

***Cognitive  
Behavior  
Management  
#10***

***Stress Inoculation***

*Compiled by Jerome R. Gardner  
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***The enclosed techniques and procedures were developed with materials from a workbook of cognitive behavior techniques titled "Thoughts & Feelings and written by Matthew McKay, Martha Davis, and Patrick Fanning. The workbook was published by New Harbinger Publications, Inc in 1997.***

# ***Technique #10    Stress Inoculation***

## ***Clinical Prompt***

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- Step 2.     Fear Assessment
- Step 3.     Building a Fear Hierarchy
- Dimensions
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    - temporal
    - threat
    - support
  - preparing for real life exposure
  - getting started
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    - fill in the middle
  - Finalize on form CBM#10-003
- Step 4.     Develop Coping Thoughts
- Probe
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- Step 5.     Stress Inoculation
- relax
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  - exit at: marked anxiety [4+] or lessened anxiety [0-1]
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- Step 6.     *In Vivo* Exposure
- Special Considerations
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## ***Forms & Charts***

Fear Assessment Form	CBM#10-001
Sample Hierarchies	CBM#10-002
Hierarchy Form	CBM#10-003
Generic Coping Statements	CBM#10-004
Hierarchy Worksheet	CBM#10-005
Bourne Anxiety Scale	CBM#10-006

# ***Technique #10 Stress Inoculation***

## ***Introduction***

Two pioneering techniques have made a huge impact on the treatment of anxiety and phobia: systematic desensitization and stress inoculation. Systematic desensitization was developed by behavior therapist Joseph Wolpe in 1958. Wolpe assisted anxious people in developing a hierarchy of stressful scenes related to their phobia. The hierarchy stretched from scenes that produced almost no anxiety all the way to images that were terrifying. With a hierarchy in place, Wolpe provided training in progressive muscle relaxation and helped people desensitize to the frightening scenes by pairing these scenes with deep relaxation.

Systematic desensitization is a simple process: first you relax, then you imagine a stressful scene until it produces anxiety. The scene is immediately erased and the process repeated until the scene no longer evokes any anxiety. Because each new scene is only slightly more anxiety evoking than the one before, the client progresses in gradual increments all the way to the most frightening items in the hierarchy.

Systematic desensitization teaches a client to master anxiety. The expectation is that s/he will feel little or no anxiety in situations s/he has desensitized him/herself to. This is simultaneously the strength and the weakness of the technique. The client feels a tremendous sense of accomplishment and freedom when they are relaxed in situations that formerly provoked anxiety. But what if anxiety begins to creep back in? What if you're suddenly hit with a wave of the old panic? Systematic desensitization offers nothing to help you cope with this situation. You're supposed to be anxiety free but you're not.

To solve this problem, Donald Meichenbaum developed stress inoculation. He taught people how to cope with their anxiety - whenever and wherever it occurs. Meichenbaum argued in his book, ***Cognitive Behavior Modification*** (1977), that a fear response can be conceived of as an interaction of two main elements: (1) heightened physiological arousal (increased heart and respiration rates, sweating, muscle tension, chills, the "lump in the throat") and (2) thoughts that interpret your situation as dangerous or threatening and attribute your physiological arousal to the emotion of fear. The actual stressful situation has very little to do with your emotional response. Your appraisal of the danger and how you interpret your own body's response are the real forces that create your anxiety.

Stress inoculation training involves learning to relax, reducing stress by using deep breathing and muscle relaxation. But there's more to coping with fear than merely relaxing your body. The client also learns to create a private arsenal of coping thoughts. These are used to counteract habitual thoughts of danger and catastrophe that arise in phobic situations.

As with systematic desensitization, the client develops a hierarchy and uses deep relaxation prior to imagining each scene. But that's where the similarity to Wolpe's technique ends. Here the client doesn't cut off the scene when s/he feels anxious. Instead s/he continues to imagine the scene for up to a minute while using relaxation techniques and coping thoughts. Instead of trying to master anxiety so it never comes back, the client learns effective coping strategies to develop confidence in the ability to handle any situation, no matter how frightening it may feel.

There is one problem with stress inoculation as a technique to treat phobia. Staying in the stressful scene and coping, if

experiencing high levels of anxiety, can be unpleasant to the point where clients are discouraged from further practice. Research indicates that extensive exposure to high-anxiety situations results in a much greater drop-out rate from treatment than gradual exposure where the client is permitted to escape [Jannoun et al. 1980; Mathews et al. 1977]. Conversely, if the client is allowed to escape a scene when anxiety reaches a critical threshold, it gives them a greater feeling of control and reduced overall anxiety (Rackman et al. 1986) while losing none of the treatment's effectiveness (Emmelkamp 1982).

Edmund Bourne, author of *The Anxiety and Phobia Workbook* (1995), recognized this issue and modified the stress inoculation technique to make it a more user-friendly treatment. Bourne follows the same approach as Meichenbaum - deep relaxation and coping thoughts applied to a hierarchy of phobic scenes - but he gives people a way out if they get too anxious. You continue to cope in the scene unless you reach a threshold of marked anxiety. Then you shut the scene off and return to deep relaxation, exactly as Wolpe recommends in systematic desensitization.

Bourne's modification of stress inoculation is considered the best available imagery technique for treating phobias.

### ***Symptom Effectiveness***

Stress inoculation and systematic desensitization have been proven effective with a wide variety of phobias in dozens of outcome studies. However, it appears that their effectiveness depends on additional in vivo (real life) exposure. In other words, you actually have to do the things you've avoided to successfully complete a phobia program.

Neither stress inoculation nor systematic desensitization is indicated for panic disorder without phobia, generalized anxiety, or interpersonal situations that require assertive behavior.

### ***Time for Mastery***

Learning the relaxation techniques necessary for stress inoculation will take a minimum of two to three weeks. The client can construct their hierarchy at the same time they are learning to relax. The systematic visualization of scenes can be done daily. Results will usually be noticed in the first several days, but the average phobia will take a week or more to treat effectively with the imagined scenes.

Complete recovery from a phobia requires the client to expose him/herself in real life to the situations that they have imagined in stress inoculation. Only when they learn to enter situations in vivo that they used to avoid will you be certain that they can learn to cope with fear.

### ***Instructions***

#### *Step 1: Relaxation Training*

The instructions for Technique #4 Relaxation, start with the exercise to learn deep, diaphragmatic breathing. When the child has learned to breathe deeply into the abdominal area and can reliably create feelings of relaxation, they can move on to progressive muscle relaxation (PMR). This exercise will teach them what it feels like when your muscles have released all tension.

When the child has mastered PMR and can relax the major muscle

groups in the body, it's time to practice relaxation without tension. Here they will follow the same sequence of muscle groups as with PMR, but they will no longer tighten and release muscles. Instead they will **will** them to relax and let go.

The next procedure is cue-controlled relaxation. This will allow the child to relax the whole body by taking a series of deep breaths and using a cue word or phrase to trigger relaxed and peaceful feelings.

The final procedure is to visualize a special place. Here the child will use visual, auditory, and physical images to create in their mind a place where they feel calm, safe, and deeply relaxed. See Technique #4 for full details.

By the time the relaxation training is complete, the child will be ready to begin visualizing and desensitizing the stressful scenes of their hierarchy.

*Step 2: Choosing a Fear to Work On*

If the child has only one fear and is ready to work on it, you can skip this section. But if s/he has several phobias and is uncertain which to work on first, or whether to work on them at all, have the child do a simple assessment for each of the fears, using the ***Fear Assessment Form [CBM#10-001]*** .

Now the child has a short profile of how each of the fears affects them. Take special notice which fear has the highest total score. Help the child decide whether s/he might wish to work on that one. However, you might decide that one of these factors is more important than the others, and the highest scoring fear on that factor should be the choice for stress inoculation. Many people, for example, are concerned less with how distressing or frequent

a phobia is than with how much their lives may be limited by it. It's the client's decision. Once s/he's made it, move on to the next section.

*Step 3: Building a Hierarchy*

Hierarchies should comprise from eight to twenty scenes. In constructing a hierarchy of threatening scenes, the child will be taught to manipulate four variables:

1. Spatial proximity - how physically close s/he is to the feared object or situation. If you were afraid of snowstorms, for example, you'd probably feel more fearful as you got closer to the mountains on the annual ski trip. You could create hierarchy scenes in which you imagine the car reaching the first prolonged grade to the mountains, or you're high enough to see the first drifts by the side of the road, and so on.
2. Temporal proximity or duration - how close s/he is in time to the feared object or situation, or how much time s/he spends exposed to it. A hierarchy on the fear of subways might have scenes in which you're getting closer and closer in time to the subway ride. Or it might list rides of progressively longer duration.
3. Degree of threat - how difficult and scary the scene is. With the fear of elevators, for example, you can manipulate the degree of threat by altering the number of floors ascended or descended.
4. Degree of support - how close s/he is to a support person during a threatening scene. With freeway fears, for example, a support person could be in the seat next to you, behind

you, behind you and out of sight, driving one car length behind you, five car lengths behind you, or just be on call in case you need help.

In many cases you will use all four of these variables to think of scenes for the child's hierarchy. You may want to show the child some of the sample hierarchies, that you received in your training [**Sample Hierarchies CBM#10-002**]. The scenes are all marked **SP** for spatial proximity, **TP** for temporal proximity, **T** for degree of threat, and **S** for degree of support. As you examine how these hierarchies are built, you're likely to get a better idea of how to use the variables to create many different scenes. **Fear Hierarchy Form [CBM#10-003]** can be used.

### Preparing for Real-Life Exposure

Where at all possible, make each scene something the child could intentionally do in real life. Consider the fear of snakes, for example. Hierarchy scenes in which the client is walking in the woods and sees a snake are hard to set up when you want to test coping skills in vivo. It's better to have scenes in a store that sells snakes, where you get closer and closer to the glass terrariums, finally touching a snake, picking it up, and so on.

### Getting Started

The first step is to help the child imagine dealing with the feared object or situation in a way that creates almost no anxiety. S/he can imagine him/herself at a distance in space or time, having a support person by his/her side, or dealing with only mildly threatening aspects of the situation.

Then have the child imagine the worst possible exposure s/he could have to the feared object or situation. For example, if

you're afraid of public speaking, you might imagine giving a long presentation before a large audience. Or, if you are afraid of crowded theaters or classrooms where you're far from the exit, you could create a very claustrophobic scene where the room is stuffy and you would have to step across many people in their seats to get to the exit. Remind the child to think about the four variables that you can manipulate to make the scene the worst imaginable.

But remember, with both the lowest- and highest-anxiety scenes, make them something the child can replicate in real life for later practice.

### **Fill In the Middle Scenes**

Now it's time to imagine from six to eighteen scenes of graduated intensity that are connected to the client's phobia. At first just brainstorm, provoking as many scenes as the child can potentially use. Have the child think of temporal and spatial proximity. Encourage the child to try to increase the degree of threat. If the child plans to use you as a support person in later real-life exposure, build varying levels of support into the hierarchy as well.

Once you and the child have a good number of scenes, have him/her try to rank them from least threatening (number 1) to most threatening (the highest number).

Now go through the scenes in the hierarchy, and see if the increments of anxiety are approximately equal throughout. If some increments are larger than others, you and the child will need to fill in these 'holes' with additional scenes. Keep working on it until the steps are close to even.

You may find that some of the child's scenes have equal ranking. If that's so, either throw one or more of them out or manipulate the variables to give each a unique place in the hierarchy.

### **Finalizing the Hierarchy**

Since you've had the child rank the hierarchy scenes, photocopy ***Hierarchy Form CBM#10-003*** and have the child fill in the items s/he has developed.

#### Step 4:            *Developing Coping Thoughts*

The child should develop one or two coping thoughts as s/he gets ready to visualize each new scene in the hierarchy. Briefly have the child visualize the scene, making it as real as possible. Have the child notice what s/he sees, what s/he hears, and even what s/he feels physically. Now have him/her listen to his/her own thoughts. What is s/he saying to him/herself about potential dangers or catastrophes that might occur in the scene? If you or the child notice the anxiety rising as s/he listens to these thoughts, you'll need to find a way to help the child answer back with coping thoughts.

Here are some key questions to teach the child to ask when developing their coping thoughts:

- A. Do I have a plan to handle this situation? What would I do if the problem I fear occurred?
- B. How likely are the frightening outcomes that I imagine? Can I estimate the odds against these happening?
- C. How long would I have to endure this if I were really in this situation? (Sometimes it's enough just to remind yourself, "I can do this; it's only a short time.")

- D. What coping skills do I have to handle this? What relaxation skills, ways to reassure myself, things I can remind myself to do?

The answers to these questions may give you and the child one or two ideas for coping thoughts to manage anxiety in this scene. You can also consult the list of ***Generic Coping Thoughts*** [CBM#10-004] which may give some other good ideas.

Distill the one or two best coping thoughts for the first scene in the child's hierarchy. Have the child record them in the space provided on the ***Hierarchy Worksheet*** [CBM#10-005]. They will do the identical process for each succeeding scene as they come to it.

Step 5:                    *Stress Inoculation Procedure*

The stress inoculation sequence:

- A. **Set ten to fifteen minutes aside for the child to get relaxed.** Go through progressive muscle relaxation, cue-controlled relaxation (which includes deep breathing), and a special- place visualization of somewhere that the client feels calm and safe. Now briefly review the coping statements for the first (or next) scene.
- B. **Visualize the first (or next) scene in the hierarchy.** Try to bring it to life. See the situation, hear what's going on, feel any physical sensations. What objects or people are in the scene? What colors? What's the quality of light? Do you smell anything, notice the temperature, feel anything against your skin? Do you hear voices, wind, a ticking clock?

Make sure the child is careful not to picture him/herself as

anxious in the scene. If s/he is in the scene at all, she should be seen as comfortable and confident.

- C. **Start to cope.** Once the visualized scene is clear in the child's mind, s/he should immediately begin relaxing and using coping thoughts. It's recommended that they use cue-controlled relaxation during hierarchy scenes. It's the quickest stress reduction strategy because it involves just a few deep breaths and the cue word or phrase.

As the child copes physically using cued relaxation, s/he should recall one or more of the coping thoughts. Keep the child visualizing the scene while coping for thirty to sixty seconds - unless the anxiety becomes *marked* (see D).

- D. **Rate the anxiety.** Use the ***Bourne Anxiety Scale*** [***CBM#10-006***] as a reference during stress inoculation.

If at any time while visualizing a scene the child reaches Level 04 *marked anxiety* - have them immediately discontinue the scene and return to the relaxation exercises. Be sure to get clear agreement as to what constitutes Level 4 for the child in advance of visualizing any hierarchy item. According to Bourne, "This is the point at which - whatever symptoms the child is experiencing - s/he will feel control over his/her reactions beginning to diminish" (1995). They will start feeling the danger of a full panic.

Marked anxiety is the cutoff point for good reason. Staying in the scene while fearing that you will lose control can resensitize you and make you more, rather than less, anxious when the scene is over.

After the child has coped for thirty to sixty seconds, or cut a scene because of marked anxiety, immediately have him/her rate

their anxiety on the Bourne Scale. Write the number down on the Hierarchy Worksheet. If the anxiety is Level 0 or 1, the child can move on to visualize the next scene. If it's 2 or above, have the client relax and revisit the same scene.

Also spend a moment in helping the child evaluate the coping thoughts. Stop using any that prove ineffective. If none of them worked, it's time to look at the generic list and experiment with one or two others.

E. **Always do deep relaxation between scenes.** Typically, the client might use cue-controlled relaxation and spend time calming themselves with their special place.

If the child reached marked anxiety or above during a scene, have him/her spend some additional time doing progressive muscle relaxation or relaxation without tension. These powerful techniques can help achieve a deeper level of calm.

F. **Keep alternating between hierarchy items and relaxation.** Immediately cut scenes that reach Level 4. Cope for up to a minute in scenes where the anxiety is Level 3 or below. Move to the next item on the hierarchy whenever the child achieves an anxiety level of 1 or 0 while coping in a scene. It usually takes at least two exposures to a scene to fully desensitize to it. The lowest-ranked scenes, where the anxiety is quite low from the outset, may be exceptions.

Practice daily. The first practice session should be fifteen to twenty minutes. Later you and the child can extend stress inoculation sessions to as much as thirty minutes. The main limiting factor is fatigue. Always stop a session if the child begins to feel tired or bored.

Expect to master from one to three hierarchy items during each practice session. When starting a new practice session, always go back to the last scene the child successfully completed. This helps to consolidate gains before facing more anxiety-evoking items.

### Step 6: In Vivo Exposure

In most cases the child can use the same hierarchy to practice in vivo exposure to feared situations. If some of the items can't be easily manipulated in a real-life situation, modify them so they can. Consider the item "Elevator stuck between floors". This is clearly something you can't create on demand. But you can modify it to "Standing in the elevator at some local building where the door closes and it waits a long time before starting to rise." This isn't the same as being stuck between floors, but it evokes some of the same feelings.

As with imagery desensitization, the child will need to retreat from an exposure session if the anxiety reaches Level 4. Retreat doesn't mean going home and giving up. Retreat means having the child go somewhere relatively safe where s/he can refocus on the relaxation exercises, returning to exposure practice once the anxiety has been reduced. Use the "Coping During Exposure" guidelines [Technique #10 ] during exposure practice.

### ***Special Considerations***

If the child experiences difficulties in practicing stress inoculation, s/he is likely to be in one of the three common problem areas:

1. **Incomplete Relaxation.** If the child can't relax at the beginning of a session, have them try to imagine lying on a soft lawn on a calm summer day, watching clouds slowly floating by. Or imagine watching leaves float by on a broad,

slow river. Each cloud or leaf takes some of the muscular tension away with it.

You may also want to have the child record the relaxation routine on tape and play it at the beginning of each session or scene.

2. **Visualization Difficulty.** If the child finds that the scenes seem flat, unreal, and unevocative of the distress s/he would feel in real-life scenes, s/he probably has trouble visualizing things clearly. To strengthen the powers of imagination, ask the child probing questions about all the senses to make the scenes real:

*Sight:* What colors are there in the scene? What colors are the walls, the landscape, people's clothes, cars, furnishings? Is the light bright or dim? What details are there—books on the table, pets, chairs, rugs? What pictures are on the walls? What words can you read on signs?

*Sound:* What are the tones of voices? Are there airplane or traffic noises, dogs barking or music playing in the background? Is there wind in the trees? Can you hear your own voice?

*Touch:* Reach out and feel things—are they rough or smooth? hard or soft? rounded or flat? What's the weather like? Are you hot or cold? Do you itch, sweat, have to sneeze? What are you wearing? How does it feel against your skin?

*Smell:* Can you smell dinner cooking? flowers? tobacco smoke? sewage? perfume or aftershave? chemicals? decay? pine trees?

*Taste:* Are you eating food or drinking water? Are the tastes sweet? sour? salty? bitter?

It also helps to go to the real setting of one of your scenes. Then you can gather images and impressions, and practice remembering details. Close your eyes and try to see the scene, then open your eyes and notice what you missed. Close your eyes and try again. Describe the scene out loud to yourself. Open your eyes and see what you missed this time, and what you changed in your mind. Close your eyes and describe the scene again, adding the sounds and textures and smells and temperatures. Keep this up until you have a vivid sense picture of the scene

3. **Misconstructed Hierarchies.** If the child finds no reduction in anxiety with repetitions of a particular scene, the hierarchy probably needs to be reconstructed with a more gradual gradient.

If the child can visualize the scenes clearly and experiences little or no anxiety, the hierarchy probably needs to be reconstructed with a steeper gradient between scenes, or with a greater variety of content in the scenes.

If the child can visualize the scenes clearly, and experiences erratic levels of tension, either the scenes in the hierarchy aren't evenly spaced with regard to intensity, or you have scenes depicting different kinds of items mixed together. In either case, reconstruct the hierarchy and try again.

**Fear Assessment Exercise**    CBM#10-001**Fear #1:**

How distressing is your fear?

1	2	3	4	5	6	7	8	9
								Extremely

Slightly

How frequently do you encounter your fear?

1	2	3	4	5	6	7	8	9
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Almost never

Constantly

How much does your fear limit you?

1	2	3	4	5	6	7	8	9
								Extremely

Not at all

**Fear #2:**

How distressing is your fear?

1	2	3	4	5	6	7	8	9
								Extremely

Slightly

How frequently do you encounter your fear?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Almost never

Constantly

How much does your fear limit you?

1	2	3	4	5	6	7	8	9
								Extremely

Not at all

**Fear #3:**

How distressing is your fear?

1	2	3	4	5	6	7	8	9
								Extremely

Slightly

How frequently do you encounter your fear?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Almost never

Constantly

How much does your fear limit you?

1	2	3	4	5	6	7	8	9
								Extremely

Not at all

## Sample Hierarchies

CBM#10-002a

<i>Phobia about Getting Injections</i>		
<b>Variable</b>	<b>Rank</b>	<b>Scene</b>
T	01	Watching a movie in which a minor character gets a shot
T	02	Talking to a friend about her flu shot
T	03	Pricking finger with pin
T	04	Making doctor's appointment for a nonmedicinal saline injection
SP	05	Driving to medical center
SP	06	Parking car in medical center parking lot
T, SP	07	Thinking about shots in doctor's waiting room
SP	08	Entering treatment room
TP	09	Nurse entering room with injection materials
TP	10	Nurse filling syringe
T	11	Smelling alcohol on cotton ball
TP	12	Seeing hypodermic poised in nurse's hand
T	13	Receiving small saline shot in right arm
T	14	Receiving larger saline shot in left arm
T	15	Receiving flu shot in arm
T	16	Having a blood sample taken

## Sample Hierarchies

CBM#10-002b

<i>Phobia about Being Near Bees</i>		
<b>Variable</b>	<b>Rank</b>	<b>Scene</b>
T	01	Seeing a picture of a bee
TP	02	Planning to practice in back yard later in the day
SP	03	Standing at door, looking out at back yard
SP,TP	04	Standing outside, near back door, for one minute
TP	05	Standing outside, near back door, for three minutes
SP	06	Standing halfway to dahlias (where there are lots of bees) for one minute
TP	07	Standing halfway to dahlias for three minutes
SP	08	Standing close enough to hear buzzing—one minute
TP	09	Standing close enough to hear buzzing three minutes
SP	10	Standing next to dahlias (bees all around)—thirty seconds
TP	11	Standing next to dahlias—two minutes
TP	12	Standing next to dahlias—five minutes

## Generic Coping Statements

- This feeling isn't comfortable or pleasant, but I can accept it.
- I can be anxious and still deal with this situation.
- I can handle these symptoms or sensations.
- This is an opportunity for me to learn to cope with my fears.
- This will pass.
- I'll ride this through—I don't need to let this get to me.
- I deserve to feel okay right now.
- I can take all the time I need to let go and relax.
- I've survived this before and I'll survive this time, too.
- I can do what I have to do in spite of anxiety.
- This anxiety won't hurt, it just doesn't feel good.
- These are fight-or-flight reactions—they won't hurt me.
- This is just anxiety—I'm not going to let it get to me.
- Nothing serious is going to happen to me.
- Fighting and resisting this isn't going to help—so I'll just let it pass.
- These are just thoughts—not reality.
- I don't need these thoughts—I can choose to think differently.
- This is not dangerous.
- So what.

<b><i>Feelings Bourne Anxiety Scale</i></b>		
07-10	Major Panic Attack	All of the symptoms in Level 6 exaggerated; terror; fear of going crazy or dying; compulsion to escape.
06	Moderate Panic Attack	Palpitations; difficulty breathing; feeling disoriented or detached (feeling of unreality); panic in response to perceived loss of control.
05	Early Panic	Heart pounding or beating irregularly; constricted breathing; spaciness or dizziness; definite fear of losing control; compulsion to escape.
04	Marked Anxiety	Feeling uncomfortable or "spacy"; heart beating fast; muscles tight; beginning to wonder about maintaining control.
03	Moderate Anxiety	Feeling uncomfortable but still in control; heart starting to beat faster; more rapid breathing; sweaty palms.
02	Mild Anxiety	Butterflies in stomach; muscle tension; definitely nervous.