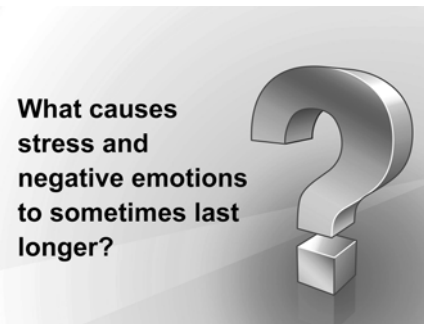


# Chapter 10

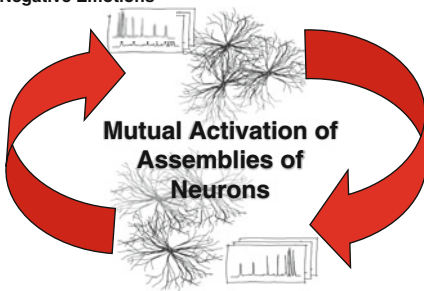
## ART Module Two: Muscle and Breathing Relaxation

### 10.1 Vicious Cycles #1 and #2: Amygdala Activation and Muscle Tension/Rapid Breathing



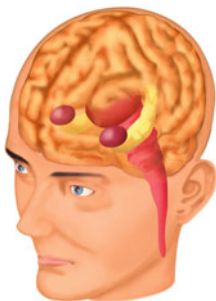
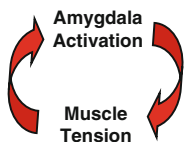
**Slide 30:** But sometimes stress and negative feelings remain intense for longer periods of time. How does this happen?

**Causes of Long-Lasting Stress Responses and Negative Emotions**



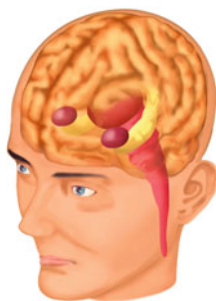
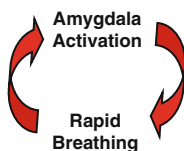
**Slide 31:** Stress responses and negative emotions last longer when different areas of the brain and body start to mutually activate each other. If this happens, these vicious cycles can override the natural regulation mechanisms in the brain and in the body.

**Vicious Cycle #1**



**Slide 32:** For example, when the amygdala is activated by a situation that is interpreted as potentially threatening, the amygdala facilitates an increase in muscle tension, which can be helpful in situations that require an immediate fight-or-flight response. Since we have normally experienced this muscle tension during threatening situations in which the amygdala was activated, the muscle tension itself becomes a danger signal to the amygdala. Thus, a vicious cycle develops: Activation of the amygdala causes increased muscle tension, and increased muscle tension causes further activation of the amygdala, which causes even more muscle tension.

**Vicious Cycle #2**

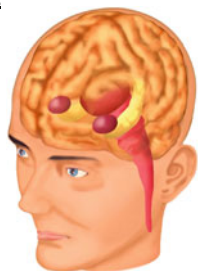


**Slide 33:** Similarly, the amygdala also facilitates rapid breathing. Since we have typically experienced this rapid breathing during threatening situations in which the amygdala was activated, rapid breathing itself, just like muscle tension, becomes a danger signal to the amygdala. This creates another vicious cycle: Activation of the amygdala causes rapid breathing, and rapid breathing causes further activation of the amygdala, which causes even more rapid breathing.

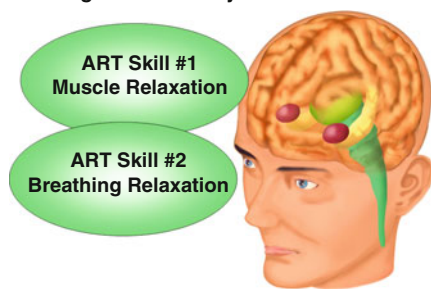
**Vicious Cycles #1 & #2**



Break the vicious cycles with  
Affect Regulation Skills



**Slide 34:** If we want to prevent stress and negative feelings from sticking around, we need to break the two vicious cycles we just talked about by using emotion regulation skills. Does anyone have an idea of what skills we would need in order to break these vicious cycles? (*Participants respond with ideas.*)

**Breaking the Vicious Cycles**

**Slide 35:** Whenever we realize that we are experiencing stress or negative emotions, we can break these vicious cycles by consciously relaxing our muscles and calming our breathing. By doing this we are telling the amygdala that it can go off “high alert” since the situation is really not so threatening. Relaxing our muscles and calming our breathing may not make the original stress or negative emotions go away, but it can keep them from spiraling out of control, intensifying, and lasting longer than they should. So let’s take a look at ART Skills #1 and #2 that can help us break these vicious cycles by relaxing our muscles and calming our breathing.

## 10.2 ART Skills #1 and #2: Muscle and Breathing Relaxation

### *Note to the therapist:*

At this point in the first module, the therapist begins the process of teaching ART Skills #1 and #2. The format for teaching all of the ART Skills is the same. The therapist first uses neuroscience to describe the rationale for the particular skill. Next, the therapist teaches the skill in detail through the use of a skill-building exercise. Finally, the skill is chained with previously learned skills to construct the *ART Sequence*, which at the end will be comprised of all seven ART Skills.

ART Skill #1 is based upon the well-established method of *progressive muscle relaxation* developed by Edmund Jacobson (1964), in which muscle groups in the body are sequentially tensed and then relaxed. ART Skill #2 consists of deep, controlled inhalations and long, slow exhalations, with a focus on the awareness of the breath during the exhalation. Skills #1 and #2 are combined in ART so that muscle relaxation begins with and is accompanied by long, calm breathing.

Muscle and breathing relaxation (ART Skills #1 and #2) are taught first using a longer version of muscle relaxation, which is later shortened in subsequent training modules. Participants are first taught to tense and relax four muscle groups separately, with relaxation occurring on the participants’ exhalation. In a later training module, all four muscle groups are tensed together and relaxed together, with relaxation occurring during the participants’ exhalation. By the end of the ART training, the participants are directed to relax all four muscle groups simultaneously, on the exhalation, without tensing the muscle groups prior.

The following is an overview of how ART Skills #1 and #2 are taught using progressively shorter versions of muscle relaxation:

### Step One (long version):

Each muscle group below is first tensed and then relaxed during deliberately extended exhalations:

1. Muscles in the hands and arms (repeat once)
2. Muscles in the face (repeat once)
3. Muscles in the shoulders and back (repeat once)
4. Muscles in the stomach, buttocks, and legs (repeat once)

### Step Two (short version):

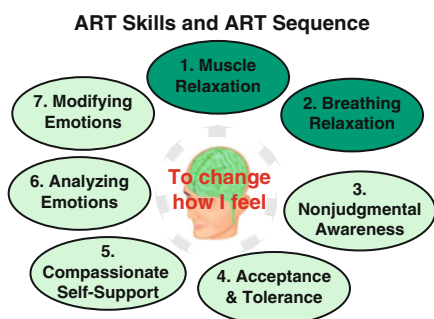
All muscle groups are tensed simultaneously and then relaxed simultaneously during an extended exhalation. Repeat once.

### Step Three (ultrashort version):

All muscle groups are simultaneously relaxed during an extended exhalation without tensing them first.

The following section includes specific instructions for teaching ART Skills #1 and #2:

*The therapist continues speaking to the participants:*



**Slide 36:** To give you a quick overview of ART Skills #1 and #2, we will be learning how, in these first two skills, to connect muscle relaxation with slow, calm breathing with a focus on long exhalations. Let's talk about how to do this. ART Skill #1 is based on something called progressive muscle relaxation. Do any of you have experience using progressive muscle relaxation? (*If yes:*) Would you mind telling us what it is? (*Supplement any responses from the group with the following information.*)

Progressive muscle relaxation, or PMR, is a form of relaxation training. In PMR, various muscle groups in the body are tensed for a short time and then deliberately relaxed ... very slowly ... and with focused attention. (*Demonstrate by clenching your fist and then slowly unclenching it. Ask the participants to do this all together.*) The goal of PMR is to create relaxation for the body and the mind. PMR is the most well-researched relaxation method, and many studies have shown that PMR can help decrease physical and mental discomfort.

In ART Skill #1 we use a modified version of PMR. In this modified version we will first learn to tense and relax muscles in large groups, in four different areas of the body. Once we have practiced tensing and relaxing each of the four muscle groups individually, we will learn to tense all four muscle groups simultaneously and then relax all four groups simultaneously. Finally, we will learn how to relax all of the muscle groups simultaneously, without tensing them beforehand.

Now as we talked about before, we are combining ART Skill #1 (muscle relaxation) with ART Skill #2 (breathing relaxation). So let's spend a little time now talking about breathing relaxation taught in ART Skill #2. Breathing relaxation consists of deliberately calming and slowing down our breathing. We'll pay particular attention to the exhalation or the out-breath, doing our best to exhale as slowly and calmly as possible. Let's try a short demonstration. When I say "now," I'd like everyone to breathe in ... and exhale as long as possible ... and then for three more seconds. Let's try it ... Now. (*Model the exercise as the group participates.*) Breathe in ... and exhale as long as possible and then for three more seconds. (*Pause.*) Good.

Since we are combining ART Skills #1 and #2, we begin muscle relaxation by focusing on deepening and calming our breathing. We will also relax our muscles only when we exhale, focusing on lengthening the exhalation as we intentionally allow the muscles to relax even more.

I'll now walk you through the instructions for the exercise we will use to practice ART Skills #1 and #2. I will be using the version of muscle relaxation that tenses and relaxes each of the four muscle groups individually. Don't worry about trying to remember what I say or the physical movements I make. Just follow along with me. When we later practice the exercise as a group I will provide all of the instructions. If you want, we will also give you a CD or audio files to download containing the exercise instructions, so you can practice later at home.

Let's first talk about our posture during this exercise. The goal of the training is to eventually be able to relax your muscles in any posture. However, we will start by using a sitting posture. We recommend placing both feet flat on the floor and shoulder width apart. Sit upright as much as is comfortable for you, and make sure your back is well supported. Your head should be balanced upright and be positioned in the middle of your shoulders. You can lay your hands on your thighs or on the armrests of the chair you are in. You can close your eyes or focus your gaze on a point in your lap or in the room.

Okay, everyone. Please follow along with me as I walk you through the muscle and breathing relaxation technique of ART Skills #1 and #2. First, take a slow, deep breath in and then exhale as long as possible and then for 3 s more. We will now focus on the first muscle group. Tense the muscles in your hands, forearms, and upper arms by clenching your fists, pointing your fists inwards toward your biceps, and pulling your fists toward your shoulders. Then, hold the tension, and after 3 s, with the next exhalation, relax your muscles slowly and very deliberately. Now that the muscles are relaxed again, lay your arms down. Let's repeat this process again. Remember that the focus in this exercise is on relaxation, not tension. (*Repeat the relaxation process for the first muscle group.*)

Next, we will focus on the second muscle group. Please follow along with me again. First, tense the face muscles by clenching your teeth, pulling the corners of

your mouth outwards, and pressing your tongue on the roof of your mouth. At the same time, carefully squeeze your eyes shut and furrow your eyebrows. Tense your muscles as much as you can, but not so much that it hurts. Hold the tension for 3 s and then, when breathing out again, relax the muscles. Let's repeat the same procedure again. (*Repeat the relaxation process for the second muscle group.*)

Now we will work on the third muscle group. (*The group continues to follow along with the therapist throughout the remainder of the instructions.*) First, tense your neck and back by lifting your shoulders up high and pushing them back. At the same time, move your hips forward slightly and arch your back in order to tense the muscles in the lower back. Hold the tension for 3 s, and then release the tension with a long exhalation. Let's repeat this process one more time. (*Repeat the relaxation process for the third muscle group.*)

The fourth and final muscle group consists of the muscles in the stomach, buttocks, and legs. First, press your buttocks together while also straightening your legs in front of you and slightly lifting your feet off of the floor in order to tense the muscles in your stomach. Also, point your feet downward in order to tense the muscles in your thighs and hips. Continue tensing the muscles in your thighs and hips by pointing your feet back toward your face. Hold the tension for 3 s, and then on the next exhalation relax the muscles. Let's finish by repeating this process one more time. (*Repeat the relaxation process for the fourth muscle group.*)

Does anyone have questions about the techniques we just discussed?

When doing this exercise, you will probably find that your attention will wander and you will start thinking about other things. This is very normal and completely fine. In fact, it's important for you to accept this as a natural process of your brain that happens to everyone. When you notice that your attention is wandering, just make a short mental note of what is happening by using words like "planning," "worrying," and "remembering" and then gently bring your attention back to the exercise. When your attention wanders again, simply make another mental note and then again gently bring your attention back to the training.

Just continue doing this any time you notice your attention is wandering, even if it happens 100 times during the exercise! If you become distracted during the exercise by something else, like noise or physical sensations, just make another mental note to yourself like "noise" and "ache" and then gently direct your attention back to the exercise. Does this process make sense? Are you ready for me to lead you in the exercise? Then let's go!

### **10.3 ART Sequence with ART Skills #1 and #2: Muscle and Breathing Relaxation**

*The therapist may guide the following ART Sequence Exercise using the "Exercise One" audio that can be downloaded from [www.AffectRegulationTraining.com](http://www.AffectRegulationTraining.com)—with access code: ART\_Pcn2cfY. All exercises described in this manual may be accessed via this same website and access code. The ART therapist may also guide this ART Sequence Exercise themselves using the following instructions:*

We will start the exercise after the sound of the bell.

*Sound of the bell*

Find a comfortable posture in which you can sit for a while without difficulties. Make sure that your feet are flat on the ground and that your back is properly supported. You can put your hands on the armrests or on your thighs. Close your eyes or focus on a point in the room. Allow yourself permission to take this 15-min break in order to relax, build some strength, and recharge your batteries. Relax your muscles. Breathe in deeply (*deep audible inhalation*) and slowly and consciously exhale as long as possible and then for 3 s more (*audible long exhalation*), letting go of all the tension you have gathered during the day ... as much as possible at this given moment. (*5 s pause*)

Then bring your attention to your hands and arms. Now tense the muscles in your hands and arms by clenching your hands into fists. Angle your fists inward. Angle the forearms toward your upper arms, and pull the fists toward your shoulders so that the shoulder muscles are tensed as well. Feel the tension in your hands and arms. Release all other muscles in your body. Keep on breathing. Pay attention to your muscle tension. Hold the tension (*3 s pause*), and then release the tension very slowly with the next long out-breath. Let the muscles relax. Release your arms back to a resting position, and be aware of the difference between the tension you felt before and the relaxation you feel now. Be aware of even the smallest changes you can perceive as you now release your muscles more and more. (*15 s pause*)

Now bring your attention to your hands and arms again. Tense these areas again by clenching your fists, angling them inward, angling your forearms toward your upper arms, and pulling the fists toward your shoulders so that the shoulders are tensed again. Feel the tension in your hands and arms. Release all other muscles in your body. Keep on breathing. Pay attention to your muscle tension again. Hold the tension (*3 s pause*), and release it very slowly with the next long out-breath. Let the muscles relax. Release your arms back to a resting position, and be aware of the difference between the tension you felt before and the relaxation you feel now. Be aware of even the smallest changes you can perceive as you now release your muscles more and more. (*15 s pause*) Breathe calmly and regularly, and feel how each muscle relaxes more and more with every out-breath ... how the pleasant feeling of relaxation expands more and more. (*15 s pause*)

Continue by bringing your attention to your face. Now tense all the muscles in your face by clenching your teeth together, pulling the corners of your mouth outward, and pressing your tongue against the roof of your mouth. Carefully squeeze your eyes shut and furrow your eyebrows very slightly. Release all other muscles in your body. Keep on breathing. Feel the tension in your face. Hold the tension (*3 s pause*), and release it very slowly with the next long out-breath. Let the muscles in your face relax, and be aware of the difference between the tension you felt before and the relaxation you feel now. (*15 s pause*)

Then bring your attention back to your face. Again, tense all the muscles in your face by clenching your teeth, pulling the corners of your mouth outward, and pressing your tongue against the roof of your mouth. Carefully squeeze your eyes shut and furrow your eyebrows very slightly. Release all other muscles in your body. Keep on breathing. Feel the tension in your face. Hold the tension (*3 s pause*), and

release it very slowly with the next long out-breath. Let the muscles in your face relax, and be aware of the difference between the tension you felt before and the relaxation you feel now. (*5 s pause*) Breathe calmly and regularly and feel how the muscles relax with every long and conscious out-breath ... more and more—how the pleasant feeling of relaxation expands more and more and becomes deeper and deeper. (*15 s pause*)

Continue by bringing your attention to your neck and back. Tense your neck by pulling your shoulders as near to your ears as possible. Then tense your upper and lower back by pulling your shoulders as far back as possible and simultaneously tilting your hips forward and slightly arching your back. Release all other muscles in your body. Keep on breathing. Feel the tension in your neck and back. Hold the tension (*3 s pause*), and then release it very slowly with the next long out-breath. Let the muscles relax, and be aware of the difference between the tension you felt before and the relaxation you feel now. (*15 s pause*)

Now return your attention again to your neck and back. Again, tense your neck by pulling your shoulders as near to your ears as possible. Then tense your upper and lower back by pulling your shoulders as far back as possible and simultaneously tilting your hips forward and slightly arching your back. Release all other muscles in your body. Keep on breathing. Feel the tension in your neck and back. Hold the tension (*3 s pause*), and then release it very slowly with the next long out-breath. Let the muscles relax, and be aware of the difference between the tension you felt before and the relaxation you feel now. (*15 s pause*) Breathe calmly and regularly, and feel how the muscles relax more and more with every long and conscious out-breath ... how the pleasant feeling of relaxation expands more and more.

Now bring your attention to your buttocks, your belly, and your legs. Tense these muscles by pressing your buttocks together while straightening your legs in front of you and slightly lifting your feet off of the floor. Also, point your feet downward. Feel the tension in your buttocks, your belly, and your legs. Release all other muscles in your body. Keep on breathing. Feel the tension. Hold the tension (*3 s pause*), and then release it very slowly with the next long out-breath. Release your legs back to a resting position. Let your muscles relax, and be aware of the difference between the tension you felt before and the relaxation you feel now. (*5 s pause*)

Now bring your attention back to your buttocks, your belly, and your legs. Tense the muscles again by pressing your buttocks together while straightening your legs in front of you and slightly lifting your feet off of the floor. This time, point your feet back toward your face. Feel the tension in your buttocks, your belly, and your legs. Release all other muscles in your body. Keep on breathing. Feel the tension. Hold the tension. (*3 s pause*) Then release it very slowly with the next long out-breath. Release your legs back to a resting position. Let your muscles relax, and be aware of the difference between the tension you felt before and the relaxation you feel now. (*5 s pause*) Breathe calmly and regularly, and feel how the muscles relax more and more with every out-breath ... how the pleasant feeling of relaxation becomes deeper and deeper. (*15 s pause*)

Now take some time to enjoy the feeling of relaxation ... to rest ... and to gain new strength. (*30 s pause*)



And now, when you are ready ... slowly ... at your own pace ... bring your attention back from the relaxation exercise by breathing in deeply (*audibly inhale*), stretching and flexing your body (*demonstrate*), opening your eyes, and lightly tapping on your thighs a few times so that you become fully awake again.

*Sound of the bell*

*Note to the therapist:*

After the exercise, the participants are encouraged to discuss their experiences during the exercise. Therapists should start with an open-ended question such as “What was that like for you?” As the discussion progresses, the therapist may need to ask specific questions, so participants elaborate on their answers. Here are some questions and comments that may be helpful to facilitate discussion:

“Did you find your mind wandering a lot?” “If so, that’s normal.” “What did you do when you noticed your mind wandering?” If they say they brought their attention back to the exercise, offer reinforcement. If they say they got frustrated, normalize the feeling while also encouraging them to continue to practice being aware of distractions and then bringing their attention back to the exercise.

“Were you able to tense the specific muscle groups that we asked you to tense?”

“What was it like to tense your muscles on purpose and then to relax them?”

“What did it feel like?” “Did your muscles feel different after you did it?”

*(It’s okay if they did not notice a difference.)*

It is extremely important that the participants experience a feeling of success in this first exercise. Thus, any difficulties should be normalized, and successes should be highlighted. One success could be that participants were able to sit still throughout most of the practice, even if they had urges to move around. This can be quite difficult. If needed, the therapist may work in more detail with the participants to brainstorm strategies in order to manage difficulties encountered during the exercise.

If the conclusion of the ART Sequence Exercise corresponds with the end of the training session for the day, the following applies: (If not, skip forward to Module Three.) Prior to concluding for the day, participants should be given the audio CD containing Exercise #1. The participants should be encouraged to practice ART Skills #1 and #2 during the time before the next scheduled training session by using the audio CD containing ART Sequence Exercise #1 and by following along with the short exercises, using either the printed training calendar or messages sent via email or text messaging. Each day, the participants should ideally practice ART Sequence Exercise #1 from the audio CD and follow along with the short exercises from the training calendar, text messages, or emails. The audio CDs containing the ART Sequence Exercises and the short exercises in printed form, text, and email are described in further detail in Chap. 11 starting with Slide 50.

## Reference

Jacobson, E. (1964). *Anxiety and tension control: A physiologic approach*. Philadelphia, PA: J. B. Lippincott Co.