a half hour shifts and they were running Friday, Saturday, Sunday night, and this was a seaside community that had a huge influx of people at the weekend. It's a party town. So not only are they running 13 and a half hour shifts at night, but it's very busy 13 and a half hour shifts.

**Jerry Ratcliffe:**

In what way would their performance be degraded in those last couple of hours, but in their hours kind of 10 to 13 and a half?

**Steve James:**

Yes. Well, it's interesting you say that because it's not just hours 10 to 13 and a half because of the accumulative impact of those, the first and second shift, their performance at the start of hour one of the third shift would've been the equivalent of blowing a 0.10 BAC. Sustained wakefulness, so being awake for 17 to 19 hours is equivalent of blowing a 0.05 BAC. And being awake for 24 hours straight is the same as blowing a 0.1. But when you have accumulated fatigue from multiple nights, that stays with you. It's very difficult, as any of your listeners who've worked graves know, to get consolidated recovery sleep during the daylight hours.

**Jerry Ratcliffe:**

You've mentioned consolidated sleep a couple of times. If I have volume, if I sleep for an hour and wake up sleep for an hour, wake up, sleep. If I get six hours of that, I can't remember the last time we got six proper hours of sleep, but you know what I mean?

**Steve James:**

Yeah.

**Jerry Ratcliffe:**

If I get four hours of that, is that the same as four hours altogether?

**Steve James:**

As long as the blocks are a minimum of one full sleep cycle, which is roughly 90 minutes.

We've done a study in our lab where people got to sleep eight hours or two chunks of four hours. It was just the same. If you're breaking your sleep, we call it split sleep, as long as those splits sleep, chunks of sleep are at least 90 minutes, ideally three, four hours. So you're getting sleep cycles through. The body is very, very good at keeping record of what it needs.

**Jerry Ratcliffe:**

Do you just need one big block like that?

**Steve James:**

Well, you need to go through various sleep cycles because the body prioritizes the different types of sleep. There's still so much we don't know, like why do we dream? Why do we do this? Why do we do that? But there are stuff we do know, and we do know that the vast majority of physical repair, because sleep is the body's way of pressing the reset button on us.

And the vast majority of physical repair and where growth hormones produced for example, is through Delta sleep. When we sleep, we go through Alpha, which is that light falling asleep, Theta, that light sleep where you're tossing and turning and if you're woken up, you might not even know you're asleep. And then there's Delta sleep, that's the sleep of the dead. And if you get woken from Delta, you feel groggy and disoriented and suffer what we call sleep inertia.

**Jerry Ratcliffe:**

Still groggy and disoriented with a sense of inertia most of the time.

**Steve James:**

Yeah, you're probably chronically sleep deprived.

**Jerry Ratcliffe:**

Not just waking up through the rest of the time.

**Steve James:**

But the body craves Delta sleep and we get the bulk of our delta sleep in the first few sleep cycles.

**Jerry Ratcliffe:**

I was really interested to see that you have also done research on post shift driving home. It's a horrible feeling when you just cannot keep awake. I used to ride a motorbike and I've ridden going up the Blackwall tunnel northern approach in the east end of London after a long night shift. And this probably is my fifth or sixth night shift I've just finished and I'm doing 70 miles an hour on the motorway, and I woke up as I hit the rumble strip on the side of the motorway. And I kept the bike on the road, but I went home the rest of the way with the visor open and got home and then I couldn't sleep because the adrenaline rush of nearly killing myself was, I mean, the whole thing was just a hot mess.

**Steve James:**

Collisions after graveyard shift or night shift is the number one killer of medical professionals. Nurses, physicians, and so on.

**Jerry Ratcliffe:**

Wow.

**Steve James:**

In the study I did, we brought 90 police officers in and the fatigue was generated in the real world. So they came in after their shift and we simulated holding them over for a half shift, which in this day and age is Tuesday.

**Jerry Ratcliffe:**

It is at the moment with the chronic decline in policing numbers.

**Steve James:**

And so I have use of force simulators, I've got driving simulators. We did some distracted driving tasks, scenarios that may or may not require force, some report writing tasks that looked at memory and so on. And then at the end of it, we got them to commute home in my driving simulator. A full 10% of those officers fell asleep at the wheel of my driving simulator.

**Jerry Ratcliffe:**

Good griffe. I mean, it doesn't surprise me. No, it doesn't surprise me.

**Steve James:**

Lois and I will travel anywhere all across the US. We're working with Oscar Kilo in the UK Police College right now. But of everywhere I've been over the last, well, 13 years now. I got a call from a sheriff to say that one of his corrections deputies, a 30-year veteran was trying to support three generations of family on his salary alone, was working double after double after double. And one day was driving home after I think the fourth double in a row, fell asleep at the wheel of his vehicle, hit another driver and killed the seven kids in that car. And he walked away from it.

**Jerry Ratcliffe:**

Jesus.

**Steve James:**

That's 30 years of service to his community and all he's ever going to be known for is that cop that killed those seven kids.

**Jerry Ratcliffe:**

Yeah.

**Steve James:**

He has to live with that. I pray to God that he's still alive.

**Jerry Ratcliffe:**

Right. Because I don't know how.

**Steve James:**

And I go up and I do an eight-hour training with the rest of the agency, and the sheriff was telling me the union won't budge on overtime.

**Jerry Ratcliffe:**

They want their members to have an income.

**Steve James:**

And their boat or their lake cabin or whatever. Part of me, I'm like, you have to be alive to spend it.

**Jerry Ratcliffe:**

Dead people don't drive boats.

**Steve James:**

No. And you also don't live long. I mean, if this'll probably make me super unpopular with your listeners.

**Jerry Ratcliffe:**

Believe me. Never compared to me. So you're in good shape, mate.

**Steve James:**

But one of the worst policies there is from a health perspective is this idea what your pension ends up being is like an average of or the highest of your last three or four years because it incentivizes working all the hours god sends to maximize that amount of money so that their pension gets bumped up. It's great for the pension fund because they're not alive long enough to draw from it.

**Jerry Ratcliffe:**

Isn't that a perverse system.

**Steve James:**

It's just like, yeah. And I do think that if someone is going to give their best years of their lives to their community, we at least should let them ride off into the sunset, healthy, both physically and psychologically healthy enough to survive their retirement.

**Jerry Ratcliffe:**

Are we at the stage where we have enough knowledge and we are reasonably confident in that knowledge to start drawing limits on people doing double shifts? What is your behavior? What is your capacity if you're in a high risk, high crisis situation, 14, 15 hours into a workday?

**Steve James:**

Absolutely, we are. There are some things that complicated and one, we all have different tolerances to sleep loss. The vast majority, 98 or so percent of the population needs somewhere between seven and nine hours. So the eight hours a night type of thing, that's the average.

**Jerry Ratcliffe:**

The last time I had 7, 8, 9 hours was back when I was in my thirties, I think.

**Steve James:**

Yeah, there's two really important caveats with this. One is that people get used to a new normal. So when I hear cops saying, I understand your science, but I'm okay on five hours or I'm okay on six hours. What I hear is I'm okay operating at 70% or 80%. And I think for the officer's safety, for your colleague safety and for community safety policing is a 100% job.

**Jerry Ratcliffe:**

As a college professor, I'm happy if I can reach like 40%, but nobody can tell.

**Steve James:**

If you're stacking shelves in a grocery store, no one's going to die if you mix the beans and peas up, right?

**Jerry Ratcliffe:**

Yep.

**Steve James:**

I don't think policing is that kind of occupation. The other thing that was really important was that when they were given three nights of 10 hours of recovery sleep, those individuals who had five hours of sleep for seven days didn't even get close to baseline with three nights of 10 hours.

**Jerry Ratcliffe:**

So once you lose it's incredibly difficult to get it there.

**Steve James:**

It's much more effective and much more important to maintain your fatigue and try and guard against the fatigue in the first place than trying to recover it after.

**Jerry Ratcliffe:**

You mentioned Calgary, and I got to thinking that Calgary's up in the far north and having grown up in Glasgow and Scotland, I remember the weird thing that you go for a night drinking with your mate and then in the summer you come out and it'll still be daylight, which was very surreal. Does that level of seasonality have an impact on all of this?

**Steve James:**

It does. Our circadian rhythm is reset by that giant gas ball in the sky, and if you don't see it, we can start getting some minor amounts of circadian drift.

**Jerry Ratcliffe:**

That's a great word. Circadian drift sounds like a cool band name, but what does that actually mean?

**Steve James:**

We should start a band. So we're all on a near 24 hour circadian. Our internal body clock. You might be 23 hours and 58 minutes, but I'm 24 hours in seven minutes. And we see this in submariners. We see this in people on this international space station. That even absent the rhythmicity of the rising and setting of the sun, our internal clocks are pretty accurate. They're not all exactly 24 but near enough. So when you don't have that environmental queue, we can start drifting.

So now I don't have a financial stake in any company that makes anything like this, but I do recommend anyone working graveyard, especially those working in the winter up north, just buy a seasonal affected disorder light box. It's a high intensity light panel that when you're having breakfast in your morning, your workday, just stick it on. So it helps reset your body clock and it helps with alerting you. And then conversely, you need to start avoiding intense light sources prior to sleep.

**Jerry Ratcliffe:**

What's next for you?

**Steve James:**

I want to understand not only the impact of sleep, stress or sleep and shift work and so on. I'm starting to move into the intersectionality of stress, sympathetic arousal, the fight or flight response into performance and health.

**Jerry Ratcliffe:**

I kind of feel like we should have a whole episode on sympathetic arousal because it sounds vaguely dirty, but I have no idea what it means.

**Steve James:**

The fight or flight response.

**Jerry Ratcliffe:**

Gotcha.

**Steve James:**

Yeah, it's maladaptive for modern day policing because it does everything that we don't want in the body to make good critical decisions.

**Jerry Ratcliffe:**

Good stuff. Well, look, mate, thanks for spending some time. I really appreciate it.

**Steve James:**

Great. Nice to finally get on here.

**Jerry Ratcliffe:**

Hey, don't give me that bullshit. [laughter] And by the way, when you see her, say hi to Lois.

**Steve James:**

I will. I will.

**Jerry Ratcliffe:**

Thanks, mate.

**Steve James:**

Thanks.

**Jerry Ratcliffe:**

That was episode 58 of Reducing Crime recorded in Dallas, Texas in October, 2022. Follow @\_ReducingCrime on Twitter for details of new episodes. And I personally lurk @Jerry\_Ratcliffe. If you subscribe at Spotify, SoundCloud, Apple, or wherever, fresh episodes will magically appear every month. You could even leave a rating and a comment. I'll tweet the best ones.

Be safe and best of luck.