

Not the Last Word: Like Father, Like Daughter

Joseph Bernstein MD¹ 

We inherit from our parents our blood type and eye color but not our knowledge and skills. For that reason, the concept of a “hereditary physician,” as noted by Thomas Paine [2], is an absurdity on par with “hereditary mathematician.” One becomes a physician or mathematician only through the acquisition of knowledge and skills.

Despite that, there seem to be many doctors who have gone into the family business, so to speak. According to one detailed study, in Sweden, about 15% of physicians have a parent who is

a physician [3]. Rigorous data for the United States are not available; however, anecdotal observations are consistent with the Swedish experience.

In orthopaedic surgery, the phenomenon may be even more pronounced. In my time at two institutions, there have been at least 13 residents whose fathers were orthopaedic surgeons (back of the envelope χ -square: $p < 0.05$). Notably, most of these 13 residents chose their father’s subspecialty as well.

The possible presence of occupational heritability deserves close examination. In a time where orthopaedic surgery is rightly criticized for its lack of diversity, it would be useful and instructive to learn why the seemingly absurd “hereditary orthopaedic surgeon” appears far more common than chance would suggest it should. As noted by the authors of the Swedish study, “High degrees of occupational heritability in selective disciplines, such as medicine, could constrain socioeconomic mobility and negatively influence efforts to increase socioeconomic diversity in the workforce” [3].

To be sure, there are good reasons that may explain why a child would follow a parent’s career path in medicine. At the most basic level, successfully running the gauntlet through medical school and beyond requires both intelligence and conscientiousness. These attributes, in turn, are influenced by

genes (though perhaps not as much as eye color and blood type). Thus, the base-case likelihood that a young person with a physician-parent makes it in and out of medical school is above average, independent of all other factors.

On the other hand, there are certain familial endowments that might be considered unfair advantages. For instance, children of orthopaedic surgeons stand a better chance of landing opportunities that enhance their applications, like summer stints in research labs—especially when those labs are led by family friends, or when the stipend is provided by The Bank of Mom and Dad.

It is, however, a more neutral category of parental benefits that is most interesting when considering interventions for increasing diversity: Namely, that children of orthopaedic surgeons have a greater exposure to the profession and a positive role model. Exposure has been demonstrated to increase applications from underrepresented groups [1], and providing a booster for students whose parents engage in nonmedical work should be fairly straightforward.


The effects of awareness and role-modeling are best studied in the particular context of gender diversity. About 50% of medical school graduates are women, compared to 25% of the orthopaedic applicant pool. Further, because the distribution of social and cultural capital between men and women medical students is likely equal, a shortage of women in orthopaedic surgery relative to their prevalence in medical schools reflects decisions made by students and not the effect of confounding

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circumstances. In short, discovering why daughters of orthopaedic surgeons follow in their parents' steps might provide useful insights that can lead to actionable plans.

Some critics may argue that while positive exposure to orthopaedics can help broaden the applicant pool, the problem of gender imbalances in orthopaedic surgery runs deeper than a mere lack of awareness or role models. Perhaps the very organization of our work (especially frequent on-call duties) disproportionately burdens those who are disproportionately responsible for raising young children, as mothers often are. Perhaps the perception (or misperception) of the jock culture commonly associated with orthopaedic surgery is off-putting to some students. That is, orthopaedic surgery may be, at its core, insufficiently hospitable to all students.

But things can change! Thomas Paine's observation regarding the absurdity of hereditary physicians and mathematicians was written in 1776, in a screed against hereditary monarchy. At the time Paine wrote, Europe was ruled by kings and emperors. These days, after great strife and struggles, more democratic models of governance pervade. Given that, I am confident that if the profession of orthopaedic surgery were to commit itself to equal opportunity with an open mind and a generous spirit, all necessary reforms can be achieved—just as thoroughly, but far less traumatically. Then and now, it's all about common sense.

Sarah Powell MD

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As the daughter of an orthopaedic surgeon, Dr. Bernstein's commentary on "hereditary physician(s)" deeply resonated with me. I was fortunate to grow up with a role model who talked

about his work and how much he enjoyed it. I was lucky to spend time in operating rooms as a high school and college student, seeing what the life of an orthopaedic surgeon looked like. My father certainly provided me with a wealth of opportunities not available to other medical students, and this foundation, early exposure, and positive role modeling—as Dr. Bernstein discussed—were pivotal in shaping my desire to pursue orthopaedics and my commitment to persevering in that goal, despite discouragement throughout my career thus far.

I poignantly remember an interaction I had while attending a dinner in medical school. During the meet and greet, there were numerous students clustered around the table with the orthopaedist. Unsurprisingly, I was the only woman there. At some point during our discussion, a radiologist meandered up. He sized up the group of students and told the men around that table that they looked like they would "fit in" in orthopaedics. He paused when he got to me, then told me that he didn't think I looked like an orthopaedic surgeon, so maybe I should consider another specialty. Reflecting on this moment now, I am grateful that I had foundational exposure to orthopaedics and knew better than to let this experience dissuade me. However, it is tough to hold true to your decisions when you are being bombarded by people within and outside of orthopaedics who are pointing out your "otherness" as a woman in the field, especially when they have statistics on their side. Experiences such as these have led me to strongly believe in mentorship as a key for women to succeed in orthopaedic surgery.

Although I agree with many points Dr. Bernstein made, I disagree with his idea that orthopaedics is "insufficiently hospitable to all students." Many other surgical specialties—neurosurgery comes

to mind, but isn't the only one—have similarly demanding call schedules and work schedules but do not have the gender diversity problem that ours does. I do not believe orthopaedic surgery is inherently inhospitable to women, despite a persistent gender gap that needs persistent attention and addressing.

I do, however, believe that our specialty can and needs to improve in terms of gender equality. We need to start listening to the impactful research and opinions on gender diversity that are being shared at national conferences—in rooms that, notably, often have very few men present—and work on becoming mentors and allies to current and future women orthopaedic surgeons. We can only improve by continuing to build on the work of the strong women who came before us. To the incredible women surgeons who have been my mentors and guides, and to my father for endowing me as a "hereditary orthopaedic surgeon": Thank you for introducing me to this incredible career and journey that I've only just begun.

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How do four sisters end up in orthopaedic surgery? Is it hereditary, as some say? When people ask if our parents made us go into orthopaedics, we used to joke that no, our parents were very supportive of our dreams growing up and always assured us that we could be any type of

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doctor we wanted to be. In all seriousness, their support and parenting choices did have a major impact on our career decisions. Our mother is an internist and our father is an orthopaedic spine surgeon. We also have numerous physicians in our extended family, including an aunt in orthopaedic surgery. We saw firsthand the hard work and dedication they each put into their careers and families, and this gave us insight into both the challenges and rewards of a career in medicine, including orthopaedic surgery. While we were not talked into orthopaedic surgery, it is important to note that we were not talked out of it, either. This may seem inconsequential, but many women and underrepresented minorities may be intentionally or inadvertently steered away from orthopaedics.

Expectations were set high in the Boden household, and doing our best was required. We were taught that if we worked hard and set goals, we could accomplish anything. We grew up playing baseball (yes, baseball; not softball), which meant from a young age we were used to holding our own in field dominated by men. Our parents did not shield us from perceptions or reality when it came to being a girl or young woman in that setting. Instead, they supported us and introduced us to role models and mentors who were honest and allowed us to make informed decisions. As Dr. Bernstein mentioned, exposure is crucial for attracting applicants into orthopaedic surgery, and we had no shortage of exposure between family members and athletic injuries. We all decided to pursue orthopaedic surgery at different stages of our education and for slightly different reasons, but at the end of the day, we each ultimately chose the specialty because we loved it and saw the potential for a career that is hands-on, team-oriented, and produces tangible results that can improve patients' qualities of life.

What about the unfair advantages? It would be remiss of us to ignore that we had a leg up in the game of life. While we did not have jobs or titles handed to us, we had the privilege of focusing on academics and athletics without many of the financial strains others have to worry about. While we did not always listen, having parental guidance through the turbulent waters of applications, internships, research projects, and medical school was invaluable. Much like any other kid who joins the family business, we can't deny that we had significant help not readily available to everyone. So how can we use this to provide useful insight and actionable plans to increase gender and racial diversity in orthopaedic surgery?

More women and people from underrepresented minority groups may be interested in orthopaedics if they get what we have been lucky to have: exposure to role models, access to invested mentors that encourage personal and professional growth, and a support system that is available and adaptable to the inherent stresses and challenges that accompany the road of becoming a successful orthopaedic surgeon. As Dr. Bernstein pointed out, there is a disconnect between the proportion of women medical students and those who pursue a career in orthopaedic surgery. At all levels, there is an underrepresentation of women and people from underrepresented minority groups in orthopaedic surgery, and this lack of representation increases at higher positions in the field [4, 5]. In the 21st century, it is largely accepted that women can have meaningful careers in addition to having a family. While work as orthopaedic surgeons may mean time away from family, that is not unique to our field. But the lack of diversity is more extreme in orthopaedic surgery than in other surgical specialties that require the same time commitments. While we agree that not all medical students are suited for a career in

orthopaedic surgery, the notion that orthopaedic surgery at its core is inhospitable for women or people from minority groups is just wrong. We need to stop giving women and people from minority groups reasons to doubt their future success as orthopaedic surgeons. We need sustained mentorship and support for diverse applicants, residents, and colleagues throughout training and beyond so that talent is developed and cultivated rather than turned away from the specialty.

Orthopaedic surgery continues to make strides toward becoming a diverse and inclusive field, but it takes time to change culture and even longer to change perceptions. The field has come a long way, but there is plenty of room for improvement. As daughters of an orthopaedic surgeon and as soon-to-be academic orthopaedic surgeons, we strive to lead by example and continue to look for ways to make orthopaedic surgery attractive to the best and brightest. We agree with Dr. Bernstein that our profession as a whole must commit itself to equal opportunity with an open mind and a generous spirit.

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