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Fear Clouds Doctors' Thinking. One Remedy Is As Old As Medicine Itself.

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Science
I write about the science of performance.

The fight or flight response impairs cognition, but camaraderie restores it.

Doctors are facing a new kind of stress during the COVID-19 pandemic, but it's not the overwhelming number of patients. It is unprecedented for U.S. doctors to fear for their own lives at work. That fear has a uniquely negative impact on the brain.

U.S. healthcare workers are facing the extraordinary in the COVID-19 pandemic. Never has this generation faced such a widespread strain on the healthcare system, and never have we done it so poorly equipped to help patients. But it's the critical shortage of personal protective equipment (PPE) that is forcing doctors and nurses to face personal life threat.

A physician is seen outside at Elmhurst Hospital Center in the Queens borough of New York City on ...
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ER doctors are trained to face the overwhelming.

Dr. Nicole Battaglioli sounds like a battle commander when she calmly discusses how she typically assesses crises. For instance, when facing mass casualties, she helps her team function by prepping them for worst case scenarios. An ER attending at Grady Hospital in downtown Atlanta which sees 100,000 patients a year, Dr. Battaglioli is no stranger to chaos.

When considering the overwhelming, Dr. Battaglioli says, "Those are the situations where we feel sort of a call to action. That's where we can really help." But COVID-19 is different, even for her. "It's hard to balance that sense of duty with just how afraid we are and how underprepared we feel. This is why we went into medicine, to help people. But it's hard to help people when you're afraid of what you're going to experience."

"It's a totally new and different experience," she explains. "If I have somebody coming in from a motor vehicle accident, at risk for loss of life

and limb, I know how to treat that. I'm not afraid that I'm going to be hit by a car. There's a modicum of control that we have."

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What happens in the nervous system when we feel our lives are threatened?

When people fear for their own lives, the body activates the sympathetic nervous system. Known as the fight or flight response, this prompts specific changes to ready the body for action. Heart rate and breathing speed up, energy in the form of sugars and fats are released into the bloodstream, and muscles tense. Even our sensation of pain is blunted in preparation for possible combat.

But sympathetic activation also turns the brain toward a particularly type of thinking, and impairs higher level cognition. The fight or flight response initiates an attentional bias toward the threat, making it hard to pay attention to anything else. It also makes thinking more rigid, and that makes creative problem solving much harder.

According to one study, "Broadly, stress impairs attention and working memory, increasing vulnerability to cognitive overload." This in turn can negatively impact our ability to learn new skills in a threatening situation.

"We do not know who is infected or when or if we are in contact with the disease. Our nervous system is now adaptively required to be in a chronic state of alertness, which means we are chronically defensive," says Stephen

Porges, PhD, Professor of Psychiatry at UNC and the neuroscientist who discovered the Polyvagal Theory.

"States of chronic defensiveness impact on our mental and physical health and cognitive processes. Cognitive decisions are poorer when the decision makers are in chronic states of defense and hypervigilance." The higher level thinking doctors need right now becomes clouded.

Doctors and teams who are in a state of defense are going to make poorer decisions.

Anxiety effects decision-making.

COVID-19 came so quickly that there were no protocols in place on the night Dr. Battaglioli first faced it. She was in the middle of an overnight shift when she was pulled and told go see a group of patients suspected of having COVID-19. She ignored her anxiety and got to work, because that's what doctors do under pressure.

The patients were in the triage area, an open space where all sorts of other people were waiting. Both Dr. Battaglioli and the possible coronavirus patients were wearing the recommended surgical masks, so she focused on "throughput" and got the patients sorted out to go home or get further evaluation. Only later that night could she reflect.

Not long after, she fell ill.

Did the anxiety provoked by being pulled unexpectedly to see these patients impact her? "Yes," she says. It definitely affected things. That night, I found myself saying, 'No, I don't have the cognitive ability to take on anything else. This is what I'm doing tonight and this is all I'm doing tonight.'"

As she developed symptoms consistent with COVID-19 and was quarantined, Dr. Battaglioli struggled with self-recrimination about that night. "How I was feeling emotionally was taking over real estate in my

mind. I didn't have the bandwidth... I normally feel like I would have been more efficient, or high performing or valuable. I just wasn't."

Her comments are typical of how doctors think, holding themselves to superhuman standards. But human bodies and human minds are still human, and they are subject to the same changes in the nervous system as everyone else.

When we spoke, she reflected on returning to work the next day. "I know that I've signed up for a profession where I'm a frontline provider and that in the ER we are open to the public. When emotions are heightened people aren't thinking clearly, and things can happen. Like, I could be a victim of a firearm injury," she says. That prospect does not frighten her. She echoes the feelings of so many health professionals when she says, "This is the only time in my career when I have experienced anxiety. I've cried. And I've been afraid of what I will encounter when I go into work, and afraid that I may not be able to protect myself."

Social connection with a trusted person can bring higher-level thinking back online.(Photo by Marco ...
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Are there solutions?

The obvious conclusion is that helping healthcare workers feel safe as they care for patients is a priority, and safety equipment is a big part of that. But another piece of the puzzle is something medicine has relied on for generations: camaraderie.

According to Porges, "Our nervous systems crave for moments of safety (i.e., predictability) and reassurance from those we trust. When trusting individuals are not available, our nervous systems try to guide us to safety but often they map a journey of defense and not cooperation. The ONLY offset/reset of our nervous system is through co-regulation - feeling safe with a select group of trusting individuals. At times it might be the family dog."

On a typical day in hospitals and offices, you'll hear doctors and nurses talking through tough cases and sharing their personal lives. Informal debriefing and socialization is built into the way medical teams function, a natural way to bring biological resources back online. The question is how to provide that for medical teams working in the epicenters of the pandemic, where relaxed moments are hard to come by.

This article is the first of two, the next will examine the effect of extreme stress on social functioning and bedside manner.

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