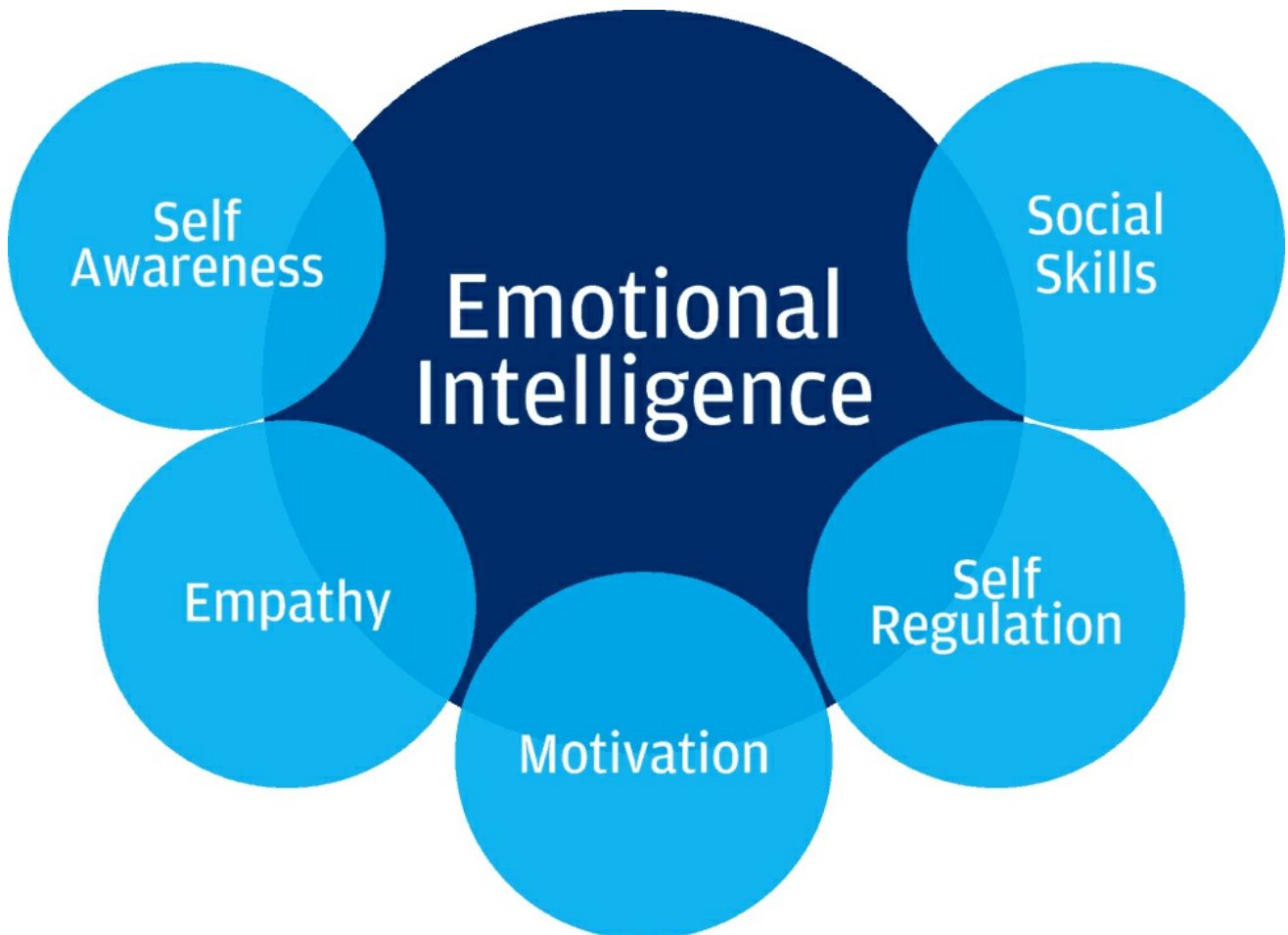




Emotional Intelligence

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INTRODUCTION

Emotional intelligence (EI) is the ability to perceive, understand, and regulate emotions in oneself and others. Introduced into formal scientific parlance in the 1990s,¹ EI was popularized by the publication of Daniel Goleman's best-selling book on the topic, entitled *Emotional Intelligence: Why It Can Matter More Than IQ*.² As a construct, EI gained early traction in the field of business management, where it has been shown to predict job performance and leadership skills.^{2,3} EI has drawn subsequent attention from medical researchers interested in the relationships between emotion processing, medical training, and patient care.⁴⁻⁷

Neurosurgeons strive to deliver care that is clinically sound and emotionally responsive to the needs of their patients and families. In the process, a neurosurgeon routinely meets his or her own emotional obstacles in a professional context that is famous for its unrelenting pace, work–life imbalance, and constant intellectual rigor. In addition, the intuitive value of emotional connection must be weighed against the need for neurosurgeons to detach themselves from emotional suffering to accomplish the task at hand in the operating room. In light of this complexity, in this article we aim to introduce the general construct of EI and situate it within the scope of routine neurosurgical practice, resident training, and surgeon well-being.

WHAT IS EMOTIONAL INTELLIGENCE?

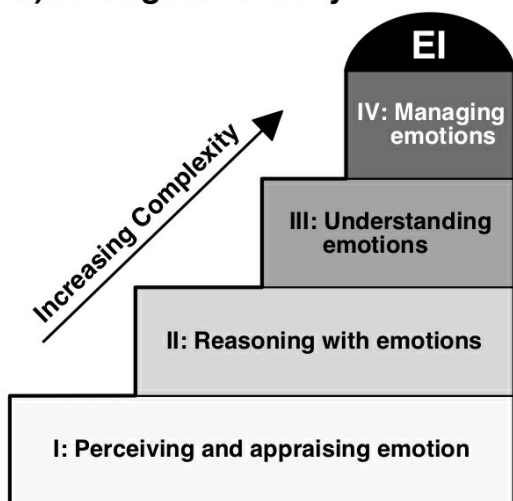
According to seminal work by Peter Salovey and John D. Mayer, both psychologists, EI is defined as an “ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions.”⁸ This definition posits EI as a form of *intelligence* encompassing a set of interrelated *abilities* (or “competencies”) that can be learned and strengthened through training. According to Mayer and Salovey,⁹ the following 4 hierarchical branches constitute the theoretical foundation of EI (from least to most complex) (Fig 1A):

1. **Perceiving and appraising emotions in oneself and others**
2. **Reasoning with emotions and using them to facilitate thinking**
3. **Understanding emotions (including sources, fluctuations, link to behavior, etc.)**
4. **Managing emotions to accomplish personal and interpersonal goals**

Daniel Goleman, a noted psychologist and *New York Times* writer, broadened this definition to include a set of personality traits and dispositions that underlie EI. His model included the following **5 core competencies**¹⁰ (Fig 1B): (1) self-awareness, (2) self-regulation, (3) motivation, (4) empathy, and (5) social skills.

To frame our subsequent discussion, emotional skills, attitudes, and knowledge states that facilitate EI are presented in Table 1. Readers should note that the terms *emotional intelligence (EI)*, *emotion quotient*, and *emotional competence* are each represented in the literature, and previous commentaries have criticized the unclear distinction between these entities, which are often used interchangeably.¹¹

A) Intelligence/Ability



B) Personality Trait Construct

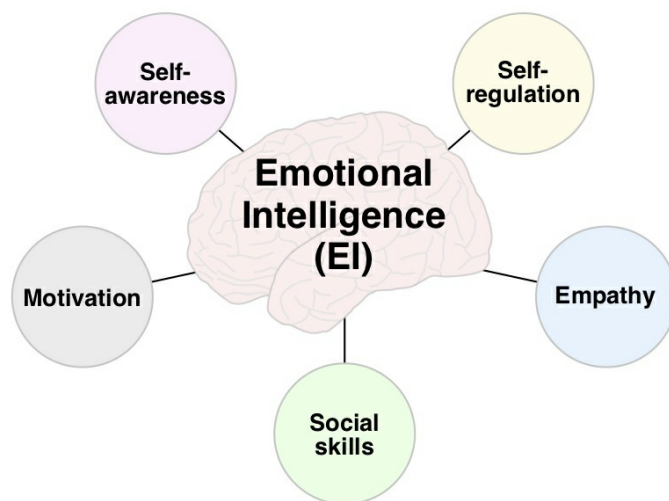


Figure 1. (A) The Mayer and Salovey 4-branch model of EI⁹ as a form of intelligence that encompasses a hierarchical set of 4 core abilities. (B) Five-component model of EI as a collection of personality traits.¹⁰

Table 1. Skills, Knowledge, and Attitudes That Facilitate EI*

Skills		Attitudes	Knowledge
Patient Directed	Self-Directed		
Reads facial expressions	Practices positive self-talk	Open	Recognizes sources of emotional state
Uses sympathetic tone	Recognizes self-emotion	Flexible	Appreciates links between emotion, cognition, and behavior
Reflects emotions back	Controls impulses	Nonjudgmental	Understands cultural beliefs that influence
		Reflective	
		Altruistic	

Emotions back	Impulses	Attitudes	Behaviors that influence emotion
De-escalates tension	Cognitively reframes situations	Accepting	Develops strategies to identify and regulate emotional states
Elicits patient concerns	Self-reflects	Encouraging	
Offers supportive gestures	Self-forgives		
Attends to nonverbal cues			
Shares emotional observations			
Makes empathic statements			

*Adapted from reference 12.

EI AND MEDICINE

Compared with the literature on EI in the corporate world, relatively little has been published about the role of EI in medicine. Arora et al⁴ performed a systematic review of EI in the context of the 6 core Accreditation Council for Graduate Medical Education residency curriculum competencies (ie, patient care, medical knowledge, problem-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice). They examined 16 peer-reviewed articles (11 focused on residents, 4 on medical students, and 1 on medical school applicants) and found that EI was reported to correlate

with improved [teamwork and communication](#), doctor–patient relationships, empathy, and stress management. Satterfield and Hughes¹² reviewed the literature on EI in undergraduate medical education and identified 5 randomized controlled trials that reported positive effects of emotional skills training on communication, empathy, and use of supportive patient-directed language.

Emerging evidence has linked EI with improved job satisfaction and well-being and decreased burnout rates among resident physicians,^{13–15} as well as increased patient satisfaction.¹⁶ The nascent literature exploring EI in surgical fields includes a study that documented low scores on an EI questionnaire among orthopedic surgery residents¹⁷ and a presidential address that discussed the role of EI in vascular surgery.¹⁸

EI AND NEUROSURGERY

Vignette

Dr V is a third-year neurosurgery resident starting a neuro-oncology rotation. His first appointment of the day is a follow-up visit with Mr J, a 53-year-old man who recently immigrated with his family to the area. Mr J presented to the hospital a few days ago after experiencing several weeks of progressive speech difficulty, minor headaches, and occasional memory lapses. He underwent outpatient magnetic resonance imaging (MRI) yesterday, and Dr V has just received the results.

Opening the radiology report, Dr V's concerns are realized: "Large, heterogeneously enhancing lesion in the posterior left temporal lobe, concerning for malignant glioma." As he prepares to discuss the results with Mr J, Dr V reflects on his own mother's long battle with glioblastoma, having fought the disease until her death just last month. Briefly overcome by traumatic memories, Dr V takes a moment to collect his thoughts and calm his breathing.

Now composed, Dr V enters the room and greets Mr J, his wife, and his 2 school-aged sons. Dr V calls for a language interpreter to help facilitate conversation with Mr J's wife, who speaks Spanish. Mr J sits anxiously as his

wife tightly grips his hands. Mr J's sons stand uneasily by the examination table. Dr V, feeling the weight in the room, flashes back to the day he sat with his mother as she received her diagnosis. He brings his focus back to Mr J and confirms his preference to discuss the results with his family by his side. He asks Mr J for permission to begin.

The following breakdown of the clinical vignette in reference to Goleman's 5-component model of EI illustrates EI in neurosurgical practice:

- **Self-awareness:** Goleman defines self-awareness as “[k]nowing one’s emotions, strengths, weaknesses, drives, values, and goals—and their impact on others.”¹⁰ This domain encompasses the skills of emotional awareness, self-assessment, and self-confidence. Dr V enters the situation with a personal connection to this particular disease process, having experienced his own mother’s struggle with [glioblastoma](#). These powerful emotions and memories should not be suppressed by Dr V but, rather, brought to the center of consciousness and acknowledged. Without self-awareness, Dr V could conjure the emotional trauma of his recent past and have an uncontrolled or unanticipated reaction while discussing the MRI results with Mr J. With preparation, however, Dr V can flag these emotions, anticipate feelings he might encounter, and prepare himself to be composed throughout the difficult conversation with Mr J and his family.
- **Self-regulation:** **Self-regulation involves managing emotional responses and impulses, remaining composed, and staying focused under intense situations.** In the vignette, Dr V has demonstrated several techniques for self-regulation. After the MRI report elicits traumatic memories from his mother’s battle with cancer, Dr V takes a moment to gather himself and bring his emotions under control. Dr V recognizes that Mr J and his family need a poised neurosurgeon to support them through this difficult conversation, and he regulates his own emotional state in response to that need. In the examining room, he again feels the rush of emotional

memories, but by recentering his attention on the patient, he is able to stay focused and composed.

- **Motivation:** In reference to the self, motivation can arise from both external sources (eg, financial reward, professional advancement, etc.) and internal sources (eg, passion, life-long commitment). In this scenario, Dr V is motivated internally by his passion for medicine and his commitment to supporting patients with neurological disease. He also has the opportunity to motivate others in his surroundings, such as Mr J, to maintain his sense of agency and control over his medical care.
- **Empathy.** In the operating room or trauma bay, neurosurgeons need to occasionally distance themselves from the emotional circumstances at hand to function at peak performance. However, in the office setting, Dr V serves Mr J and his family **by attending to the emotion in the room, noting their facial expressions and posture, and reflecting back his sympathy.** Dr V has the difficult task of supporting the entire family unit through this conversation, and he must optimize the environment accordingly. For example, he confirms Mr J's wishes to have his family present in the room (especially his children), and he ensures that a language interpreter is available to communicate most effectively with Mr J's wife. He also asks permission to share the test results with Mr J, a simple acknowledgement of the patient's agency that fosters trust and respect.
- **Social skills:** As is always the case, social savvy and interpersonal instincts are essential and likely dictate the quality of the patient-doctor relationship. Social skills refer to one's ability to interact effectively with others and manage relationships in a manner that facilitates desired outcomes. In this scenario, Dr V aims to communicate his medical impressions and establish himself as an ally for Mr J in his forthcoming battle with disease. He therefore must be approachable, open, kind, and honest. **Social nuances such as calibrating his greeting to the circumstances of the visit (eg, remaining cordial but not exuberant) contribute to the positive**

relationship.

EI AND LEADERSHIP

Beyond the immense knowledge base and technical skills that they must acquire, neurosurgeons need to function as an effective team leader (see [Leadership Principles](#)). EI is a fundamental skill that generalizes across a wide range of leadership positions, and neurosurgery would seem to be no exception. Having the ability to communicate effectively, inspire a team, and serve as a leader within the operating room during hours of high stress requires tremendous emotional skill. Neurosurgeons must be able to motivate colleagues around a shared vision of the treatment plan, procedural goals, and potential pitfalls.

Becoming an emotionally intelligent leader requires one to sense the mood of a colleague or group and adopt a communication style that suits that particular audience. EI is also required to navigate the everyday difficult conversations that arise between colleagues, patients, and families. As highlighted in the vignette, Dr V is the person in charge of setting the stage and creating an environment that is attentive to the emotional needs of the patient and his family. If colleagues are brought into the scenario (eg, language interpreter, member of the nursing team, etc.), Dr V assumes an interprofessional leadership role and must be able to orient the team to the emotional situation at hand.

EI AND PERSONAL COMPETENCE

Personal competence with regard to EI consists of self-awareness and self-regulation. The importance of self-awareness is familiar to most people, but the limitations of introspection and self-reflection are often overlooked. As a consequence, forming an accurate perception of one's own mental and emotional states can be incredibly challenging. In particular, it is often difficult to recognize how our emotional state affects our behavior, and how our continuous stream of discursive thought influences our actions. Introspective techniques such as mindfulness and meditation can help overcome these "blind spots" by establishing a clear link between thoughts arising in consciousness and the emotional states

that they elicit. **The first step toward a more self-aware state of mind, therefore, is recognizing the connection between thoughts, emotions, and behaviors** (see [Situation Awareness](#)).

Self-regulation is the second component of personal EI competence. Self-regulation offers immense benefit for neurosurgeons, especially given how emotionally draining the profession can be because of the high expectations placed on them by colleagues and patients. **When practicing appropriate self-management, inner emotional conflicts are minimized and clarity in managing external situations evolves.** This evolution optimizes efficiency and adaptability while promoting a more considerate approach toward one's own emotions, which frees one's senses and attunes them to the emotions of others. Self-regulation is also an important skill in conflict resolution and resident teaching, because losing control of one's emotions can create an environment of distrust and contempt.

EI AND BURNOUT

Being a neurosurgeon results in an incredibly demanding lifestyle.¹⁹ Over the years, these demands can wear a person down. A 2015 study found that more than half of US physicians are experiencing professional burnout²⁰ (for further details on burnout and how to avoid it, refer to [Dealing with Burnout](#)). Having EI is essential when demands become overwhelming, because it provides appropriate coping mechanisms. In fact, a study by Lin et al.¹⁴ found a direct correlation between EI and psychological well-being and an inverse relationship between EI and depression, emotional exhaustion, and depersonalization.

Within the framework offered by Goleman, EI can promote well-being and decrease burnout in several ways:

1. **Self-awareness** helps the physician understand how he or she can function best.
2. **Self-regulation** enables the physician to manage his or her own emotions under stressful conditions on the hospital floor and in the operating room.

3. **Motivation** provides the physician an incentive to continue learning and improving despite being fatigued from the demands of the job.
4. **Empathy** results in the compassion necessary for the physician when interacting with patients and families.
5. **Social skill** enables the physician to accomplish his or her medical goals in a more efficient and patient-friendly manner.

CONCLUSION

We all should aim to enhance our EI. Some suggestions for attaining this goal, as Goleman outlined in his article, include the following:

- **Seek constructive criticism from your colleagues**
- **Be cognizant of your actions and the effects they have on others**
- **Be a dynamic/active listener**
- **Be honest with yourself**

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