PHYSIATRIST'S VOICE

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Enhancing Health and Function Through Education and Research In The Field Of Physical Medicine And Rehabilitaion

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Diana A. Hussain, M.D.

Dear Colleagues,
As we enter the spring season, a time traditionally associated with renewal and forward momentum, I am pleased to reflect on the continued growth and evolution of our specialty and to highlight the importance of our upcoming Florida Society of PM&R Annual Meeting.

Physical Medicine and Rehabilitation stands at a pivotal moment. Advances in interventional techniques, regenerative medicine, neurorehabilitation, musculoskeletal care, and value-based delivery models are reshaping how we restore function and improve quality of life. At the same time, we face important challenges — workforce development, reimbursement pressures, legislative advocacy, and ensuring that physiatrists remain central to multidisciplinary care models across Florida.

Our upcoming annual meeting represents more than an educational event. It is a strategic gathering of leaders, innovators, and dedicated clinicians committed to advancing PM&R throughout our state. This year's program has been thoughtfully designed to provide rigorous scientific updates, practical clinical applications, and meaningful dialogue about the future direction of our specialty.

Equally important, this meeting serves as a platform for collaboration and mentorship. It is where academic and private practice physiatrists align, where experienced leaders guide emerging physicians, and where we collectively strengthen our voice in healthcare policy and advocacy. Our ability to influence the future of rehabilitation medicine in Florida depends on our unity, engagement, and shared vision.

As leaders in restoring function and improving lives, we must continue to elevate standards of care, embrace innovation responsibly, and advocate for policies that protect patient access to comprehensive rehabilitation services.

I encourage each member to attend, participate actively, and contribute to the ongoing advancement of PM&R in our state. Together, we are shaping the future of rehabilitation medicine in Florida.

I look forward to seeing you at the meeting and continuing this important work alongside you.

Warm regards,
Diana Hussain, M.D. FAAPMR,DABPM
President, FSPMR

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Review Article

Hereditary Multiple Exostoses: A Comprehensive Clinical Overview

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INTRODUCTION

Hereditary Multiple Exostoses (HME), also known as multiple osteochondromas or diaphyseal aclasis, is a rare autosomal dominant skeletal disorder characterized by the formation of multiple benign cartilage-capped bone tumors (osteochondromas) that grow outward from the metaphyses of long bones [1,2].

HME is classified as a rare disease, with an estimated prevalence of approximately 1 in 50,000 individuals in the general population, though this figure likely represents an underestimate due to variable penetrance and underdiagnosis of mildly affected individuals [3,4]. The condition demonstrates worldwide distribution with no significant ethnic or racial differences and has been documented across Europe, Asia, Africa and the Americas [5].

HME affects both sexes, with some reports suggesting a slight male predominance that may reflect ascertainment bias [2,6]. Diagnosis in both boys and girls typically occurs during childhood, as osteochondromas become clinically apparent through palpable masses, skeletal deformities, or incidental radiographic findings [7].

The majority of HME cases follow an autosomal dominant inheritance pattern, although some arise from de novo mutations [8]. The condition results from loss-of-function mutations in the *EXT1* and *EXT2* genes, coding for a complex that is crucial for the polymerization of heparan sulfate in the skeletal system [9,10]. This process allows for regulation of chondrocyte differentiation, ossification, and apoptosis [11]. Disordered expression of these genes leads to tumor formation in HME. Mutations in *EXT1* and *EXT2* together account for nearly all identified genetic cases of HME, with *EXT1* generally more frequent than *EXT2* [10]. A small percentage of patients with clinical HME do not have identifiable mutations in either gene [12]. Patients with *EXT1* mutations tend to have more severe phenotypes with greater numbers of exostoses and higher rates of complications compared to those with *EXT2* mutations [2].

Here we provide a summary of the clinical presentation of HME, as well as details on how it is diagnosed and managed.

HME has a variety of clinical manifestations, which affect quality of life

Clinical manifestations vary widely, from minimal symptoms to significant skeletal deformities and functional limitations [13]. The following symptoms represent the most significant contributors to decreased quality of life in HME patients:

Chronic pain: Chronic pain represents the most frequently reported symptom in HME [14,15]. Pain arises from multiple mechanisms including mechanical irritation of surrounding soft tissues, nerve compression, bursa formation over prominent exostoses and muscle strain from altered biomechanics [16]. The persistent nature of pain significantly impacts daily functioning, sleep quality, and psychological well-being. Pain intensity varies considerably among patients but often worsens with physical activity and skeletal growth spurts during childhood and adolescence [14].

Functional limitations and reduced range of motion: Skeletal deformities and strategically located osteochondromas frequently result in restricted joint mobility and functional impairment [17,18]. Common deformities include forearm abnormalities, such as radial head dislocation and ulnar shortening, ankle valgus deformity, and limb length discrepancies [19,20]. These

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limitations affect activities of daily living, participation in recreational activities, and occupational capacity. Studies using validated outcome measures demonstrate that HME patients score significantly lower than healthy controls on physical function subscales of quality-of-life assessments [15].

Skeletal deformities and short stature: Progressive skeletal deformities are common in HME patients and substantially impact both physical function and psychological well-being [2,21]. Asymmetric growth disturbances can produce limb length discrepancies, angular deformities and joint incongruity. Disproportionate short stature is common, with adult height often falling below expected genetic potential based on parental height [22]. The visible nature of skeletal deformities contributes significantly to body image concerns, social anxiety and reduced self-esteem, particularly during adolescence [23].

Nerve and vascular compression syndromes: Compression of adjacent neurovascular structures by expanding osteochondromas affects 11-30% of patients and can produce severe symptoms including paresthesias, weakness and vascular compromise [24,25]. Common compression syndromes include peroneal nerve palsy, ulnar nerve compression, and rarely, spinal cord compression when exostoses arise from vertebral elements [26]. Vascular complications, though less frequent, can include arterial stenosis, pseudoaneurysm formation and venous thrombosis [27]. These complications often require urgent surgical intervention and can result in permanent neurological deficits if not promptly addressed [28].

Psychological distress and reduced quality of life: The cumulative burden of chronic pain, functional limitations, visible deformities, and concerns about malignant transformation produces significant psychological impact, with studies documenting elevated rates of anxiety and depression in HME patients compared to healthy controls [23,29]. Quality-of-life assessments consistently demonstrate impairment across physical, emotional and social domains [15]. Children with HME report increased school absence, reduced participation in peer activities, and heightened parental concern [30]. The hereditary nature of the condition adds additional stress related to guilt about transmission and decisions regarding family planning [31].

There are several routes to an HME diagnosis

The diagnosis of HME integrates clinical evaluation, radiographic assessment, and genetic testing, with the diagnostic approach evolving as clinical suspicion increases and complications are evaluated [32].

Initial clinical evaluation: Diagnosis typically begins when patients present with palpable bony masses, skeletal deformities, growth disturbances, or pain during childhood [7]. A comprehensive clinical examination should assess for multiple osteochondromas, characterize their location and size, evaluate for skeletal deformities and limb length discrepancies and assess joint range of motion and neurovascular function [33]. A detailed three-generation family history is essential, as approximately 62% of cases demonstrate familial inheritance [8].

Radiographic imaging: Plain radiography remains the primary imaging modality for initial diagnosis and surveillance, effectively demonstrating the characteristic features of osteochondromas including bony stalks arising from metaphyses, continuity between lesion and underlying bone and in some cases, visible cartilage caps (though calcification may be required for radiographic visibility) [34,35]. An example of a radiograph image is provided in (Figure 1-4). Complete skeletal surveys are often performed at initial diagnosis to document the full extent of disease and establish a baseline for comparison [36].

Figure 1: Standing radiograph of bilateral lower legs. **Note:** There are large osteochondromas visualized on the proximal fibulas, proximal tibias, as well as the distal tibias and fibulas of both legs. There are guided growth plates at the left medial distal femur and medial proximal tibia. Additionally, at the ankles there is proximal migration of the fibula due to the tethering effects of the distal tibia-fibula osteochondromas resulting in ankle valgus.

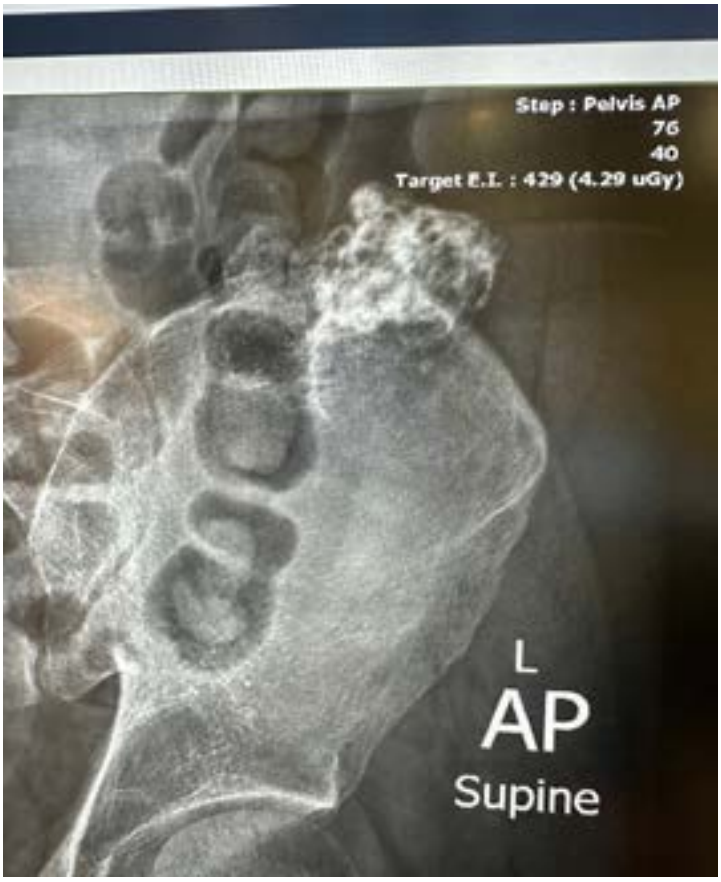

Figure 2: Radiograph of a large osteochondroma of the left iliac wing.

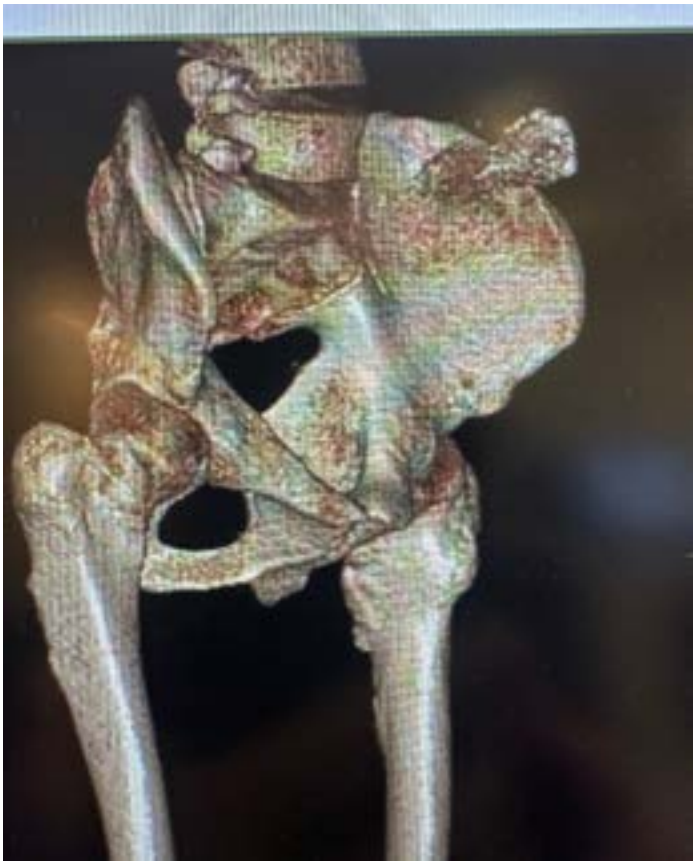

Figure 3: Oblique view from a pelvic Computed Tomography (CT) with 3D reconstruction of a left iliac wing osteochondroma.

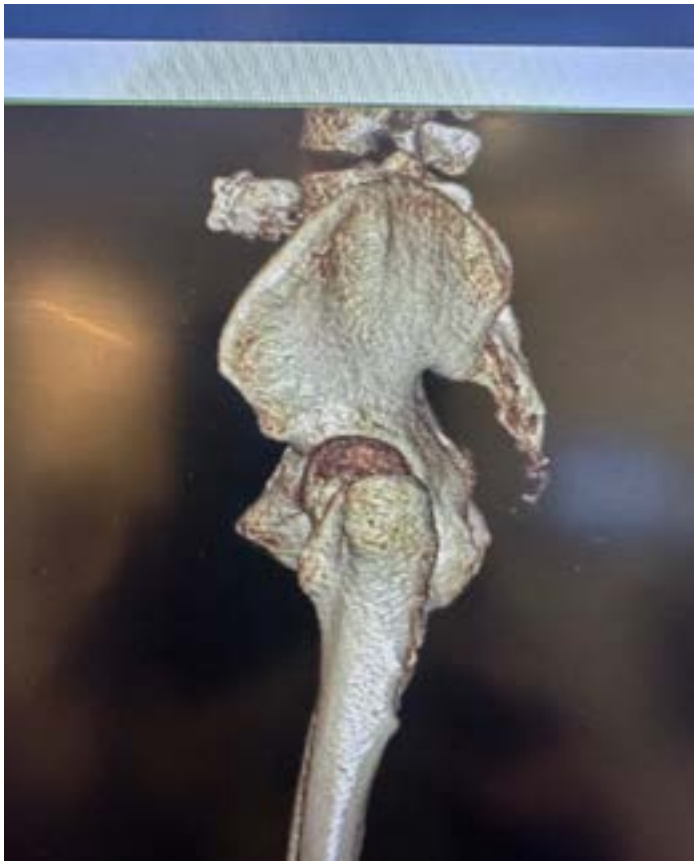

Figure 4: Sagittal view from a pelvic (Computed Tomography) CT with 3D reconstruction of a left iliac wing osteochondroma.

Figure 5: Tenting of the peroneal nerve over the top of a proximal fibula osteochondroma.

Figure 6: Proximal fibula osteochondroma has been exposed. **Note:** The nerve has been mobilized and now runs posterior to the osteochondroma.

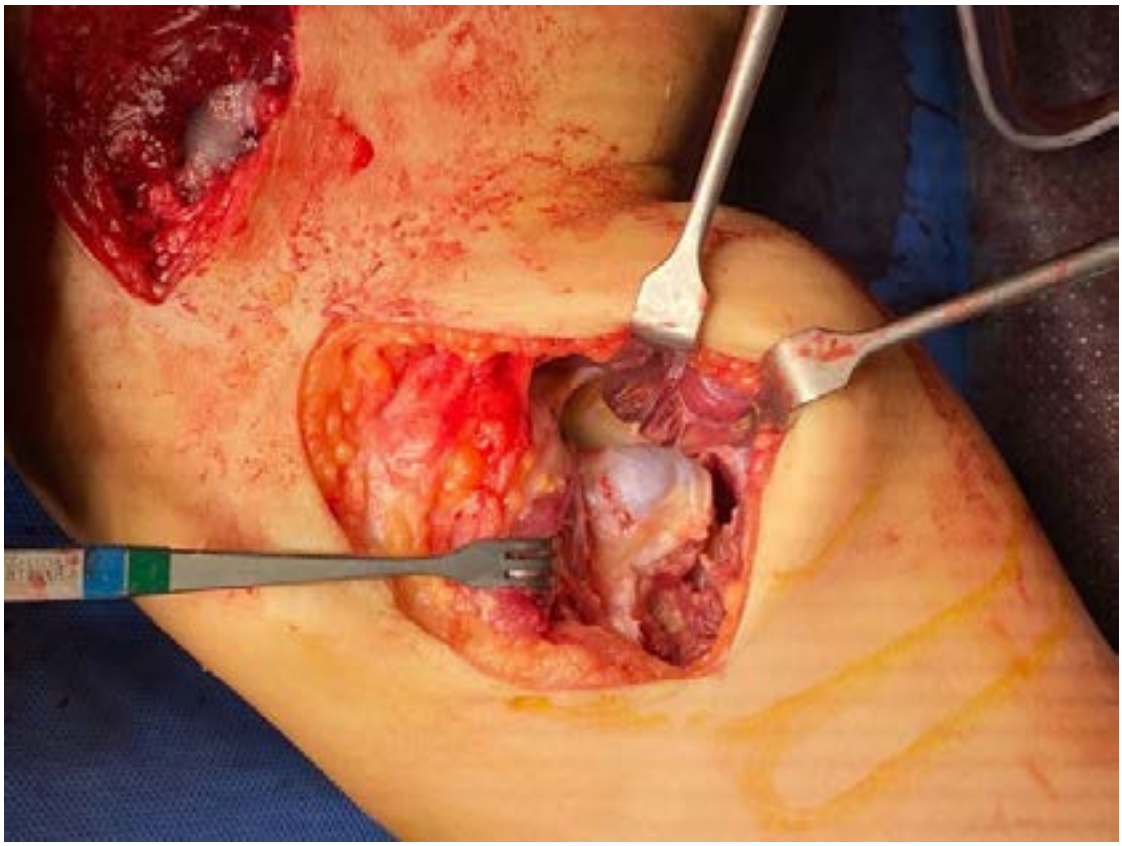

Figure 7: The peroneal nerve has been decompressed as it runs into the lateral and anterior compartments of the leg. The nerve continues to be displaced and compressed by the large osteochondroma on the fibular head.

Figure 8: Excised osteochondroma with shiny cartilage cap.

Advanced imaging with Magnetic Resonance Imaging (MRI) or Computed Tomography (CT) is reserved for specific clinical scenarios including evaluation of suspected malignant transformation (cartilage cap thickness >2 cm in adults suggests increased malignancy risk), assessment of spinal or pelvic lesions where plain radiography is limited, preoperative planning for complex lesions, and evaluation of neurovascular complications [37,38]. Whole-body MRI has emerged as a valuable tool for comprehensive disease assessment and surveillance, particularly in research settings [39]. An example of 3-Dimensional (3D) deconstruction is illustrated in (Figures 3,4).

Genetic testing: Molecular genetic testing for *EXT1* and *EXT2* mutations provides diagnostic confirmation and enables accurate genetic counseling [10]. Testing is particularly useful when clinical and radiographic findings are unclear, for confirming diagnosis in mildly affected individuals, and for family planning and counseling [40,41].

Current testing strategies typically employ next-generation sequencing panels that can detect both sequence variants and large deletions/duplications, achieving detection rates of approximately 85-95% in patients with clinical HME [11,42]. The inability to identify mutations in all clinically affected individuals suggests either genetic heterogeneity or limitations in current testing methodologies [12].

Differential diagnosis: Several conditions may mimic HME and require consideration, including metachondromatosis (distinguished by enchondromas in addition to exostoses), Langer-Giedion syndrome (characterized by additional features including intellectual disability and distinctive facial features) and solitary osteochondroma (single lesion without genetic basis) [43,44]. Clinical context, family history, and genetic testing help differentiate these entities [45]. Clinical evaluation and genetic testing usually allow confident distinction among these conditions.

HME management requires a multidisciplinary approach

The multidisciplinary approach for managing HME requires addressing the skeletal manifestations as well as the functional, psychological and genetic counseling needs of patients and families [46,47]. Currently, no disease-modifying pharmacological therapy exists for HME and treatment remains primarily supportive and surgical [48].

Conservative management: Conservative approaches form the foundation of HME management for asymptomatic or minimally symptomatic lesions. These strategies include regular clinical and radiographic surveillance to monitor disease progression and detect complications early, with regular clinical examinations during growth. Imaging is pursued as indicated by symptoms or changes, rather than by rigid protocol [49,50].

Physical therapy plays a crucial role in maintaining joint mobility, strengthening compensatory muscle groups, addressing biomechanical abnormalities and providing gait training [51]. Pain management utilizes multimodal approaches including Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), physical modalities (heat, ice, transcutaneous electrical nerve stimulation), and in select cases, referral to pain management specialists for chronic pain syndromes [52].

Orthotic devices may benefit certain patients through shoe lifts for limb length discrepancies, ankle-foot orthoses for ankle instability, and custom orthotics to address biomechanical abnormalities [53,54].

Surgical intervention: Surgical excision of osteochondromas is the definitive treatment for symptomatic lesions. Surgical

images are provided in (Figures 5-11). Clear indications for surgery include significant pain unresponsive to conservative management, functional limitation from joint restriction or deformity, neurovascular compression, suspected malignant transformation, rapid growth or change in lesion characteristics and significant psychological impact related to appearance [55].

Surgical procedures vary based on lesion location, size and associated complications. Simple excision of pedunculated or sessile osteochondromas is most common, while corrective osteotomies may be necessary for angular deformities and limb length discrepancies [19]. More complex reconstructive procedures address joint incongruity and severe deformities, with some patients requiring guided growth techniques in skeletally immature patients [56,57].

Figure 9: Exposure of osteochondroma left iliac wing.

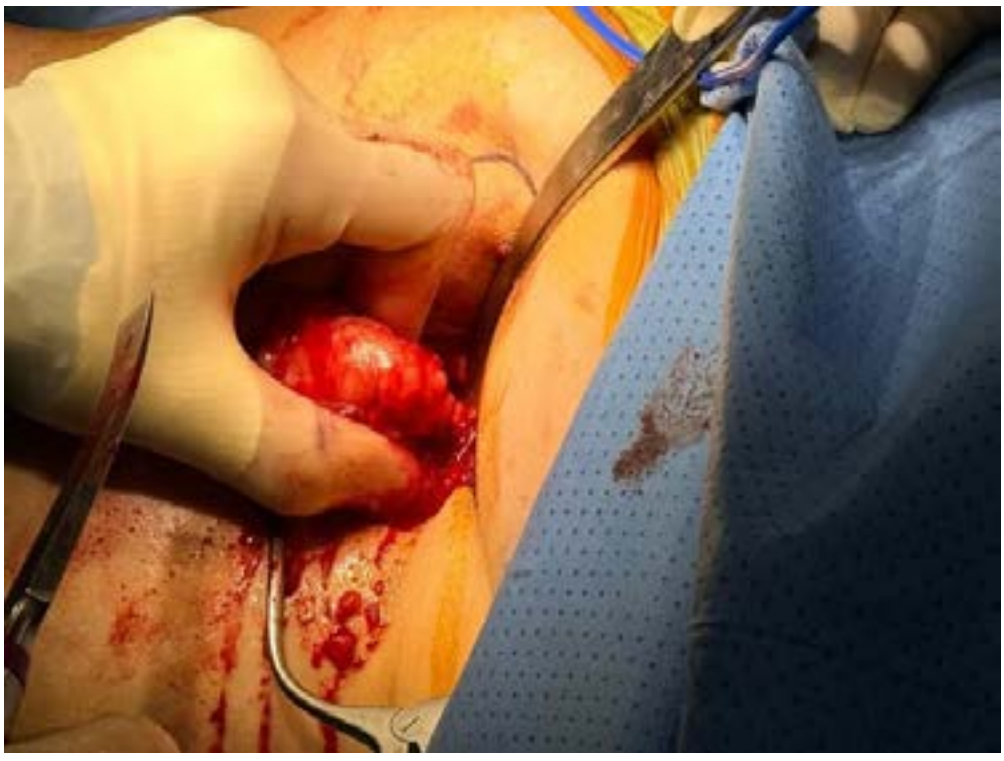

Figure 10: Surgical removal osteochondroma left iliac wing.

Figure 11: Osteochondroma of left iliac wing surgically removed.

Surgical outcomes are generally favorable for well-selected cases, with most patients experiencing symptomatic improvement [58]. However, recurrence can occur, particularly in young children with significant remaining growth potential, and multiple surgeries throughout childhood and adolescence are common [59]. Surgical complications include typical orthopedic surgical risks (infection, bleeding, neurovascular injury), incomplete resection leading to recurrence and iatrogenic growth plate injury in skeletally immature patients [60].

Management of malignant transformation: Malignant transformation is estimated to occur in 0.5 to 5 percent of HME patients [1,6,61]. The development of secondary peripheral chondrosarcoma represents a serious complication requiring prompt recognition and aggressive treatment [62,63]. Warning signs include pain in a previously asymptomatic lesion, rapid increase in lesion size after skeletal maturity, and cartilage cap thickness exceeding 2 cm on imaging in adults [37].

Management involves wide surgical excision with clear margins as the primary treatment, with adjuvant chemotherapy and radiation therapy considered based on tumor grade, stage and surgical margins [64]. Prognosis depends on early detection and complete surgical resection, with lower-grade tumors having favorable outcomes following adequate surgical treatment [65].

CONCLUSION

Hereditary multiple exostoses is a complex genetic disorder that significantly impacts patients physical function, psychological well-being, and quality of life. While genetic testing has clarified the molecular basis through identification of *EXT1* and *EXT2* mutations, no disease-modifying therapies currently exist and treatment remains primarily supportive and surgical. Successful management requires a multidisciplinary approach addressing orthopedic complications, chronic pain, functional limitations and psychological burden. Early diagnosis enables appropriate surveillance for complications, particularly malignant transformation, and facilitates genetic counseling for affected families. Coordinated care focusing on symptom management, timely surgical intervention and comprehensive psychosocial support remains essential for optimizing outcomes in individuals living with HME.

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Trevor's Disease

By Craig Lichtblau, M.D.

Introduction

Trevor's disease, also known as Dysplasia Epiphysealis Hemimelica, is a very rare benign childhood bone disorder. Trevor's disease causes abnormal cartilage growth usually in the epiphyses of long bones, most often in the ankle or knee affecting the medial (inner) side of the limb, leading to asymmetrical limb deformity, swelling, and limited motion.

Prevalence

Trevor's disease is congenital, typically diagnosed in young children before the age of 8 and is more often seen in boys than in girls. The cause of Trevor's disease is unknown, but it is thought to arise from early fetal limb bud development. Trevor's disease can be localized into one bone but is classically in multiple bones of one limb and can be generalized throughout the entire limb.

Symptoms

Symptoms of Trevor's disease include a painless mass, swelling, joint tenderness, restricted range of motion of the affected joints, and limb length discrepancy.

Diagnosis

Trevor's disease is diagnosed using imaging which includes x-rays, CT scans, and MRIs to visualize the cartilaginous mass.

Treatment

Treatment for Trevor's disease includes observation for asymptomatic cases with monitoring until growth plates close. Treatment for symptomatic cases in which the tumor is causing pain or dysfunction is focused on surgical removal of the benign tumor with careful surgical management to preserve joint function. There is a risk of growth and deformity continuing until puberty.

Evidence-Based Use of Supplements in Physically Active Patients: What Works, What Doesn't, and What to Avoid

Author: Sonia Andreou, MD
PGY-IV, Physical Medicine & Rehabilitation
Larkin Community Hospital South Miami

Patients frequently ask physicians about dietary supplements, particularly those related to muscle building, fat loss, energy, or recovery. The supplement industry is a multi-billion-dollar market characterized by aggressive marketing, variable product quality, and limited regulatory oversight. Most supplements are not subject to FDA pre-market approval, and many lack rigorous safety or efficacy data, particularly with regard to hepatic and renal metabolism.

While placebo effects may play a role in perceived benefit, only a limited subset of supplements demonstrate consistent, reproducible effects in controlled human studies. This article reviews supplements with the strongest supporting evidence, those with limited or situational utility, and products that remain largely unsupported or misleading.

Supplements With Strong Evidence of Benefit

Creatine Monohydrate

Creatine monohydrate remains the most extensively studied ergogenic aid. It enhances high-intensity performance by increasing phosphocreatine availability, thereby facilitating ATP regeneration during short bursts of anaerobic activity. Numerous trials demonstrate improvements in strength, power output, lean body mass, and recovery.

Beyond musculoskeletal benefits, emerging evidence supports a role for creatine in neuroprotection, cognitive performance, and recovery from neurological injury. Concerns regarding renal impairment or pathologic water retention are not supported by data in individuals with normal renal function. The observed increase in body weight reflects intracellular water retention within muscle tissue rather than extracellular edema.

Typical dosing: 3–5 g daily; optional loading phase of 20 g/day for 5–7 days. Timing relative to exercise appears flexible, though peri-workout ingestion may improve uptake.

Electrolytes

Sodium, potassium, and magnesium are essential for neuromuscular transmission and muscle contraction. Athletes with significant sweat losses are at increased risk for electrolyte imbalance, cramping, and performance decline. Sodium replacement is particularly important during prolonged or high-intensity training.

Suggested intake: Approximately 300–700 mg sodium per hour during heavy sweating.

Beta-Alanine

Beta-alanine increases intramuscular carnosine, buffering hydrogen ions and delaying fatigue during high-intensity or high-volume exercise. Its primary benefit is improved exercise tolerance rather than maximal strength. Transient paresthesias are a common but benign side effect.

Dose: 2–4.8 g daily, divided to improve tolerability.

L-Citrulline (Citrulline Malate)

Citrulline enhances nitric oxide production and improves blood flow, endurance, and resistance training volume. Compared with arginine, citrulline demonstrates superior bioavailability.

Dose: 6–8 g approximately 30–60 minutes pre-exercise.

Omega-3 Fatty Acids (EPA/DHA)

Omega-3 fatty acids exert anti-inflammatory effects and support joint, cardiovascular, and neuromuscular health. Evidence suggests reduced delayed onset muscle soreness and improved recovery with consistent use.

Dose: 1–3 g combined EPA/DHA daily, preferably in re-esterified triglyceride form.

Vitamin D

Vitamin D functions as a steroid hormone influencing bone density, muscle performance, immune modulation, and mood. Deficiency is common, particularly in individuals with limited sun exposure. Adequate levels are associated with improved strength and reduced injury risk.

Dose: 1,000–2,000 IU daily for maintenance; higher dosing for deficiency under laboratory guidance.

Magnesium

Magnesium plays a critical role in neuromuscular signaling, sleep quality, and recovery. Deficiency may manifest as muscle cramps, fatigue, or impaired recovery. Magnesium glycinate is well absorbed and better tolerated gastrointestinally.

Dose: 200–400 mg elemental magnesium daily, often taken in the evening.

Caffeine

Caffeine improves perceived exertion, strength, endurance, and cognitive alertness. However, as a vasoconstrictor, excessive doses may impair blood flow and exacerbate anxiety or sleep disturbance.

Dose: 100–200 mg pre-exercise; periodic cycling is recommended to limit tolerance.

Supplements With Conditional or Situational Utility

Glutamine

Glutamine may support immune and gastrointestinal integrity during periods of intense training or caloric restriction. Evidence for direct hypertrophic benefit is limited.

Dose: 5–10 g daily, divided.

L-Carnitine

Carnitine facilitates fatty acid transport into mitochondria and may improve recovery and endurance, particularly when taken with carbohydrates. Acetyl-L-carnitine has additional cognitive benefits.

Dose: 1–2 g daily.

Essential Amino Acids (EAAs)

EAAs may reduce muscle protein breakdown during fasted or prolonged training sessions. Benefits are minimal in individuals meeting daily protein requirements.

Dose: 6–12 g peri-exercise.

Collagen (Hydrolyzed Peptides)

Hydrolyzed collagen, particularly when combined with vitamin C, has demonstrated benefits for tendon, ligament, and connective tissue health. It should not be considered a substitute for complete protein in hypertrophy goals.

Dose: 10–15 g collagen with 50–100 mg vitamin C approximately 1 hour prior to loading activity.

Metabolic and Neurocognitive Support Supplements

- **Inositol:** Improves insulin sensitivity and metabolic regulation (2–4 g/day).
- **Alpha-Lipoic Acid:** Enhances glucose utilization and has neuroprotective effects (300–600 mg/day).
- **Chromium Picolinate:** Modest improvements in insulin sensitivity in select populations (200–400 mcg/day).
- **Citicoline (CDP-Choline):** Supports cognitive performance and attention (250–500 mg/day).
- **Ashwagandha:** Adaptogenic effects with modest cortisol reduction and recovery support (600 mg/day standardized extract).

Supplements With Limited Evidence or Overstated Claims

- **BCAAs:** Redundant with adequate protein intake.
- **Testosterone or Growth Hormone "Boosters":** Ineffective in eugonadal individuals.
- **Tribulus terrestris, D-Aspartic acid:** Minimal and inconsistent effects.
- **Garcinia cambogia:** No meaningful evidence for fat loss.

Protein Supplements: Practical Considerations

Protein supplementation serves as a convenience tool rather than a requirement. Total daily protein intake remains the primary determinant of muscle protein synthesis.

Recommended intake: 1.6–2.2 g/kg/day.

- **Whey isolate:** Rapid absorption, high leucine content.
- **Casein:** Slower digestion, useful overnight.
- **Plant-based blends:** Effective when amino acid profiles are complementary (e.g., pea + rice).
- **Soy protein:** Appropriate for many individuals, though hormonal sensitivity should be considered on a case-by-case basis.

Multivitamins: Necessary or Not?

Population studies indicate common micronutrient deficiencies, particularly in calcium, magnesium, and vitamins D and K. However, indiscriminate multivitamin use is not a substitute for a balanced diet. Targeted supplementation guided by dietary history and laboratory assessment is preferred.

Final Perspective

Supplements should complement—not replace—foundational health behaviors such as adequate nutrition, structured training, sleep, and recovery. They are performance enhancers, not corrective agents for poor habits. When used judiciously and guided by evidence, supplements can provide incremental benefits, particularly for physically active or rehabilitating patients. The role of the clinician is to help patients distinguish between data-driven tools and marketing-driven distractions.

The Foundation: Basic Daily Stack

Supplement	Purpose / Benefit	Typical Dose	Best Timing	Notes
Creatine Monohydrate	Strength, power, cognition, muscle growth	3–5 g/day (optional loading 20 g × 5–7 days)	Anytime (post-meal or post-workout ideal)	Safe long-term; intracellular water = full muscles, not "bloat."
Glutamine	Gut health, immune support,	5–10 g/day	Split AM & post-workout	Best during heavy prep or

Supplement	Purpose / Benefit	Typical Dose	Best Timing	Notes
	possible fat loss aid			calorie restriction.
Protein Powder (Whey/Vegan)	Muscle repair, recovery, daily protein target	20–40 g/serving	Post-workout or as meal supplement	Prioritize total daily intake (1.6–2.2 g/kg).
Ashwagandha	Stress reduction, testosterone support, recovery	600 mg/day (300 mg × 2)	With food (AM or PM)	Use standardized root extract (KSM-66 or Sensoril).
L-Carnitine (L-tartrate)	Fat transport, endurance, recovery	1–2 g/day	With carb-containing meal	ALCAR variant supports cognition.
EAAs	Muscle preservation & protein synthesis	6–12 g	Pre- or intra-workout	Ideal for fasted or long workouts.
Collagen (Marine or Bovine)	Joint, tendon, and skin health	10–15 g + 50–100 mg Vitamin C	45–60 min pre-training or daily	Vitamin C enhances collagen cross-linking.
Caffeine	Focus, endurance, alertness	3–6 mg/kg (~200–400 mg)	30–60 min pre-workout	Avoid late-day; can reduce vasodilation.
Pump / NO Supplements (Citrulline, Beetroot)	Vasodilation, endurance, recovery	6–8 g citrulline malate or 300–500 mg nitrates	30–60 min (citrulline) or 2–3 hr (beet) pre-workout	Avoid pairing high caffeine doses with NO boosters.
Electrolytes	Hydration, nerve & muscle function	300–700 mg sodium/hr sweating	Pre- & intra-workout	Salt or electrolyte mix both fine.

Supplement	Purpose / Benefit	Typical Dose	Best Timing	Notes
Intra-Workout Carbs (Dextrose/Karbolyn)	Glycogen support, endurance, recovery	30–60 g/hr (endurance) or 20–40 g (hypertrophy)	Intra- or immediately post-workout	Great for doubles, long sessions, or bulking.
Vitamin D	Bone, muscle, hormone, and brain health	1,000–2,000 IU/day (up to 4,000 for low levels)	Morning with fatty meal	Monitor serum 25-OH D levels.
Vitamin C	Antioxidant, immune support, collagen synthesis	200–500 mg/day (up to 1,000 mg PRN)	With meals	Avoid megadoses during training blocks.
Inositol	Insulin sensitivity, metabolic support	2–4 g/day	Split AM/PM	Works gradually over weeks.
Alpha-Lipoic Acid	Glucose metabolism, antioxidant	300–600 mg/day	With meals	Don’t exceed; use reputable brands.
Chromium Picolinate	Insulin sensitivity, carb tolerance	200–400 µg/day	With food	Most effective in insulin-resistant users.
CDP-Choline (Citicoline)	Focus, mental energy, cognition	250–500 mg/day	Morning	Pair with omega-3s for synergy.

Supplement	Purpose / Benefit	Typical Dose	Best Timing	Notes
Digestive Enzymes	Nutrient absorption, GI comfort	1–2 caps with large meals	With meals	Great for high-calorie or high-protein phases.
Omega-3s (EPA/DHA)	Inflammation control, joint & heart health	1–3 g combined EPA+DHA/day	With meals	Consistency > timing.
Pumpkin Seed Oil	Prostate, hair, and anti-inflammatory support	1–2 g/day	With meals	Nutritional oil, not a performance booster.
Magnesium (Glycinate)	Sleep, muscle relaxation, recovery	200–400 mg elemental/day	Evening	Deficiency common in athletes.

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Residency Updates

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- Univ. Florida

University of Miami Miller School of Medicine/Jackson Memorial Hospital
PM&R Residency Update
Lance Reccoppa MD Resident Liaison
Diana Molinares MD, PM&R Residency Program Director


Lance Reccoppa MD

Dear FSPM&R,
We hope everyone is having a great start to the new year! We ended 2024 with several residency-wide events to celebrate the holidays. Our department held its annual gingerbread house-making contest, which became quite competitive! Each resident teamed up with two others, and our attending physicians helped vote for the best houses. Additionally, we enjoyed our annual Secret Santa gift exchange, where everyone had fun guessing the identities of their gift-givers. We ended our holiday celebrations with a department-wide holiday party that was masquerade-themed!

So far, 2025 has been exciting for our PM&R program, and we would like to share some updates. The past few months have been busy for our fellowship applicants. We are thrilled to announce that three of our PGY-4 residents have matched into their respective fellowships. Dr. Sara Kurtevski matched at Sloan Kettering for Cancer Rehabilitation, Dr. Sandra De Mel matched at Johns Hopkins University, and Dr. Michael Morgan matched at Orlando Health BayCare in St. Petersburg for a Sports Medicine fellowship! We could not be prouder of our colleagues and look forward to seeing the impact they will make in their fields.

In January, Miami hosted its annual Wodapalooza Fitness Festival. Many of our residents graciously volunteered to provide medical coverage at the event throughout the weekend. We also welcomed our new co-chief residents for 2025-2026, Dr. Matty Alderman and myself! We are grateful for the opportunity to lead the residency program and appreciate the efforts of our 2024-2025 chief residents, Dr. Sara Kurtevski and Dr. Kaitlyn Brunworth, for the outstanding example they set.

In February, our residency program organized its annual Wellness Day. It was a well-rounded day that included lectures on wellness and financial assistance, along with activities such as laser tag on the beach, volleyball, and spikeball! We look forward to seeing some of our FSPMR colleagues at the Annual AAP Meeting in Phoenix, AZ, in February!

All the best,
Lance Reccoppa, MD, PGY-3
FSPMR Liason for University of Miami/Jackson Health System PMR Program

Our department holdiay party! From left to right: Coretha Davis (Program Coordinator), Dr. Sara Kurtevski, Dr. Diana Molinares (Program Director), Dr. Daniel Wang, Dr. Robin Mata, Dr. Michael Morgan, Dr. Felicia Mix, Dr. Reid McCullough, Dr. Vittoria Costantino, Dr. Sandra De Mel, Dr. Kaityln Brunworth, Dr. Dylan Wood, and Dr. Joslyn Gober (Pediatric Rehab Attending)

Congrats to Dr. Sara Kurtevski who matched into Cancer Rehab fellowship!

Congrats to Dr. Sandra De Mel who matched into Sports Medicine Fellowship!

Congrats to Dr. Michael Morgan who matched into Sports Medicine Fellowship!

Our residents, fellows and attendings covering the annual Wodapalooza Fitness Festival in Miami! From left to right: Dr. Zeeshan Haque (Fellow), Dr. Alwin David, Dr. Tricia Prince (Attending), Dr. Sandra De Mel, Dr. Felicia Mix

Congrats to our new chief residents!

2024-2025 Annual Wellness Day at Crandon Beach on Key Biscayne!

Broward Health PM&R Residency Update
Arian Khoshgowari DO , Resident Liaison
Meilani Mapa MD Residency Program Director
APD - Minh Quan Le

Greetings FSPM&R,

It's been a very exciting time here at Broward Health's PM&R program and we're so excited to share our updates with you all. Firstly, we are proud to announce our newly elected Chief Residents for the upcoming academic year, Dr's Khoshgowari and Myers. Please join us in congratulating them on this well-deserved achievement. Their leadership, dedication to resident education, and commitment to advancing our program continue to set a high standard. We are confident they will lead our department with vision, collaboration, and enthusiasm.

Pictured form Left to Right are Dr's Myers and Khoshgowari (PGY3)

This month, our department had the pleasure of hosting a dynamic Spasticity Workshop led by our very own Dr. Cassandra List, alongside representatives from AbbVie. The session provided hands-on experience with botulinum toxin reconstitution and injection techniques using both EMG and Ultrasound along with practical pearls on patient selection, dosing strategies, and optimizing functional outcomes. Workshops like these are invaluable in bridging textbook knowledge with procedural confidence, especially as our residents continue to refine their expertise in tone management and neurorehabilitation.

A sincere thank you to Dr. List and the AbbVie team for investing in our education, we always learn so much when you are with us.

Broward Health

Pictured from Left to Right: Dr's Yusupov and Harper (PGY3) going over forearm anatomy during our spasticity workshop.

Pictured from Left to Right: Dr's Harper (PGY3) and Le (APD) reviewing real world ultrasound application in the setting of flexor synergy spasticity

At Broward PM&R, we believe in working hard and celebrating harder! This month, we had two special birthdays in our PGY-3 class: Dr.'s Myers and Harper. Thank you both for bringing leadership, humor, and positivity to our residency family. We hope your year ahead is filled with continued success, growth, and happiness.

Pictured from Left to Right (Top Row): Dr's JC Leach (PGY2), Beshara (PGY2), Khoshgowari (PGY3), Myers (PGY3), Le (APD), Harper (PGY3), Yusupov (PGY3). Bottom Row: Dr's Myers (PGY3), Risi (PGY2), Younesian (PGY2), and Carol Siu (PC)

Dr. Harper blowing out his birthday candles and wishing for more sardines

Finally, our Annual Choosing Wisely Competition is right around the corner, and the excitement is building! Residents have been hard at work developing innovative Quality Improvement projects aimed at enhancing patient care within our rehabilitation unit. The Choosing Wisely initiative continues to challenge us to think critically about value-based care, resource utilization, and evidence-based practice. We look forward to seeing the creativity, data-driven insights, and practical solutions our residents will present and how these initiatives will help strengthen and elevate our rehab services at Broward Health. Please stay tuned for more!

Thank you to our faculty, residents, and staff for continuing to foster a culture of excellence, innovation, and camaraderie within FSPMR. Here's to another great month of learning, leadership, and rehabilitation excellence!

PM&R Residency Program Update

Dr. Dev Patel MD (PGY-2) Resident Liaison
Dr. Jeremy Jacobs DO, Residency Program Director
Dr. Joanne Marie Delgado-Lebron MD, Associate Program Director

Hello FSPM&R family!

As we move into March, we're excited to share some recent highlights that showcase the energy, camaraderie, and continued growth of our residency program. From wellness initiatives and athletic accomplishments to hands-on education and national conference excitement, it's been a busy and rewarding month for our Memorial team!

Following the completion of the SAE examination, residents had the chance to decompress and recharge with a post-SAE pickleball outing. It was an afternoon filled with friendly competition, laughs, and well-earned stress relief.

We're proud to highlight the dedication and perseverance of our associate program director and Spinal Cord Injury expert Dr. Delgado-Lebron, one of our residents Dr. Bilbao (PGY-4), and one of our physical therapists Marta Chaljub, who successfully completed a half marathon in January. Their accomplishment is a testament to discipline, resilience, and the importance of prioritizing personal health—values we strive to embody as physiatrists. Huge congratulations to the team for this impressive feat!

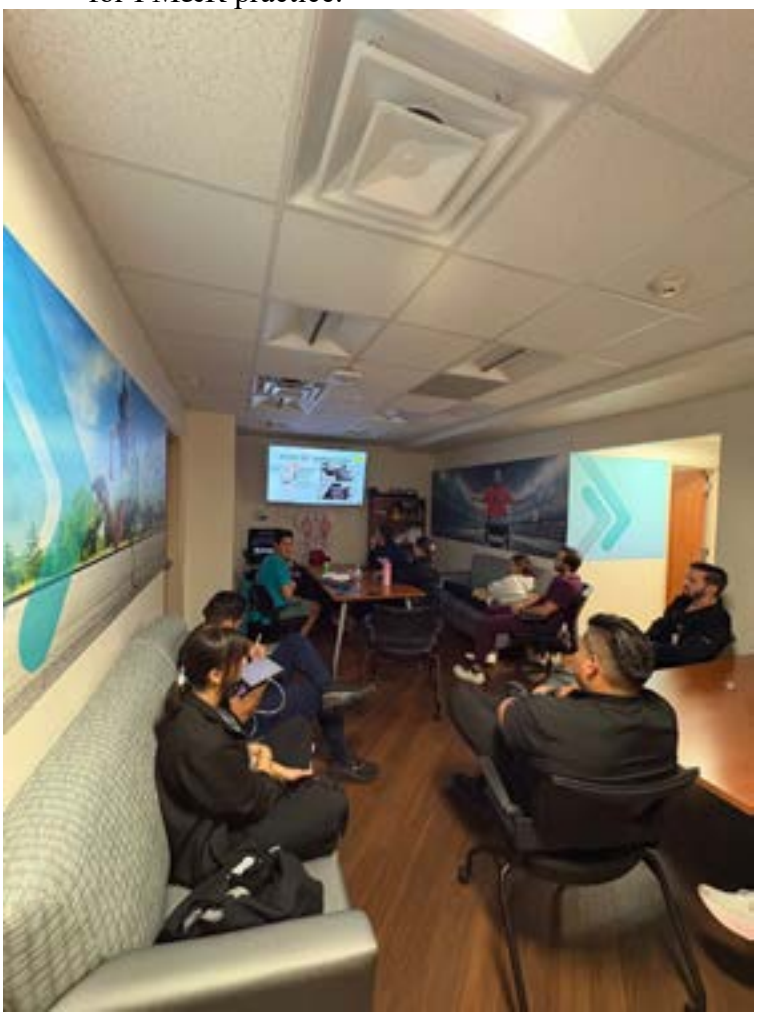
Live action photos of our talented APD and Spinal Cord Injury specialist Dr. Delgado-Lebron running the half-marathon

Memorial Healthcare System

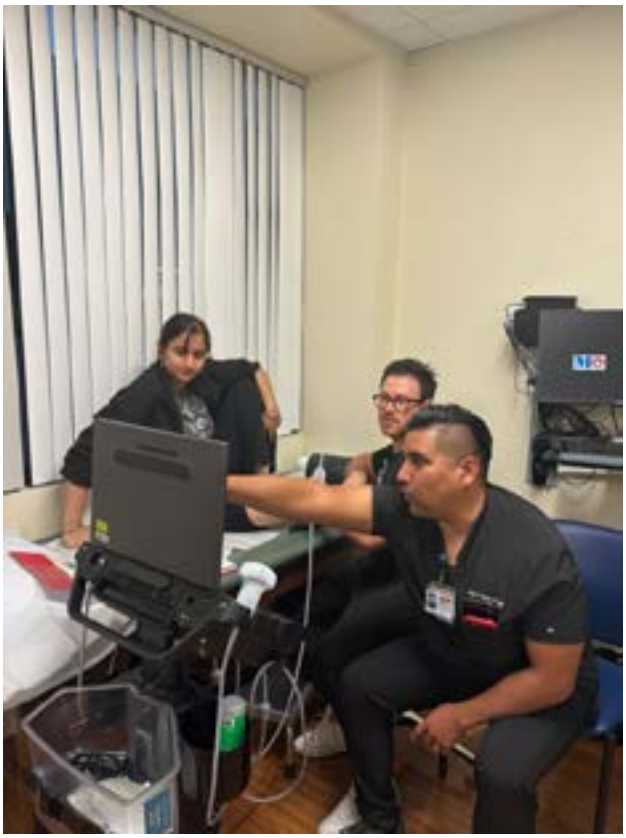
On the right is our awesome PGY-4 Dr. Bilbao

On the left is one of our wonderful Physical Therapists, Marta, with Dr. Delgado on the right

Our ultrasound curriculum continues to expand under expert guidance, with recent sessions focusing on diagnostic ultrasonography of the knee. Under the guidance of our musculoskeletal specialist Dr. David Valdes and our Sports Medicine attending Dr. Giorgio Negron, residents reviewed key anatomical landmarks, scanning techniques, and common pathologies, followed by hands-on practice with live ultrasound. These sessions reinforce the clinical utility of musculoskeletal ultrasound and further equip residents with practical diagnostic skills essential for PM&R practice.



Dr. David Valdes leading our ultrasound lecture series for the knee



Dr. Negron demonstrating key anatomical landmarks

Congratulations to Dr. Tahreem Hashmi our PGY-3 and our APD Dr. Delgado-Lebron for their recent publication with resident physical therapist Christina Thomas titled “Interprofessional Collaboration in Inpatient Rehabilitation for Patient with Thiamine Deficiency-Related Sensorimotor and Cognitive Deficits - Case Report” which was published in the ULM Journal of Interprofessional Practice and Collaboration.

Journal of Interprofessional Practice and Collaboration

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Article 7

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Interprofessional Collaboration in Inpatient Rehabilitation for Patient with Thiamine Deficiency-Related Sensorimotor and Cognitive Deficits – Case Report

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In true Memorial spirit and Holiday tradition, check out these fun photos of us celebrating Secret Santa!

Memorial Healthcare System

Finally, we were incredibly excited to see both new and familiar faces at AAP in Puerto Rico. Our program had a great time reconnecting with colleagues, sharing scholarly work, and representing FSPM&R on a national stage.

And that's a wrap to our program's updates for this quarter! More updates to come in the following months. If you want to stay more up-to-date with our residency program's activities, follow our Instagram page @mhs_pmr_residency. As always, we wish that everyone has a great Spring season, and we look forward to hearing your updates and any exciting news!

Larkin Community South Miami PM&R Residency Program
Aagna Patel DO, Resident Liaison
Jose J. Diaz, DO Program Director


Aagna Patel DO

Hello FSPMR Family,

It is a privilege to introduce myself as the new Resident Liaison for FSPMR. I am currently a PGY-2 PM&R resident at Larkin Community Hospital – South Miami Campus, where I have the opportunity to train within a diverse patient population and a dynamic rehabilitation environment. I look forward to representing our program, highlighting the work being done across Florida, and strengthening collaboration among residents and faculty through FSPMR.

My name is Aagna Patel, and I am originally from Queens, New York. I earned my medical degree from Lake Erie College of Osteopathic Medicine in Erie, Pennsylvania followed by a Transitional Year at HCA Florida Blake Hospital in Bradenton, Florida. Training across different regions has shaped my adaptability and deepened my appreciation for the diverse communities we serve.

My passion within physiatry lies in Interventional Pain Medicine, with a focus on compassionate, function-restoring care. I am particularly committed to advancing equitable access to pain management and strengthening representation for women of color in medicine. I am drawn to the specialty's biopsychosocial framework and its emphasis on restoring independence, dignity, and quality of life.

Outside of medicine, I enjoy decompressing with music, getting lost in a good book, or watching a Bollywood film. I also love exploring new coffee shops, gardening, and taking on DIY projects, creative outlets that balance the intensity of residency training.

I am excited to serve in this liaison role and look forward to amplifying resident perspectives, fostering statewide engagement, and contributing to the continued growth of physiatry in Florida.

University of Florida PM&R Residency Program
Amber Rampersaud DO, Resident Liaison
Irene Estores MD, Program Director
Cole McCarty, MD, Assistant Program Director

Greetings from sunny Gainesville aka “the swamp”!

My name is Amber Rampersaud, and I am currently a PGY-2 at the University of Florida. I am excited for the opportunity to transition into the role as our new FSPMR Liaison. Even though the year has just begun, we have had many events and updates we would like to share.

First, we would like to congratulate our new Chief Residents, Dr. Abenezer Amare and Dr. Eleazar Fariscal. They have already demonstrated strong leadership skills and with their determination, intelligence, and charisma, they embody the spirit of our program. We are excited to see how they will continue to further the residency.
We would also like to take a moment to thank our previous chiefs, Dr. Danny Kiehl and Dr. Joe Rinaldi for the phenomenal work they have done this year.

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It's a Match!

Congratulations to our Administrative Chief - Dr. Danny Kiehl for matching at Orlando Health Bayfront – St. Petersburg, FL in Sports Medicine! We are so proud of your accomplishments and wish you all the best in your future endeavors!

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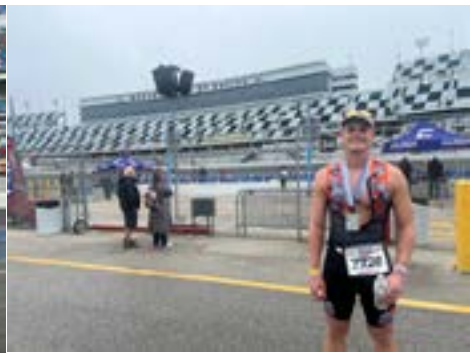
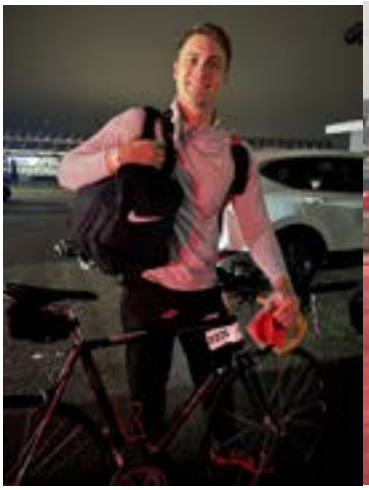
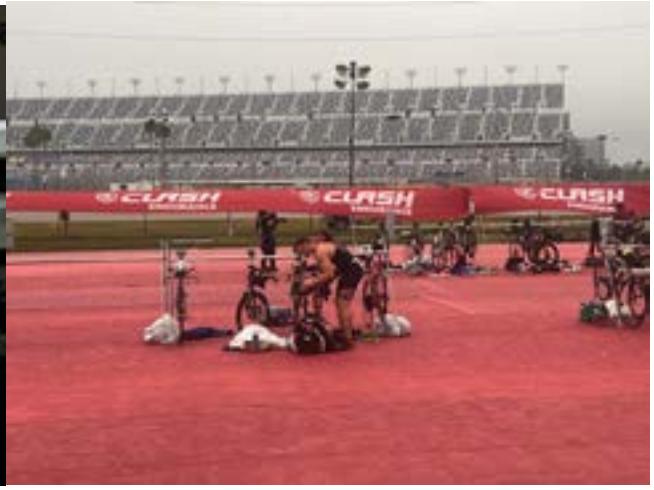
Holiday Celebrations!

We had a wonderful time at the annual holiday party! We enjoyed delicious foods and drinks while spending time with fellow residents and faculty. Both PGY-2's Alyssa Axelrod and Ravi Ibrado tied first place for the ugly sweater contest. We are especially thankful to our Wellness Committee leader, Dr. Sibille and the department for planning and hosting our annual holiday party!

Resident on the Run

Our very own PGY-3 Cole Verble, (former American Ninja Warror competitor) completed the Clash Endurance Triathlon at Daytona Speedway! We are so proud of you!

Meeting the Next Generation

At the 2025 University of Florida Career Fair in collaboration with the College of Medicine Dr. Yevgeny Zadov and PGY-2 Amber Rampersaud represented our program. They engaged with prospective medical students, discussing the field of Physical Medicine and Rehabilitation and addressing questions about training and career pathways.

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One Big Family

Whether it's hanging out at Dragonfly to enjoy freshly made sushi, meeting up at Las Carretas for delicious Mexican food while we learn about fellowship opportunities, or getting together to watch Sunday night football, our residents enjoy spending time together like a big happy family.

@uf_pmr

@UF_PMR

Follow us on Instagram @uf_pmr for more updates and content!
https://www.instagram.com/uf_pmr/

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PM & R Pioneers
Craig H Lichtblau MD

We help our early career physiatrists by providing mentors for them. We call our mentors PM&R Pioneers. These mentors are for both practice management and clinical issues. They are listed below and early career members can contact them.

What makes a PM&R Pioneer? They have a minimum of 20 years of experience and want to share their knowledge, training and experience with new FSPMR members.

If you wish to serve in this capacity and you are not yet on the PM&R Pioneers list, please submit your name to Tania Jones, FSPMR Executive Director, tjones@meyerresources.com . Thank you for your consideration and if you'd like to discuss it further with me before deciding, please contact me at C.Lichtblau@chlmd.com.

Craig Lichtblau MD
Past President Director, FSPMR

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Adobe PDF (.pdf), or Photoshop (.psd).
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Deadline for our next issue, is May 15th 2026

for our June 2026 Newsletter

Guidelines for your articles are available on the website: FSPMR.org/newsletters
Here a few for your convenience;
Pictures: should be in .jpg or .gif format.
All files must have minimum resolution of 72 dpi. (max. 300) with a image size no larger than:
1500 px x 900 px

Documents should be submitted in electronic format (.docx).
PDF's are not be accepted

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All articles will be approved by Newsletter editors.
FSPMR will retain full editorial rights to any submissions.

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