KID STUFF:
Pediatric clinical news update

In this special section, LER updates you on the latest research and clinical news to help optimize management of your littlest lower extremity patients. Topics include pediatric flexible flatfoot, cerebral palsy, ACL injury, clubfoot, Charcot-Marie-Tooth disease, gait patterns in autism, and footwear for early walkers.

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New papers revisit, rekindle flexible flatfoot controversy

“Other considerations” spark debate

By Cary Groner

Two recent literature reviews have reignited the debate over treatment options for pediatric flexible flatfoot.

In January 2010, when LER first covered the controversy, Australian podiatrist and researcher Angela Evans, PhD, had recently published a paper in the *Journal of the American Podiatric Medical Association* suggesting that children whose feet were flatter than expected, but asymptomatic, should be monitored rather than automatically treated with orthoses. This provoked the ire of some American pediatric foot specialists, who thought the approach downplayed important pathologies. Not everyone agreed, however; for example, Edwin Harris, DPM, the lead author of guidelines from the American College of Foot and Ankle Surgeons, concurred with the basic premise of Evans’s approach, and said it provided a practical direction for further investigation.

More recently, Evans and a colleague, Keith Rome, DPM, professor of podiatry at Auckland University of Technology in New Zealand, published two literature reviews revisiting the topic—and rekindling the debate. In the first, comprising three trials involving 305 children, they concluded that the evidence was too limited to draw definitive conclusions about use of nonsurgical interventions for pediatric pes planus. The more recent review broadened the inclusion criteria for studies, reviewing 15 and proposing an algorithm for managing flexible flat feet.

Part of the goal, Evans told LER, was to further develop the “yellow zone” in the original JAPMA paper—the asymptomatic children who, as mentioned, should simply be monitored.

“That seems to have been interpreted in an absolute sense of monitoring only,” she said. “But monitoring is a dynamic process: within that yellow zone, if a clinician sees a foot that’s not painful, but that also isn’t functioning well, that should direct some form of treatment. That may mean changing their shoes or using an inexpensive foot orthotic. Our criticism has been of the excessive use of expensive customized orthoses. But it also came out of the review that in children with arthritis and foot pain, customized orthoses are indicated because they improve both pain and function.”

Alan Ng, DPM, who practices with Advanced Orthopedics and Sports Medicine Specialists in Denver and is on the board of directors for the American Board of Podiatric Surgery, concurs with the monitoring approach in asymptomatic children.

“I think a lot of pediatric flatfoot can be treated conservatively, as long as there’s no coalition,” he said. “The initial evaluation should include weight-bearing, x-rays, gait analysis, resting calcaneal stance position, and mobility. Most of the time, initial treatment is physical therapy, muscle strengthening, functional orthotics, or good, supportive shoes, and eighty or ninety percent of the time they do fine. But if a kid is asymptomatic and can do full activity with no issues, I don’t touch them; putting them into an orthotic just because they have flat feet is inappropriate.”

Russell Volpe, DPM, who teaches at the New York College of Podiatric Medicine, said that the evaluation and treatment parameters in Evans and Rome’s most recent paper don’t go far enough.

“It’s an exemplary review and analysis of what’s been published, but it doesn’t cover the complicated topic of what makes asymptomatic flat feet a potential issue,” he said.

What Evans and Rome refer to passingly in the paper as “other considerations” are, to Volpe, a big issue and a significant part of his practice. They include superstructural and pedal influences on all three body planes.

“They miss the point about the huge role of lower extremity residual torsions, equinus, genu or tibial varum, calcaneal varus, and the like,” he said. “There’s a lot that goes into identifying the foot that is at risk to become dysfunctional and symptomatic over time, and the big tool for evaluating it is the biomechanical integrity of that lower extremity. In their paper I see one sentence about it in twenty pages. That’s the problem.”

Such influences, Volpe said, are better corrected with custom orthoses, and he took particular umbrage at the paper’s suggestion that custom approaches “desist.”

“I will not desist; in fact I will insist!” he said. “For the cohort with biomechanical comorbidities, I need to incorporate postings and modifications that allow me to manage both the primary structural comorbidity and the compensation in the foot, and for that I need to use a custom orthosis.”

No doubt as positions are refined on both sides of the argument, matters will become clearer. Stay tuned.

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References are available at www.lowerextremityreview.com
CP experts assess evidence for use of orthotic devices

Despite progress, research gaps remain

By Larry Hand

The January publication in NeuroRehabilitation of the recommendations from a consensus conference held in 2008 paints a less-than-perfect picture of the evidence underlying orthotic management of cerebral palsy (CP).

The conference did reach a consensus that ankle-foot orthoses (AFOs) can improve gait in ambulant children with CP, while the extent to which AFOs can prevent deformities remains unclear. However, as described in the January review, inadequate reporting and lack of transparency has compromised much of the published research, particularly regarding the types of patients and the design of the interventions being evaluated.

Now that nearly three years have elapsed since the conference, has the picture gotten any sharper?

“It’s too early to say, especially given the paper we are discussing was published only in 2011. Any improvement in the quality of research methodology and reporting is likely to be slow,” said first author Christopher Morris, MSc, DPhil, senior researcher in child health at Peninsula Medical School in Exeter, U.K. “Two key methodological improvements would be longitudinal design, long-term follow up, and increasing the number of subjects in studies.”

Yet others say progress has been made.

“At the time I agreed with the assessment,” said Bob Lin, CPO, chief orthotist for Hanger Orthopedic Group at Children’s Medical Center in Hartford, CT. “Now I think we’re turning the corner relative to better outcome measures in bracing. One of the biggest things is better use of computerized gait analysis for pre- and postoperative management. We can look at certain metrics, such as step length and muscle firing, and we can compare these to normal gait parameters or certainly pre-brace gait parameters. As opposed to the (formerly) very rare instance where one would have an ambulatory CP patient walk through a motion lab and be assessed for the effects of the brace on gait, it’s becoming more prevalent now.”


The limitations of published research on CP and orthoses do not necessarily reflect poorly on clinical practice, Morris noted, but patients and their families may not understand that.

“The limitations of published research on CP and orthoses do not necessarily reflect poorly on clinical practice.”

“Clinicians should be aware of the prevailing uncertainty around whether treatments they are prescribing and providing have been shown to be effective, and discuss this with families,” Morris said. “Clinical trials are not necessary for all treatments, especially when an effect is immediately apparent or common consensus suggests that orthotic intervention is advisable. In other instances there is ample scope for research, especially with new orthoses that are not widely available, as is the case with Lycra-based orthoses.”

The review authors did a good job outlining one of the biggest controversies among clinicians who treat children with CP: whether to use an articulated or solid system, said Brigid Driscoll, CO, PT, at Children’s Memorial Hospital in Chicago.

The review cited studies showing that solid AFOs can help increase the second peak of ground reaction force (GRF) in the propulsive phase of gait. They also cited new evidence suggesting that solid AFOs tuned to adjust sagittal plane alignment can improve the devices’ impact at proximal joints and on children’s gait.

“I definitely lean toward using the solid AFO, where you’re using the fine-tuning method, adjusting the shank angle and having a slight forward inclination to get optimal alignment at the hips and the knees,” Driscoll said. “Research needs to better define which exact AFO device we should use, what type of shoe we’re fine tuning, and the angle of inclination. We also need research to help us decide when that articulated system is going to be appropriate without compromising any of the biomechanical aspects of the foot and ankle.”

Today’s orthotist is better able to define or quantify outcomes, Lin said, a trend that is gradually rendering the ISPO report’s conclusions less accurate.

“Orthoses in general have become part of the standard treatment for CP,” he said. “An orthosis stabilizes the joint so that the patient, rather than having to do that with their own musculature or balance, no longer has to. Strategic bracing of a particular joint will then enable the therapist to work on mobilization of other joint mechanics and improve things like weight shift and balance reactions.”

Larry Hand is a writer based in Massachusetts.
ACL injury prevention training focuses on younger athletes

Age-specific protocols are key to success

By Emily Delzell

Training programs aimed at preventing anterior cruciate ligament injuries have been used for many years, but injury rates remain high. Injury prevention experts suggest such programs may be more effective if implemented before children reach the ages associated with highest injury risk and if the programs utilize age-specific protocols.

Adolescents aged 16 to 18 years appear to be at the highest risk for ACL injuries, but the frequency of these events begins increasing when children are aged 10 to 12 years, says Lindsey DiStefano, PhD, ATC, assistant professor in the Department of Kinesiology at the University of Connecticut in Storrs.

“ACL injuries are relatively uncommon in younger children, but when they start taking part in organized sports they exhibit movement patterns during landing and cutting tasks that are associated with heightened ACL injury risk,” she said.

These risky patterns include decreased knee flexion, knee valgus, and excessive leg rotation, DiStefano said.

Researchers from Cincinnati Children’s Hospital Medical Center, where much of the early work on ACL prevention was done, reported in October that development of high risk movement patterns begins in early puberty.1

“We know young children are much more plastic in their adaptive abilities than adults and think there are windows of opportunity to address this prior to puberty,” said Greg Myer, PhD, a research instructor of sports medicine in the Human Performance Laboratory at CCHMC.

Several recent studies have examined the effects of age-specific ACL injury prevention training, including two randomized controlled trials (RCTs) conducted by DiStefano and colleagues.

“Previous research suggests injury programs that deliver injury-prevention benefits in high school and college-aged athletes don’t work in younger children,” she said.

A 2009 study by DiStefano and colleagues, for example, found that an injury prevention program focused on landing biomechanics in two age groups of children produced greater improvements in the older group (aged 14-17 years) than in the younger children (aged 10-13 years), despite the fact that training time was more than twice as long in the younger group.2

In a more recent trial looking at the effect of injury prevention programs on lower extremity biomechanics during cutting tasks, DiStefano and colleagues randomized 65 youth soccer players (38 boys, 27 girls; mean age 10±1 years) into three groups: a pediatric ACL injury prevention program, a traditional program, and no training. Authors hypothesized that the age-specific program would increase knee and hip flexion and reduce knee valgus and knee and hip rotation.3

“The pediatric and traditional training programs both focused on quality of exercises, i.e., performing movements correctly rather than going through the motions, but the pediatric program also emphasized progressive exercises, taught smaller task components with increased instruction time, and involved more frequent feedback and exercise variety,” DiStefano said.

Results, published in May in the American Journal of Sports Medicine, found the traditional program produced no change in cutting biomechanics while the pediatric program modified only knee external rotation.

“Taken together, these data suggest age-specific training in younger children is more effective than traditional programs,” DiStefano said. “It may be more difficult to alter biomechanics during more dynamic activities, such as cutting tasks, but if we start intervening when children are younger and can make significant changes in jump-landing tasks then there’s additional time to refine their more dynamic movements before they reach the age of highest injury risk.”

References are available at www.lowerextremityreview.com

Kid-specific training features smaller task components and more instruction time, feedback and exercise variety.
Not all practitioners embrace soft soles for novice walkers

Barefoot-like isn’t necessarily best

By Shalmali Pal

Barefoot is a biomechanics buzzword these days, but not all practitioners believe soft-soled shoes are best for very young children, even if such shoes do approximate the barefoot walking experience.

Fueling debate on this topic is a gait analysis study funded by children’s shoe company Stride-Rite, the results of which have been popping up at scientific conferences for the last year and a half. In early walkers, shoes with the most torsional flexibility were associated with the highest plantar pressures, which the researchers suggested was an indication of enhanced proprioception, and were most similar to a barefoot condition (see “Impacts spell injury,” September 2010, page 11).

Mom and dad may be enamored of flexible footwear for their offspring, but not all the experts are convinced of their validity. There’s a time and place for soft sole shoes, they say, but young walkers need more than a barefoot experience.

It’s important to define “early” and “young” walkers, said Jeffrey Feld, DPM, who practices in Virginia Beach, VA, and is a clinical faculty member at Eastern Virginia Medical School in Norfolk. A child transitioning from crawling to ambulation is an early walker; one who walks with stability and balance is a young walker, Feld said.

For the early walker with an unstable gait, Feld said he is fine with pure leather, fully flexible shoes as long they are worn indoors.

“For such an early walker, I want that kind of flexibility. The child is learning tactile sense,” he said. “However, I do not like those super-soft shoes outside of the home as they make the child prone to trauma.”

Outside the home, and for a young walker, Feld called for protection against the environment.

“There are a lot of people pushing ‘Let’s get back to nature’ with these bare-minimum shoes. I ask those people, ‘Is the child walking on dirt, grass, and sand?’ We live in a concrete world and we have to put shoes on our feet to protect ourselves from constantly banging the pavement,” he said.

Feld’s preference is for a semi-rigid shoe that offers a thick or firm sole for protection, but flexibility in the toebox to maintain foot mobility. Given that early and young walkers have very malleable feet, shoes need to offer some support.

“The only places where the foot significantly bends are the toes and the ankle joint. Of course, there’s motion in the other joints, but nothing so severe that the whole shoe needs to bend in half as in some shoe products marketed today,” he said.

Randy Brown, CPed, of Brown’s Shoe Enterprises in Washington, MO, echoed that sentiment: Early on, a child’s round-heeled, fatty, archless, unstable feet need structure and strength.

Brown recommends a shoe with stability from the heel to the ball of the foot (suitable sole materials include rubber, suede, or urethane) and with some, but not too much, flexibility in the ball of the foot.

“A firmer sole shoe allows them to maintain their balance, and may actually encourage them to walk a little quicker,” he said.

Once a child has achieved balance and takes more confident steps, Brown is fine with migrating to a softer shoe with a nappy, sueded sole, generally at 10 to 12 months for girls and 12 to 14 months for boys. Durability of soft sole shoes is a non-issue, Brown said, because most kids will outgrow the shoes long before they wear them out.

The experts who spoke with LER were unanimous on one point: The buttery soft, flexible leather shoes that can be completely balled up like a piece of tissue? Their appeal is about fashion, not function.

Parental fascination with these extremely soft shoes may be little more than a backlash against the stiff, white, leather-soled shoes that they were made to wear as children, Feld suggested.

For walking indoors or in other safe environments, the child is better off being barefoot, said Yaron “Ron” Raducanu, DPM, president of the American College of Foot and Ankle Pediatrics.

“Most kids don’t develop an arch until they are two or three years old. A soft sole shoe isn’t really going to help that develop that,” Raducanu said.

Brown looks at these shoes as “crib shoes.”

“They really don’t have any other purpose. They are for fashion purposes and for pictures,” he said. “A young child doesn’t have the anatomy to gain benefit from barefoot walking.”

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Charcot-Marie-Tooth patients respond to AFO management

But recognizing device limits is key

By Shalmali Pal

Muscle weakness and instability associated with Charcot-Marie-Tooth disease in children can be addressed with ankle foot orthoses, research suggests, but practitioners should be aware of the limitations of AFOs in this patient population as well as the ever-present challenge of compliance.

In a 2010 paper in the Journal of Child Neurology,^1^ Kristy Rose, PhD, and Joshua Burns, PhD, of the University of Sydney found marked differences in ankle range, dorsiflexion strength, and muscle imbalance between preschool age CMT patients and healthy age-matched controls. However, there were no significant differences in foot structure, inversion, eversion, or plantar flexion strength.

These findings underscore the two main goals of AFO use in CMT management: Maintain ankle dorsiflexion and compensate for muscle weakness and instability. An ancillary goal is to encourage compliance.

However, an overarching principle needs to be kept in mind when working with AFOs in orthoses, namely that bracing cannot correct the equinus deformities that are characteristic of CMT, cautioned Grant Scheffers, a research honors student at the University of Sydney. Scheffers is conducting his research under the guidance of Burns and Rose at the Institute for Neuroscience and Muscle Research, part of the Children’s Hospital at Westmead.

CMT is a progressive neuropathy that depends, to some extent, on tendon length. But lengthening or transferring tendons to correct foot alignment in CMT requires surgery.

“Orthoses cannot correct the ankle weakness and muscle balance, but they can be prescribed to compensate for muscle weakness and ankle instability,” Scheffers said. “The evolution of the cavus deformity in children with CMT is thought to be related to selective atrophy and weakness of the peroneus brevis, tibialis anterior, and intrinsic foot muscles, which orthoses cannot correct.”

In fact, determining the limits of AFOs in CMT should be the first step, according to a 2010 review article in Clinics in Podiatric Medicine and Surgery.^2^ Researchers from the International Center for Limb Lengthening at Baltimore’s Sinai Hospital emphasized that before an AFO is fitted, contractures must be reduced to a point at which a child can achieve a neutral ankle position and a plantigrade foot within the AFO.

The Baltimore group recommended the following general criteria for AFOs in CMT:

- The AFOs should capture the leg just below the knee and include the foot to control the equinus deformity;
- The AFOs can include ankle dorsiflexion assist;
- Solid AFOs should be used in children who have severe hypertonia and no ankle range of motion;
- Once adequate tone reduction has been achieved with static AFOs, pre-articulate AFO can be substituted.

Of course, patient compliance with orthoses is a perpetual struggle, and CMT patients are no exception. A 2008 Italian study in the European Journal of Physical & Rehabilitation Medicine noted that only five of 25 CMT patients used AFOs, and three of those five said they hated their devices.\(^3\)

The study further concluded that CMT patients shun AFOs because they feel the devices highlight their disability, are uncomfortable, and are not essential for daily living.

A June paper by Margaret Phillips, PhD, and colleagues in Disability and Rehabilitation: Assistive Technology found that AFO use among 15 CMT patients was influenced by concerns about pain and discomfort as well as aesthetics.\(^4\)

The patient populations in both of these studies were adults, but compliance issues can be exacerbated in younger patients who simply do not have the maturity to comprehend the value of AFOs.

“Having talked to adults who had AFOs as children, including some in this study, the main impression is that they didn’t have the same level of understanding of the use of orthotics. Having had to wear them as children almost seems to have put them off wearing them in adult life in some cases,” said Phillips, a clinical associate professor in rehabilitation medicine at Royal Derby Hospital in Nottinghamshire, U.K.

Recent advances in AFO materials, such as lightweight thermoplastics and carbon fiber, have gone a long way toward improving compliance, Scheffers said. In the pediatric population, colors and designs can alleviate cosmetic concerns, he added.

The results from compliance studies emphasize the importance of a systematic, individualized approach to AFO prescription whereby only the least restrictive type of orthoses is prescribed for a particular individual, Scheffers stressed.

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References are available at www.lowerextremityreview.com
French study favors Ponseti over compatriots’ technique

Casting simplifies clubfoot management

By Emily Delzell

Ponseti serial casting for clubfoot continues to gain traction in the U. S. and abroad—even in France, the birthplace of an alternate nonsurgical therapy.

In a comparative study published in the April/May issue of the Journal of Pediatric Orthopaedics, French researchers found that Ponseti casting compared favorably to French physiotherapy for initial treatment of idiopathic clubfoot.1

French physiotherapy, or the functional method, originated in the 1970s in France and has been used in the U.S. since the mid-1990s. The technique involves gradual, progressive stretching of medial soft tissue and bony structures; passive reduction of the talonavicular joint; sequential correction of forefoot adduction, hindfoot varus, and calcaneal equines; muscle strengthening and stimulation; and, when appropriate, heel-cord tenotomy. It also requires active participation of the patient’s parents, who must take part in the daily home program of exercise, elastic taping, and splinting.2

Ponseti casting focuses on global correction of the clubfoot over six to eight weeks, and heel-cord release is performed in most patients.2

“In 1995, French physician Alain Dimicco came to our hospital to teach the physiotherapy method. We continue to use it, along with Ponseti casting, which we began using around the same time,” said Stephen Richards, MD, an orthopedic surgeon and assistant chief of staff and medical director of inpatient services at the Texas Scottish Rite Hospital for Children in Dallas. “We found that adding heel-cord release to French physiotherapy allows us to achieve initial correction in 95% of clubfeet, a very similar rate to that of the Ponseti method.”2

Meanwhile, in France, French physiotherapy had been the main method of clubfoot management until Ignacio Ponseti introduced his method to that country in 1999, said Franck Chotel, MD, PhD, an orthopedic surgeon at the Hôpital Universitaire Mère Enfant de Lyon in Bron, France.

“This French method is more critically dependent on the therapist’s skills than the Ponseti method, which can lead to inconsistent results,” Chotel said. “The excellent results with the Ponseti method were viewed initially with surprise and suspicion, and it took about 10 years and much discourse before it gained acceptance. Today about 80% of French pediatric orthopedists apply a pure or variant form of the Ponseti method, though there is still considerable resistance in Paris, where the functional method was born.”

Chotel also noted that proximity to a skilled therapist plays a role in functional method outcomes—parents typically bring the child in for initial treatment five times a week—and that not all health care systems cover the frequent care needed for success.

In the JPO study, Chotel and colleagues looked at 219 clubfeet in 149 children, placing patients into two groups. Clinicians treated 116 clubfeet with French physiotherapy (FM group) and 103 clubfeet with Ponseti casting (PM group).

The need for surgery beyond heel-cord tenotomy was considered failure of nonoperative management, and investigators ranked complete posteromedial release as a poor result and limited posterior release as fair, while nonrelease surgery or nonoperated feet were scored based on a modified Ghanem scale emphasizing morphology and function.

After a mean follow-up of 5.5 years, surgery had been performed at a similar rate in both groups (21% in the FM group, 16% in the PM group) but complete posteromedial release was mainly done in the French physiotherapy group (19% of feet), while only nonrelease surgery was done in the Ponseti group.

Excellent, good, fair, and poor results occurred in, respectively, 55%, 20%, 6%, and 19% of patients in the FM group and 79%, 15%, 4%, and 2% of patients in the PM group. Results for Dimeglio grade II clubfeet were equivalent between groups, but results for grade III and grade IV clubfeets were better in the PM group.

“We believe the Ponseti method is the treatment of choice for management of clubfeet,” said Chotel. “It is reproducible and reduces the need for extensive surgery.”

In addition, Chotel noted, research3 has found French physiotherapy is four times more expensive during the first year of management than the Ponseti method.

“The Ponseti method produces excellent results and is less expensive and labor-intensive than French physiotherapy; that’s why it has emerged as the conservative treatment of choice in the U.S. and elsewhere,” said Richards, who noted that prior to using the Ponseti or French methods at TSRHC about 85% of infants’ feet required full posteromedial release. “Now, although relapses occur in 10% to 15% of children, excellent results can be achieved with both methods when the proper level of expertise is available.”

References are available at www.lowerextremityreview.com

The Ponseti method is less expensive and less labor-intensive than French physiotherapy for clubfoot treatment.
Early research characterizes gait associated with autism

Results could have clinical implications

By Larry Hand

Little research has been published about gait patterns in children with autism, but that could be changing. One recently published study, although small, appears to lay the foundation for more focused research and could have clinical implications as well.

In the February issue of *Clinical Biomechanics*, researchers at the University of New Brunswick in Fredericton, New Brunswick, Canada, published what they describe as the first comprehensive analysis of 3-D joint and muscle gait patterns in children with autism. The study found that a group of autistic children, compared to controls, had a significantly higher cadence, increased upper flexion of the ankle in swing phase, decreased peak ankle joint angles, and significantly smaller peak plantar reflex moments.

The study included 12 children with autism, ages 5 to 9, plus 22 age-matched control participants. However, the researchers excluded toe-walkers and children with Asperger syndrome or pervasive developmental disorder not otherwise specified (who typically would fall under the definition of full autism spectrum disorder (ASD)). Many children with ASD have sensory sensitivities that make them behave less than ideally when researchers use markers, tape, and Velcro to capture patterns for wave form analysis, explained senior author Victoria Chester, PhD, associate professor of kinesiology at UNB’s Andrew and Marjorie McCain Human Performance Laboratory.

“We were successful in getting them through,” she added, probably because of the exclusion of some children from the study.

The researchers used an eight-camera motion capture system to track 3-D trajectories of reflective markers placed on the children’s skin. They used custom software to compute cadence, velocity, and percent cycle spent in single limb stance for every gait cycle. They used parameterization techniques and principal component analysis to analyze their data and then compared the two sets.

“We actually managed to get kinematic and kinetic data sets for a group of kids with autism,” Chester said. “And you really need both sets of data to get a better understanding of what their gait patterns are like. I was surprised that the children could actually be grouped this way for a study. They often appear to the naked eye to be very different from one another.”

So what do the study results mean to practitioners?

“Given our small sample size, we remain fairly conservative in terms of our clinical relevance,” Chester said. “However, the findings may be important in terms of treatment planning for children with autism and plantar flexor strength training, stretching, and orthotic.” Gait analysis can provide clarification in terms of identifying gait deviations and treatment planning. The effects of treatment on gait can also be monitored. Practitioners should know that children with autism may benefit from the objective data made available from gait analyses for treatment planning. We still need to learn more about the autism spectrum and associated gait disorders, and this paper is a start in that direction.”

Whether gait pattern analysis could be used to screen for possible autism disorders is a “huge topic, very controversial,” Chester said. And while some people are looking into that possibility, it was not a focus of the UNB research, she said.

Dawn-Marie Ickes, PT, a physical therapist at Core Conditioning PT in Studio City and Burbank, CA, agreed that gait analysis screening is not close to being ready for prime time.

“I wouldn’t say it is something that is a clinically objectifiable screening program for autism. Symptoms do overlap, but not all children with sensory integration dysfunction have autism. However, it could be a predictor of other things that look like autism but aren’t,” Ickes said.

“The best takeaway from this study for practitioners is that these abnormalities can pose value for predicting ASD if they’re coupled with sensory integration screening.”

Although other symptoms and aspects often are given priority when managing autism, Chester encouraged practitioners to remember that there is a physical component to autism as well, making it necessary to treat the whole child.

“A child who can’t keep up with others on the playground from a motor perspective is also affected socially,” she said.

Larger studies are now needed that include children from all autistic-related groups, Chester said, to facilitate an understanding of how gait differs across the autism spectrum.

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