Foundations of Emergency Medicine
Foundations III: Guided Small Group Experience

Personal Development

Session 1: "Physician Wellness 1: Burnout, Resilience and Mindfulness"

- **Agenda and Learning Objectives**
  - Case Part I - Burnout and Resilience (10 min)
    - Burnout
      - Define burnout
      - Review the scope of the problem
      - Review the symptoms of burnout
      - Review strategies to mitigate burnout
    - Resilience
      - Define resilience
      - Discuss strategies to foster resilience
  - Case Part II – Mindfulness and Self-Reflection (30 min)
    - Mindfulness
      - Define mindfulness
      - Practice a mindfulness activity
      - Discuss strategies for mindfulness on shift
    - Reflection
      - Define self-reflection
      - Discuss strategies for reflection
  - Case Concludes (10 min)
    - Review Session Teaching Points

- **Note to Facilitators**

This session is the first in a series of 3 physician wellness sessions; the others are Session 7 covering physician depression, mental health impairment and suicide and Session 15 covering physician errors and the second victim syndrome. This session includes a question-based group discussion as well as a guided meditation you can either read from these materials or can access through the Foundations website at (https://emergencymedicinefoundations.com). There is also a short exercise asking the residents to write down 3 good things that happened to them today (or yesterday if it's early morning) and attach one of ten emotions to the events (joy, gratitude, serenity, interest, hope, pride, amusement, inspiration, awe, and love). Finally**,** there is a 5-minute session asking the residents to write about a particularly meaningful case and their response to it. For these activities, the residents will need pen/paper or a computer/phone.

In order to prepare for this session, please review these materials and decide if you want to lead the meditation or find a way to play the recorded meditation housed on the Foundations website. Finally, it may be helpful to review your institution's particular resources for resident support including mental health.

- **Case Part I – Burnout and Resilience (10 min)**

  JO is a second-year Emergency Medicine resident at a high volume, high acuity hospital. He has been struggling in both his personal and professional life. He has become withdrawn on shift and several staff members have commented that he seems short and angry when talking with patients. He previously had strong communication skills and has been well liked by patients, families and staff. You ask him how he is doing after a shift and he tells you that he no longer enjoys the practice of medicine and feels like his life is falling apart.

- **Discussion Questions with Teaching Points**
  - **What is burnout?**
    - Burnout is defined as physical or mental collapse caused by overwork and stress
    - In the medical realm it is defined by three domains: emotional exhaustion, depersonalization and a lack of personal accomplishment
    - Burnout is a condition that arises when stress becomes so severe relative to one's own emotional, cognitive and/or physical resources that one loses motivation to perform and has a sense of hopelessness that leads to disengagement
    - Is not a psychiatric diagnosis but caries many common features with depression

  - **How common is burnout?**
    - Unfortunately, it is very common in medicine
    - Several studies have found that up to 70% of medical students suffer from significant burnout during school and up to 2/3 of residents do during training
    - This continues throughout practice with up to 50% of practicing physicians meeting the criteria of severe burnout

  - **Why is burnout problematic?**
    - It is closely linked to depression, anxiety, drug and alcohol use and even suicide
    - Can lead to decreased job satisfaction and poor patient interactions and care
    - Can lead to physicians ultimately leaving medicine

  - **What symptoms have you noticed in yourself when you're suffering from burnout?**
    - Symptoms often include poor sleep, irritability with those around you (staff, patients, family and friends)
    - People suffering from burnout often begin to withdrawal from others

  - **How do you determine if JO is suffering from burnout?**

- The 2-question derivative of the MBI is free, quick, easy to use, reliable and validated
- The single questions with the highest factor loading are the emotional exhaustion (EE) ("I feel burned out from my work") and depersonalization (DP) ("I have become more callous toward people since I took this job") domains of burnout

❖ **Case Part I Continued**

JO says yes to both questions and you are concerned he is highly burned out.

❖ **Discussion Questions with Teaching Points**

- **How do you start an open conversation around burnout with JO?**
  - Start by simply asking some questions → express concern for JO's well-being.
    - How are you? What is your biggest worry? What are the issues that you are finding most stressful?
    - Who is your support system? Have you discussed your feelings with your program leadership? Anyone else?

- **What resources are available to assist resident physicians with burnout? Are you aware of any at your institution?**
  Note to Facilitators*:* It may be helpful to do some research about your own institutional resources prior to this session
  - Are there any institutional resources?
    - Counselors, psychologists, psychiatrists
    - Benefits to help mitigate burnout - gym memberships, Lyft/Uber, grocery or meal delivery discounts
    - Program leadership - does JO need to take a leave of absence from work?
  - Departmental resources - program leadership, faculty mentor, peer support group
  - Online resources for physicians
    - https://www.thehappymd.com/physician-burnout-resources
    - https://wellmd.stanford.edu/healthy/stress.html
    - https://www.stepsforward.org/modules/physician-burnout
    - https://www.acep.org/wellnesssection/
    - https://medicine.umich.edu/sites/default/files/content/downloads/Wellness_Book_for_Emergency_Physicians.pdf
    - https://www.mededwebs.com/blog/7-resources-for-physicians-suffering-from-burnout
  - Mindfulness and reflection as discussed in the next case

- **What is resilience? What mindsets or other factors are a part of creating and cultivating resilience?**
  - Resilience is the capacity to recover quickly from difficulties → otherwise known as toughness

  - Comprised of four dimensions:
    - Attitudes and perspectives that promote self-efficacy and persistence
    - Balance and prioritization that foster a sense of self-control
    - A desire to learn from difficulty (e.g. task-oriented coping)
    - Supportive relationships that can help the individual face new challenges
  - Strongly linked to a growth mindset

- **What are some strategies to build resilience? What strategies have you used to overcome challenging situations?**
  - Reflecting on prior challenges and what skills were used to overcome it
  - Some of the strategies surrounding the 4 dimensions above include:
    - Attitudes/perspectives → optimism, realism, mindfulness
    - Balance/prioritization → schedule things that you love, control your schedule, protect things that keep you well
    - Desire to learn from difficulty → reflection, decision to grow from difficult situations (developing a "growth mindset")
    - Supportive relationships → foster and protect your relationships with your social supports (family, friends, mentors)
  - Online resources
    - www.apa.org › Psychology Help Center
    - https://www.stepsforward.org/modules/improving-physician-resilience
    - https://wellmd.stanford.edu/healthy/resilience.html

- **Case Part II – Mindfulness and Self-Reflection (30 min)**

  JO had felt burned out several months ago. You see him for the first time in months, and he looks really well and happy. You ask him how he is doing and what's new? He tells you that he started performing daily mindfulness and self-reflection and has felt great improvement in his overall well-being. You first ask him what mindfulness is all about and to tell you more about it.

- **Discussion Questions with Teaching Points**
  - **What is mindfulness?**
    - Mindfulness means paying attention in a particular way → on purpose, in the present moment, and without judgment
    - Training the attention, and reducing mind-wandering in a systematic way, allows for a sharper focus, a calmer mind and an increase in emotional well-being
    - The basic 'practice' of mindfulness is simple → find an anchor such as the breath, or sensory information such as sound, and bring all of your attention to bear on that anchor. When the mind wanders, which it naturally will, bring it back, without judgment, and in an alert but relaxed way, maintain your attention, then repeat

  - Mindfulness is naturally occurring human state → practicing mindfulness just increases the frequency of these experiences and gives you a method to access this state of mind when you might need to control your attention and situational awareness on shift
  - Mindfulness combats thought wandering → In terms of neurobiology, the default mode of your mind is to engage in thought wandering (Killingsworth and Gilbert 2010) contemplating events that happened in the past, might happen in the future, or may never happen at all
    - This default mode is negatively correlated in fMRI studies with the activation of prefrontal attention networks
  - This type of stream of consciousness mind-wandering is actually a triumph of cognitive evolution → it allows us to dynamically make sense of the world, while at the same time imagine and therefore prepare for possible future challenges
  - Mind wandering is ubiquitous and natural; however, it can also cause distress and a lack of focus when a high degree of attention is required (like in the ED)

- **What role does mindfulness have in preventing and treating burnout in practicing physicians?**
  - Several studies have shown improvement in burnout rates in physicians practicing mindfulness
    - A 2016 systematic review and meta-analysis by West et al found that both individual-focused and structural or organizational mindfulness strategies can result in clinically meaningful reductions in burnout among physicians → among the individual-focused strategies, mindfulness practice was noted to be an effective intervention for reducing burnout
    - Krasner et al (2009) delivered a mindfulness program to 70 physicians and found a significant and sustained reduction in burnout
    - Fortney et al (2013) found that a brief mindfulness-based training led to significantly reduced burnout among physicians and that this benefit was sustained when assessed 9 months after the intervention

- **Why do you think mindfulness may be useful to a practicing emergency physician?**
  - Thinking and feeling are what make us human but at an 'emergency medicine' pace they can be exhausting and being able to maintain your attention on one thing, even for a very short period of time, is quite relaxing
  - Rather than becoming clouded by a high volume of extraneous thought with a sympathetically driven emotional tone, you can sit back a little mentally, allowing yourself to pay attention and become more situationally aware
    - For example, the shouting aggressive patient is seen clearly, observed and attended to, but with a reduction in the sympathetic response to aggression that is natural, and even heightened in people under chronic stress

- A calm alert attention keeps you focused on what you need to do, not what your HPI axis is pushing you to do → you create a space between stimuli and their responses, a very powerful space where you get a sense of being able to choose how to react
- Another side-effect of a mindfulness practice is a natural increase in feelings of compassion, for yourself and others → this allows you to skillfully engage with the grief and pain we are exposed to, rather than being drained by it over time

- **Let's practice a guided mediation to see how it feels (5 min).**

  Note to Facilitators: You can either listen to the guided meditation on the Foundations website or follow the script below:

  Try to get into a comfortable position, sitting in your chair is fine, sit with your back upright but not too tight with your knees lower than your hips, feet planted on the ground, your hands resting in your lap or wherever they feel most comfortable. Then you can close your eyes and being to notice the sounds in the room. Just let whatever sound is there come to you and notice it, without making up any story about the sound. If you hear a siren, just note the sound of the siren, no need to bring to mind an ambulance and thoughts about what might be in it.

  After a brief time focusing in a relaxed but alert way on the sounds around you grab hold of your attention and move it to your breath. Where in your body are you most aware of your breath? For some people it is at the nose, or the back of the throat, for others they are most aware of the rising and falling of their chest wall or their abdomen. Wherever you are most aware of the sensation of breathing, focus on that area. Try to notice as much detail as you can about the breath. You may be able to appreciate that each breath is subtly different, no need to control the length of the breath, you are simply noticing, with a sense of curiosity, what there is to know about this breath, and then the next one and so on. Nothing else to do. You might be able to appreciate the beginning, middle and end of each breath. And when you become aware that your mind has wandered, perhaps to thoughts about your last shift, or your next lecture, or the uncomfortable sensation in you back, just notice that the mind has wandered and gently but firmly, without judgment, grab a firm hold of your attention and bring it back onto the breath.

  Lets practice maintaining our attention on the breath for just a short while, perhaps a minute or two. Remember, the wandering of your attention is normal, its how you are built ad its totally fine, what we are practicing is simply being aware when your mind has wandered, then actively training your attention back onto the breath. If you become distracted by any sounds, simply notice them, let them go and bring your attention back onto your breath. For the last few moments of this exercise, just let your mind be free of any control, let it be free to wander and think without any object of attention.

Then slowly become aware again of the sounds in the room, your body in the chair, and as we finish, just thank yourself for taking the time to train your attention and awareness. In a small way, you have made your ability to do our difficult job just a little bit stronger. Gently open your eyes.

What was that like for people?

- Remember, mindfulness is not about enforcing an artificial calmness, it is about noticing what is there, good or bad, and without judgement, using what is there to train your attention. If you start the exercise angry, guess what? You will notice anger. If you start happy, you may notice that. The calmness and reduced emotional reactivity is more of a side-effect of the practice, and it is a very powerful side-effect, but it can take a bit of practice to get there.

❖ **Case Part II Continues**

Let's get back to JO. Let us consider a typical ED scenario. JO has a sick patient coming i., He walks to the door of the resuscitation bay, pauses and walks in, assuming a clear leadership position at the end of the bed. The patient arrives and he gives his full attention to the patient, the EMS crew and the general situation. After examining and treating the patient, he washes his hands, walks back to his computer, and sits down. During this brief time, and unbeknownst to the rest of the team, he has engaged in 6 informal mindfulness practices that have helped him bring his full attention and awareness to the care of his patient. These exercised have also helped him to handle this scenario in a manner that is enriching and resilient rather than potentially depleting and stressful.

- **What are some ways in which JO might have used mindfulness during this encounter? What sorts of mindfulness exercises have you yourself tried on shift?**
  - Sitting down to meditate for 10 minutes is a type of 'formal' practice → while you might benefit from building this into your day, like time given to physical exercise, you can't really do this on shift in the ED
  - However, you can engage in shorter 'informal' practices on shift without anyone knowing you're even doing them → each activity is an opportunity to reset, to create a restful space that allows you to briefly stop drinking from the cognitive firehose that is the Emergency Department for a few → when you re-engage, you are a little more able to face the next challenge
    - **Informal Practice 1:** "**Walking to the Patient's Room"** - Walking practice involves focusing the attention on the sensation of the feet as they touch the ground and leave the floor. You can label your footfalls 'left' then 'right' as your attention goes back and forth. In JO's informal version of this practice, he takes the few seconds walking to the patient's room to grab hold of his attention and then broaden out and maintain that focus when he arrives at the door.

- **Informal Practice 2:** "**Crossing the Threshold of the Patient's Room"** - As JO arrives at the door of the patient's room, he pauses, and takes one mindful breath, that is, one breath where he focuses his attention on the in breath, the transition at the end of the breath, and then the out breath, before stepping through the door.
- **Informal Practice 3:** "**Anchoring"** - When JO walks into the room he quickly takes in every detail into a broad and relaxed awareness. He assumes a clear leadership position at the end of the bed with a confident body posture. He briefly and imperceptibly shifts his weight back and forth on his feet, feeling where he is at, the most important place in the world for his mind to be is right here. The awareness of the ground under his feet activates his attention, and anchors him to this particular moment in time
- **Informal Practice 4:** "**Mindful Listening"** - JO knows the next few minutes in the resus bay are very important to the patient's outcome. He empties his mind of all the other details and stories that he has been managing throughout the shift, and listens to the patient, the EMS crew, the nurses and everyone else with his whole attention. He opens the field of his awareness to everything available to his senses. His attention is focused, but it has an open accepting and nonjudgmental quality. He hears and sees everyone in the room and this allows him to give clear direction when needed. The nurse later comments that she felt that the communication had been really good during the case.
- **Informal Practice 5:** "**Handwashing"** - After a successful resuscitation, JO takes off his gloves and goes to wash his hands. This is an activity that we are required to do many times each shift and is often a mindless activity best done quickly so that we can get on with the next thing. However, JO uses the physical sensations of handwashing as the anchor for his attention, thereby turning handwashing into a powerful informal mindfulness practice. Grabbing hold of his attention he focuses on the sensations of the water on his hands, the texture, the temperature, how it looks, the feel of one hand as it moves over the other, the sound of the water. He attends to everything that is available to his senses about handwashing for as long as it takes to finish and then broadens out his awareness once more to the ED before moving on to the next thing he has to get done.
- **Informal Practice 6: The Body Scan** - JO walks through the threshold of the resus bay door, taking one mindful breath, before walking back mindfully to his computer. Sitting down he decides to do a quick 5-second body scan before typing up his note.
    - Imagine your attention is like a searchlight, and you beam it onto different parts of your body starting from the bottom and working up You start by focusing on your left foot and see what you can notice about that part of your body. You may notice the feel of a

sock or shoe pressing on it, a sheet if you are in bed. Then move up your body one area at a time until you get to the top of your head.
- When JO is sitting in his chair he very quickly scans up through his body, using his attention as if it were a search light, illuminating only the area that it is trained upon. He notes the feel of the chair on the back of his legs, and on his back, he may note the feel of the keyboard under his fingers.

- **Informal Practice 7: "Food and Drink"** - JO is busy, but every now and then he remembers to be mindful. When drinking his coffee, he takes in its scent, warmth and taste, when eating his lunch he notes the feel, texture, taste and smell of his food. If even for one bite or one sip, it brings him into the present, and helps him manage the best clinical tool he possesses, his mind.

❖ **Case Part III Continued**

You tell JO that you are happy to see him appearing more engaged and well at work and express an interest in trying mindfulness for yourself. You remember he also mentioned some self-reflection exercises and ask him about those too.

- **What is self-reflection?**
  - The '3 good things 'exercise, where a person writes down three good things that happens to them daily for 2 weeks, has been shown to reduce burnout in physicians.
  - Earlier in this module we defined burnout as a mixture of emotional exhaustion, depersonalization and a low sense of personal accomplishment → a researcher at Duke University, Dr. Sexton, defines burnout slightly differently as the impaired ability to experience positive emotions
    - A study of 148 resident volunteers at Duke showed that engaging in the 3 good things reflection by writing down 3 good things that happen each day and labeling them with 1 of 10 positive emotions (joy, gratitude, serenity, interest, hope, pride, amusement, inspiration, awe, and love)
    - They found a 15% reduction in burnout at 2 weeks and 48% of these volunteers continued to show increasing resilience at a year suggesting a lasting effect
    - The residents also reported significantly less depression in the post-intervention measures, less conflict, and better work-life balance

- **Look back at your day and write down 3 things that went well for you during the day (or yesterday if it is early morning). Attach an emotion to the event (joy, gratitude, serenity, interest, hope, pride, amusement, inspiration, awe, and love).**
  Note to facilitators: It may help to write these 10 emotions on the board for the residents to refer to.
  - If you can't easily generate this list then you probably really need to!

- Make a commitment to doing this simple exercise every day for the next 2 weeks.

- **What about reflective writing? What is it and what are its benefits?**
  - Reflection is a key part of learning → however, the density of intense experiences that you go through in medical training often does not allow adequate time to process and learn from these events
  - Reflective writing is one method of allowing yourself the space to reflect on key events in order to learn from them
  - Narrative medicine is a growing area of study in medicine that seeks to recognize the importance of 'narrative competence' to medical practice
  - Narrative competence is the ability to acknowledge, absorb, interpret, and act on the stories and plights of others and of ourselves
  - Reflective writing and reading literature can allow us to examine four of medicine's central narrative situations as outlined by Charon (2001): physician and patient, physician and self, physician and colleagues, and physicians and society.

- **In this section, we will take 5 minutes to write about a case that has significant meaning for you. It could be a difficult case or one that left a mark on you for some other reason. This is a practice that you can engage in yourself when you feel the need to take time to process an event more completely.**

❖ **Case Concludes (10 min)**

JO has suffered from burnout. But through increasing his resilience, practicing mindfulness and self-reflection, he has again found joy in the practice of medicine.

❖ **Case Teaching Points Summary**

- Burnout and Resilience
  - Burnout: physical or mental collapse caused by overwork or stress
  - Can be assessed with two questions → "I feel burned out from my work" and "I have become more callous toward people since I took this job"
  - Affects physicians at very high rates compared to the general adult working populations and has many negative outcomes
  - Resilience: the capacity to recover quickly from difficulties; otherwise described as toughness
  - Resilience refers to the ability of an individual to respond positively to stress
  - Comprised of four dimensions
    - Attitudes and perspectives that promote self-efficacy and persistence
    - Balance and prioritization that foster a sense of self-control
    - A desire to learn from difficulty (e.g. task-oriented coping)
    - Supportive relationships which can help face new challenges

- Mindfulness and Self-Reflection
  - Mindfulness means paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally
  - Mindfulness has been shown to reduce burnout in physicians
  - Formal mindfulness practice involves training your attention by spending time focusing on a physical anchor such as the breath or sound
  - Mindfulness can be practiced on shift using informal practices such as walking, handwashing, threshold breathing and the body scan
  - **Reflection**: serious thought or consideration that aids learning and emotional processing
  - Narrative competence is the ability to acknowledge, absorb, interpret, and act on the stories and plights of others and of ourselves and is critical to our medical practice
  - The three good things exercise has been shown to reduce burnout in physicians
  - The 10 positive emotions that have been most closely tied to combating burnout are joy, gratitude, serenity, interest, hope, pride, amusement, inspiration, awe, and love → try to write using these positive emotions

- **Facilitator Background Information**
  - **Burnout and Resilience**

    Definitions

    Burnout: physical or mental collapse caused by overwork or stress

    Resilience: the capacity to recover quickly from difficulties; otherwise described as toughness

    Mindfulness: the quality or state of being conscious or aware of something; a mental state achieved by focusing one's awareness on the present moment, while calmly acknowledging and accepting one's feelings, thoughts, and bodily sensations without judgment; used as a therapeutic technique.

    Reflection: serious thought or consideration

    Self-reflection: meditation or serious thought about one's character, actions, and motives

Burnout is defined by three domains: emotional exhaustion, depersonalization, and a lack of sense of personal accomplishment. While stress can be seen as a sense of urgency that impels individuals to actively engage to meet a challenge, burnout is a condition that arises when stress becomes so severe relative to one's own emotional, cognitive, and/or physical resources that one loses motivation to perform and has a sense of hopelessness that leads to disengagement. The condition of burnout is associated with many negative outcomes, including decreased productivity and job satisfaction, increased risk of medical error, adverse effects on patient safety, alcohol and drug use disorders, depression and anxiety and risk of suicidal ideation or even suicide itself.

Burnout is very common throughout medical training. Medical students have a 45 to 71% prevalence of burnout and this continues during residency, in which approximately 2/3 of residents are burnt out at some point in their training. Duty hour limitations have unfortunately not resulted in a decrease in the prevalence of burnout. Unfortunately, burnout is not a transient condition associated with the challenges faced during medical training. The prevalence of burnout in attending physicians is at least twice that observed in the general adult working population. Over 50% of practicing physicians meet the criteria for severe burnout and the rates of burnout are increasing with a sense of decreased work life balance across all major specialties. Sources of burnout for practicing physicians include long workdays, high patient volume, time pressures, poor sleep habits, high performance expectations, challenging patients and personal fears regarding competency and changing roles in the workplace.

Burnout has been associated with specific negative coping strategies. Emotion oriented and avoidance-oriented coping strategies, which include blaming, seeking distractions to separate from work and substance use are associated with increased risk of burnout. Task-oriented coping strategies, those directed at improving self-efficacy, are associated with a decreased risk of burnout. Such strategies are directed at improving one's performance to meet challenges faced in the workplace. Time recovery from the work environment is also an important factor in

reducing risk of burnout. The failure to invest in recovery time can result in fatigue, a reduced sense of well-being, and lower performance at work. Inadequate recovery is associated with increased job stress, burnout and lower levels of work engagement and life satisfaction. While shift work might seemingly aid in creating a clear separation from work, shift work is actually associated with increased risk of burnout unless accompanied by a focus on sleep hygiene (6 to 8 hours of sleep per day) and eight or more days off per month. Adequate job resources are a critical component of mitigating burnout in the workplace by directly influencing employee motivation and engagement as well as buffering the impact of job demands. A healthy practice environment relies on prioritizing self-care, focusing on providing safe and high-quality patient care and valuing the education of patients.

Resilience refers to the ability of an individual to respond positively to stress. Since burnout results in disengagement in the face of excess work stress, resilience is a central factor in reducing burnout. It is comprised of four dimensions: 1. Attitudes and perspectives that promote self-efficacy and persistence; 2. Balance and prioritization that foster a sense of self-control; 3. A desire to learn from difficulty (e.g. task-oriented coping); and 4. Supportive relationships which can help face new challenges. Resilience is the result of the complex interplay between genetic predisposition and formative experiences. Interventions directed at promoting resilience may include cultivation of professional and personal relationships, proactive engagement with personal limits, personal reflection, separating oneself from the moral injury inherent to medical practice (self-demarcation) and developing an understanding that actively choosing to value oneself can lead to improvements in both personal wellness and the quality of care one can provide at work.

A critical component to resilience is the capacity for mindfulness. Mindfulness is the ability to frame experience and reactions to experiences in a “big picture” or “long view” context. Mindful individuals exhibit an acceptance and realism about the limits of control over life’s circumstances. This understanding reduces the temptation to react immediately to stressful situations (reflexivity). In practice, this can be something as simple as taking a breath before reacting to bad news or an unexpected outcome and responding with inquisitiveness rather than anger or fear in an unfamiliar situation. Understanding the limits of one’s control over a situation can facilitate meaningful engagement in medical practice that requires witnessing human suffering without feeling overwhelmed by feelings of inadequacy or failure.

What is Mindfulness? A Deeper Dive

This will not come as a surprise to you, but your mind is a wandering mind. Killingsworth and Gilbert (2010) did a study published in Science using an iPhone app that gathered 250,000 data points on subject’s thoughts, feelings and actions as they went about their lives. They found that humans spend a lot of time thinking about what isn’t going on around them, contemplating events that happened in the past, might happen in the future, or may never happen at all.

Indeed, mind-wandering appears to be the brain's default mode of operation, and furthermore, when engaged in mind-wandering, subjects reported increased negative emotion.

Your 'default mode network' is a neural network that switches on within milliseconds of disengaging from any task and is negatively correlated with attention networks involving the prefrontal cortex. It is unlikely that your mind will be wandering just as the needle you are holding punctures the skin as you place a central line in a critically unwell patient, however, immediately before and after, you may semi-consciously be considering the last patient encounter when you placed a central line, or a time when it went badly, with subsequent projections of how this time it might also go badly, or how your colleagues will think you're great if you get it because 2 others have tried and failed, or how the patient looks like your brother, or a person from high school that always gave you a hard time in math class, or the fact that you are hungry and when you get home you are going to cook, or perhaps eat some junk on the drive home, and what if the needle goes through and out the other side, like that time you put a line in the carotid, I hope to God I don't do that again, ok focus, I need to make this stick perfect…

And as you focus, you engage the attentional networks and effectively switch off your default mode network, allowing you to complete a detailed skillful task successfully.

Let's play this correlation out in another clinical context. You have received an EMS call saying that the crew is 5 minutes out with a female patient in severe respiratory distress that will likely need immediate resuscitation and intubation on arrival. You hang up the phone and walk to your resus bay. Your heart rate has increased and you feel suddenly more alert. As you prepare for the patient's arrival the following thoughts may arise: I have 3 other patients that might crump while I'm in here. I hope the patient doesn't have right sided heart failure; I hate managing right sided heart failure; I'm pretty good at intubating; I haven't missed a tube in ages, except for that guy with the angioedema, what a disaster; it doesn't matter now, I have to get myself ready. Once I get through with this shift I'm on vacation for a week, I can't wait to get to the beach! I might go scuba diving. It's been 5 minutes, the EMS guys can never estimate time, where's the video laryngoscope? It must be in the other room, I'll send the nurse to get it, why doesn't she like me? It's probably because of that case last week, when she didn't get the insulin drip hanging fast enough. What am I supposed to do, ok, here's the patient, let's focus…

This type of stream of consciousness mind-wandering is actually a triumph of cognitive evolution. It allows us to dynamically make sense of the world, while at the same time imagine and therefore prepare for possible future challenges. It is ubiquitous and natural, however, it can also cause distress and a lack of focus when a high degree of attention is required.

Training the attention, and reducing mind-wandering in a systematic way, allows for a sharper focus, a calmer mind and an increase in emotional well-being. The basic 'practice' of mindfulness is simple, find an anchor such as the breath, or sensory information such as sound,

and bring all of your attention to bear on that anchor. When the mind wanders, which it naturally will, bring it back, without judgment and in an alert but relaxed way, maintain your attention, then repeat.

- **References**
  - **Author:** Dr. James O'Shea
  - **Secondary Author:** Dr. Michelle Lall
  - **Editors:** Dr. Natasha Wheaton and Katie Runde, MFA
  - **References:**

    - West CP, Dyrbye LN, Sloan JA, Shanafelt TD. Single Item Measures of Emotional Exhaustion and Depersonalization Are Useful for Assessing Burnout in Medical Professionals. *J Gen Intern Med*. 2009 Dec; 24(12): 1318–1321
    - Charon R. Narrative Medicine A Model for Empathy, Reflection, Profession, and Trust. *JAMA.*2001;286(15):1897–1902
    - Winkel, A.F. (2016). Narrative Medicine: A Writing Workshop Curriculum for Residents. Mededportal.
    - Martini S, Arfken CL, Churchill A, Balon R. Burnout comparison among residents in different medical specialties. *Acad Psychiatry*. 2004;28:240-242.
    - Kuhn G, Goldberg R, Compton S. Tolerance for Uncertainty, Burnout, and Satisfaction With the Career of Emergency Medicine. *Ann Emerg Med*. 2009;54.
    - Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in Burnout and Satisfaction With Work-Life Balance in Physicians and the General US Working Population Between 2011 and 2014. *Mayo Clin Proc*. 2015;90(12):1600-1613.
    - Howe A, Smajdor A, Stöckl A. Towards an understanding of resilience and its relevance to medical training. *Med Educ*. 2012;46(4):349-356.
    - Mindfulness Practice Resources:
      - Attending: Medicine, Mindfulness & Humanity. Epstein, R. (2017)
      - UCLA Mindfulness Research Center Short Guided Meditations http://marc.ucla.edu/mindful-meditations
      - University of Massachusetts Medical School Mindfulness Center - MBSR programs in person and online. https://www.umassmed.edu/cfm/
      - University of Rochester Medical School Mindful Practice Center https://www.urmc.rochester.edu/family-medicine/mindful-practice.aspx
      - Best meditation Apps 2018 Healthline https://www.healthline.com/health/mental-health/top-meditation-iphone-android-apps