

CHAPTER

2

General Application Procedures

CHAPTER OUTLINE

Application Approaches

- The Critical Thinker Approach
- Standard Yet Flexible Operating Procedures

The Five-Step Application Procedure

OPENING SCENE

Jennie, a new student, is in her 5th day of clinical observation/experience. She has noticed that patients with similar injuries are treated the same, with little regard to how they respond to the treatment. She reflects on the three times she sprained her ankle during her high school athletic career. Even though she was told with each one that it was a lateral sprain, her response to the injuries was different in each instance. With one, her ankle hurt constantly for the 1st week; with another, she had pain only when she tried jumping or running. As she talked to the patients, she learned they were responding differently to the treatments. Then why were they all being treated the same way?

Jennie is also amazed at the number of different therapeutic modalities and the variety of their knobs, switches, and applicators. And the clinic has three machines called “electrical muscle simulators” that appear to be quite different modalities. She asks, “How long will it take me to master the use of all of these machines? What if I get mixed up and use the procedures of one modality when applying another modality?”

Jennie’s two concerns are the basis of this chapter. How do you modify treatment to the specific needs of the patient? How do you learn the application of so many different modalities and keep them straight?

Application Approaches

Therapeutic modalities can be either powerful rehabilitation tools or a waste of time. What makes the difference? Using the right tool in the right way. Successful application requires more than knowing which knob to turn or what button to push (being a knobologist). You must know how to apply the modality, but you must also know:

- What your specific goals are
- That the modality you have chosen is the proper modality for achieving those goals
- What other therapy, such as therapeutic exercise, is beneficial and should be applied in combination with the modality

The application must be part of a carefully thought out, goal-driven rehabilitation plan. This is sometimes called the rifle approach, as contrasted to the shotgun approach. The following analogy helps explain these two approaches.

When a hunter fires a shotgun, hundreds of small round pellets are emitted from the gun. If a few of these pellets hit the target, they might kill a small animal, even though many pellets missed. On the other hand, when a hunter shoots a rifle, only one bullet comes out of the barrel. The hunter must take careful aim or else the target

will be missed. With the shotgun approach, the patient is treated with every possible modality, with the hope that one will be effective. The rifle approach is more focused; the patient is treated with one or two specific modalities, targeted to achieve a particular goal (Fig. 2.1).

In Chapter 1 we discouraged the use of a cookbook approach to rehabilitation, and we repeat that advice here. The cookbook approach is rigid; it follows a specific recipe. In contrast, the critical thinker approach is more flexible. Just as some clinicians fall into the habit of using the same rehabilitation protocol for every injury, some also use the same modalities (and settings) when treating several different types of injuries. Although the one-recipe-fits-all approach to modality application is easier to learn and use, it is not in the best interest of patients. No two patients or injuries are alike, and not everyone responds the same way to all treatments. With the cookbook approach, clinicians often treat the symptoms rather than the cause of the injury.



CRITICAL THINKING 2.1 Can you think of some ways that you might be a better clinician by applying the rifle approach when you use therapeutic modalities? List several, then turn to the end of the chapter and compare your responses with ours.

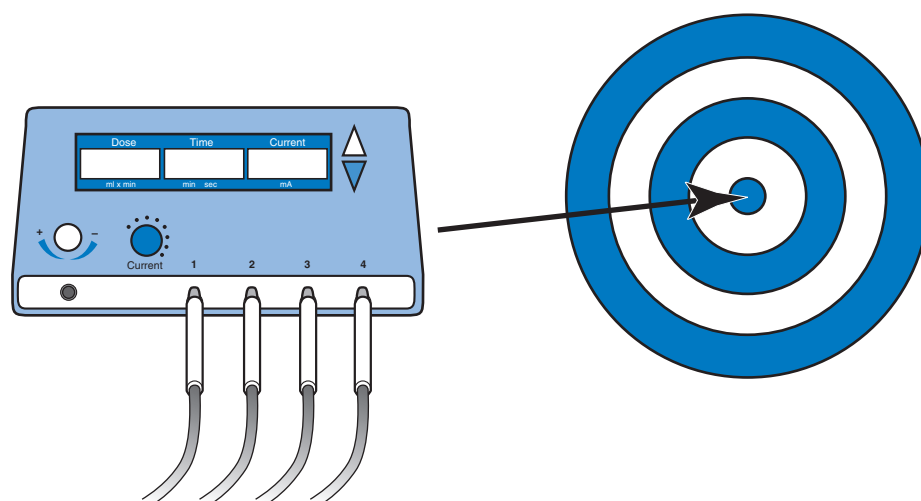


FIGURE 2.1. Use modalities that target the specific needs of the patient.

THE CRITICAL THINKER APPROACH

The **critical thinker approach to rehabilitation** uses an organized procedural outline that includes fairly broad guidelines to help the clinician choose the most appropriate modality and mode of applying that modality.¹ It is patient driven, rather than specific-modality driven. The modality is not the focus; it is part of an overall rehabilitation plan.

This approach begins with a thorough evaluation of the injury, establishing long-, medium-, and short-term goals and then selecting modalities and application parameters that will accomplish those specific goals. As the patient progresses, the application is altered to reflect the changing patient needs. Because no two patients or conditions are identical, the skilled clinician can use several tools (modalities) to reach particular treatment goals. The clinician who understands and employs critical thinking adapts to various situations. He alters the application parameters to best meet patient needs and to address the cause of the injury or condition. The critical thinker approach is more flexible than the cookbook approach because it empowers the clinician to speculate and ask, “I wonder what might happen if I try this modality in this situation?” (Fig. 2.2).

STANDARD YET FLEXIBLE OPERATING PROCEDURES

Standard operating procedures (SOPs) are specific guidelines and protocols for performing a specific task. Having SOPs is a form of quality control. A knowledgeable person, or team of people, develops SOPs for all staff to follow when performing the task. For example, your favorite fast food will be the same in Moab, Utah, as it is in

New York City because it was prepared by people using the same standard operating procedures. Having SOPs for complex tasks promotes consistency. They help you remember the specific steps and ensure that all essential elements are performed.

Using SOPs for therapeutic modality operation can have some disadvantages. They may lead to cookbook ap-



FIGURE 2.2. A critically thinking clinician is always seeking more efficient ways of treating patients.

plications, and the task of learning SOPs for each of the dozens of modalities can be daunting and confusing, especially for modalities that you use infrequently.

The five-step approach outlined in this chapter is a framework for therapeutic modality application.¹ It is not as rigid as typical SOPs because it does not dictate all the specifics of each modality application—it is not a cookbook. We call it a *framework* because it contains all the essential elements. A clinician thinks critically, then adds

the specifics of each modality to the general framework. Using the same framework for each modality is a quality control measure because it ensures that all essential elements are included. Using the same five-step procedure for all modalities minimizes the amount of information you need to learn for each modality, thus adding another element of quality control. Remember that this framework is a general outline. Specific information will be presented in subsequent chapters for a variety of modalities.



The Five-Step Application Procedure

The application of all therapeutic modalities should follow a standard procedure to ensure that all essential elements occur and to prevent rogue applications (Fig. 2.3). Although there is a wide range of therapeutic modalities, each one can follow a general application process. Our **five-step application procedure** eliminates the need to learn SOPs for each modality.¹ After learning the five-step framework, you can plug in specifics for each therapeutic modality. By learning and applying this system, you will be more organized and effective in delivering therapeutic modality treatments.



STEP 1: FOUNDATION

- A. Definition. A description of the modality and the basics of how it operates (Fig. 2.4).
- B. Effects. The physiological and/or pathological changes the modality evokes, both locally and systemically (throughout the body).
- C. Advantages. The benefits of the modality that make it more effective in treating injuries than other modalities.
- D. Disadvantages. The possible negative effects the modality might cause as well as the benefits that might be lost from using this modality over another.
- E. Indications. Situations in which the modality should be used or for which it is a suitable treatment or remedy for the condition.
- F. Contraindications. Situations in which the modality should not be used—that is, situations in which it may do more harm than good.
- G. Precautions. Situations that could cause harm if the clinician is not careful—for example, failure to move

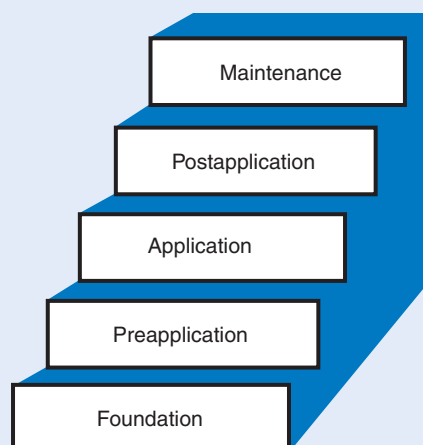


FIGURE 2.3. The five-step application procedure is a standardized framework for applying any therapeutic modality. It is rigid enough for quality control, yet flexible enough to allow the clinician to use modalities in the context of a critical thinking approach to rehabilitation.

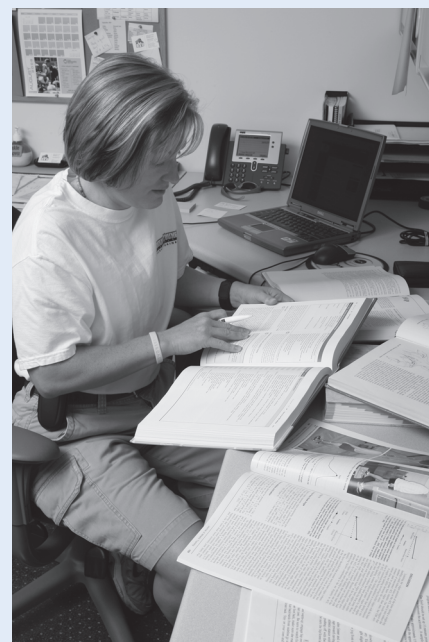


FIGURE 2.4. Before a therapeutic modality can be properly applied, you must have foundational knowledge about the modality and how specific types of injuries respond to the various ways of applying it.

the soundhead during ultrasound treatment could damage tissue or cause extreme pain.

MODALITY

MYTH

THERE ARE RELATIVE AND ABSOLUTE CONTRAINDICATIONS

Some clinicians inappropriately use the terms *absolute contraindication* and *relative contraindication* to refer to contraindications and precautions, respectively. The term *absolute contraindication* is redundant. *Contraindication* means “do not use,” so it is already absolute. The term *relative contraindication* contradicts itself. It is impossible to “relatively” not use a modality. Use the more precise terms, *contraindication* and *precaution*.



STEP 2: PREAPPLICATION TASKS

- A. Selecting the proper modality
 1. Determine the pathological and physiological changes associated with the injury by doing the following:
 - a. Evaluate (or reevaluate) the injury or problem.
 - b. Review the patient’s response to any previous treatment (Fig. 2.5).



FIGURE 2.5. Patient interaction is an essential preapplication task. Detailed questions about how the patient responded to previous treatments help you decide whether to continue with the present modality or to select another one. Explaining the purpose, the expected outcome, the body's physiological response, and what the patient should feel help prepare the patient psychologically for the treatment.

2. Establish the objectives (goals) of the therapy.
 3. Match your therapeutic goal with a modality that will help you achieve that goal; consider the effects, advantages, disadvantages, indications, contraindications, and precautions of all the possible modalities you could use to reach your goals.
 4. Make sure the modality is not contraindicated for the injury or condition in question.
- B. Preparing the patient psychologically.** This step entails more than just good bedside manners. As we will discuss in Chapter 7, there is a strong connection between emotions and physiological responses. The patient's psychological state modifies tissue responses to the therapy.
1. Explain the purpose and expected outcome of the procedure.
 2. Describe the body's basic physiological response to the treatment, if the patient is interested.
 3. Explain what the patient should expect to feel—for example, tingling, pins and needles, or gentle warmth.
 4. Demonstrate the procedure on yourself if the patient is apprehensive.
 5. Warn the patient about precautions.
- C. Preparing the patient physically**
1. Remove clothing as necessary.
 2. Remove bandages, braces, and so on, as necessary.
 3. Position the patient in a manner that will be comfortable, yet allow accessibility to the modality. Have an ample supply of pillows or bolsters (supports) to use in positioning the patient (Fig. 2.6).



FIGURE 2.6. Pillows and bolsters are helpful in positioning a patient for treatment. You can never have too many pillows and bolsters in an athletic training clinic.

- D. Preparing the equipment**
1. Set up the equipment.
 2. Check the equipment operation.
 3. Perform a safety check.



STEP 3: APPLICATION PARAMETERS

- A. Procedures**
1. Turn on the unit (if necessary).
 2. Adjust the output parameters as needed.
 3. Check the patient's response and readjust the output as needed.
- B. Dosage**
- C. Length of application**
- D. Frequency of application**
- E. Duration of therapy**



STEP 4: POSTAPPLICATION TASKS

- A. Equipment removal; patient cleanup**
- B. Equipment replacement; area cleanup**
- C. Instructions to the patient.** *Note:* These should be written if they are extensive or complicated.
1. Schedule the next treatment.
 2. Instruct the patient about the level of activity and/or self-treatment she should administer before the next formal treatment.
 3. Instruct the patient about what she should feel after treatment.
- D. Record of treatment, including unique patient responses (Fig. 2.7).**



STEP 5: MAINTENANCE

- A. Regular equipment cleaning**
- B. Routine maintenance**
- C. Simple repairs**

CLOSING SCENE

Recall from the opening scene, Jennie, a new student, seemed a bit confused that patients with similar injuries were treated with the same method, even though they responded differently to the treatments. She was also overwhelmed by all of the different kinds of therapeutic modalities housed in the clinic. She wondered about the purpose of each modality and the function of each of the knobs, switches, and lights on the devices. She wondered how long it would take her to master the correct use of all of those machines.



FIGURE 2.7. Properly recording the specifics of the therapeutic modality application, patient response, and instructions to the patient is an often neglected part of the modality application.

Jennie was fortunate to be assigned to work under the direction of a clinical instructor who understood when and why to use modalities. This instructor cautioned her about the flaws of the cookbook approach to treatment. He taught her how to be a critical thinker. This included looking at each patient differently and then determining the appropriate modality to use for each condition. He also taught her the five-step procedure to use when applying modalities. Under his watchful eye, he allowed Jennie to experience what each modality treatment felt like. Within a few months, Jennie understood the functions of each modality and felt confident in using them. As she became more confident, her clinical instructor turned the treatment of some patients over to her. Much to her surprise, the patients got better! Jennie succeeded where others had failed, because she became a clinician skilled in the art of critical thinking.

CHAPTER REFLECTIONS

1. Read and ponder each of the following points. Do you feel you have a clear understanding of each concept? If not, reread the appropriate section of the chapter.
 - Define a standard operating procedure.
 - Explain the cookbook and critical thinker approaches to therapeutic modality application.
 - Discuss the similarities and differences between SOPs and the five-step application procedure.
 - Describe the five-step application procedure, including the sub-elements of each step.
 - Identify the differences between indication, contraindication, and precaution with respect to therapeutic modalities.
 - Explain the importance of each of the following elements in selecting a therapeutic modality: evaluating the patient and injury, therapeutic goals, the physiological effects of the modality on the body, and the advantages of a particular modality over another modality.
2. Write three to five questions for discussion with your class instructor, clinical instructor, classmates, and clinical colleagues.
3. Get together with classmates and quiz each other on the concepts of this chapter. Use the points in exercise 1 and questions you wrote for exercise 2 as a beginning. Explaining concepts out loud to others requires a deeper grasp of the material than feeling you understand it as you read.

CRITICAL THINKING RESPONSE

Critical Thinking 2.1

There are several possible answers:

1. You treat the cause of the injury instead of the symptoms.
2. Your patients get better faster.
3. You know which modality/treatment regimen worked because you tried one or two at a time and there is a cause-and-effect relationship to the outcome.
4. Your patients develop confidence in you.
5. You are able to establish which regimens work and which ones don't.

REFERENCE

1. Knight K, Draper D. Critical thinking and therapeutic modalities. *Athl Ther Today* 2004;9:28–29.