



# Neurosurgery residency burnout: what can prevent this?

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## ABSTRACT

Burnout is an occupational phenomenon indicating that the work and the workplace are responsible. We here discuss how a supportive resident-mentor relationship, and a positive working environment, could help to prevent resident burnout. A positive resident-mentor relationship can be achieved by understanding the mentor, the mentee, and the generational differences of each individual. A positive working environment depends on a healthy work-life balance and the atmosphere in the department. The benefits of preventing burnout include not only happier physicians but also fewer medical errors and better medical care. The universal reminders and proven suggestions in our paper could help address the burnout problem among working physicians worldwide.

**Key words:** burnout, mentorship, neurosurgery residency, work-life balance

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Neurosurgery is regarded as one of the most prestigious specialties in the medical world, and so it is understandable that the profession requires the input of an enormous amount of time and effort. During the marathon that is a neurosurgery residency, one can become exhausted. Burnout is more common among physicians compared to the average United States (USA) population [1] and residents are particularly at an increased risk, with a lower quality of life than attending physicians [2]. Older age, female sex, and junior residents all independently carry an increased rate of attrition, particularly in neurosurgery [3]. Suicide is still one of the leading causes of death among residents [4]. Fortunately, despite the rigours of residency, neurosurgery residents actually have a lower prevalence of burnout than other medical specialties [5]. Burnout is a diagnosis included in Revision 11 of the International Classification of Diseases [6] as a strictly occupational phenomenon, indicating that the work and workplace are responsible. Given this sobering background, what preventative interventions can well-meaning residency programmes take? Is there a way to support residents within the bounds of an 80-hour working week? In our paper, we suggest how an encouraging resident-mentor relationship and a positive working environment can help eliminate resident burnout.

## A meaningful mentorship

Having a mentor results in greater work satisfaction, higher academic scores, and more publications [7]. A study conducted among American neurosurgery residents proved that neurosurgery residents can handle a tremendous workload and still be satisfied in their work so long as they have a meaningful mentorship [8]. A positive resident-mentor relationship is especially necessary since surgeon-to-surgeon training is needed to acquire advanced neurosurgical skills. Moreover, a fruitful mentorship not only benefits the mentor and the mentee, but also the host institution which benefits from higher physician retention and higher productivity [9].

## Suggestions for mentors

Some attending physicians might find themselves having to fulfill the role of a mentor by chance. This is challenging, as mentoring is a tremendous responsibility that requires not only the ability to teach neurosurgical skills but also the social intelligence to guide, counsel and orient mentees in a new environment. Despite its challenges, mentoring can offer some people a sense of personal fulfillment, development of leadership skills, and even a renewed interest in neurosurgery [9].

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Active leadership has been proven to increase work satisfaction and ameliorate against burnout [10]. Therefore, we propose that mentors encourage residents to seize leadership opportunities. These might include designing their own research projects, running for a local council or serving as a delegate for interim meetings. Moreover, it is the feeling of accomplishment that is most related to happiness — not the number of hours a week a physician works [11]. We propose that mentors advocate specific, measurable and attainable goals for residents, since unrealistic expectations will wear down a resident. Finally, we urge mentors to instill the core values of neurosurgery at career-entry so that the mentee can navigate academic culture and establish helpful contacts [12]. The end goal is to provide support and guidance so that a motivated resident can prosper, rather than become overwhelmed with additional responsibilities. Therefore, we suggest that a mentor engages in these activities *jointly* with the mentee.

### Suggestions for residents

We advise residents to consider the resident-mentor relationship as empowering and to be open to suggestions and feedback. With a mentor, the steep learning curve of neurosurgery can be curtailed, productivity may be advanced, and new networking opportunities may appear. Mentors can also impart informal knowledge that might not be found in a textbook.

Junior residents must regularly deal with bureaucratic burdens and copious documentation because they are necessary obligations involved in patient care. In consequence, they may spend less time in the operating theatre [13].

However, we ask residents to recognise that even the most menial tasks play a vital role in a hospital's ecosystem, and that even the most renowned neurosurgeons of today faced the same paperwork in the past.

### Generational obstacles

A resident-mentor relationship may be hindered by a generational gap; baby boomers perceive the independent-minded Millennial generation to be distrustful and reluctant to establish a resident-mentor relationship. Baby boomers generally take pride in the patience and discipline required for mundane work, while Millennials consider it a hindrance. You could say that in general baby boomers 'live to work' while Millennials 'work to live'. [14]. Some authors feel that while duty hour regulations have improved the conditions of residency, they have also lessened empathy in the workplace [14]. We recommend that the mentorship style should maintain some flexibility to take account of generational differences. For example, the resident-mentor relationship can take place face to face, over an online chat (e.g. Skype), or even in a group setting. "Personal inadequacies and relationship problems" are quoted as the most common cause of

dysfunctional mentoring. Therefore, we believe that effective communication — in whatever medium and capacity — is paramount [9, 15]. No matter what style is applied, shared values and effective communication have proven to be the pillars of an effective mentorship [16].

### A positive working environment

While a mentorship is crucial to reducing physician burnout, studies show that facilitating the proper environment at an institution is necessary for such a relationship to prosper [15]. A positive and encouraging work environment results in more productive and happier residents. This has been proven true when considering the deleterious effects of rudeness among physicians on patient care and safety [17, 18]. In the words of Juha Hernesniemi — a Finn who is one of the world's leading neurosurgeons: "The atmosphere in the department should be open and supportive of good work, and the employees should be proud of their clinic... Express your appreciation of your hardworking colleagues" [19]. Furthermore, a resident under Hernesniemi's department recalled that when serious complications are encountered, "the colleagues are very supportive, and from their own experience understand that there is no room for accusations and cynicism, but constructive re-evaluation of the case and circumstances" [19]. We feel that by understanding the resident, and by establishing a sustainable work-life balance, a positive work environment can be brought about.

### Understanding the resident

In the USA, neurosurgical residents have already proven their competency, work ethic and dedication when they match into one of the most selective medical residency programmes. They require some of the highest United States Medical Licensing Examination scores, and illustrate their dedication to neurosurgery with numerous scientific publications. On average, international medical graduates have more than 47 research projects (including abstracts, presentations, and publications) [20]. Compare this to only 12 research projects for orthopaedic surgery [20]. With these rigorous entry standards, few individuals can match into residency. We maintain that it is important for students to recognise residents as being competent individuals even though they might not have a chance to exhibit it with their surgical skills during residency.

During residency a resident might question their specialisation and career choice. We encourage such a resident to discuss these issues with family, friends, mentors or even a psychiatrist to reflect on their achievements and establish reasonable expectations. Psychological support can also come in the form of yoga, mindfulness-based cognitive therapy, and cognitive behavioural therapy as they have all proved to increase health-related quality of life [21].

## Work-life balance

While neurosurgery offers exciting new opportunities for research, intellectual development, social prestige, and wealth, it consumes time otherwise spent on one's family, friends, hobbies, spiritual and other goals. The work-life balance is perhaps complicated when a spouse is not a physician and does not always appreciate the long hours spent away from home. Research shows that a lack of work-life balance can be detrimental to a trainee's learning and well-being; this has been seen especially in women with children [22]. Work-life balance can be understood as rungs on a ladder, where both aspects are dependent one on another i.e. a better attitude at home results in a better attitude at work [23]. Therefore, we assert that to maintain a positive work environment the academic institution and resident should work together to try to establish a sustainable work-life balance early.

A preliminary study in Europe showed that the 2003 Working Time Directive — which attempted to promote health and safety by cutting excessive working hours — resulted in a steep decline in surgical cases over time and less surgical exposure in residents graduating [24]. Thus, we emphasise that perhaps it is not long hours that are to blame for physician burnout, but rather the invalidating environment that needs to be addressed. So, even with the same *quantity* of hours, the *quality* of practice can improve to cultivate a resident to his or her most productive potential.

In summary, we encourage physicians to establish a positive and supportive environment in the department and strengthen the resident-mentor relationship despite generational obstacles. The problem of burnout is the responsibility of a department's entire team. Its benefits include not only happier physicians but fewer medical errors [25] and better medical care at an institution. We invite neurosurgeons to serve as leaders and set an example for other medical specialties. The universal reminders and suggestions in our paper can help address the burnout problem among working physicians worldwide.

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