



# Getting Up to Speed on Orthotic Therapy

The author outlines a one-year plan for helping new (and not-so-new) DPM's develop expertise in this vital area.

BY LAWRENCE HUPPIN, DPM

Over the past decade or so, applied biomechanics and orthotic therapy appears to be taking a decidedly smaller role in the practices of newer podiatrists in the United States. This should not be surprising. There has been a decrease in the didactic and clinical hours devoted to applied biomechanics in U.S. podiatry schools. Residencies have become longer, but few incorporate significant education on mechanical non-surgical treatments. The result has been a generational shift where newer podiatrists are entering practice with less orthotic therapy education, and subsequently less ability to effectively incorporate orthotic therapy and other mechanical treatments into their practices for the benefit of their patients.

There is irony to be found in these changes because we have far more evidence now on how orthoses affect lower extremity pathology and how to write orthotic prescriptions for optimum clinical outcomes. Those practitioners who stay abreast of evidence-based medicine as it is applied to biomechanics and orthotic therapy are likely to be more successful than ever at using these modalities to help their patients reach their treatment goals.

There is not necessarily less desire on the parts of the new podiatrists to use non-surgical mechanical therapies to help their patients; they simply are not being exposed to it as much as previous generations. This article is focused on helping the new practitioner who wishes to learn applied biomechanics and orthotic ther-

apy to find the education needed to become expert in this area. Of course, this information can also be used by any podiatrist wishing to improve orthotic therapy skills.

So, where does the new podiatrist, finished with formal training and starting practice, find the proper education and training to develop expertise in the application of orthotic therapy? This can be a difficult task. Most new practitioners have signifi-

cant debt in the form of school loans to pay off and the idea of taking time out of practice to pursue more education, or to invest more money in such education, can be daunting.

thotic therapy to patients? It is the opinion of the author that four items must be mastered to become an orthotic therapy expert:

- **Understand Evidence-Based Lower Extremity Biomechanics and Orthotic Therapy:** To have a practice that successfully incorporates orthotic therapy in order to achieve optimum clinical outcomes, the clinician must first be well-versed in the current literature regarding the application of

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This article will attempt to provide a one-year plan for new podiatrists to become knowledgeable in biomechanics and orthotic therapy in a manner that is relatively inexpensive and that allows them to continue their day-to-day practice. If followed, this can be one of the best possible investments a young podiatrist can make in both the health of one's patients and practice.

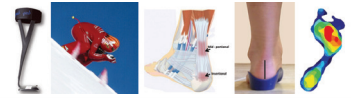
### What Do You Need to Know?

The first question to consider is: what exactly must the new podiatrist learn to develop the foundation to become proficient in providing or-

lower extremity biomechanics and orthotic therapy. There is significant literature available on lower extremity function and foot orthoses. It is the responsibility of those practicing orthotic therapy to be familiar with it.

- **Develop Negative Modeling Skills:** Regardless of how well-versed a practitioner is in literature pertaining to foot orthoses, achieving optimum clinical outcomes is still dependent on the ability of the podiatrist to take a quality negative suspension cast or image of the foot. This includes the ability to evaluate the negative model and to understand why the model is taken this way. 3-D scanning technology has made "casting" the foot far more efficient, but the basics of foot positioning and

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## *Orthotic Therapy (from page 71)*

cast evaluation remain the same.

- **Prescription Writing for Functional Orthoses:** Prescription writing incorporates the ability to use the findings of the history, general examination and biomechanical evaluation of the patient to develop a logical orthotic prescription to treat that patient's pathology, along with being able to write the prescription so that the orthotic laboratory can produce the desired orthosis.

- **Troubleshooting and Modification:** Orthoses often need minor adjustments to improve function and comfort. Most adjustments are quick and easy to do in an office setting. These are skills that are rarely taught in residency, but are critical for practitioners to provide effective orthotic therapy for their patients.

### **Where to Get the Education**

The next item to consider is where exactly to find this education and

training. Options are listed below in order of how easy they are to incorporate into day-to-day podiatric practice:

- Online Courses
- Podcasts
- Books
- Consultants
- Local Mentors
- Distant Mentors
- Courses

### **Take a Biomechanics and Orthotic Therapy Course**

Just as there is minimal orthotic therapy training available in most residencies, there is little available in the United States for the post-graduate. Most U.S. podiatric CME programs devote little time to orthotic therapy. In addition, there are no longer any annual or regularly scheduled seminars devoted to lower extremity biomechanics and orthotic therapy. For more than a decade, the annual Prescription Foot Orthotic Lab Association (PFO LA) meeting was an

excellent educational opportunity for those interested in biomechanics and orthotic therapy; but the last PFO LA seminar took place in 2009, and there is currently no definitive information about future conferences. Occasionally, you will see courses advertised that are sponsored by orthotic labs. These courses vary wildly in quality and some appear to focus more on “selling orthotics” and have little focus on evidence-based orthotic therapy.

Fortunately, there are some exceptional online courses available. In the opinion of this author the best are presented by Podiatry CPD Academy (CPD stands for Continuing Professional Development—what we in the US would call Continuing Medical Education).

### **Clinical Biomechanics Boot Camp by Podiatry CPD Academy:**

Clinical Biomechanics Boot Camp is the most science-based and in-depth course on biomechanics and

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orthotic therapy currently available. It is presented by Australian podiatrist Craig Payne, DipPod, MPH.

The Clinical Biomechanics Boot Camp course is aimed at the practical application in clinical practice of all the latest thoughts, ideas, theories, and research on foot biomechanics and orthotics. The course is approximately 30 hours long and presented in a progressive manner where new concepts build on those previously discussed. It is presented in very digestible segments which usually run about 20 minutes. Another advantage of the Boot Camp that is unique is that it has no connection to specific orthotic laboratories and is presented in a very unbiased manner.

Mr. Payne is an effective and interesting educator and this author highly recommends this course to any practitioner with an interest in lower extremity biomechanics and orthotic therapy.

Podiatry CPD Academy also offers these additional courses:

- Running Shoe Boot Camp
- Critical Thinking and Science Based Podiatrist Boot Camp
- Weekly CPD Update Boot Camp

## **Podcasts**

There are several podcasts which have a number of episodes devoted to lower extremity biomechanics and/or orthotic therapy. All of these podcasts should be available on your preferred podcast player. They are listed here in order of application to this topic:

- Podchat Live
- The Heel Pain Expert
- RPM2 Sports Docs

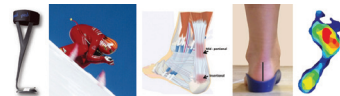
## **Books**

There are several books that function as good references for orthotic practitioners. Three stand out as being most applicable to clinical orthotic therapy for the new practitioner.

***Foot & Lower Extremity Biomechanics Volumes 1-5*** (1997-2018) by Kevin Kirby, DPM, Precision Intricast, Inc.) are a collection of monthly newsletters written by Dr. Kevin Kirby over a 25-year period. Clinicians could essentially create their own master course in foot and lower extremity biomechanics and orthotic therapy by reading five or six newsletters each week over the course of a year.

The Foot & Lower Extremity Biomechanics volumes also function as an excellent reference on orthotic therapy. For example, if presented with a patient who has posterior tibialis tendon dysfunction, you can look up the newsletter on Orthotic Modifications for PTTD to determine the best modifications and the scientific basis as to why they work for this problem. If faced with a patient complaining of orthotic irritation of a prominent plantar fascia, the newsletter on Proper Grinding Technique for Plantar Fascia Accommodations provides step-by-step instructions on how to adjust the orthoses.

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The second recommended text is **Recent Advances in Orthotic Therapy** by Paul Scherer, DPM (Lower Extremity Review, 2010). (Disclosure: The author was a contributor to Recent Advances in Orthotic Therapy but receives no financial remuneration from sales of the book). Dr. Scherer reviews the most common mechanical lower extremity pathologies and provides a logical approach to foot orthotic prescription decision-making categorized by pathology. The text is well-referenced and is superb for helping the clinician to determine effective orthotic prescriptions for the most common mechanical pathologies seen in podiatric clinics and to find literature supporting these choices.

**Pathomechanics of Common Foot Disorders** by Douglas Richie, DPM focuses on the underlying mechanics of the most common pathologies treated by foot and ankle specialists. Dr. Richie does an excellent job of consolidating the current knowledge of lower extremity biomechanics and pathomechanics and their effect on foot and ankle pathology. While not focusing specifically on treatment, the content is presented in a manner that allows the clinician to review current evidence explaining the etiology of these disorders in order to formulate effective treatment interventions.

A new series of books to consider is **Practical Biomechanics for the Podiatrist** by Richard Blake, DPM. This is a 16-chapter text spread over four volumes. As of this writing only the first book is available. Book 2 is planned for later in 2022 and the other two are planned to follow. As noted in its title, this is a practical and straight-forward text from a very experienced biomechanics practitioner.

For new podiatrists, Dr. Kirby's *Foot & Lower Extremity Biomechanics* and Dr. Scherer's *Recent Advances in Orthotic Therapy* work best as references to use when first writing orthotic prescriptions for a specific pathology. For example, when first prescribing orthoses to treat functional hallux limitus, a review of the functional hallux limitus chapter in

either book will provide them not only with a recommended orthotic prescription for treating this pathology but a review of the literature supporting those recommendations. If they follow this plan every time they see a pathology discussed in the book, within a few months, they will have a good understanding of how to write orthotic prescriptions for all of the most common mechanical pathologies they see.

For best clinical outcomes, however, a thorough understanding of the

orthotic labs that provide podiatrist consultants. Once podiatrists achieve a level of expertise in orthotic therapy, they often are pursued by top orthotic labs and hired as consultants. Consultation is then offered as a service by the lab to their clients. In most cases, the cost of consultation is built into the cost of the orthoses.

So, if a podiatrist is looking to improve orthotic therapy skills, one of the most important choices to make is which orthotic lab to use to manufacture orthoses. The new podiatrist

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pathomechanics will guide the practitioner in writing the most effective orthotic prescriptions. Here, Dr. Richie's *Pathomechanics of Common Foot Disorders* will provide the most complete understanding of the underlying pathomechanics of the pathologies commonly treated by the podiatrist.

### Use a Consultant via Phone or Email

Consulting via phone or email with a podiatrist who specializes in orthotic therapy is one of the most effective ways to get the education and training necessary to provide expert orthotic therapy. Initially, inexperienced orthotic practitioners would benefit from consultation on each and every orthotic prescription that they write. The benefits of this approach are great. Not only will inexperienced orthotic practitioners be able to provide better orthotic therapy to their patients but the consultations themselves are an educational opportunity for the new podiatrist. When first in practice, new podiatrists will find that they will benefit from consultation on almost all prescriptions. A good consultant will educate the new practitioner so that each consultation builds on the previous one and the knowledge and skills of the new practitioner increase over time.

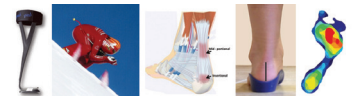
So where do you find experienced podiatrists with orthotic expertise who will act as orthotic therapy consultants? The most convenient and cost-effective option is to use only

looking to learn advanced orthotic therapy should find a lab that includes unlimited consultation with clinically experienced podiatrists who have expertise in orthotic therapy.

The choice of an orthotic lab is a critical decision, and the podiatrist should research and interview multiple labs to find the one that best fits his or her needs. In researching the labs, be sure to ask these questions:

- Do you have consultants available?
- Are your consultants podiatrists? (Make sure that the consultants are clinically experienced podiatrists, not orthotic technicians.)
- Are your podiatrist consultants in practice or have they spent considerable time in practice? (Day-to-day clinical practice requires different skills than teaching orthotic therapy in an academic setting. Ensure that the podiatrist has plenty of clinical experience. These podiatrists can help you with practice management questions as well as clinical consults.)
- Who are your consultants?
- When are they available? (Look for labs with consultants who are available on most, if not all, business days.)
- If my patient has a problem with the orthotics, can the consultant help me troubleshoot the problem? (The ability to help you with troubleshooting is one of the reasons it is so critical that the podiatrist consultant be experienced in clinical practice.)

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- What do your consultants do to help clients keep up-to-date on orthotic literature? (Look for consultants who spend time culling the literature for information related to orthotic therapy.)
- Can I have unlimited consults? (The answer should be “yes.” The odds are you will use them a lot initially and, as time goes on, will only need them for more difficult and complex cases.)
- Is consultation included in the cost of the orthotics? (This is usually

therapy and who is generous with time and knowledge, then spending time with that person can be invaluable. In particular, pay close attention to how they discuss treatment options with patients and how orthotic therapy is incorporated into those discussions. Take advantage of this time to ensure you can consistently take a quality negative cast. Also important is to learn troubleshooting and orthotic modifications. Although it is important to pay attention to prescription writing, this skill is often better learned through consultations on specific patients.

es than the preceding, but even if a new podiatrist can only accomplish stage 1, s(he) will likely gain the knowledge and skills to provide effective orthotic therapy for patients.

### Stage 1

- Purchase Clinical Biomechanics Boot Camp from Podiatry CPD Academy (\$390 for lifetime access at <https://podiatrycpdacademy.com/>).
- Watch one segment 3-5 nights per week. This is easy to do while working out or washing dishes.
- Spend your commute time listening to one of the recommended podcasts.
- Find an orthotic lab with skilled and experienced podiatrist consultants who can assist with specific patient prescriptions while providing orthotic therapy education.

## Find a local mentor and spend a few hours shadowing him/her every month.

the case. Be aware that you’ll probably pay a bit more for the orthoses if the lab is hiring top podiatrists as their consultants. Better clinical outcomes, less hassle, and happier patients, make it a very good investment.)

- Can I send pictures or video of my patient for help in the consultation? (Again, the answer should be “yes.” Video, in particular, can be very valuable in providing both consultation and education.)

Next, research the podiatrist consultants online. Ensure that they are orthotic therapy experts. Do they do research, write articles, or lecture on orthotic therapy? Learn about their backgrounds and make sure they are likely to be able to provide top-level orthotic therapy education along with consultations.

If you choose an orthotic laboratory with the right podiatric consultants, they will become your mentors and, over time, will educate you in the nuances of orthotic therapy. If done right, this method of mentoring allows the new practitioner to not only learn but to provide patients with sophisticated orthotic therapy while learning.

### Find a Local Mentor

If a new podiatrist is fortunate enough to have a podiatrist in the community who is an expert in lower extremity biomechanics and orthotic

### Travel to Visit a Distant Mentor

Young podiatrists who do not have a local mentor, or who want a more varied mentoring experience, should consider the idea of traveling to visit several orthotic experts. Consider taking two days off clinic each quarter to visit a podiatrist in another city who specializes in lower extremity biomechanics. To find these podiatrists, look for those who are writing articles or lecturing on biomechanics and orthotic therapy. Then, just give them a call and see if they would be willing to be shadowed for a day or two. Many, if not most, of the best orthotic therapy practitioners in the country have great concern over the lack of available clinical biomechanics education in podiatry and will be more than happy to share their expertise.

For new practitioners who are trying to establish a practice and have student loans to pay off, the idea of taking time off to shadow podiatrists in other communities may seem daunting. It should, however, be looked upon as an investment in both your clinical skills and practice growth. The skills are ones that will be used for an entire career.

### Plan of Action

In summary, below is a four-stage one-year plan of action for developing orthotic therapy expertise. Each stage requires more time and resour-

### Stage 2

- Purchase *Foot & Lower Extremity Biomechanics* Volumes 1–5, *Recent Advances in Orthotic Therapy* and *Pathomechanics of Common Foot Disorders*.
- Five nights per week read one newsletter from *Foot & Lower Extremity Biomechanics*.
- Whenever writing an orthotic prescription for any of mechanical pathologies seen in the average podiatrist’s office, read the corresponding chapters from *Recent Advances in Orthotic Therapy and Pathomechanics of Common Foot Disorders*.

### Stage 3

- If available, find a local mentor and spend a few hours shadowing him/her every month.

### Stage 4

- Find nationally known orthotic therapy experts and arrange to spend a day or two with one of them every few months. **PM**



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