



DermWorld

directions in residency

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Straightening things out

Answering important questions about ergonomics

By Tejesh Patel, MD, FAAD, Virginia Koubek, MD, FAAD, and James Ferrer, MD

What do we know about workplace injuries?

Surveys have shown that most dermatologists experience some kind of musculoskeletal injury (MSI) during their career. These injuries tend to happen early on in their practice and continue to impact them day-to-day. The incidence of MSIs among physicians and other health care professionals has been increasingly recognized in recent years. A 2022 systematic review in the *Journal of Safety Research* established two important concepts: ergonomic interventions can have significant impact on the prevention of MSI and that physical conditioning can reduce the amount of pain in individual experiences.

What is ergonomics?

Ergonomics comes from the combination of two Greek words: “ergon” meaning work and “nomos” meaning natural law. It is the study of how working humans interact with various components of a system. Individuals that study ergonomics aim to maximize both the well-being and overall performance of the system being worked in. To do this, one must consider the optimization of work environment, psychosocial environment, and physical environment as well as technology designs.

Why should I care?

There is a paucity of ergonomics training or discussion, especially for dermatology, during residency and fellowship training. As previously mentioned, it is known that MSI occurs early on and has a day-to-day impact on dermatologists. Chronic pain is well known to negatively impact performance and happiness. By incorporating ergonomic principles into their practice, dermatologists can mitigate the risk of MSIs and reduce the physical strain on their bodies. Additionally, small ergonomic improvements can improve patient care and have large impacts on clinic efficiency.

What concepts are important in the office setting?

Proper ergonomics in an office setting is essential to prevent MSI and promote overall well-being. With an almost complete transition to electronic medical records, individuals working in dermatology clinics may spend a significant amount of time sitting at a desk, typing on a computer, and performing other tasks that require repetitive movements or can lead to suboptimal postures. Ensuring proper workstation

see **ERGONOMICS** on p. 3

Discover the **power** of GEP

An ongoing collaboration with the **National Cancer Institute** to produce the **largest real-world study** of gene expression profile (GEP) testing in melanoma demonstrates:

- DecisionDx-Melanoma® provides **significant, independent risk stratification** of patients with cutaneous melanoma.
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Tumor biology matters



Bailey CN, Martin BJ, Petkov VI, et al. 31-Gene Expression Profile Testing in Cutaneous Melanoma and Survival Outcomes in a Population-Based Analysis: A SEER Collaboration. *JCO Precis Oncol*. 2023. doi:10.1200/PO.23.00044

setup, whether one is at the computer, sitting at the microscope, or working in the examination room, is critically important to have proper ergonomics. This includes adjusting chair and computer monitor heights, as well as having adjustable patient chairs or tables so that the physician can keep their joints in neutral and relaxed positions while working. Additionally, near identical setup of biopsy/surgical trays as well as organization of drawers and cabinets between rooms can reduce unnecessary movements and improve overall efficiency.

What about during surgeries?

Adequate lighting and magnification are crucial in dermatology for proper patient evaluation and procedures. Poor lighting during an evaluation can lead to uncomfortable and unnecessary postures for the dermatologist as well as misdiagnosis. With regard to dermatologic surgery, poor lighting may lead to a greater likelihood of surgical error. Combining magnification with proper lighting can synergistically improve patient evaluation and surgical proficiency. For reference, in a 2017 *Cutis* paper written by Chodkiewicz and Joseph, the various magnification options and a list of pros and cons were discussed. Magnification can lead to improved posture and reduced muscle strain by preventing unnecessary bending of the neck and hips. Using magnifying loupes or surgical microscopes can improve accuracy and precision during surgery and reduce the need for awkward postures. It also allows for better visualization of small structures, which can heighten precision and accuracy during surgical procedures.

Does prioritizing ergonomics lead to better patient outcomes?

Yes! Dermatologists should prioritize ergonomics due to the significant impact it can have on their well-being, performance, and patient care. As dermatologists spend long hours performing various procedures and evaluations, they are at a higher risk of developing MSIs and experiencing physical discomfort. Proper ergonomics, including maintaining good posture, using ergonomic equipment, optimizing lighting conditions, and organizing their workspace efficiently can enhance dermatologists' comfort, productivity, and overall job satisfaction. Moreover, by prioritizing ergonomics, dermatologists can improve the accuracy and quality of their diagnoses and treatments, ultimately leading to better patient outcomes. By recognizing the importance of ergonomics and implementing ergonomic practices, dermatologists can safeguard their own health, enhance their professional performance, and provide optimal care to their patients. **DR**

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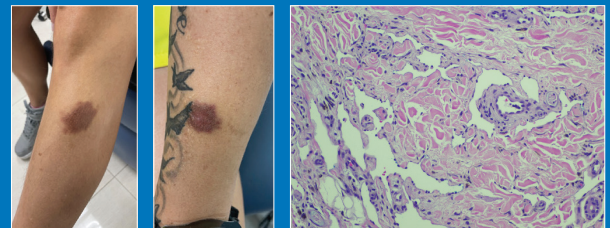


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Race for the Case

By Andrea Paola Caro Muñiz, MD, and Marelly Santiago Vázquez, MD, FAAD



A 36-year-old male patient with history of hypertension and fulminant acute kidney failure requiring renal transplant presented to outpatient clinics with two asymptomatic growing lesions in his left arm and his left leg since approximately two years prior to initial evaluation. The patient denied any allergies. His medication regimen included mycophenolate sodium, prednisone, and tacrolimus due to his post-transplant status. Physical examination revealed a single violaceous plaque on his left forearm and a single violaceous plaque over the lateral left shin.

1. What is the most likely diagnosis and what are its subtypes?
2. What histologic immunostaining can aid the diagnosis?
3. Which histologic sign is characteristic of this lesion on pathology?








Respond with the correct answers at www.aad.org/RaceForTheCase for the opportunity to win a Starbucks gift card!

Race for the Case winner (Summer 2023)

Our congrats and a Starbucks gift card go out to Jane Zhang, MD, a PGY-3 in the department of dermatology at UIC. She correctly identified tertiary syphilis in our summer issue and gave the most comprehensive answers to the questions asked. You can read more about this case online at www.aad.org/race-case-answers. If you can solve the latest case, there may be a Starbucks gift card in your future, and you may be invited to contribute your very own Race for the Case. Better get on it now!

Ticks: Common associated organisms and diseases

By Emily Ptasnik, DO, and Alexis Buffington, DO

Vector	Common name	Disease	Organism	
<i>Amblyomma americanum</i>	Lone Star Tick	Human monocytic ehrlichiosis	<i>Ehrlichia chaffeensis</i> and <i>E. ewingii</i>	
		Rocky Mountain Spotted Fever "Brazilian spotted fever"	<i>Rickettsia rickettsii</i>	
		Southern tick associated rash illness (STARI)	<i>Borrelia lonestari</i>	
		Tularemia	<i>Francisella tularensis</i>	
<i>Amblyomma maculatum</i>	Gulf Coast Tick	Rickettsia parkeri rickettsiosis	<i>Rickettsia parkeri</i>	
<i>Dermacentor andersoni</i>	Rocky Mountain Wood Tick	Colorado tick fever	CTF virus	
		Rocky Mountain Spotted Fever	<i>Rickettsia rickettsii</i>	
		Tularemia	<i>Francisella tularensis</i>	
<i>Dermacentor variabilis</i>	American Dog Tick	Human granulocytic ehrlichiosis	<i>Anaplasma phagocytophilum</i>	
		Human monocytic ehrlichiosis	<i>Ehrlichia chaffeensis</i>	
		Rocky Mountain Spotted Fever	<i>Rickettsia rickettsii</i>	
		Tularemia	<i>Francisella tularensis</i>	
<i>Ixodes cookei</i>	Groundhog Tick	Powassan virus disease	<i>Powassan virus</i>	







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Ticks: Common associated organisms and diseases

By Emily Ptasnik, DO, and Alexis Buffington, DO

Vector	Common name	Disease	Organism	
<i>Ixodes pacificus</i>	Western Backlegged Tick	Borrelia miyamotoi disease Human granulocytic anaplasmosis Lyme disease	<i>Borrelia miyamotoi</i> <i>Anaplasma phagocytophilum</i> <i>Borrelia burgdorferi</i>	
<i>Ixodes scapularis</i> (I. dammini)	Backlegged Tick	Babesiosis Human granulocytic anaplasmosis Lyme disease	<i>Babesia microti</i> <i>Anaplasma phagocytophilum</i> <i>Borrelia burgdorferi</i>	
<i>Ornithodoros</i> spp.	Soft Bodied Ticks	Tick borne relapsing fever	<i>Borrelia hermsii</i> <i>Borrelia duttonii</i> <i>Borrelia turicatae</i> <i>Borrelia parkeri</i>	
<i>Rhipicephalus sanguineus</i>	Brown Dog Tick	Mediterranean spotted fever (Boutonneuse fever) Rocky Mountain Spotted Fever	<i>Rickettsia conorii</i> <i>Rickettsia rickettsii</i>	

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3. Images courtesy of the CDC Ticks Image Gallery with photo credit to Jim Gathany (*Ixodes scapularis*, *Ixodes pacificus*, *Dermacentor andersoni*, *Dermacentor variabilis*, *Amblyomma Americanum*, and *Rhipicephalus sanguineus*)

Ticked off because you want more?



The online, extended version of this chart includes an illustration of relative sizes of several ticks at different life stages. Available at www.aad.org/boardfodder.

More boards!



There are more new charts online, including a chart on [suture techniques](#) by Neelesh Patrick Jain, MD, Christian Gronbeck, MD, and Steven Brett Sloan, MD; and a new chart on [wound healing biology](#) by Samantha Gardeen, MD, Anna Kozlowski, MD, and Lina Rodriguez, MD.

Check out the full archives at www.aad.org/boardfodder.

Resident Timeline

Readers of DermWorld Directions in Residency requested a resident timeline to help you facilitate improved learning, career building, and research study during your dermatology residency. The AAD Resident and Fellows Committee (RFC) Chair Morgan Murphrey, MD, MS, and RFC committee member Kristen Chen, MD, have assembled a full multi-year look at the important milestones of residency.

First year of dermatology residency | PGY-2

Exams/learning	Career building	Academics and research
<ul style="list-style-type: none"> Familiarize yourself with your program's approach to didactics and consider your own study schedule. There are many textbooks, but two primary ones include <i>Dermatology</i> by Bologna and Fitzpatrick's <i>Dermatology</i>; many residents also use <i>Dermatopathology</i> by Elston. Common review books include Jain and Alikahn (among others). Familiarize yourself with the available textbooks but commit and stick to the 1-2 that work best for you. Focus on building a "bookshelf," understanding the types of dermatologic conditions, and becoming an expert in morphology. Build a foundation rather than focusing on esoteric details. <p>March: Basic exam</p> <ul style="list-style-type: none"> This exam is primarily for self-assessment. This is not something to cram for; instead, use it to assess your learning progression over the last 10 months. 	<ul style="list-style-type: none"> Career building can start as early as your first year of residency. You may be approached by physician recruiters or receive mailings, but do not feel pressured! This is your time to explore and introduce yourself to all that dermatology has to offer. Take opportunities to learn more about what your career can look like (i.e., career fairs, conversations with mentors). Think about key questions: <ul style="list-style-type: none"> > Do you think you will want to pursue a fellowship after residency? > Do you prefer academic or private practice? > Would you prefer to work for a physician-owned practice, or are you open to private equity-owned practices? As you explore and have conversations, take notes! These will be helpful down the line. <p>If you are considering a dermatopathology fellowship, plan early! You will apply in July of your 2nd year, earlier than other fellowships.</p>	<ul style="list-style-type: none"> Look ahead at this year. Are there conferences you want to attend? Do you plan to present? Talk with your program early about educational opportunities to help facilitate scheduling. Take note of key dates: <ul style="list-style-type: none"> > September: AAD Abstracts due for Annual Meeting! Apply for committees within organizations that excite you (i.e., AAD Councils, Committees, and Task Forces). Try to stay up to date with your case logs.



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Kristen Chen, MD, is academic chief resident at University of Wisconsin and is also a member of the AAD Residents and Fellows Committee.

Resident Timeline

Second year of dermatology residency | PGY-3

Exams/learning	Career building	Academics and research
<ul style="list-style-type: none"> • There are 4 total CORE exams (Medical, Peds, Surgery, DermPath). The CORE exams focus on fundamentals of knowledge and specific details and facts relevant to the tested topic. • You begin these exams in 2nd year and complete them in 3rd year. • There are 4 seatings offered during your residency (Feb./July/Nov./Feb.) • You can take as many as 4 CORE exams in 1 session, or as few as 1 CORE exam in 1 session. • Most residents double up and take 2 exams in 1 session at least once, so they complete all exams in 3 sessions. • Popular study resources include Alikhan/Jain, DermQBank, AAD Board Prep Plus, Derm-In-Review, Self-Assessment in Dermatology, and Dr. Mariwalla's Boards University videos (highly recommend!) 	<ul style="list-style-type: none"> • Around this time, you should decide if you are pursuing a fellowship. • For those pursuing dermpath, applications open now! • For those pursuing other fellowships (pediatrics, Mohs, cosmetics), work on building mentoring relationships. • Seek out guidance from others who have recently applied and plan ahead. • Ask for letters of recommendation early (around the end of 2nd year, or at least 1 month before the due date). • If you are not pursuing a fellowship, now is the time to think more seriously about your future practice. • It is never too early to start looking but be wary of pushy recruiters. • Consider big picture things like location and type of practice. • Find mentors and seek advice — they have been through this and want to help! • Work on updating your CV and resume. 	<ul style="list-style-type: none"> • Second year offers more time to explore your academic interests. • Consider conference requests and presentation opportunities. Plan early! • If your program offers elective time, consider elective planning for your senior year. • Many organizations offer scholarships or grants for externships with attendings. These experiences can be life changing, and you should be sure to apply early! • Many residencies require published research or quality improvement projects. Be sure to stay on track to meet any requirements of your program. • Continue entering your cases into your case logs!!
<p>February: CORE #1 +/- 2</p>		

More resources!



As you continue the path toward your career, check out the AAD's career development page (www.aad.org/member/career), which offers a multitude of invaluable resources.

Resident Timeline

AAD career launch resources



Check out the AAD's career launch resources (www.aad.org/member/career/launch) for more high-yield information.

Third year of dermatology residency | PGY-4

Exams/learning	Career building	Academics and research
<ul style="list-style-type: none"> • Congrats on how far you have come! Your first year was focused on developing a strong foundation. During your senior year, it's time to fill up your "bookshelf" with books of knowledge. • Keep up your momentum and keep reading!! • You will take 2 or 3 CORE exams. Continue studying accordingly. • After finishing your COREs, it's not long before you begin preparing for boards. • As you move toward studying for the APPLIED exam, think about big-picture concepts and clinical next steps. • Kodachromes are key! A great approach to studying is reviewing kodachromes and thinking through associations, next steps, and therapeutics. <p>July: CORE #2 +/- 3</p> <p>November: CORE #3 +/- 4</p> <p>February: CORE (additional opportunity as needed)</p> <p>JULY: BOARDS</p>	<ul style="list-style-type: none"> • Fellowship applications generally open at the end of 2nd year, or early 3rd year. • Finalize your CV and ask for your letters of recommendation early! • You can apply early, but there's no need to rush! Make sure you are ready before you submit. • For those who are not pursuing a fellowship, consider starting the job hunt earlier rather than later. <ul style="list-style-type: none"> > <i>In our experience, most senior residents start their job hunt by January of their senior year, if not earlier.</i> • AAD's Career Compass (aadcareercompass.org) can be a great place to evaluate the job market. • Be sure to interview broadly, and don't be afraid to negotiate! 	<ul style="list-style-type: none"> • Senior year is your chance to work on and wrap up projects you pursued in residency. <ul style="list-style-type: none"> > If you are not finished with projects, consider passing them off to younger residents who may be seeking opportunities. • Continue working with organizations that you align with and consider how you can stay involved after residency. • Wrap up any administrative tasks or requirements specific to your residency program. • Be sure to make sure your case logs are complete by graduation!!

Resident Timeline

Residency Examination Schedule

Residency Year	Summer	Fall	Winter	Spring
PGY2				March: Basic Exam
PGY3			February: Core #1/#2	
PGY4	July: Core #3	November: Core #4	February: Core Offered	July: Applied Exam

NEW

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Larisa J. Geskin, MD, FAAD,

is professor of dermatology in medicine (hematology-oncology) at Columbia University Irving Medical Center, and is director of the Comprehensive Cutaneous Oncology Center at Columbia University Department of Dermatology. She is also immediate past president for the International Society for Cutaneous Lymphomas; and chair of the Skin Cancer Action Team at Cancer Consortium at New York State Department of Health.

Clinical Pearls

Clinical Pearls will help prepare residents for the future by providing them with five top pearls about what they should know about a specific subject area by the time they complete their residency.

Cutaneous T-cell lymphoma

By Larisa Geskin, MD, FAAD

Pearl #1: The pathologic and clinical features of CTCL may be non-specific and highly variable, making it difficult to distinguish from other inflammatory dermatoses including spongiotic dermatitis and psoriasisiform conditions [1]. Continue to perform multiple biopsies over a period of time to establish a diagnosis of CTCL, and keep looking if you are suspicious. Whenever possible, send the sample to a pathologist who is a specialist in the field. The specialists may be able to discern minute details, such as subtle lymphocyte atypia, and usually are familiar with the novel biomarkers, which might be useful for the diagnosis. New markers are continually being discovered to aid in diagnosis of CTCL [2, 3].

Pearl #2: All cancer patients need to be staged to provide them with the appropriate care for disease stage. The tumor, node, metastasis, blood staging is an important prognostic factor in CTCL and will inform your approach to treatment [4]. Mycosis fungoides (MF) and Sezary syndrome (when there is significant blood involvement) are the most common types of CTCL. Remember to beware of “invisible mycosis fungoides.” Because mycosis fungoides is a disease of white blood cells, the only reason that they are visible on the skin is due to a local immune response and inflammation. If there is no inflammation present, you may miss MF [5]. Rarely, what appears to be “early stage disease” may already have nodal or leukemic involvement. In addition, there are some cutaneous lymphomas that may look like MF but have an aggressive course including some cytotoxic lymphomas of the skin [6].

Pearl #3: Improvement in quality of life and long-term remission is the main goal of the therapy. MF/CTCL in general is an indolent disease with favorable long term-prognosis and protracted course. Inducing a long-term remission and improving quality of life is of utmost importance in these patients. In addition, the patients are usually immunocompromised, especially in the advanced stages of the disease, and harsh multi-agent chemotherapy is not indicated for the vast majority of these patients. Early stages of disease can be entirely managed by dermatologists using skin-directed therapies. However, dermatologists play a significant role in management of the patients through all stages, including advanced stages of the disease. Dermatologists should monitor MF patients for dis-

ease progression during early stages and contribute to the patient care in advanced stages. To achieve the best outcomes, whenever possible, input from a CTCL specialist or a specialized multidisciplinary team is advisable.

Pearl #4: Do not underestimate the importance of a good skin care routine which can significantly improve quality of life. Proper skin care plays a key role in the treatment of this disease. We recommend aggressive skin moisturization, treatment of bacterial colonization, and avoiding any tight or irritating clothing. Dilute vinegar baths also help to restore the slightly acidic pH of the skin and result in reduced bacterial load, especially on the impaired and inflamed skin. These measures help to improve pruritus, which is frequently the most important quality of life concern in these patients.

Pearl #5: Keep an eye out for new drugs and clinical trials which are available to treat CTCL in all forms and stages. Novel, better drugs are currently being tested across the country and the globe [7, 8]. Do not hesitate to send a patient to a specialist to investigate new treatment opportunities. New drugs and/or combination of therapies may improve patient outcome and possibly survival.

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Challenge and reward

A resident travels to Botswana to provide dermatologic care.

By Anthony B. Mak, MD, PhD, FRCPC, DABD

Through the American Academy of Dermatology's Resident Education Grant and support from the Botswana-UPenn partnership, I had the opportunity to practice dermatology at Princess Marina Hospital in Gaborone, Botswana, as well as its affiliated outreach hospital sites in neighboring towns and villages. In addition to my practice, I was also a clinical teacher and examiner for medical students at the University of Botswana. Originally, my trip was scheduled for 2020 but this was canceled due to the COVID-19 pandemic. Three years later, it was revived by the Resident International Grant program directors, to whom I am very thankful for this opportunity.

I faced various clinical challenges, ranging from treating common dermatologic conditions with limited resources to tackling complex diseases that I had never seen before in practice. What I found most challenging was witnessing the difficulties that many patients face in regard to their social determinants of health.

Here is an example: A 40-year-old outdoor carpenter traveled many hundreds of miles to dermatology clinic for consultation. On exam he had thick, red, scaly confluent plaques covering his entire face, scalp, hands, and arms. He was clinically diagnosed with generalized hypertrophic discoid lupus erythematosus, which was associated with extensive scarring and disfigurement. I was surprised when the patient stated that his dermatologic manifestations had been present for more than 10 years and that he had not seen a medical doctor his entire adult life due to financial constraints and a lack of access to medical facilities from the remote area where he lived. Although extensive scarring and disfigurement had already occurred, he demonstrated impressive insight into his condition as being photosensitive and he adapted by constructing a face mask with materials at his disposal to prevent further exacerbation of his condition.

Prior to traveling to Botswana, my focus was on improving my clinical acumen and management in complex medical HIV dermatology and global dermatology. However, as exemplified by the case above, I soon realized that I had emotionally and cognitively gained more from my patients than I had initially intended. I was impressed by their resilience, persistence, and self-advocacy in a constrained health care system. My lasting impression was invariably their patience, warmth, and politeness. This feeling was translated to my relationship with the clinic staff in Botswana, which allowed me to integrate smoothly as a dermatologist team member. I am grateful for the knowledge, experience, and teamwork skills that I have gained, which will undoubtedly help me provide better care to my future patients.

My time in Botswana was both intellectually and sentimentally rewarding, and I left with mixed feelings. I am appreciative that I had the opportunity to participate in a defining moment in my career. However, I am also sad that I have left behind people and places that I care about. I have traveled back to Canada with many amazing memories and hope to continue a career in global dermatology. **DR**



Anthony B. Mak, MD, PhD, FRCPC, DABD, graduated from the University of Toronto dermatology residency program and is currently practicing in Mississauga, Ontario.



Dr. Mak (seated, left) with the nursing staff at Princess Marina Hospital.



Dr. Mak visited neighboring Zimbabwe.



Is something interesting happening in your residency program? We'd like to feature it in *Directions*.

Send your ideas to dmonti@aad.org.



Morgan Murphrey, MD, MS, is a cosmetic laser dermatology fellow at Mass General/Harvard, and is chair of the AAD Residents and Fellows Committee.

Dermatology residency in three acts

The fall season brings thoughts of the holidays and year-end reflections. Yet, for those of us in academia, fall signifies the beginning of the academic year and a period of transition and growth. The changing leaves mirror our changing roles, welcoming new colleagues and adapting to fresh challenges. As a recent residency graduate, my collaboration with Dr. Kristen Chen on this issue's dermatology residency timeline evoked nostalgia and reflection. Residency follows a similar cadence to the changing seasons or the acts of a play, with a beginning, an intermission, and an end.

The first year of residency, or "act one," is all about embracing novelty. It feels like yesterday that I embarked on this journey, and I'm sure seasoned readers can relate. The year begins with anticipation and eagerness. To finally practice dermatology is invigorating and exciting! As what may have been a grueling intern year fades into memory, you embark on a myriad of clinical experiences — pediatric to geriatric, surgical to academic.

Amid the exhilaration, the challenges of first year also reveal themselves. The novelty of dermatology residency merges into the reality of its unique demands. Learning is constant and the breadth of our specialty is immense. Be kind to yourself and show yourself grace, embracing the learning curve rather than allowing it to overwhelm you. Try to find the best in every moment because the first year, like a first act, moves fast.

Second year offers more autonomy, and like a reflective intermission, is a time to build your knowledge base and confidence. Freshman anxiety settles as you develop your skills and fall into a rhythm. Autonomy is a privilege that comes with responsibility, and while this can feel intimidating, it also offers a sense of belonging. As you welcome the new first years, don't forget what it's like to be in their shoes! Guide them through their own first act, recognizing your role as their mentor. As you juggle responsibilities, remember to find pride in your progress, because you will realize that intermission, like residency, flies by!

The third and final year is a climactic last act, where you will embrace leadership and independence. As the most senior residents, you assume the vital role of leaders. Some conclude their journey here, stepping into the professional world, while others prepare for fellowships. Regardless, this is a year of rounding out your expertise. Treasure time with your co-residents and colleagues because the final act unfolds quickly, and you will soon miss those cherished moments.

Just as the seasons change, so does the residency journey. Each year of residency offers new opportunities: from novelty, to confidence, to leadership. Remember that every attending was once a resident and every mentor a learner. Embrace mistakes, celebrate victories, and prioritize self-care as you traverse each act, because while the days are long, the years are short, and the wisdom you gather along the way endures forever. **DR**

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