Much of how dermatologists practice is shaped by their residency training. With the recent introduction of a new AAD online course focusing on genital skin exams, Directions asked the course creators to answer some questions on the topic. Their responses to our questions have been amalgamated for this story.

What are some basic topics residents should know about genital skin exams by the time they complete their residency?

By graduation, residents will be expected to perform detailed histories of genital skin complaints and systematic genital skin exams, as well as experience continuity of care to see how their assessments/plans evolve. Residents should be comfortable recognizing and distinguishing normal anatomy, and its variants, from pathological findings, such as scarring/architectural changes and signs of inflammation. Moreover, it is important to be familiar with common non-infectious inflammatory skin conditions that have a predilection for the genitalia, such as lichen sclerosus and lichen planus. Graduating residents should also understand which topical agents (and, if appropriate, systemic agents) may be utilized for genital conditions and be familiar with basic diagnostic tests, including when a biopsy may be warranted, and how to optimize performance of biopsies for the dermatopathologist. Given the complexity of this topic, graduating residents should have had several genital skin encounters, at the very least.

What are the most common genital conditions residents are likely to encounter once they enter practice?

Residents will see their fair share of inflammatory, infectious, and malignant processes. Moreover, it depends on the type of practice, age of the patient, and anatomy (vulvovaginal versus penoscrotal), but in general, genital warts, molluscum, psoriasis, candidiasis, and nevi/melanotic macules are commonly encountered conditions. Other common genital skin conditions include contact dermatitis (both allergic and irritant), as well as lichen simplex chronicus. Benign conditions/anatomic variants, such as Fordyce spots and pearly penile papules (and vestibular papillomatosis) will often be seen in
Gene expression profile testing for patients with dermatologic cancers

Castle Biosciences is proud to support the AAD and its residents with innovative approaches to improve patient care. Together we help the next generation of physicians push the boundaries of what's possible. Driven by a shared purpose, we are transforming the treatment of dermatologic cancers, enabling more precise testing for better informed decisions.

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In addition to diagnosis and treatment, what are some things residents should know about genital exams? Do patients have any special needs?

One of the most important parts of the genital exam is making sure the patient feels comfortable, so we spent a good portion of the module detailing the process of creating a comfortable physician-patient encounter. During full-body skin exams, a significant number of patients decline cutaneous exam of their breast/genitalia and residents/learners are sometimes asked to leave the room during genital skin exams, decreasing resident training in such an important skill. This was the impetus toward developing the module. To create a comfortable environment, use anatomic terms, explain the exam step-by-step as you go, and avoid making assumptions. Additionally, listen to patients and reassure them that no question or practice should be considered embarrassing. In situations patients may find “embarrassing,” remind them that the more information they share about their genital health/practices, the better you will be guided to help them. Also, patients may apologize during genital exams, and it is important to be prepared for this.

In addition to the above, residents should be comfortable performing biopsies on anogenital skin, if indicated. Biopsies of this region can be more nuanced compared to other sites, given increased pain and sensitivity, different types of epithelium, and the unique anatomy.

What are the benefits of the new online AAD course?

The new online AAD course is a great resource! As an overview, it takes learners through anatomy, appropriate language, and exam techniques, to optimize a comfortable visit for both children and adults with genital conditions. It also provides pearls from experts in the field for increasing efficiency/thoroughness and patient comfort, as well as how to improve diagnosis and treatment of genital skin conditions. The module is divided into penoscrotal and vulvovaginal content. There are a variety of interactive cases that include both common and rare conditions. Each case includes questions on diagnostic workup and therapies, while addressing common pitfalls in diagnosis and management.

The course is certified for 2 AMA PRA Category 1TM credits and can be accessed on the AAD website at learning.aad.org/URL/GenitalSkinExam. DR

Race for the Case

A 42-year-old male with past medical history significant for HIV with medication noncompliance, methamphetamine use disorder, and chlamydia, presents with a pruritic eruption that has been ongoing for four months. The patient reports that the rash started on his arms and then rapidly spread to the rest of his body. He denies clearance of any lesions since onset of the rash and reports continued development of new lesions. He denies a personal or family history of any prior dermatologic conditions. Review of systems is significant for an unintentional 15-pound weight loss over two years.

1. What is the most likely diagnosis and which histologic findings suggestive of the diagnosis are shown in the slide?

2. Describe the clinical findings of the secondary stage of this condition.

3. Describe the two categories of serologic tests that can assist with diagnosis. Which test can be used to monitor treatment response?

4. What is treatment of choice for the secondary stage of this condition?

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

Race for the Case winner (Spring 2023)

Our congrats go out to Mansee Desai, MD, who recently completed her residency at Loma Linda University. She correctly identified neurocutaneous melanosis/neurocutaneous melanocytosis in our last 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 this latest case correctly and expeditiously, there may be a Starbucks gift card in your future, and you may be invited to contribute your very own Race for the Case! Good luck and we look forward to hearing from you.
Atypical fibroxanthoma
By Davis C. Diamond, MD, Silas M. Money, MD, and Matthew D. Belcher, MD, FAAD, FACMS

**Atypical fibroxanthoma**
- Benign dermal-based tumor of uncertain lineage
- Elderly: 70-80 yo
- M>F
- Head and neck (most common)
- Upper trunk/extremities

**Clinical features**
- Rapidly growing, often ulcerated, dome-shaped red-pink nodule or plaque
- Risk factors:
  - Cumulative UV exposure
  - Advanced age
- Differential diagnosis:
  - Basal cell carcinoma
  - Squamous cell carcinoma
  - Amelanotic melanoma
  - Merkel cell carcinoma
  - Lymphoproliferative disease
  - Cutaneous metastasis
  - Pleomorphic dermal sarcoma

**Histologic features**
- Proliferation of atypical, monomorphic spindle cells arranged in fascicles, “slamming” up against an ulcerated or atrophic epidermis. Extends down to deep dermis without extensive subcutaneous fat invasion.
- Non-specific staining with: CD10, Procollagen I, SMA (tram-track pattern)
- AFX is a diagnosis of exclusion! Other spindle cell neoplasms abutting the epidermis (SLAM Ddx) must be ruled out:
  - Spindle cell SCCa: CK903, CK5/6, p63, p40
  - Leiomyosarcoma: Desmin, SMA (diffuse cytoplasmic)
  - Angiosarcoma: CD31, CD34
  - Melanoma: S100, Sox-10

**Dermoscopic features**
- Red and white structureless areas with irregular polymorphous vessels

**AFX histology**

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Davis C. Diamond, MD, is a PGY-4 dermatology resident at the Medical College of Georgia.

Silas M. Money, MD, is a PGY-3 dermatology resident at the Medical College of Georgia.

Matthew D. Belcher, MD, FAAD, FACMS, is a board-certified dermatologist and fellowship-trained Mohs surgeon, and the director of Mohs micrographic surgery at the Medical College of Georgia.
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Management

Primary:
• Mohs micrographic surgery (preferred): 3-5% recurrence rate
• Wide local excision (1-2 cm margins): 8-10% recurrence rate

Recurrent:
• Mohs micrographic surgery
Postoperative radiation should be considered in all cases where excision with clear surgical margins is not possible

An essential diagnostic distinction: AFX vs. PDS vs. UPS

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<th>Clinical</th>
<th>Pathology</th>
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| Atypical fibroxanthoma (AFX) | Rapidly enlarging, exophytic, often ulcerated nodules, typically measuring <2 cm on head and neck. | Proliferation of atypical, monomorphic spindle cells arranged in fascicles, slamming up against an ulcerated or atrophic epidermis. Extends down to deep dermis without extensive fat invasion. | Mgmt: Mohs > Excision  
Prognosis: Recurrence: <10%  
Metastasis: rare |

Pleomorphic dermal sarcoma (PDS)
Rapidly growing, large (median 2.5 cm), ulcerated nodules and rarely plaques.
Similar to AFX, but with deep subcutaneous invasion, necrosis, lymphovascular or perineural invasion.
Mgmt: Excision/Mohs +/- imaging  
Prognosis: Recurrence: 25-30%  
Metastasis: 5-10%

Undifferentiated pleomorphic sarcoma (UPS)
Similar to PDS, but more likely to be larger, deep-seated, ulcerated and on lower extremity.
Similar to AFX, but arising in deep soft tissues of lower extremity.
Mgmt: Excision + imaging +/- chemotherapy and/or radiation  
Prognosis: Recurrence: 30-50%  
Metastasis: 15-40%

* AFX, PDS, and UPS are considered a spectrum by some sources and distinct entities by others

Acknowledgements:
Special thanks to Dr. Harold Rabinovitz, professor of dermatology at the Medical College of Georgia at Augusta University, and Dr. Matt Powell, assistant professor of pathology at the Medical College of Georgia at Augusta University, for providing original dermoscopic and histologic images, respectively. Medical illustration by Alicia Berry, Augusta University.

References:
Clinical Pearls

Clinical Pearls help prepare residents for the future by providing them with top tips from experts about what they should know about specific, key subject areas by the time they complete their residency.

DRESS syndrome

By José Dario Martinez, MD, IFAAD

1. Etiology, epidemiology, and HLA relationship
Drug reaction with eosinophilia and systemic symptoms (DRESS) is a hypersensitivity syndrome triggered by multiple drugs. It can be produced by enzyme deficiency to detoxify, and it is associated with several HLA antigens as well as reactivation of human herpes virus 6/7. Among HLA antigens, DRESS is associated with HLA B58:01 (allopurinol) and HLA B15:02 (carbamazepine). It affects children and adults, has no gender predilection, occurs after 2-6 weeks after starting the culprit drug (first exposure), and is not dose related. It is a delayed hypersensitivity reaction with eosinophils activation and elevation that causes hepatic and cardiac damage.

2. Drugs and target organs
Multiple drugs can cause DRESS syndrome: antiepileptics (carbamazepine, phenytoin), antibiotics (vancomycin, minocycline, ampicillin, dapsone), and allopurinol, among many more. Allopurinol targets the kidney; carbamazepine the kidney; ampicillin the heart; dapsone liver and kidney; minocycline liver, lung, and heart; and phenytoin the liver. Mortality is around 10% and most of the cases are due to fulminant hepatitis.

3. Clinical skin and laboratory features; differentiate minor and major forms of DRESS; Dx criteria
Clinically, a widespread rash (97.6%), typical facial edema (53.6%), maculopapular rash (84.8%) or exfoliative rash (47.2%), and mucosal involvement (32.8%) are the most common skin features. Skin manifestations of DRESS exhibit a wide range of skin lesions and can vary according to the culprit drug.

Severity predictor with a sensitivity of 96% and a specificity of 100% include: BSA > 35%, eosinophils > 6%, absolute eosinophil count > 450 cells/mm3, CRP: > 5 mg/L, ALT > 92 U/L.

Distinguishing minor and major forms of DRESS: A major form has high fever, short latency, persistent reaction, and facial edema — this means a severe case of DRESS and the culprit drugs are sulfas, carbamazepine, vancomycin, allopurinol, and phenytoin.

Diagnosis of DRESS include Boquet’s et al criteria, RegiSCAR study group, and Japanese consensus group, all of them are useful for Dx.

4. DDx, poor prognostic factors, and long-term sequelae
Differential diagnoses include: drug eruptions, SJS/TEN, erythoderma, viral infections, angioimmuno-blastic T-cell lymphoma (AITL).

Poor prognostic factors include high eosinophil count, thrombocytopenia, pancytopenia, renal failure, and involvement of various organs. Associated co-morbidities are crucial in the prognosis of these patients.

The long-term autoimmune aftermath of DRESS syndrome includes Graves’ disease, Hashimoto’s thyroiditis, type 1 diabetes mellitus, systemic lupus erythematosus, and alopecia areata.

5. Management and therapy
Management includes supportive therapy and skin care, systemic therapy includes dexamethasone IV (pulsed), then tapering with prednisone: 1-2 mg/kg/day PO or deflazacort PO, anti-TNF-α (etanercept), antihistamines, and antivirals (valacyclovir) as needed.

The disease process of DRESS includes development and activation of drug-specific T-cells — cyclosporine inhibits the activation and proliferation of these T-cells. A small study showed quicker symptom resolution resulting in a reduced hospital stay and less Rx duration than corticosteroids, using cyclosporine (5 mg/kg/day) PO for 2-4 weeks.

References:
Many of us remember the day that we matched into a dermatology program. We finally became members of a specialty we had dreamed about for so long. A surreal moment that truly changed our lives. Looking back, I think about that day fondly. I also think about the mentors that helped me get to this point. These mentors came in various forms from faculty members and attendings to residents, fellow medical students, and even patients. The advice, guidance, and opportunities that they provided me helped direct me and ultimately achieve my dream of becoming a dermatologist. Now, as a dermatology resident, I see other medical students trying to achieve the same goal and I see myself in many of them. I see their determination and perseverance, work ethic, and desire to make an impact in the field. Seeing the energy that they have makes me want to give back and help every single day.

You can find the value and power of mentorship in many forms. It’s not only those who provide career guidance or research and volunteering opportunities but may also be someone who is willing to listen to you. I believe that as residents we can also serve as mentors for future aspiring dermatologists. Sharing your passions in the field with others can help inspire them to make an impact in the field. Take time to teach medical students in dermatology clinics and answer their questions to help strengthen their knowledge base. Involving students in case reports and research projects can help them develop a specific interest in the field. Encouraging students to get involved with community service activities including volunteering in student-run free clinics, skin cancer screening events, and public education programs will help them become inspired. Even taking the time to chat after clinic and answering questions about applying can help students understand how to develop a strong application.

As a dermatology resident, I’ve had the chance to mentor in many ways and have had the opportunity to hear stories from many students. I created a platform called Future Dermatology Residents on Twitter (@futureofderm) which is a way for residents to post advice for medical students not only during the application season but also during each year of medical school. The platform has allowed students to ask questions and seek advice and guidance, which has been especially helpful for those who do not have a home program.

DIGA (Dermatology Interest Group Association) has been another valuable platform where I have been able to give podcasts on how to gain research opportunities during medical school. Additionally, through national organizations such as the AAD, the Skin of Color Society, and other medical student dermatology groups, I have had the chance to work with students on a one-on-one basis through committees. Through the National Medical Association Dermatology Section, I have been paired with medical students who I have mentored throughout their medical school career. Additionally, I have seen other dermatology residents who have gone on to create social media platforms such as the Latinx Dermatology (@latinxderm) which has created a sense of community in the field.

Through these experiences, I have gained joy in helping students achieve their dreams. When I see medical students who match into a dermatology residency, publish their first paper, volunteer in a dermatology clinic for the first time, or learn something new, I know that I’ve made an impact in some way. It gives me fulfillment knowing that I was able to help someone else. Giving back through mentorship is one of the greatest ways you can help change someone’s life. Just remember, even a small action can be powerful. DR
When this quarter’s issue of *Directions in Dermatology* arrived in your inbox, you may have felt a twinge of discomfort as you read the title of our cover story, “What residents need to know about genital skin exams.” The article dovetails with a new AAD course on the topic. For many of us, especially in the earlier stages of our training and career, the genital skin exam can be intimidating. Skin screenings are the bread and butter of dermatology, and one of the first skills we master as residents. Yet, many residents have less experience with genital exams. While some opt to perform a genital exam during every skin screen, others perform an exam only if their patient has a specific concern, and few may even defer the topic to other physicians entirely.

So, the question becomes: Why is there a variation in physician practices and how can we best take care of our patients?

To me, the answer is simple: The genital exam can be uncomfortable. While the level of discomfort may vary amongst patients and physicians, there are few who would deny that genital exams are sensitive. And while some physicians may feel more comfortable, patients often experience a genital exam as awkward or embarrassing.

What if, instead of avoiding or ignoring these feelings, we allow ourselves to sit in this awkwardness or unease. As physicians who have endured medical training, discomfort is a familiar feeling. Think back to your third year of medical school, and the stress of starting a new clinical rotation or before a shelf exam. As medical students and residents, we are constantly adapting as we rotate through clinical settings, work with new colleagues, and even encounter patients. Each day, we manage discomfort as we adapt to our ever-changing environment.

The process of embracing discomfort and learning to navigate difficult situations is a crucial part of our training, but also our personal and professional growth. Acknowledging and accepting discomfort allows us to overcome awkwardness and gives us the confidence to reassure our patients. With each new experience and encounter, we can grow to become comfortable with the feeling of being uncomfortable. And ultimately, we can create a safe and reassuring environment for our patients.

Keep in mind that we can respect our patients by carefully draping them, allowing them time to acclimate to the exam, and reassuring them when we encounter normal findings. We should also emphasize the importance of the exam on ensuring an accurate diagnosis and use our findings to create an effective treatment plan.

As you approach your next full body skin exam, consider your approach to the genital exam. Keep in mind that showing care and attention to detail, while creating a supportive environment, can empower your patient to voice sensitive concerns and may be the key to diagnosing and treating an impactful condition. DR