

Three principles  
for applying force  
with clients.

# Safe and Effective Stretching

**FORCE = MASS × ACCELERATION**

mass = weight

acceleration = the time rate of change in velocity

For years, stretching has been viewed as a necessary part of personal training, yet stretching itself has received little attention. Recent research on how forces act on the body gives us a new way to think about stretching and provides methods that make it safer and more effective for clients.

When stretching a client, a personal trainer produces a force on the client's body. Force is defined as mass (weight) × acceleration (the time rate of change in velocity). The most dangerous forces that act on the body during stretching are those that act directly on joints. Over time, joints deteriorate naturally from “wear and tear” and age. Stretching should not contribute to this process. The goal is to maximize the benefits of stretching while minimizing the forces that act on joints. To achieve this result, remember three principles when applying force: (1) where? (2) what direction? and (3) how much?

## Place Hands Safely

**Where?** refers to hand placement on the client's body. Do not place your hands directly on the joint; that is unnecessary and dangerous. The safe way to apply force is to position your hands 1 to 1½ inches below or above the joint. In this way the soft tissue that supports the joint absorbs the stress of the force. Hand placement also influences the client's form. When direct force is applied to a joint, the client's natural tendency is to bend it.

## Don't Push Down

**What direction?** refers to the angle at which

the force is applied. Do not push downward on the client. Instead, when the client is lying on his back, apply the force parallel to his body. This minimizes the force acting straight down on the joints.

The parallel application of force is warranted for most lower-body stretches performed lying down or sitting. These stretches include, but are not limited to, the supine hamstring stretch (shown), the supine knee-to-chest stretch and the prone quadriceps stretch. Never apply force downward on the client; this goes for lower-body, torso, neck and upper-body stretches performed lying down, sitting or standing.

## Use Light Force

**How much?** refers to the amount of force to apply. The client's flexibility determines this. You can apply more force and produce a better stretch than a client can alone. However, be careful not to use too much force. Hold the stretch for at least 60 seconds, which is consistent with current literature on long-term adaptation to stretching.

The appropriate amount of force will vary from client to client. Before stretching, obtain background information, including age, fitness level, flexibility test results, prior experience with programs like yoga, general stretching experience, and existing and past medical conditions that influence flexibility.

## Communicate for Comfort

In addition to understanding the variables that influence flexibility, you must estab-

lish communication with the client. Teach a few relative terms and how to use them. Define “tension” due to stretch versus “pain.” A client may assume that stretching is painful. Assure her that pain is not necessary, but tension in the muscle is. Explain the difference between muscle tension and joint tension. Joint discomfort during stretching is not normal. If the client reports joint discomfort, release the stretch to a comfortable point.

Communication is important before stretching and essential during it. Be attentive to the client's wants and needs. Let her know in advance what questions you will ask and how her responses will be used. Use your own judgment and knowledge of the client to develop a dialogue. Here are a few suggestions:

“Tell me when you feel the stretch.”

“Let me know when the muscle feels tight.”

“I am about to begin the stretch, and I need you to tell me when to stop.” (Hold the stretch at the client's request.)

The key to knowing how much force to apply is paying close attention to the client. Learn to read body language. The client may not tell you that the force is too much. Look for evidence that form has collapsed: excessive bending at the joints, the body coming off the mat during a lying stretch, a shift in body position, a change in facial expression or body language, or shallow breathing. If any of these occur, you have applied too much force. If the client is pushing back, ask if the stretch is too much and if she is resisting. If so, release the

stretch to a comfortable point.

Stretching is an important part of any personal fitness program. Safe and effective stretching depends on the correct use of force. When applying force, a conscientious trainer uses the three principles of where?, what direction? and how much? Used correctly, these principles will enhance your training repertoire and increase the safety and effectiveness of stretching.

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#### **References**

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