

## Evidence in Action

### A Patient Comes in With a Twisted Ankle

By John Stites, DC, DACBR, and Ron Boesch, DC, DACNB

A day before his visit, an established patient had a misstep off a curb, causing excessive pronation of his ankle. He experienced a twinge of pain but kept walking to his appointment. Within a few hours, the pain increased and swelling developed posterior to the lateral malleolus, as well as along the ankle mortise. When you examine the patient, you notice the swelling and a slight discoloration of the ankle. You decide to apply the Ottawa Ankle Rules. You are aware that these are well-researched clinical prediction rules, *not* guidelines. Clinical prediction rules are developed and tested in multiple venues with different populations, while guidelines are typically outcomes of consensus, based on current literature.<sup>1</sup>

Applying these rules, you determine that the patient can bear some weight on the ankle and walk a few paces, and there is no appreciable tenderness when palpating the medial malleolus or the proximal portion of the 5<sup>th</sup> metatarsal.<sup>2</sup> Believing that fracture is unlikely, you proceed with your usual care and review the elements of PRICE (protection, rest, ice,

compression, and elevation) with the patient.

Then you begin to wonder... You have been using the same icing instructions for many years. As you think about it, you realize that you learned that approach from a mentor when you first left chiropractic college. The management approach of icing for 20 minutes every 2 hours, therefore, has likely been used for decades. You wonder if anyone has actually studied that and if perhaps there is a better way to use ice.

Wondering is the key first step in evidence-based clinical practice (EBCP). Wondering leads to clinical questions, which lead to the search for information to help you provide care for your patient in light of your patient's needs and values. There are numerous misconceptions about EBCP. Some chiropractors believe that EBCP means a doctor can do only what is established by the scientific literature. This is not the case. EBCP directs a doctor to use the best available evidence in conjunction with his or her own clinical experience and

the values of the patient.

### Finding the Evidence

PubMed is a resource readily available to anyone with access to the Internet. The sheer volume of articles included in that database can make its use daunting. You are not alone if you have chosen search terms that result in 10,000 linked papers. A search using the term "ankle injury" would identify more than 11,000 articles. This is a primary reason that it is helpful to clearly define your clinical question prior to attempting a search.

"PICO" is an acronym used to establish your clinical question and assist in the search process. PICO stands for population, intervention, comparison, and outcome. PICO can help you focus your question on specifics:

Population: Patients with ankle injuries or sprains

Intervention: Alternative icing protocol

Comparison: Standard icing protocol

Outcome: Decrease in pain or disability; increase in function

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In this situation, the clinical question, then, could be written as “In patients with ankle sprains, is there an icing protocol that is superior to standard icing in reducing pain and disability?”

When doing your search, you may use any or all elements of your PICO question and modify the terms to find what you are looking for.

By recognizing the type of study you are looking for, you can use some of the tools in PubMed to help narrow your search. Here, you are interested in the therapeutic outcomes of the use of ice. You can go to the clinical queries button in PubMed, click on *therapy*, and add the search terms “ankle injury” and “ice.” Among the 32 studies identified in the Clinical Studies Category is an article titled “Cryotherapy for acute ankle sprains: a randomized controlled study of two different icing protocols” published in the *British Journal of Sports Medicine* in 2006.<sup>4</sup>

This article directly addresses your clinical question.

### The Randomized Controlled Trial

When reading about a randomized controlled trial (RCT), there are several features common to all good studies. You should look for these to see how much weight

you can place on the outcomes of that study. There should always be a mention of ethics review and informed consent. You should look at the method of randomization to make sure that no element of bias can be introduced. In this study, the randomization schedules were placed in envelopes, and neither the primary researcher nor anyone involved in rendering treatment was involved in the process. Generally, an RCT will have a flowchart showing recruitment, inclusion, and exclusion criteria to record how many people in each group completed treatment; this is known as a CONSORT chart. There is often a table outlining the characteristics of each group. This is an important table to explore since it helps you determine if the 2 groups are comparable in attributes that may influence outcomes. In other words, this helps you know if the two groups are prognostically similar. Other things to look for include appropriate follow-up and whether the patients were analyzed in the group into which they were randomized. This is referred to as an “intent-to-treat analysis,” which preserves randomization in order to balance unanticipated prognostic factors.<sup>5</sup>

This study compared 2 icing protocols: standard icing for 20 minutes every 2 hours and

intermittent icing with 10 minutes on, 10 minutes off, and 10 minutes on again every 2 hours. Forty-six patients were randomized to the standard group with 34 analyzed (12 lost to follow-up). Forty-three were randomized to the intermittent group, and 36 were analyzed (7 lost to follow-up). Patients were followed for 6 weeks. You will see that both groups had similar outcomes in all measurements except one: The intermittent treatment group had less pain with everyday activity at week 1. Now, here is where serious decisions must be made. Is the information provided in this paper useful in the management of your patients?

One of the first things to look at is whether the patients in the study are similar to the patients you treat. If your patients don’t suffer ankle injuries, this paper is of no use to you. It is also important to consider if there may be any risk or expense involved in using a different intervention. You may need to consider the practicality of a different intervention, as well as the possibility of problems with compliance.

In our own practices, we’ve started to recommend intermittent icing because of the short-term benefit and the fact that we don’t see any problems with the alternate approach. We recognize that

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this is a relatively small study, so it is entirely possible that future studies may alter our approach. The benefit here is only in the short term, so if our patient has difficulty in complying or refuses to take 30 minutes every 2 hours to do the intermittent icing and

would rather just do the 20 minutes, that's fine. EBCP is not just about the evidence. It is also about the doctor's clinical expertise and the patient's values. ■

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