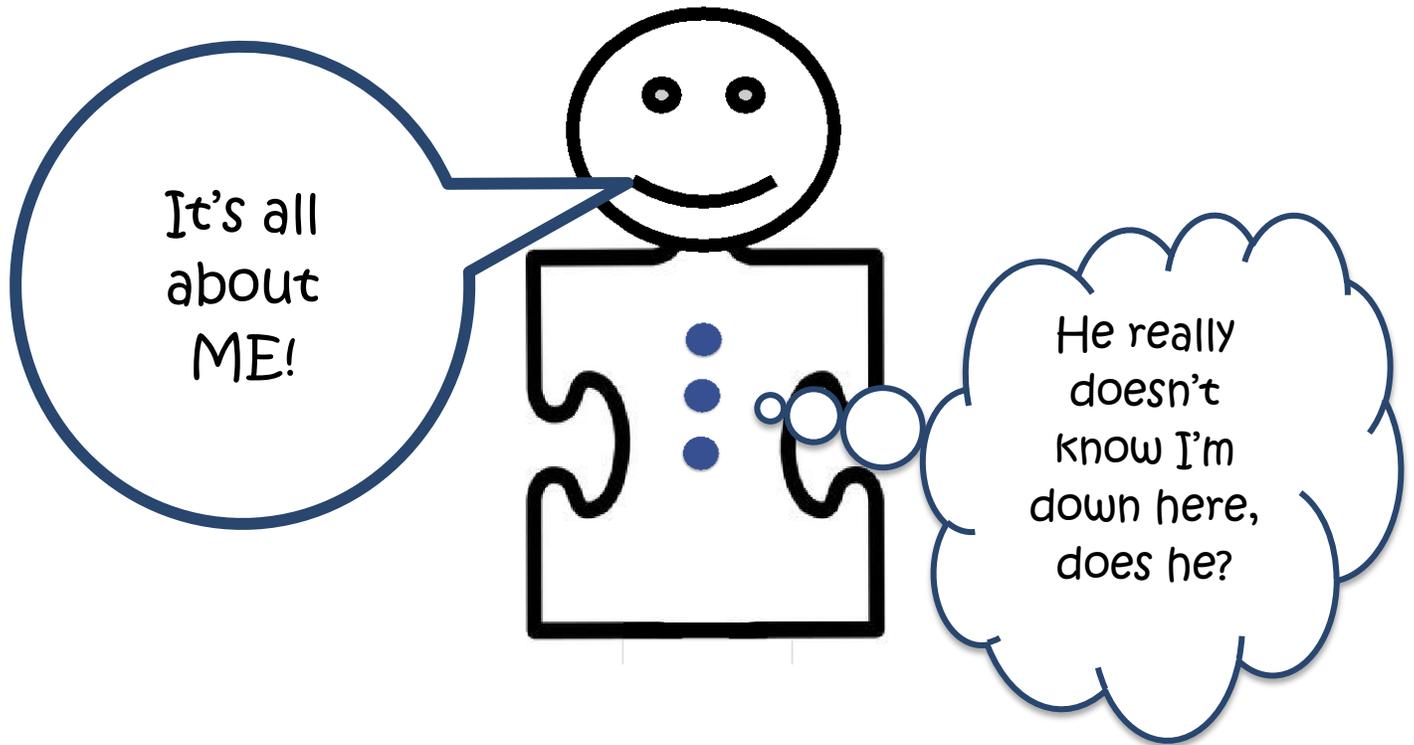


# You Fit Together



## Body, Mind, Resilience, and Recovery

### Understanding and Building Better Health

Pamela Woll, MA, CPS

Addiction Technology Transfer Center Network



ATTC

Addiction Technology Transfer Center Network

Funded by Substance Abuse and Mental Health Services Administration

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Understanding and Building Better Health

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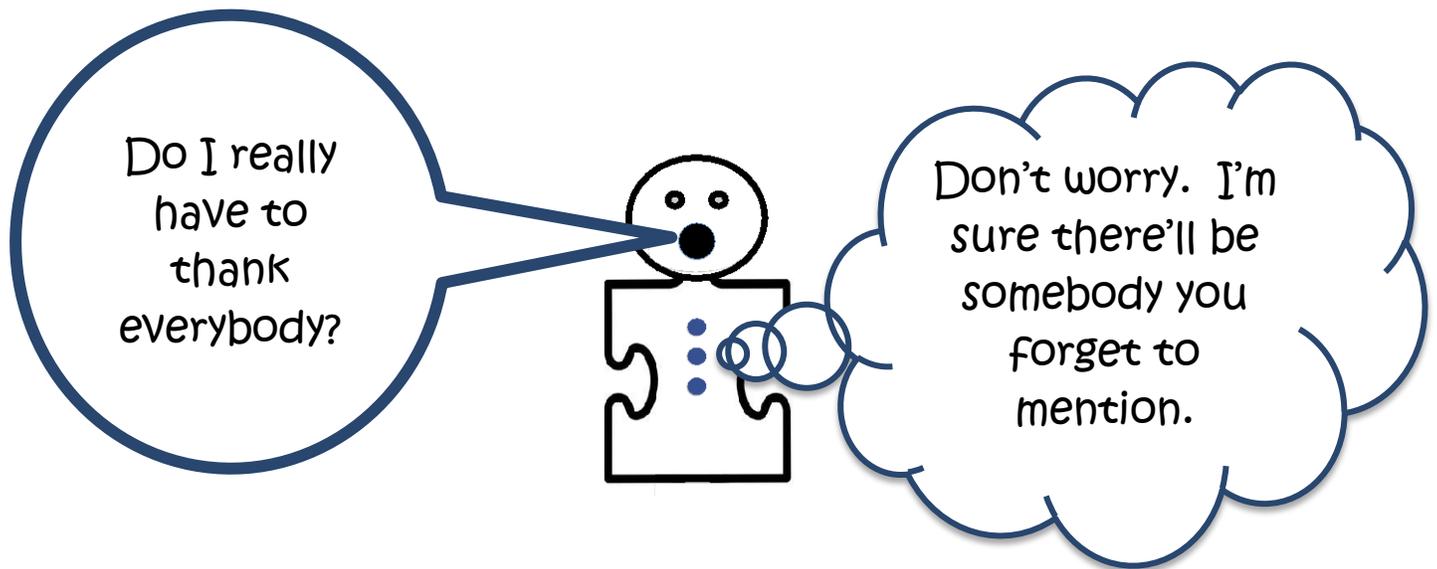
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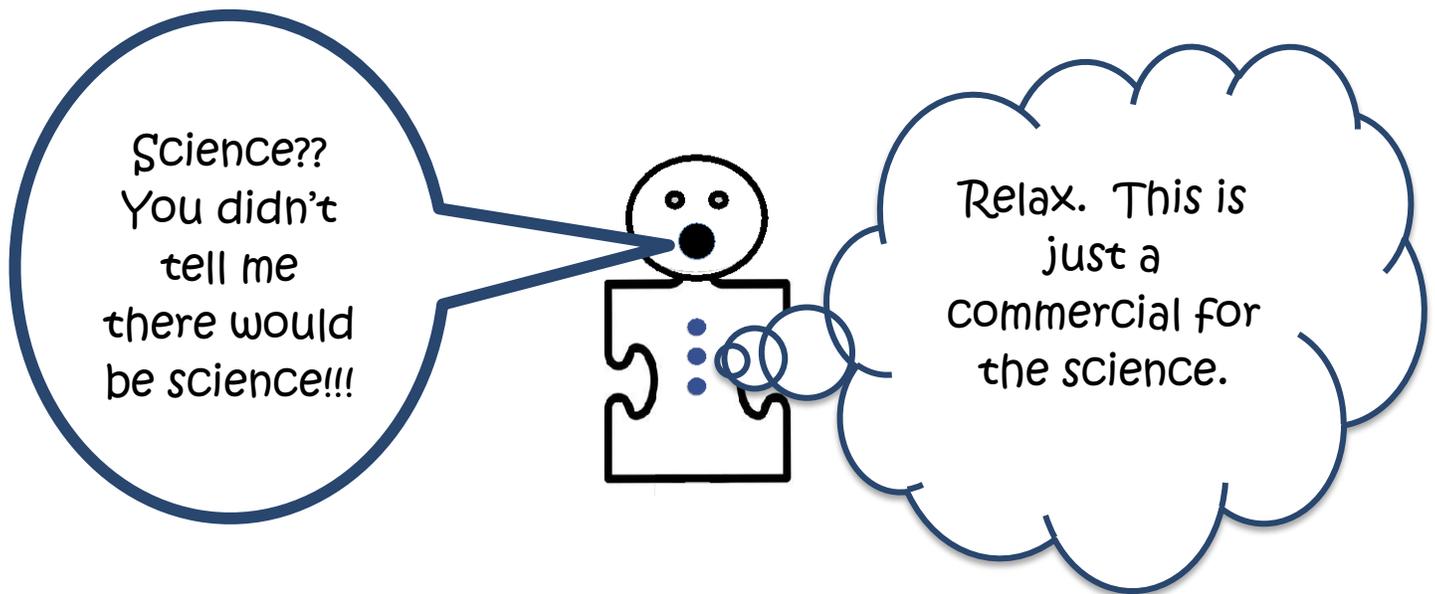
The author also wishes to express gratitude for the leadership and support of GLATTC Visiting Director/Principal Investigator Rafael Rivera and Associate Director Tiffany Kilpatrick in the preparation of this project.

This booklet combines very basic information about the body, the mind, behavioral health, chronic illness, and community – very basic, but very important to present accurately. Special thanks go to Andrew Davis, MD and Andrew Griffin, MD, for reviewing the initial draft and pointing out errors to be corrected and potential misunderstandings to be avoided.

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## About the Science...

This booklet presents some general information about the body, the brain, resilience and stress, chronic health concerns, and stress-management techniques. Most of it comes from a commonly known body of very basic health information, so it isn't documented with citations of all source articles and books, the way a scholarly work would be. It also uses colloquial terms (like "stress system") instead of technical terms, because it aims for a wide audience that includes newcomers to the subject.

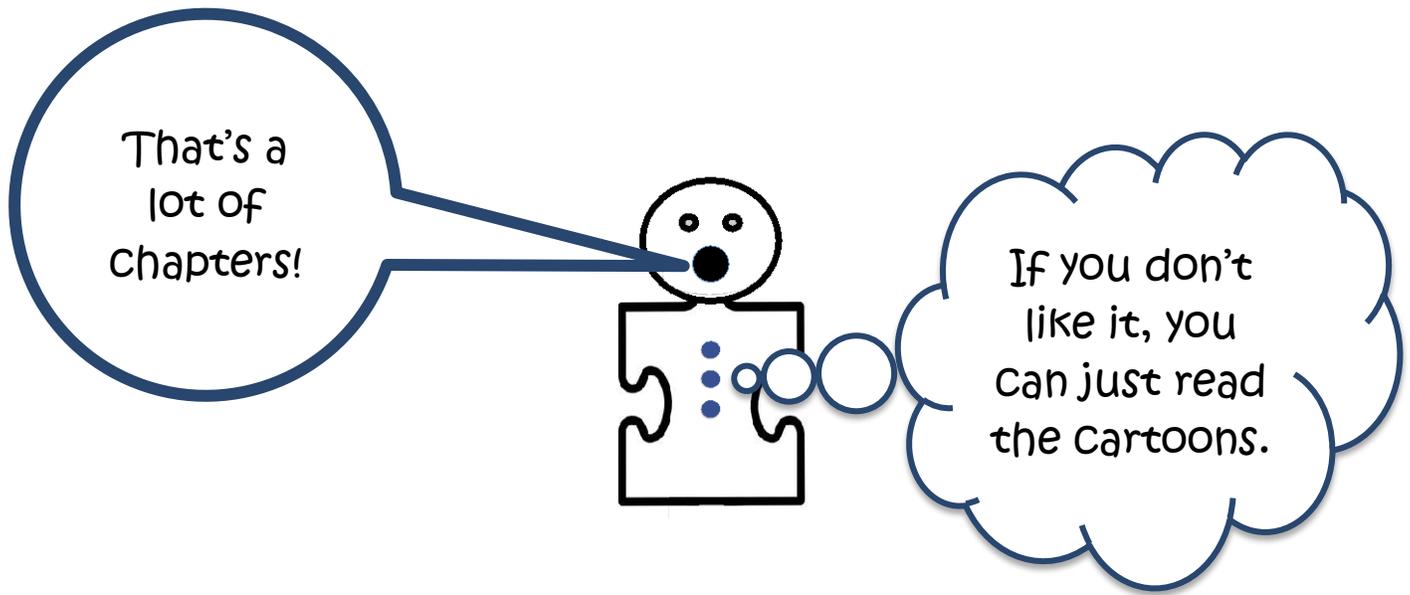
This approach doesn't mean the scientific material is too mysterious or hard to understand. For those who like it, the science of the body is fascinating, understandable, and well worth studying. It's a combination of learning processes, and there are many scientists who are good teachers. There's a lot on the internet that's nonsense, but there's also a lot that's well documented and scientifically sound. One caution is to remember how little we know, and how dangerous it can be to make assumptions based on our limited knowledge.

You might think of scientific terms about the body as a language and think of what it's describing as a play – sometimes a comedy, sometimes a drama, but often interesting.

- The environments we live in are like the background set that appears on the stage.
- The brain and body parts are like the characters, with their roles, motives, personalities, and customary actions and ways of interacting with the other players.
- The chemicals are their dialogue – the messages they convey to one another.
- The health benefits and challenges that come out of all this action make up the outcome of this play – what actually happens, how the play ends.

How much we learn about our health, and how active we are in taking care of it, determine whether we get to be the director or just a member of the audience. But remember: One

quality of a good play is that somebody important in the play (you?) changes in important ways. May all your changes be for the better, and may you be an award-winning director!



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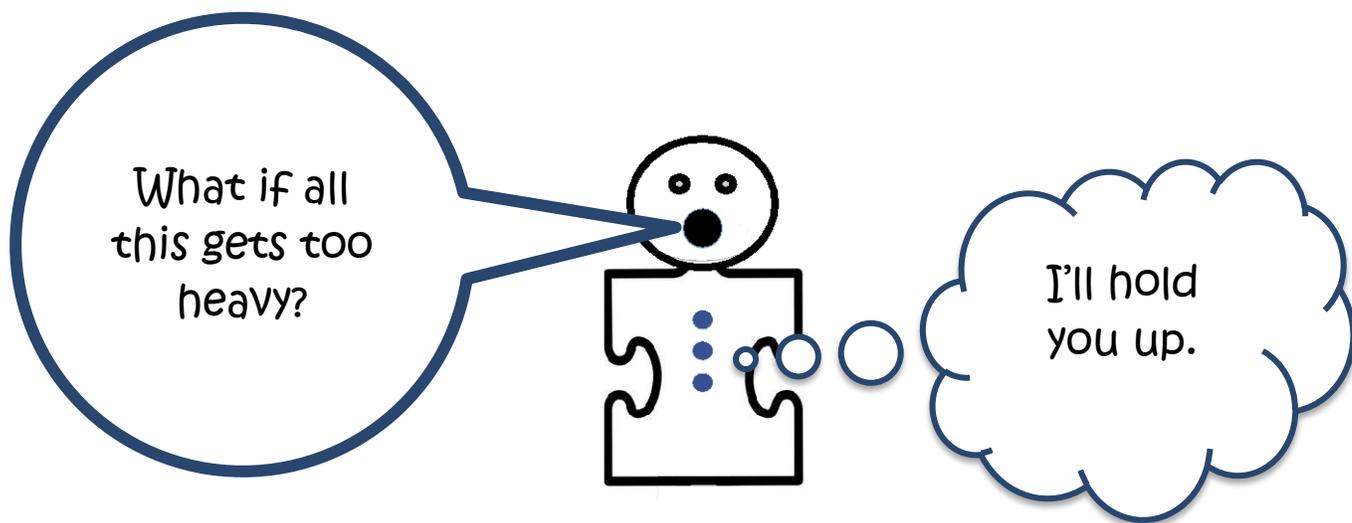
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## Read Me First!

This booklet is about stress—the body’s reaction to the physical, emotional, or intellectual challenges it faces. Moderate stress can be positive and healthy, but having too much stress can cause problems with physical and/or mental health and raise the risk of problems with alcohol or drugs. You might be reading this to learn about your own health, the health of someone you know, or the health and well being of your community as a whole.

The booklet describes challenges that too much stress can cause, but it pairs those with:

- The strength of the body and mind to overcome stress, threat, injury, and illness
- Things that people can do—and other people can help them do—to get more healthy
- Things that communities can do to reduce stress and increase available resources

This booklet is written to help you improve your sense of comfort and safety in the world, not to take it away. The focus is on the present—not digging into what happened in the past, but figuring out what’s happening **now** and doing what you can to get as healthy and balanced as possible. Still, at vulnerable times in people’s lives, the mention of high stress, threat, or the fact that painful things happen might cause distress—a very troubling state of physical or emotional strain. At vulnerable times, many things we see, hear, or read can bring up distressing memories, thoughts, feelings, or urges. Raising distress is definitely not the intention of this booklet. So if that happens, here are some things you can do:

1. Stop reading, put the booklet down, and try breathing more slowly and deeply.
2. Call someone you trust—someone positive—and talk about what you’ve read, how you feel, and what you want or need to feel calm and strong.
3. If your thoughts or feelings are out of control, or you want to hurt yourself, call 911.
4. If it’s less serious, but still serious, call someone who can connect you with help soon.

On the next page is a “grounding exercise.” It’s a good thing to learn, and to use if you feel distressed about something, whether or not you know why it’s bothering you so much.

## Grounding Exercise

A grounding exercise can get you out of the things that might be distressing you, and back into the “here and now.” Here's one example of a grounding exercise:

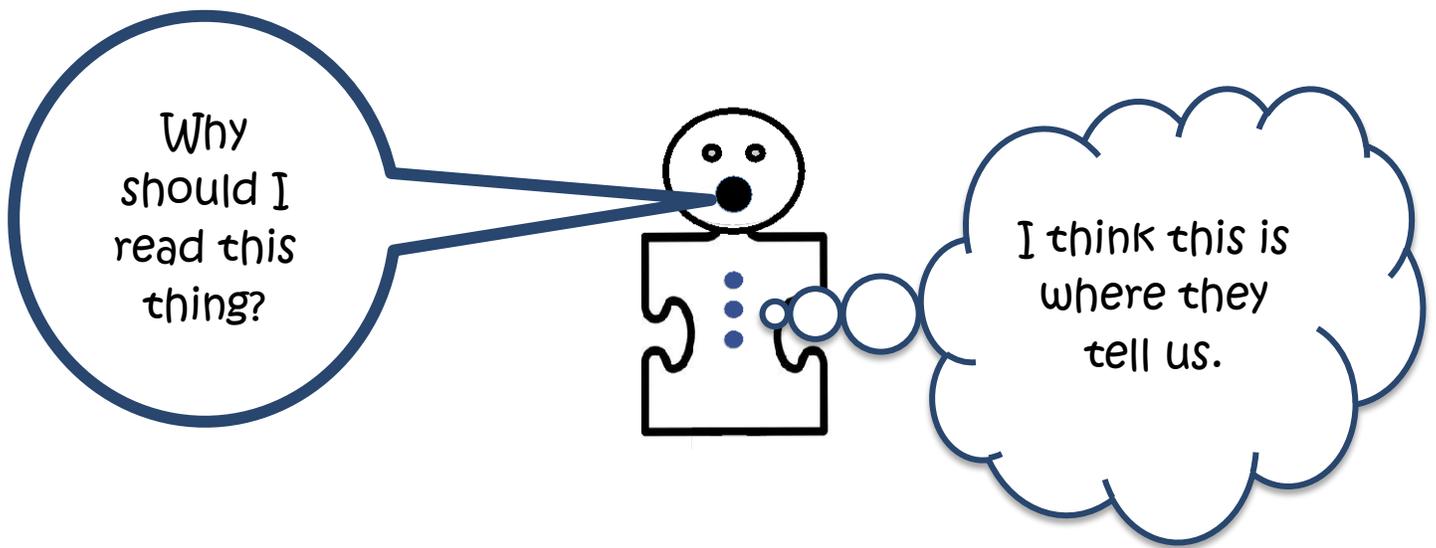
- Sit in a position that’s comfortable to you and feels well balanced – so you can relax your muscles. You can close your eyes or keep them open – your choice.
- Notice the physical sensation of your breath as it goes into your body and comes out. Is it fast or slow? How does it feel? What happens if you breathe in more slowly, make the breath go deeper in your chest, and let it out more slowly?
- Notice the physical sensation of sitting or standing where you are, and the sensations of having the different parts of your body rest on the furniture, the ground, etc.
- Start your attention at the top of your head, and slowly move your attention down, noticing the sensations in your body. Is there a place where it’s more tense? Is there a place where it’s more relaxed? Practice going back and forth from a tense place to a relaxed place.
- Continue until you’ve moved your attention all the way down to your feet. Feel your feet resting on the ground, the floor, or wherever you’ve put them.
- When you’re ready, turn your attention back to the room or outside area around you. Notice everything around you right now – walls, floors, furniture, streets, sidewalks, people, sounds, air, temperature, light, and shadows.
  - Count backwards slowly, from 10 to 1.
  - Identify five colors around you.
  - If there are people around you, count them.
- Remind yourself that you’re in the present – in the “here and now.” Remember who you are, where you are, and what you want to accomplish by being here.

It’s a good idea to learn and practice this exercise in ordinary times, so you can remember to do it when you feel your stress levels rise, when you’re feeling distress, or when you recall something difficult or you’re worried about something that might happen in the future.

In case you need something but you’re not sure what, Appendix A (Page 27) is a brief combination of all the suggestions given in the booklet, including suggestions about:

- Finding help in a physical crisis
- Dealing with adrenaline overload and other intense experiences
- Planting an image of a safe and pleasant place in your mind
- Grounding exercise
- Things to do if you’ve just been exposed to extreme stress, threat or trauma<sup>1</sup>
- Things to do if you have a history of intense stress, threat, or trauma

- Building resilience and reducing stress and stress-related challenges
- Promoting chemical health (instead of problems with alcohol, drugs, or medicines)
- Healthy eating (and weight loss, if needed)
- Getting screening and evaluation



## 1. Why Read This?

Illness is a mystery, and health is an even bigger mystery. Why do some people carry a heavy load of illness much of their lives, while others seem to walk through the world protected? Is it how many vegetables they eat? Are some people just stronger than others? Luckier than others? And what about all the people who combine physical and mental health conditions? Why both, and why so many different challenges?

We often find that illnesses of all kinds settle in people who have already had more than enough heavy stress to deal with—injuries, losses, family troubles, school troubles, work troubles, abuse, neglect, long hours, low income, poverty, homelessness, prejudice, discrimination, injustice, community violence—too many examples to mention. What role does stress play in illness? Our society often thinks of physical illnesses as living strictly in the body, and addictions and mental health conditions as living strictly in the head. But what if there's no real barrier between the two? What if whatever is part of us lives in the whole person? And what does that mean for individuals? For families? For communities?

### Resilience

And then we have the mystery of resilience, the ability to “bounce back” from heavy stress, threat, grief, even trauma (a normal response to distressing experiences that overwhelm our ability to cope). Resilience isn't just the thing that keeps some people healthy while others develop health problems. It's also the thing that helps us get well after serious health conditions—or rise above conditions that don't go away. We can “bounce forward” into better understanding, peace of mind, balance, wellness, and a stronger sense of purpose.

In many cases, illness is the price we pay for an important strength: the ability to survive and keep going, keep functioning, through difficult experiences. As painful as they might be, these kinds of health challenges are not signs of weakness. They might be signs of

strength—signs that we had the strength to survive and keep going, and now we're "paying for it." To understand this, you need to know a little about how the mind and the body are connected, and some of the strategies the body uses to survive and keep going.

Understanding won't cure illness, but it can be helpful to look at mind-body connections:

- In terms of strength and resilience, rather than weakness
- In a very basic human way, not pretending to be a medical or therapeutic approach
- With a focus on what these connections mean to you, and what to do about them
- Without focusing on painful things that happened (though you don't deny them)

So this booklet is about the human experience of stress and resilience. Our experience of stress lives on a long line, called a "continuum."<sup>2</sup> At the low end of that line is complete calm and safety, and at the high end is trauma. In between those extremes are mild and moderate stress (the "good stress" that makes us stronger), high stress, and "toxic stress" (heavy stress that keeps wearing us down for years). We spend our lives moving back and forth on that line, based on our experiences, the resources that might be available to us, and the way we respond to our experiences and use our resources. Though this booklet is about the whole continuum, it most often uses the general word "stress." And why we respond to our experiences the way we respond is sometimes obvious, and sometimes a mystery.



## Understanding

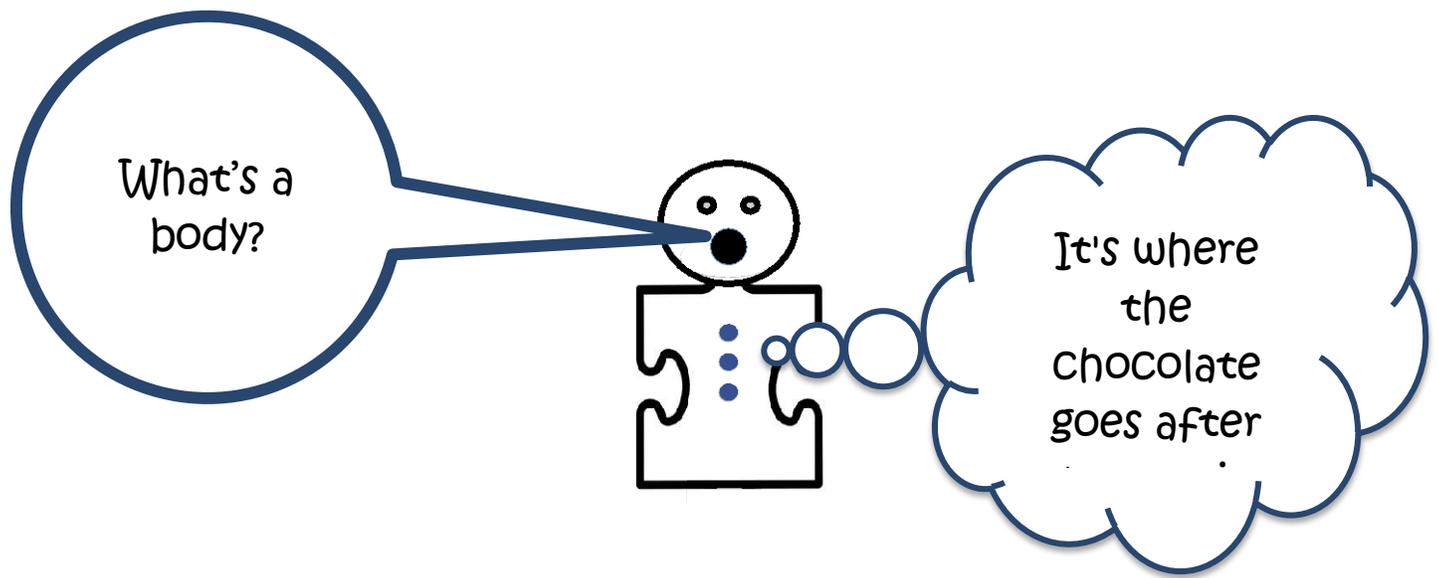
Understanding won't make the pain go away or prevent the next challenge. But the best argument for understanding the body is the high cost of **not** understanding it. For example:

1. Many people never learn how to be advocates for their own health, or how to make the most of their own resilience. Many never even know these are skills they can learn.
2. Many professionals who have dedicated their lives to healing the mind or the body have overlooked connections between the two, missing important opportunities for healing.
3. Many families and communities have been strained by conditions that, with better information and collaboration, could have been prevented, healed, or managed.
4. Many people with addictions and mental health conditions – and some physical illnesses – have been blamed, shamed, isolated, and discriminated against. Some have even been shamed for the roles and experiences that led to their health challenges (two examples: many people with HIV and many veterans, particularly Vietnam veterans).
5. Misunderstanding and prejudice have forced many people to live in isolation, deprived of the healing power of community, while their communities are deprived of their gifts.

But lately, a growing number of individuals, families, and communities have been working to expose the old myths. We're learning more about how the brain and the rest of the body work together to survive, bounce back, heal, and recover. We're also identifying skills that can help us support that strength and resilience, and starting to learn and practice those skills. But we're not there yet. We live in a world that's been shaped by centuries' worth of

misunderstanding. It will take a while, but we can start with ourselves, our families, and our communities.

Why learn how the body and the mind work together? Because it sets us free, breaks our isolation, affirms our strength and dignity – **all** of us – and helps us find solutions.



## 2. Your Body

You have a **great** body.

What? You disagree?

Many people disagree. They might think about the way they look or feel, or what goes on in their bodies – and don't forget, the body includes the brain. Some people might think about the negative things they feel and do that they don't understand. Some might think about the urges and cravings their bodies and brains seem to force them to act on – against their will, their values, their common sense, or their moral codes. So they think, "No. I definitely do **not** have a great body!"

Sometimes people say things like:

- "My body is ugly."
- "My body is weak."
- "My body is an embarrassment."
- "My body is way out of balance."
- "My body has too many problems."
- "My body lets me down, over and over."
- "My body is a weakness that I have to overcome."
- "My body has become my enemy," or "My brain has become my enemy."

One piece of good news is that your body is "programmed" to survive. It just knows how to protect you and does it automatically. Your body also knows how to use mild or moderate stress to make you more resilient. Those are huge strengths, things to be proud of and celebrate. The bad news is that some of the things your body does to get you through intense stress or threat can come at a price later – aches and pains, raw nerves, exhaustion, out-of-control feelings or urges, or greater vulnerability to physical

illnesses, mental health conditions, addictions, or powerful cravings for unhealthy foods. Often the price of survival is very high. Often it isn't fair at all.

## The Stress System

Remember the “survival instinct,” the thing that has kept humans alive for many, many years?<sup>3</sup> The body is “programmed” to help us stay alive and try to keep the people we care about alive. And “the people we care about” might include loved ones, strangers, or even a whole nation or the whole of humankind. It’s different for different people.

A lot of complicated things happen inside us to support that single goal, survival. Usually we’re not even aware of any of this. But underneath the surface, a collection of organs and brain areas sometimes thought of as the “stress system”:

1. Gathers information about what’s going on in us and around us
2. Tries to figure out what it all means – often in a split second
3. Pumps out the natural chemicals we need to deal with it
4. Sends those chemical messengers out to different parts of the brain/body<sup>4</sup>

All those chemicals help us have thoughts, feelings, and urges – and so we react. We might also think of the stress system as a “survival system,” because that’s its first job.

## The Brain

We started out as primitive creatures living in the wild, and we’ve been here a long, long time. To survive in a difficult world, we’ve changed and grown smarter. It almost looks as if the brain has dealt with our changing needs by simply adding extra layers, wrapped around whatever was there before. So far, we have three “layers,” often thought of in terms of the things they do best.<sup>5</sup> In order of their development, they are:

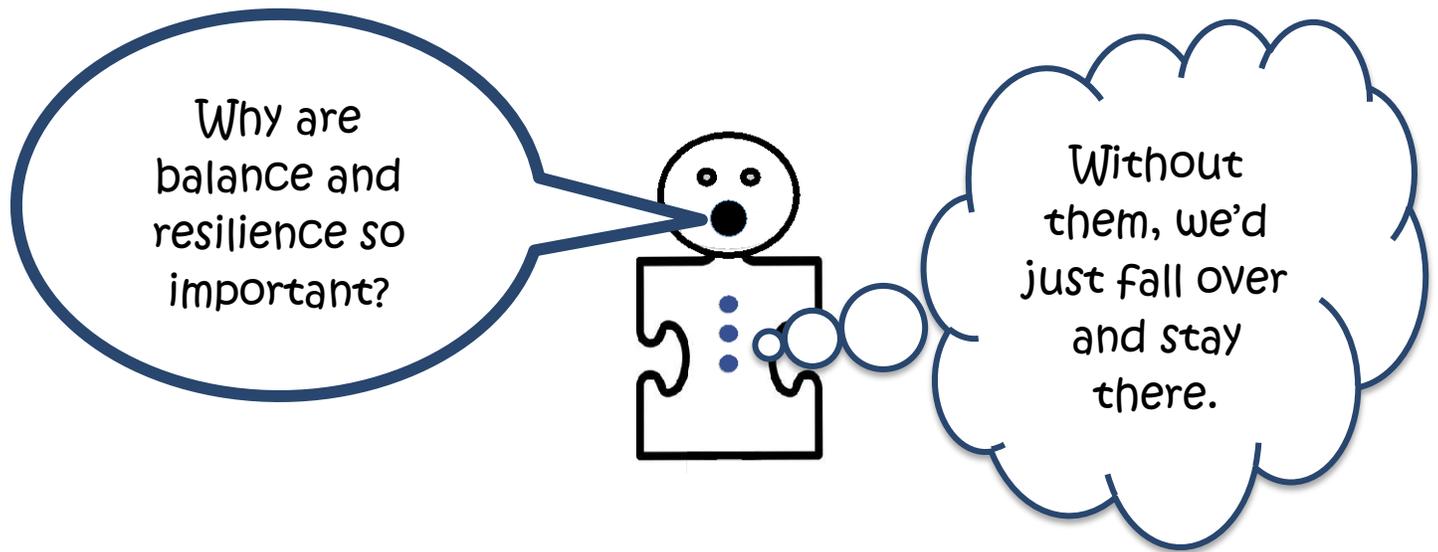
1. The primitive “basic brain,” which handles basic functions like sleep and waking, and makes many of the chemicals that tell the body what to do
2. The “emotional brain,” which uses feelings to help direct our choices and actions
3. The amazing, logical “thinking brain” – which thinks it’s in charge, but it’s not

These nicknames are much simplified, because all three “brains” – and many parts and chemicals within them – affect our basic functioning, emotions, thoughts, and ways of coping. But one important thing to know is this: The more primitive the brain layer, the more powerful it is, because our need for survival is so basic and so powerful.

## Survival

When the survival system sets out to protect us, it uses all three layers of the brain. But its strongest tools are the powerful chemicals, emotions, and urges from the basic and emotional layers. Under mild or moderate stress that doesn't last long, this process can work well and make us stronger. But under extreme or long-lasting stress, the body’s powerful responses can push the brain and body off balance, keep them off balance, and override the thinking brain’s thoughts about what’s happening and what to do.

After the crisis is over, the brain/body has a job to do, putting us back in balance again. One of the aims of this booklet is to make that whole process a bit more understandable: 1) how the brain/body keeps us safe, 2) how those processes sometimes go out of balance, and 3) a few things we can do to bring them – to bring **us** – back into balance.



### 3. Balance and Resilience

Whatever you've been through—and whatever you're still going through—the strength and resilience that have pulled you through your hardest times are still in you. You might think of resilience as the ability to cope and adapt in the face of crises and difficult conditions. This might just mean you keep on trying and “bounce back,” or you “bounce forward” into new growth, strength, and wisdom. Whether or not you recognize it, you probably use your resilience every day, in big or small ways. It might need a rest and a little more conscious attention, but it's definitely still part of you.<sup>6</sup>

#### Balance

One of the best tools the body has for resilience and well being is balance. For example:

- If you lean too far in one direction, you'll probably lose your balance. It's the same with the chemicals and functions in your brain and the rest of your body.
- If there's too much of a particular chemical affecting the body, or if an organ or a muscle is working too hard, things get more difficult. There's more strain, and more wear and tear. Sooner or later, more problems are likely to develop there.
- Your body is “programmed” to notice when something is off balance, and to send out chemicals designed to have the opposite effect—just enough to put it back in balance. This works, as long the body doesn't send out too much of those balancing chemicals. If it does, it can push you off balance in the other direction.
- Your body might be telling you when it's out of balance, even though you might not think of it that way. It might give you urges to do things that, in moderation, would move you back toward balance. For example, when you're hungry, you might have an urge to eat something. That can put you back in balance, as long as you eat moderately (the right amount to give you energy and clear thinking).

Or if you notice you're going too far – eating too much – you can stop (whether that's an easy thing for you to do or something you need to work on doing). But if you just keep eating because it tastes good, you'll go back out of balance again.

The stress system uses several systems and chemicals to keep you healthy and balanced in your reactions to stress. One major player is the “autonomic nervous system,” which balances the “sympathetic nervous system” (we’ll call it the “fast system”) with the “parasympathetic nervous system” (we’ll call that one the “slow system”). Another is the “immune system,” which fights off infection. (More about these systems later.)

## Balance and Resilience

Balance and resilience are important for one another. Your body uses balance to keep you resilient, and resilience helps you stay in balance. Resilience doesn’t crash into things. It weathers the storm, bends when it has to, and bounces back when it’s ready.

We build resilience by facing mild or moderate levels of temporary stress, mixed with periods of safety and rest. In a perfect world, we’d all have this gentle balance of opposites. But our imperfect world hands many people a big helping of heavy stress. And some people get a steady stream of high stress that never really goes away, just wears down their resilience and takes a toll on their bodies. Some people call that “toxic stress.”<sup>7</sup> Toxic stress can have a “weathering” effect. It can wear away health and resilience, just as many years’ worth of bitter weather can wear the paint off a house.

We react in many ways to stress in the body, the mind, the spirit, and our relationships, but the “fuel” for these reactions comes from the body. The stress system reacts to all the information our senses collect, sending chemical “messengers” all through the body. The body has many powerful ways of trying to keep us safe, functioning, and balanced, which we might think of as survival strategies. Here are just a few examples:

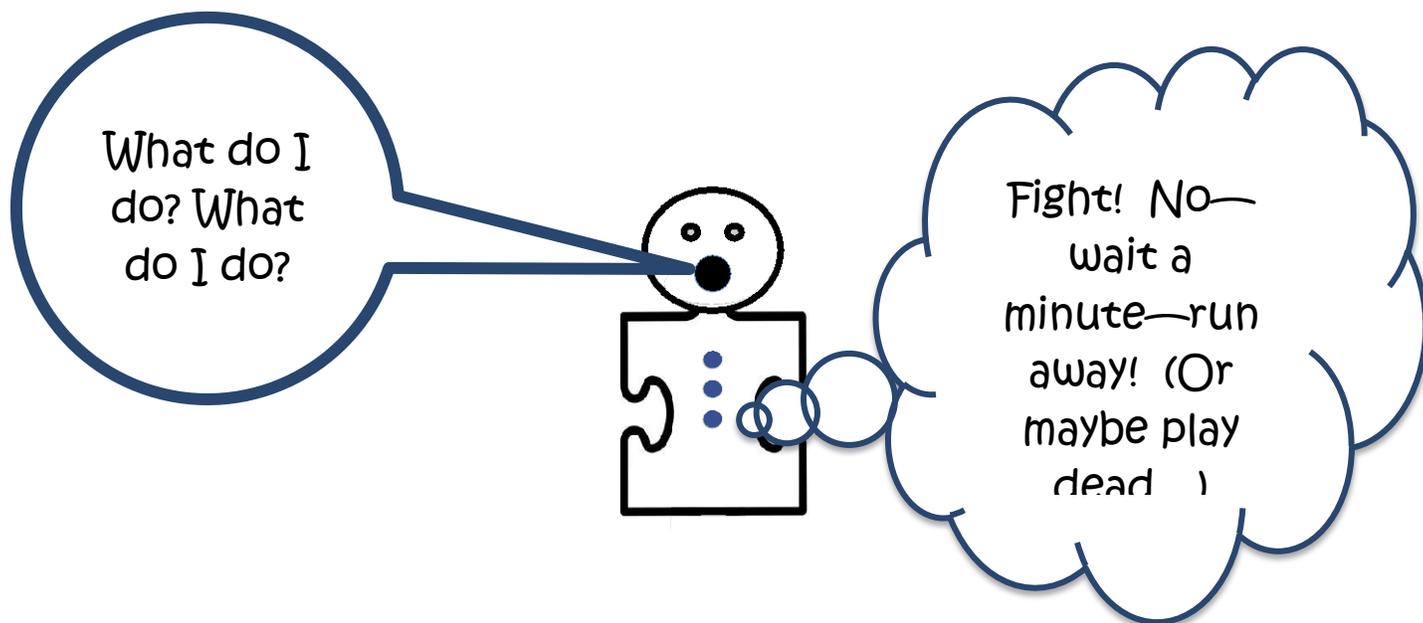
- Fight, flight, or freeze: Fight off the threat, outrun it, or play dead
- Hibernate: Hide, heal your wounds and fatten up, so you can survive the winter
- Ease the pain: Stop the pain, escape it, or just don’t remember it happened
- Don’t let this happen again: Remember the danger signs, and be ready to react

When your body reacts to stress in powerful ways – sometimes even scary or painful ways – it’s really just using those strategies to help you survive. Your brain sends signals to your mind and your body, to help you stay alive and functioning. The next four chapters take those four strategies one by one, looking at things like:

- How the body tries to carry out the strategy
- Some helpful and harmful things the body accomplishes along the way
- The kinds of things our bodies might do to try to get back in balance
- Some actions people sometimes take to try to get back in balance

Are you having a hard time that might be related to some of the effects of stress on your body, mind, and/or spirit? Chronic illnesses? Physical and mental health challenges?

If so, there are many things you can do to bring your strength, resilience, and wellness back to life. There are also many things other people – families, friends, medical staff, counselors, and communities – can do to support that process. You might not be sure any of these things can help you. Different people react differently, and sometimes we have to try several things before we find the ones that work for us. But each time, we learn a little more about what we want/don't want, and how resilient we really are.



## 4. Fight, Flight, or Freeze!

It's one of the most basic instincts: If you're challenged by stress or threat, get it to stop! So if it's lions and tigers and bears (oh my), you might fight them off, run faster than they do, or play dead. The part of your stress system that we're calling the fast system is sometimes described as a "fight, flight, and freeze" system. Reacting rapidly, it uses chemicals – particularly adrenaline – to speed you up and make you stronger.

- In the brain, you focus on basic survival, make quick decisions, react quickly.
- Adrenaline speeds up your heart rate, blood pressure, breathing.
- It slows down your digestion, so your energy can feed more urgent movements.
- It sends more oxygen to your brain and more nutrients to your whole body.<sup>8</sup>

If the stress is connected with something you can fight off, run away from, or fool by playing dead, this is exactly what you need. But many stressful situations are ones we can't fight or escape, and "freezing" – feeling paralyzed with fear – would leave you even more vulnerable. You might be driving someone to the hospital and get caught in a traffic jam, or you might be the object of discrimination or unfair criticism at work. Having a lot of adrenaline does you no good in those kinds of situations. What you really need is calm and strategic thinking, but your body doesn't know it.

This challenge may also be complicated by another stress chemical, which is activated soon after the adrenaline. That chemical (cortisol) is the subject of the next chapter.

### What About Balance?

The stress system is built for balance. So when the high-stress experience is over, the counter-balancing "slow system" is activated. Its main chemical, acetylcholine, slows down your heart rate, blood pressure, and breathing, and speeds up digestion. But

what if intense stress becomes a regular part of life? Chronically high adrenaline levels can raise your risk of health problems. They can also put a strain on your relationships.

## A Few Effects of Long-Term High Adrenaline

Challenges from Too Much Adrenaline	A Few Suggestions for Prevention or Treatment
High blood pressure <sup>9</sup>	See a doctor, take your blood pressure pills every day, get more exercise, do relaxation activities, eat less salt.
Heart disease <sup>10</sup>	Watch your diet and alcohol use, get screened for heart disease, make sure you follow your doctor's advice.
Loss of appetite <sup>11</sup>	Get more exercise, relax before meals, at meal time, avoid arguments or TV shows that make you angry.
Ulcers and other stomach or bowel problems (because your muscles tend to clench when adrenaline levels are high)	Do relaxation activities, avoid foods that are spicy or hard to digest, see a doctor if you have pain in those areas.
Tense neck <sup>12</sup> and shoulders (or other muscles)	Do relaxation activities, including massage, and avoid sitting with your neck angled forward. If you have a stiff neck, headache, and nausea, see a doctor right away.
Migraine <sup>13</sup> or tension headaches <sup>14</sup>	Do relaxation activities, including massage. If you get migraines, follow all medical advice for treating these.
Tension/anxiety conditions or unrealistic fears (fears of things that can't really hurt you, or things that never really happen). <sup>15</sup>	Do relaxing things and talk to positive people. If you have serious fear or anxiety, see a therapist and/or a psychiatrist (a psychiatrist can prescribe medication)
Urges to drink too much or take sedatives, tranquilizers, opioids, or cannabis. Any of these can lead to addiction, which will increase your stress, anger, and fear. <sup>16</sup>	If you can cut down or quit without help, do it—unless you're taking tranquilizers. <sup>17</sup> If you can't do it alone, go to a recovery group, treatment, your doctor, or another source of help, until you know what works for you. <sup>18</sup>

## Adrenaline Overload

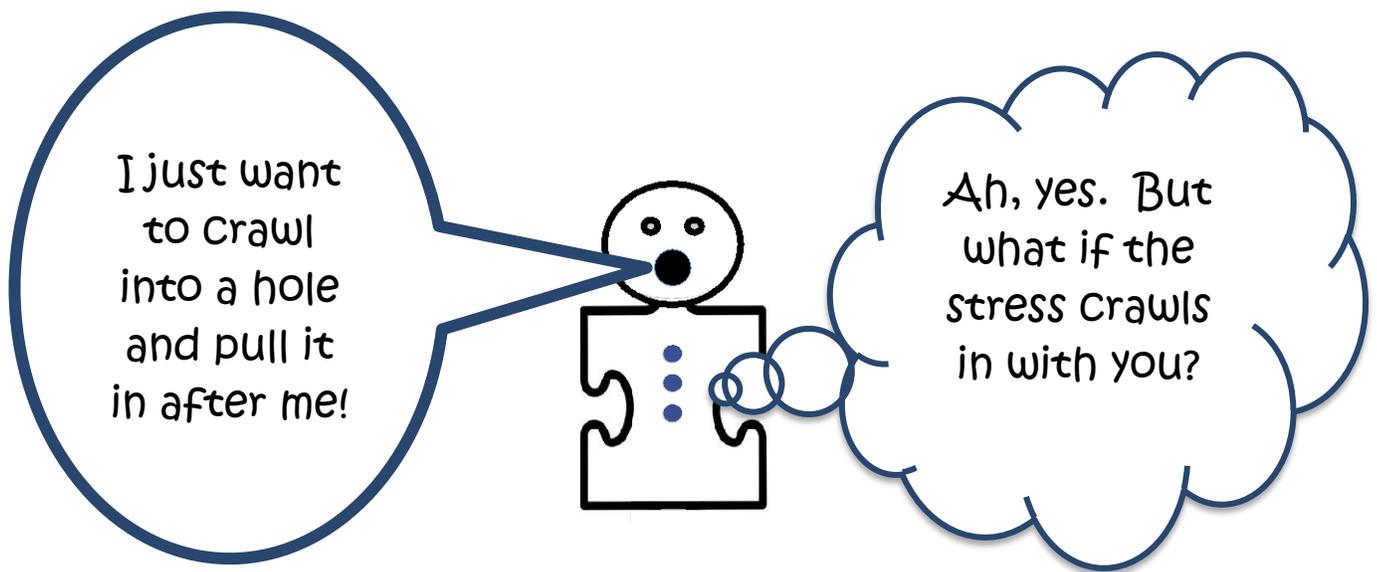
Even in the short term, you can get a flood of adrenaline with strong fear or anger, and even with intense feelings of guilt or shame. Your body might react to these kinds of experiences by pumping out a lot of adrenaline, so your brain goes into “adrenaline overload” (sometimes called “flooding”). This can make it hard (or impossible) to:

- Think clearly and understand the situation (it all seems like one great big threat)
- Understand what people are saying (so you hear only threats and insults)
- Find words to say what you mean (you sputter or mumble and make no sense)
- Think of options (fighting, freezing, running away seem like your only choices)
- Think of consequences (you don't question your urges to do dangerous things)
- Make a well-thought-out plan (instead, you're just overreacting in the moment)

This happens to everybody. Fortunately, there are things you can do to get some relief:

- Focus on breathing slowly, deeply. Both the oxygen and the focusing will help.
- If you can excuse yourself from the situation without making things worse, go where you can do some quick large-muscle exercises. Large-muscle exercise can help you think more clearly and make it easier to feel strong and calm.
- If you can't leave the situation, you can still exercise without people knowing it:
  - Try to pick up the chair you're sitting in—**while you're sitting in it.**
  - If you're sitting at a heavy table, try to pick up the table (but don't flip it!)





## 5. Hibernate!

Highly stressful situations have a way of making us want to hide from them – escape the stress and “hole up” somewhere safe and comfortable, like a bear hibernating through the winter. The body has a chemical called cortisol. It’s meant to help us hide, heal, and fatten up, so we can survive when it’s cold out and food is hard to find.

In brief periods of stress, cortisol does many things. For example, cortisol can:

- Make us hungry and raise our blood sugar or “glucose” levels, so we’ll have “fuel” to fight off attackers and survive the long, hard winter in our little caves
- Tell the body to send out immune chemicals, to attack invading infections and help heal any wounds (It thinks our stress must be linked to physical danger.)
- Reduce inflammation – that swelling, pain, and redness that is the “down-side” of the immune process – because inflammation can cause big problems, too

But many people live under high stress for long periods of time, often starting in childhood – or even at birth. Some studies have shown that chronic exposure to stress (for example, poverty, discrimination, abuse or neglect in the family, exposure to violence in the community, pressure at school or work, or life in a war zone) can lead to chronic high levels of cortisol. And long-term high cortisol levels can do things like:

- Increase appetite and blood sugar levels, so we’re more vulnerable to weight gain, hypoglycemia (spikes of high and low blood sugar), and Type 2 diabetes
- Increase inflammation, so we’re more vulnerable to infection, chronic illnesses, heart disease, digestive problems, and autoimmune diseases (like rheumatoid arthritis or fibromyalgia), and – oh yes – faster aging processes
- Raise the risk of depression (deep, overwhelming sadness and/or difficulty even getting out of bed or finding the will to go anywhere or do anything)

- Make it harder to learn or remember things, and make older adults more vulnerable to memory loss and dementia (for example, in Alzheimer’s disease)

Age makes a difference, too. People at the low or the high end of the age scale are more vulnerable to the effects of long-term stress and high cortisol levels. Babies and toddlers are particularly vulnerable, because the brain is developing rapidly, the immune system is just learning how to fight infection, and the body is still forming its relationship with nutrition and blood sugar. And many older adults have high stress levels (loss of body strength, lower income, caregiving for a spouse) and cortisol levels that often stay high after stress—in bodies worn down by a lifetime’s worth of stress.<sup>19</sup>

## Cortisol is Not Your Enemy

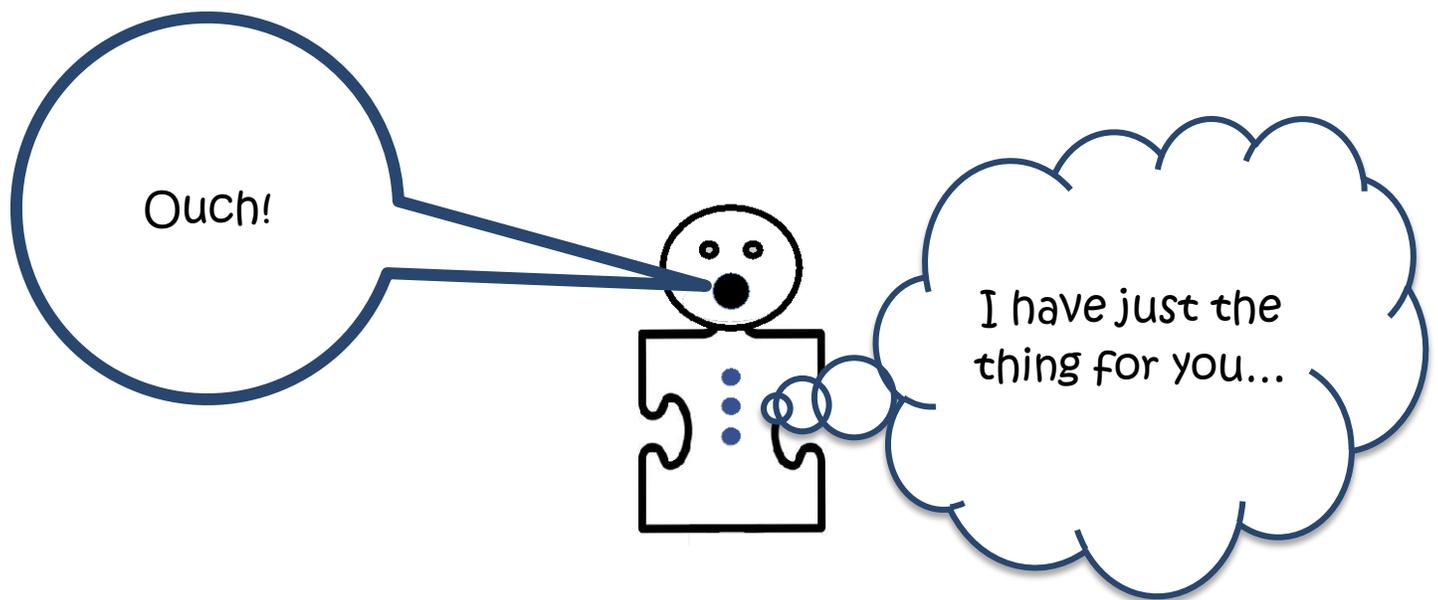
Though high cortisol levels can leave you more vulnerable to many health problems, it’s important to remember that cortisol isn’t a “bad” chemical. We need to have enough cortisol to survive and be healthy. It’s necessary for immunity and for handling stress. It’s not that there are “good” and “bad” chemicals in our natural brain/body chemistry. But sometimes experiences—stress, trauma, illnesses, injuries, and genetic inheritance—can leave us with too much or too little of important chemicals. Then it’s up to us to do what we can, and to get whatever help we need, to get back in balance.

## Dealing with High Cortisol Levels

Usually your doctor won’t test cortisol levels unless you ask for the test. If you’ve had a lot of stress and you might have cortisol-related challenges, there are also many basic things you can do—and these are healthy things for anyone to do. A few examples:

- **You can deal with stress** by:
  - Regularly getting at least 7 hours’ sleep (and 8 or 9 if you can do it!)
  - Getting as much exercise as is safe and healthy for you
  - Cutting down on caffeine and alcohol (with or without help from others)
  - Spending more time with positive people who treat you with respect
  - Doing things that relax you and avoiding high stress whenever you can
  - Taking an honest look at how much you’re trying to do in your life
  - Asking for help when you need it—or when you’re about to need it
- **You can deal with blood sugar problems (too high or too low)** by:<sup>20</sup>
  - Cutting down on sugar and processed foods (like white bread, candy, soda, and other “junk food”) and eating more whole grains, vegetables, and protein, especially if you get a headache or feel weak between meals
  - Eating less at a time—5 or 6 **small** meals or snacks spread out all day
  - If you suspect problems, asking your doctor to do a “glucose tolerance test” (to check for hypoglycemia) and/or to assess you for risk of diabetes
- **You can deal with inflammation** by:<sup>21</sup>

- ❑ Avoiding foods that raise inflammation and eating foods that lower it
- ❑ Doing whatever you can to lower the level of stress in your life
- ❑ Asking your doctor to do a “CRP test”<sup>22</sup> to measure inflammation
- ❑ Asking your doctor if anti-inflammatory medicines (like aspirin, ibuprofen, or naproxen) or supplements (like ginger or omega-3 fish oil) are safe for you, and if they are, using them as directed



## 6. Ease the Pain!

This might be hard to believe sometimes, but your body doesn't want you to hurt. Pain – physical or emotional – is supposed to call your attention to problems you need to deal with, or parts of your body that need more care. Other than that, pain doesn't do much good. Your body wants you to be at your best, ready for the next challenge.

So under extreme stress and threat, your body might treat that experience the same way it would treat an injury. It might send chemicals out that will ease the pain – for a little while. It might help you feel more separate from the situation you're in, so it hurts less. And in some cases, after traumatic experiences, those and other natural chemicals can even keep people from remembering the story of what happened.

### Reducing the Pain

Ever hit your thumb with a hammer? At first it hurts a lot, then for a short time it hurts much less, then it hurts a lot again. That time in between, when it hurts less, is when your body has sent out a flood of pain-killing chemicals called "endorphins." But that's temporary. As soon as the endorphins are gone, it starts hurting more.

Endorphins ease the pain, make you feel less connected to the pain, and give you a feeling of overall well-being. Even if the stress you're experiencing doesn't involve physical pain, your body might still send out endorphins. Many other things might raise your endorphins, too, including exercise (as in "runner's high"), chocolate, spicy foods, sex, creativity, being helpful to people who need help, and acts of generosity.

Endorphins are the body's natural painkillers, your natural "opioids," like the opioid painkillers that doctors sometimes prescribe. But endorphins aren't addictive, and

people don't overdose on them. And, unlike opioid drugs, endorphins don't end up attacking your body's ability to feel any pleasure or excitement without the drugs.

A few words about opioids: If you're dealing with physical pain, please see a pain specialist instead of turning to opioid pain relievers. Opioids should be used only for **extreme, short-term pain** due to an injury, surgery, etc. If it's long-term, chronic pain, please work with your doctor and a pain-management specialist to find a different solution.<sup>23</sup> Opioids are very strongly and very quickly addictive. It takes expert help to treat opioid addiction – often including medication to cope with the effects of opioids on the body's "reward system" – and long-term recovery support. Many people are dying these days because they overdose on opioids – even on prescribed painkillers.<sup>24</sup>

## Getting Some Distance

When your body floods with endorphins, you might feel less connected to the stress, threat, or pain – as if you still feel it, but you don't care as much. In some situations:

- People might feel as if they're floating above the scene, watching from far away.
- That doesn't mean they've lost touch with reality. It's just the body using some natural chemicals to protect them while they're under high stress and threat.
- If this has ever happened to you, just know that it's a natural chemical reaction to intense stress, threat, and helplessness. It's something that has happened to a lot of people. You weren't hallucinating or refusing to accept reality.

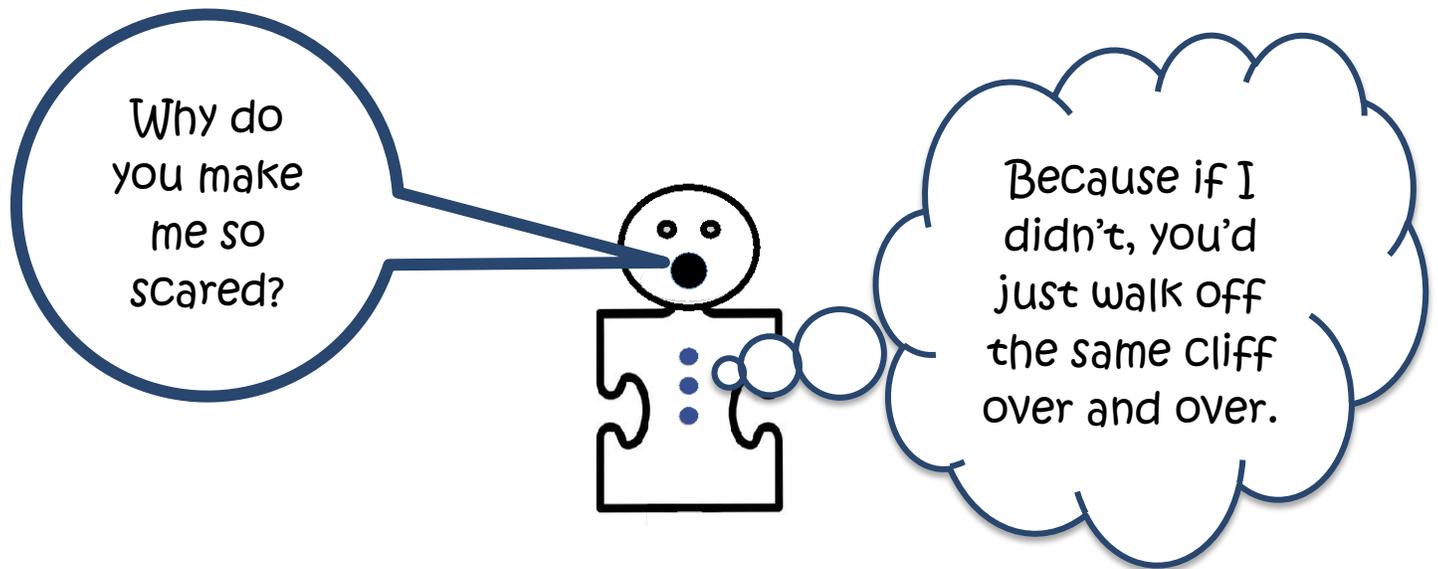
## Forgetting Traumatic Memories

In the movies, when a guy can't remember some traumatic thing that happened to him, other people tell him, "Oh, you blocked it out, because you can't handle it." Nonsense. He didn't "block it out," and he didn't decide to forget it. What happened was that a combination of natural chemicals – probably adrenaline, endorphins, and cortisol – somehow changed the way his brain would handle the memory of that experience.

We have two kinds of memories, called "declarative" memories and "non-declarative memories." Declarative memories include things like the meaning of words and the conscious memory of experiences.<sup>25</sup> One example of a declarative memory: "I went to the Grand Canyon today, and it was huge. I was eating a chocolate ice cream cone."

Your brain knows where to store declarative memories, and how to pull up them up when you want them. But what if a giant dinosaur head suddenly appeared over the canyon edge and ate your ice cream cone? This might be a bit frightening, so your body might pump out a lot of adrenaline, endorphins, and cortisol. That might affect: 1) the way your brain stores those declarative memories and 2) your brain's ability to find the memories later. Soon, you might not be able to recall much of your declarative memory of that experience – as if you'd forgotten big chunks of the story of what happened.<sup>26</sup>

If that has happened to you (the memory thing, that is, not the dinosaur), please know that it's a sign of strength, not weakness. Maybe in some primitive way your body was trying to protect you from the pain of remembering, so it put the memory where you wouldn't find it. Who knows? But don't force it: Trust yourself to remember when it's time. Focus on being safe and healthy in the present, and building stability little by little. Trust your body, and talk to someone safe and kind who understands trauma.<sup>27</sup>



## 7. Don't Let it Happen Again!

As you can imagine, your brain has a built-in alarm system, so it knows when to pump all that adrenaline and get you out of danger. The alarm system involves several brain parts and circuits, and it uses your memories to decide when to sound the alarm.

- The alarm system doesn't rely on the declarative memories explored in the last chapter, because they work too slowly. Your thinking brain would still be saying, "Let's see: This looks very much like the giant dinosaur I saw in the Grand Canyon, but this one isn't smiling" as you slide into the dinosaur's mouth.
- Instead, the alarm system uses "emotional memories," a particular type of **non-declarative** memory (the second category of memory mentioned in the last chapter). These memories take the form of sights, sounds, smells, tastes, physical sensations, and emotions. We don't have conscious control over whether or not we notice these sights, sounds, etc. as our senses take them in, or whether or not we'll remember them later. They also pop into our minds very quickly, even when we're not trying to find them – and whether or not we want them.

So when you experience intense fear, pain, or loss, your brain records the details in little pieces of emotional memory sometimes called "flashbulb memories." Later on – even after many years – the moment you see, hear, smell, taste, or feel something that reminds you of those memories, some fast and primitive parts of your brain might react very quickly. You might get a lot of adrenaline, telling you to fight, run away, or freeze!

For example, if you're allergic to bee stings, you might hear a fly buzzing and suddenly flood with adrenaline. Your slow, thinking brain might know enough to turn around and realize it's not really a bee. But by the time it's figured out what's happening and thought about how to respond, you and your "survival brain" are half a mile away.

Of course, memories aren't the only things that can activate the alarm system. Others include loud noises, pain, startle, being attacked, hurting someone else, seeing someone we love hurt, and many more. Each of these experiences can create new memories for us to carry – but they can also create new strength and purpose to help us carry them.

## On the Alert

When your body wants to put you on guard, adrenaline is its favorite tool. This might be anything from a vague “gut feeling” that something’s wrong to a steady sense of “Watch out!” so you’ll notice everything around you and nothing will be able to creep up on you. At that extreme, it can make you tense and jumpy, so whether you see a danger sign or just **think** you see a danger sign, you’ll react quickly. In the military, they call this “tactical awareness.” In danger – say, in a community or a family where violence is common – it’s an important skill. Being on guard might make sense.

Unfortunately, our bodies don’t always know how to tell real danger from everything else. In ordinary life, it might not be very pleasant to feel like a coiled spring all the time, and that might make it more challenging to be around people. Some suggestions:

- Understand that your body is just doing what your experience has taught it to do, trying to protect you. Over time, you can teach it other ways of reacting.
- Get lots of exercise, do relaxation activities, and breathe slowly and deeply.
- Help the people you trust understand what you're dealing with, and how hard it is. Also, try to understand how hard your reactions must be for them. Tell them how you’d like them to respond or help you if you have an extreme reaction.
- Avoid caffeine, alcohol, and stimulant drugs. They all make it harder to tell real danger from ordinary life, and harder to choose **not** to overreact.

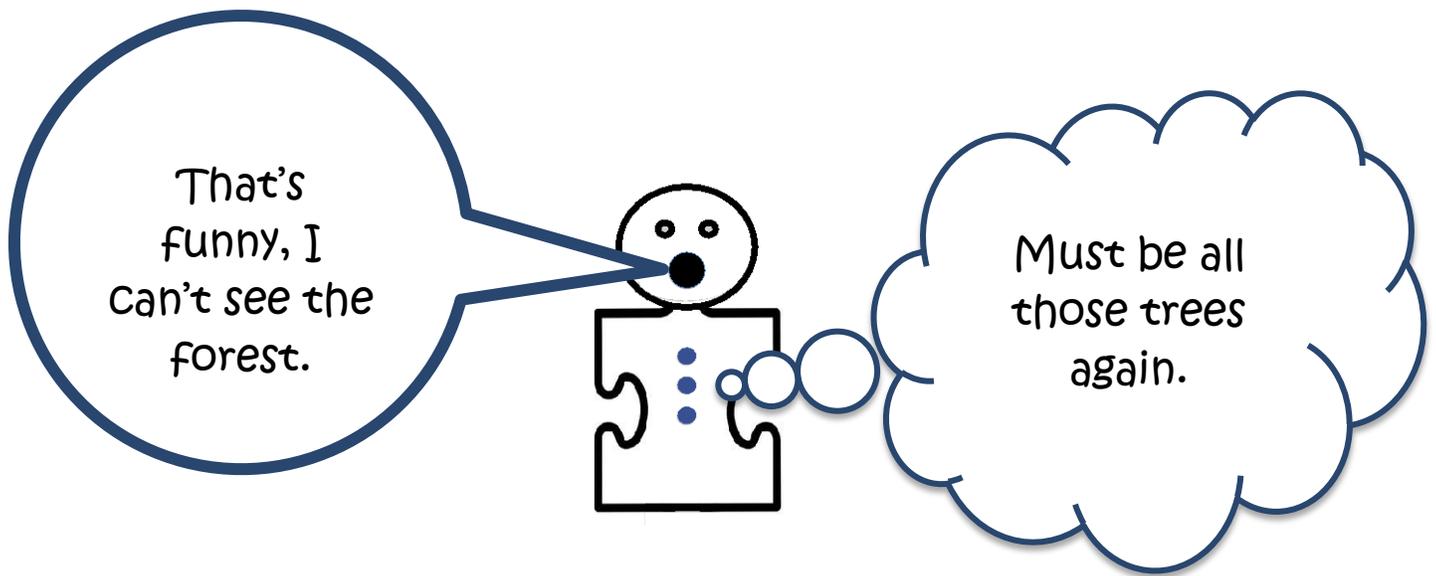
If you’ve had an intensely stressful and threatening experience at some point in your life, some of those flashback memories might come up all of a sudden. They might be activated by something outside you, or they might seem to come out of nowhere. This can happen even if you don’t have any declarative memory of it – don’t have the story of what happened. So when you put it all together, here’s how it might cause problems:

1. Your survival brain records flashback memories of emotion-charged experiences.
2. It stores them where you might not notice them, but they’re ready to “jump out.”
3. Something in the present reminds you of something painful in the past.
4. You get an instant flood of adrenaline, telling you that you’re in danger.
5. You might get strong and frightening images, sounds, smells, and/or feelings.
6. You might not trust the people around you enough to tell them what’s going on.
7. You might react in intense ways that cause problems for you or other people.

If this sometimes happens to you, here are a few suggestions:

1. Understand that this is a normal and common reaction to intensely stressful experiences, your body’s best guess at how to protect you. Tell people you trust that these kinds of reactions might happen, and how you’d like them to respond.
2. Learn the Grounding Exercise on Page 2, and use it whenever this kind of thing happens, or any time you’re under high stress. No one can tell you’re doing it. It can help you stay in the “here and now,” which is a much safer place to be than in disturbing memories or thoughts about what might go wrong in the future.

3. Find a therapist, counselor, or psychiatrist who specializes in trauma, and ask to be screened for post-traumatic stress. Remember that you have a right to choose the provider you'd like to work with. You should ask lots of questions about the approaches they use, and choose an approach that's right for you right now.<sup>28</sup>



## 8. Look at the Big Picture

So: Does all that make sense? Are you ready to take the quiz?

Just kidding. There is no quiz. You don't need to remember all this, but here it is:

Good News!	Bad News!	Good News!
1) We all have resilience.	Stress can make it harder to find and believe in our resilience.	We still have resilience, and we can build it back up again.
2) We do best with smaller amounts of stress/threat, mixed with rest/safety.	Sometimes we get lots of stress and very little safety—and sometimes this lasts a long time.	There are many things we can do to reduce stress and deal with its effects.
3) We have an amazing stress and survival system.	Sometimes it goes overboard and causes problems.	There are many things we can do to deal with these problems.
4) We have 3 brains (well, three brain “layers”), one very primitive, one for feelings, one for thinking.	In times of stress, our primitive brains take over, and sometimes that can cause problems.	Our primitive brains may be a little clumsy sometimes, but they know how to save our lives.
5) Our bodies are programmed to seek balance, and to put us back in balance when they need to.	Sometimes our bodies go out of balance, and sometimes we react in ways that don't help.	There are things we can do to get our bodies back in balance, if we choose to make the effort.
6) Adrenaline gives us feelings of energy and strength, and helps us survive.	Sometimes adrenaline levels go out of control. We can get too intense, and we can get sick.	There are things we can do to get adrenaline under control, so it can be a tool, and not be a threat.
7) Short-term cortisol can lower inflammation and send immune chemicals to fight infection.	Under long-term stress, cortisol can leave us with less immune power and more inflammation.	We can lower our stress, and there are things we can do about the effects of too much cortisol.
8) The body can send out pain-killing endorphins when we have pain or very high stress.	Sometimes that can affect our memory of intensely stressful things that happened.	We can learn to be safe in the present, and remember it all later, when we're really ready.
9) Our bodies have an alarm system that records reminders of danger, to help warn us later.	Sometimes our bodies react as if we're in danger when we're not, and this can lead to problems.	There are things we can do to get back in the present and react less to the danger in our minds.

## Summary of Suggestions in Chapters 1 through 7

The discussions in chapters 1 through 7 have a lot of suggestions, including ways of reducing/coping with stress, being more resilient, and dealing with challenges that can follow heavy stress and threat. Here's a very general overview:

### **Building resilience and reducing stress and stress-related challenges:**

- Do activities that give you mild stress, mixed with periods of safety and rest.
- Get lots of exercise.
- Do relaxation activities.
- Breathe slowly and deeply, as often as you think about it.
- Let your mind go quiet and just observe – and notice what you're focusing on.
- Before meals, do things that are relaxing for you.
- Avoid arguments or TV shows that make you angry, especially at meal time.
- Get at least 7 hours' sleep a night – 8 or 9 if possible.
- Make sure you don't sit with your neck angled forward (over your phone, etc.).
- Get as much exercise (aerobic and strength) as is healthy and safe for you.
- Spend more time with kind, positive, trustworthy people.
- Avoid people who tend to say negative things, annoy you, insult you, etc.
- Take an honest look at how much you're trying to do and how stressful it is.
- Ask for help if you need it, and let people know the exact kind of help you need.
- Eat anti-inflammatory foods and avoid foods that increase inflammation.
- Notice any signs that it's time to start lowering stress and taking care of yourself.

### **Grounding exercise**

- Notice the physical sensation of your breath going into and out of your body.
- Notice the physical sensation of sitting or standing where you are.
- Start at the top of your head, and slowly move your attention down your body.
- When you're ready, turn your attention back to the room or area around you.
- Remind yourself that you're in the present now – in the "here and now."

### **Dealing with adrenaline overload and other crisis situations:**

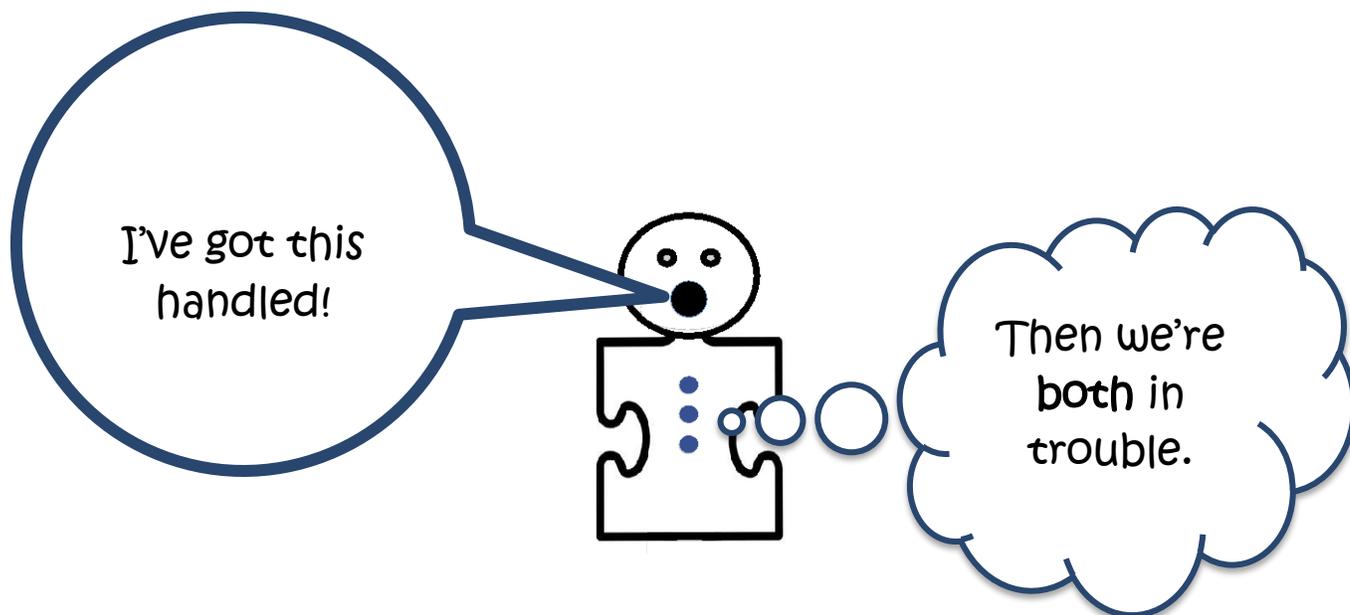
- Breathe slowly and deeply. The oxygen helps you get calm and think better.
- If you can excuse yourself, go where you can do some large-muscle exercises.
- If you can't leave the situation, pushing/pulling against resistance can also help.

### **Finding emergency help and support for distress connected with stress or trauma:**

- Call someone you trust, someone positive, and talk about what happened.
- If your feelings are out of control, or if you want to hurt yourself, call 911.

### **If you have reactions from intense stress, threat, or trauma:**

- Understand that these are normal and common reactions to intense experiences.
- Connect with someone it's safe to be with and to talk to about this.
- Find a therapist, counselor, and/or psychiatrist who specializes in trauma.
- Help trustworthy people around you understand what you're dealing with.
- Know that your body and brain are reacting in ways meant to make you safe.
- Give your body positive experiences, and spend time savoring those experiences.



## 9. Don't Try to Do it Alone!

It's a blessing that might sometimes seem like a curse: We need other people. Our stress/survival systems need them, too. Starting in our earliest days, it's through human contact that we learn to handle stress and connect safely with people. We learn to do this through the warmth and safety of our human connections, particularly our caregivers' ability to respond to our distress in comforting ways that make sense.

- Being held gently, securely, looking into the eyes of a trusted caregiver, hearing a voice we associate with love – all of that teaches us to deal with stress, tells the body to pump out chemicals that make us feel safe, trusting, calm, and happy.
- Living in a family and community where we know and care about others, and they know and care about us, gives us a sense of being accepted and protected.
- Having close, trustworthy friendships and working relationships is a strong source of protection from the more serious effects of stress, threat, pain, and loss.
- When we've been affected by stress, loss, injuries, or illnesses, the most powerful sources of hope, healing, and recovery are trustworthy people who treat us with respect, kindness, and patience – especially people who have "been there."
- When we let others' pain and challenges inspire us to compassionate action, we can find a sense of mission and purpose that brings us strength, health, and joy.

Yes, sometimes people don't live up to that. Sometimes they're dishonest and cowardly and cruel. You might have read those last 5 dot-points and thought, "That's not **my** life!" If that's so, it's a loss to be grieved. Our bodies were built for loving, trustworthy relationships in a caring community, and some people have missed out on those things.

- These kinds of losses can make it much harder to work toward a better future.
- Still, many people have chosen to look for – and have found – true community.

- Many people have even been able to use their losses later, to transform themselves and their lives. This has been healing for them, and for others.

## Family

Families can be complicated, can't they? They can be sources of love, pain, happiness, fear, comfort, confusion, safety, danger, and a hundred other things. They can be the deepest roots of our resilience and ability to handle stress well, or the biggest sources of stress, pain, and danger in our lives. They carry with them all the strengths and vulnerabilities that are built into their cultures, their histories, and their genetic codes.

And just like a chemical process in the body, a family can go out of balance. The family carries the stress of each member, and that combination of chemicals, words, actions, and feelings can make even a happy family a hard place to be. But sometimes even a family whose members live in bitter conflict can rise to meet a crisis with deep love and compassion. Families may need help and support, but they might have resilience, too.

## Professional Help

Whether our physical or mental health is challenged, or we find ourselves caught in addictive patterns – or all three – some questions are the same:

- Do I need to see somebody, or can I make it go away on my own?
- Do I see a specialist, or is this something my primary care doctor can deal with?
- Will I be able to afford the medical treatment I need?
- How much choice and control do I have over the type and quality of care I get?

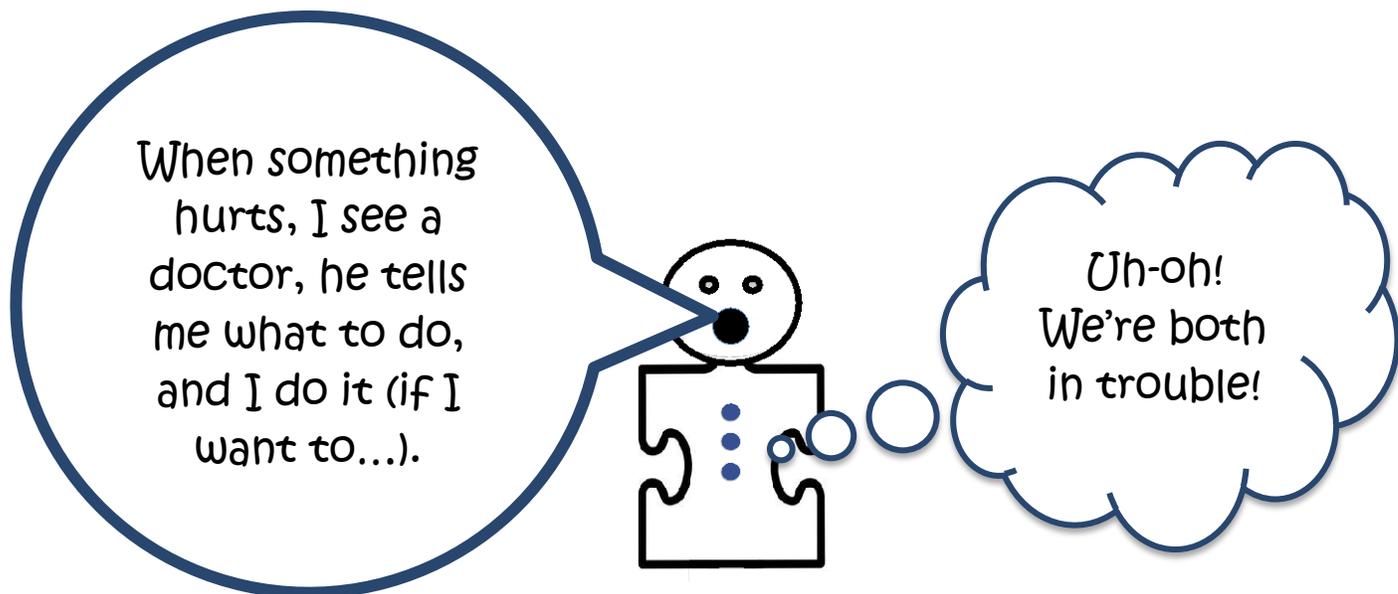
Everyone has a right to health care. Not everyone has health insurance that covers the kinds of needs that arise, but there are also free clinics and city or county hospitals that provide free services. There can be long lines and full waiting rooms at these clinics, and waiting lists for addiction treatment, but the medical staff who dedicate themselves to these free services are often highly skilled and compassionate. If all else fails, emergency rooms are required to accept patients who don't have insurance. And whenever you're in a situation where your condition or treatment might make it hard for you to make your wishes known and make choices about your own healthcare, it's important to have someone you trust with you, someone who can be your advocate.

## Peer Support

In addiction and mental health, there are strong traditions of peer support for health, well-being, and long-term recovery. People who have “been there” can provide information, hard-earned wisdom, respect, caring, advocacy, referrals, and – most of all – hope. Whether the supporter is a member of a recovery group, a peer supporter hired by a treatment agency, or a peer supporter at a VA or Vet Center, peer support has been – from the start – a powerful resource for health and wellness.<sup>29</sup>

In healthcare for chronic physical illnesses, there are also many peer support options. Some are attached to medical facilities, but others are community based or have a home

on the internet. Like many services, these are harder to find in rural areas. There's a strong need for more peer support programs connected with physical health care. Your community might have these services – or you might be one of the people who will work together to start them. These services are needed. **You** are needed.



## 10. Be a Partner in Your Own Health Care!

There are two very different things that we often mistake for one another: Hope and wishful thinking.

- Hope is a most mysterious thing – maybe a thought, maybe a feeling, maybe an act of faith or an act of will. It helps us “tough it out” and “rise above it” when life gets hard, but it keeps fear from stopping us when it’s time for us to take brave action. Hope may be our most powerful ally in health and healing.
- Wishful thinking, on the other hand, is pretty easy to understand: It feels good to think things will go our way, we’ll get what we want, we can do it the easy way, and closing our eyes to a threat will make it disappear. Wishful thinking makes it easier to ignore signs that something’s wrong, to assume other people can read our minds, to believe we know all we need to know, and to do whatever we want – even if people who know more than we do tell us to do something else. Wishful thinking may be the worst enemy of health and healing.

In other words, even the best medical team needs your active partnership and full communication. It’s easy to think of doctors as superior beings who speak in tongues about things you can’t possibly understand. It’s also easy to overlook the physicians’ assistants and nurses who work with doctors. In many cases, they can tell you what that doctor said before he or she bolted out of the room, or help you after you get home and realize you’re confused. They can give you explanations, answer questions over the phone, and check things out with the doctor. Many pharmacists, occupational therapists, and physical therapists might also be able to give you a piece of the puzzle.

### Do Ask, Do Tell

Whatever kinds of health challenges you have – physical, emotional, or related to your thoughts or actions – your best tool might be a simple spiral-bound notebook.

- Date each “chapter” of your notebook with your appointment date. Before the appointment, write your symptoms, questions, allergies, and medications taken.
- During the visit, tell medical staff you want to use your notebook, and then make sure you name all the symptoms (briefly but accurately), allergies, and meds, and ask all the questions you wrote – plus any others you think of during the session.
- If they’re talking faster than you can write (and still be able to read it later), ask them to pause, so you can catch up. If they say something you don’t understand, ask them what they mean, and write the answer in your notebook. Later on, go through your notes, fill in the gaps, and identify any questions you should ask.

If you’ve ever been rushed through a medical appointment, this might surprise you, but many doctors like it when patients ask questions. People who ask questions and actively support their health are more likely to get well and stay well. Healthfinder.gov has a very useful tool you can look up.<sup>30</sup> But here are a few questions to start with:

- What’s the name of my condition? What caused it? Is it contagious?
- What are the different treatment options, and why do you recommend this one?
- What are the dangers and possible side effects of this medicine or procedure?
- What can I do to make the side effects less uncomfortable or harmful to me?
- What kinds of side effects or changes should I report to you, and how soon?
- What can I do on my own to improve my condition or keep it from coming back?

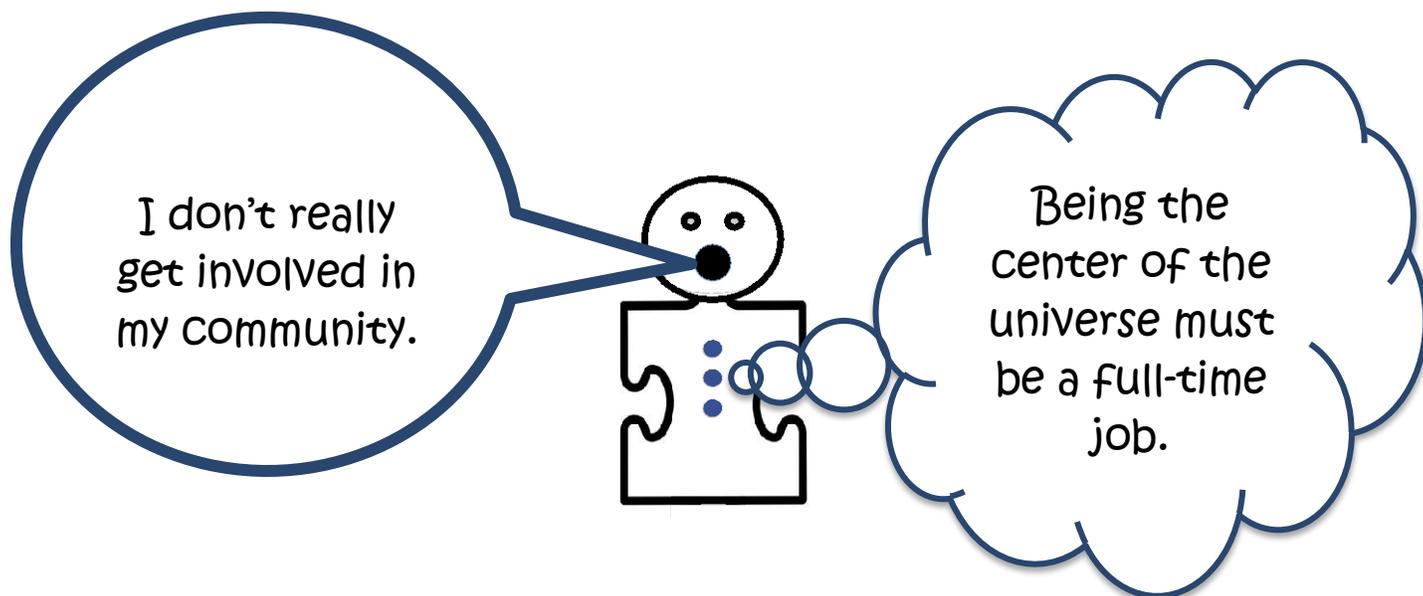
## Working Together so Medications Will Work for You

If you tell your doctor about your allergies, all meds you take, and side effects you’re having, that will help protect you from dangerous effects, drug interactions, and the temptation to stop taking your meds. Here are three other important things to know:

- Many medications for mental health conditions, diabetes, high blood pressure, seizures, allergies, pain and inflammation, and some other conditions make you gain weight, whether or not you’re eating too much. But don’t stop taking your meds or just give up on yourself. Ask medical staff to help you find information and support to help control the weight gain and get – and stay – healthier.
- Opioid painkillers really **are** addictive, anyone can get addicted, and this addiction is deadly. Work with your doctor to limit their use, notice any signs of dependence, and look for non-opioid drugs and pain-management options. And if you start to feel dependent on opioids, get help right away. This one is serious.
- A natural chemical called acetylcholine was mentioned briefly on Page 9. It’s involved in calming the body, controlling muscles, and helping the brain work well. But many medicines – including some meds for allergies, blood pressure, mental illnesses, and Parkinson’s – are what they call “anticholinergic.” That

means they interfere with the important work of acetylcholine. Especially in older adults, these drugs can make it harder to function, and they can raise the risk of dementia. Ask your doctor which of your meds are anticholinergic, and if there are any other meds that would work as well and still be affordable.<sup>31</sup>

Definitely don't stop taking a medication your medical team says is necessary, but please remember that you are responsible for helping them guard your health.



## 11. Be Part of a Community

So we're all walking around with some amazing but very primitive processes going on in our bodies. And each one of us suffers from, and reacts to, the stress of living.

- Stress comes at us from many different directions, at many levels of intensity.
- Our bodies react to stress by doing heroic things that might give us more stress.
- All that stress, and our efforts to deal with it, can take a toll on our health.
- Under stress, we don't always take good care of ourselves or one another.
- Things we do under stress often cause more stress for ourselves, and for others.
- The stress spreads out from there, whether or not we want it to.
- Whole families, and whole communities, can be affected by this collective stress.

As individuals and families, many of us have some control over the amount of stress in our lives, and we all make choices about how we react. But there are much larger forces – including social and economic conditions – that can have profound effects on the amount of stress a community and its members will experience. An individual can take action that will set things in motion, but the health of the community – and its more vulnerable members – depends on the **community's** willingness to act.

### Community

You're part of a community – probably many communities – however you define that. These might include extended families, neighborhoods, faith communities, schools, organizations, villages, cities, states, professions, countries, or cultures.

As a society, we've gotten pretty good at dealing with germs and signs of illnesses. We have programs for immunizing children and adults, testing for anemia and high

cholesterol levels, even screening for high blood pressure in drug stores. We've learned to identify healthy and unhealthy behaviors, and we've spread that knowledge around. So whether or not we actually follow all that advice, many people have a pretty good idea what to do to stay healthy. But there are other life-and-death matters we're just starting to learn about, including:

- The power that stress can have over physical, mental, and behavioral health, overwhelming our resilience, will power, intelligence, and good intentions<sup>32</sup>
- The high number of people who live in very stressful conditions due to forces they can't control – unless caring communities are willing to take action
- What individuals and families can do to lower the stress in their lives, deal with it in ways that give it less power, and make better use of health care resources
- What the community can do to lower the stress in people's lives, by making changes that make life less stressful and teaching skills for dealing with stress

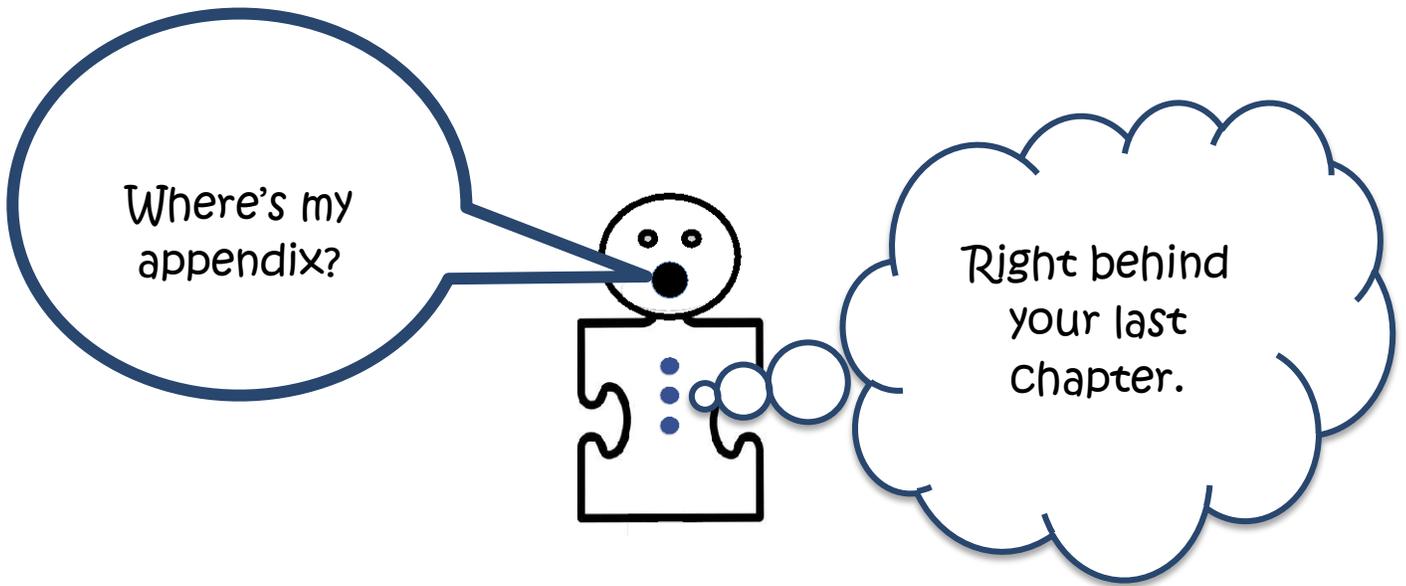
Many people live without enough of the things people need to be well: food, shelter, love, kindness, work, respect, safety, opportunity, justice, education, health care, etc. What can communities do to reduce the stress on their members? A few examples:

- If your community has high unemployment, what might a community-wide effort do to support economic development, attract employers, train people in job and job-seeking skills, and retrain people whose jobs have been phased out?
- If law enforcement and the community are at odds over policing practices, what might the community do to promote trauma/crisis intervention training for police, support for troubled officers, and community-oriented policing programs that build real collaboration between law enforcement and the community?
- If people with mental health conditions have nowhere to go in crisis except hospital emergency departments – where they're stabilized and discharged until the next crisis – how might the community start a mental health crisis center, a safe place where professionals and peers can offer stabilization and support?
- If a neighborhood has a high concentration of people with many chronic health conditions, how might the community attract and sustain more resources for health care, peer support, in-home help, social services, etc.?

We can all learn to make the most of our resources. But unless we change some of the circumstances that are creating overwhelming stress, they'll continue to lead to more stress – and more illness – for more people. How much evidence of this do we need?

Whether you're reading this because of an interest in your own health, the health of a friend or family member, or the health of your whole community, that interest makes you one of the best people to get involved in a community effort to respond to these challenges. If no such effort exists, you might be surprised at how many people would be interested in starting one. If you recognize the need, probably others will, too.

You're an expert on your own experience and what you've learned about others' experience. You're important to these kinds of community efforts – and they could turn out to be very important to you and the people you love. The health of one and the health of all are not separate, any more than the body and the brain are separate. We all need connection, we all need purpose, and we all need one another.



## Appendix

**Appendix A: Summary of Suggestions in the Booklet**

**Appendix B: Endnotes**



**Finding help in a physical crisis (from an illness or injury): Call 911.**

**Finding help and support for mental or emotional distress connected with trauma or grief:**

- Call someone you trust, someone positive, and talk about what happened and how you feel. If you don't reach the first person, try another.
- If your thoughts or feelings are out of control, or if you want to hurt yourself, call 911. If it's less serious, but still serious, call someone who you know can connect you with help right away.

**Dealing with adrenaline overload and other crisis situations:**

- You need oxygen to think, and large muscle exercise.
- Breathe slowly and deeply.
- If you can excuse yourself from the situation:
  - Go somewhere where you can do some large-muscle exercises.
  - You might do running, fast dancing, fast walking, stair climbing, jumping jacks, etc.
- If you can't get out of the situation, pushing or pulling against resistance can also work the large muscles. For example, you might:
  - Try hard to lift yourself, in a situation where you can't really lift yourself.
  - Try to pick up the chair you're sitting in—while you're sitting in it.
  - If you're sitting at a heavy table (like a big conference table), try to pick up the table. But if it's light enough for you to really pick up, don't try, because you might flip it or spill the things that are on the table.

**Planting an image of a safe and pleasant place in your mind:**

- Remember a place that has given you peace and pleasure, and practice focusing on it. Include what it looks like, sounds like, feels like, smells like, etc.
- When you're feeling worried or distressed, bring up that image in your mind, and as many details about it as you can remember and experience.

**Grounding exercise**

A grounding exercise gets you out of the things that might be distressing you, and back into the here and now. First, you want to learn and practice this exercise in ordinary times, so you can remember it and do it when you feel your stress levels rise, when you're feeling distress, or when you remember something difficult or you're worried about something in the future:

- Notice the physical sensation of your breath as it goes into your body and comes out: Is it fast or slow? How does it feel? What happens if you breathe in more slowly, make the breath go deeper in your chest, and let it out more slowly?
- Notice the physical sensation of sitting or standing where you are, and sensations of the different parts of your body resting on the furniture, the ground, etc.
- Start your attention at the top of your head, and slowly move your attention down, noticing how your body feels. Is there a place where it's more tense? Is there a place where it's more relaxed? Practice going back and forth from the tense place to the relaxed place. Continue to move your attention down, all the way to your feet.
- When you're ready, turn your attention back to the room or outside area around you. Notice everything around you right now – walls, floors, furniture, streets, sidewalks, people, sounds, air, temperature, light, and shadows.
  - Identify five colors around you.
  - If there are people around you, count them.
- Remind yourself that you're in the present, in the here and now. Remember who you are, why you're here, and what your plans are for the day.

**If you've just been exposed to extreme stress, threat or trauma:**

Here are some things to do right after the stress, threat, or trauma is over and you realize you're safe. You might want to learn this list in ordinary times, so you'll remember at least some of it if something has happened. Except for the first thing (getting help for physical injuries), try doing these things in whatever order seems right to you:

- Breathe slowly and deeply.
- Focus your mind on the fact that you're safe. Turn your attention to all the evidence that you're safe – people, objects, whatever seems like evidence that you're safe.
- If you have any physical injuries that might need help, get some help for them.
- Connect with someone it's safe for you to talk to and be with, someone who won't judge you or try to silence you about what you've been through.
  - Ask them to stay with you, especially if you have to go to a busy and confusing place like an emergency room, police station, shelter, etc.
  - Talk to them about whatever you want to talk to them about.
  - Don't force yourself to remember or keep talking about what happened. Talk about it if you want to, and if it helps, but remember there will be other chances to "unpack" your experience.
- Try the grounding exercise listed above.
- Whatever your body is doing – shaking, being tired, being tense, being numb, whatever – trust your body, follow it, and understand that it knows what it's doing.
- If you can safely do some large-muscle exercise, do as much of it as is comfortable.

**If you have a history of intense stress, threat, or trauma:**

If you've had intense stress, threat, or possible trauma in the past, and you're feeling some distressing effects:

- Understand that these are normal and pretty common reactions to intensely stressful experiences.
- Connect with someone it's safe to be with and talk to about this, someone who won't judge you or try to silence you about your experiences.
- Consider finding a therapist or counselor who specializes in trauma, someone you'd like to work with.
  - Ask him or her to do screening and evaluation for post-trauma challenges.
  - Ask the therapist or counselor to describe the approach that he or she takes.
  - Decide if this is the right approach for you.
  - If it isn't, try someone else.
- Help the trustworthy people around you understand what you're dealing with, and how hard it is.
  - Tell them about the reactions you seem to be having.
  - Tell them how you'd like them to respond to you if you have an extreme reaction.
- Understand that your body and brain are reacting to your experience in ways they think will make you safe—even if their reactions tend to make you feel less safe.
- Teach your body and brain to have different reactions, by giving it positive, comfortable experiences, and spending time remembering, anticipating, and savoring those experiences.

### **Building resilience and reducing stress and stress-related challenges:**

- Do activities that expose you to mild levels of temporary stress, mixed with periods of safety and rest.
- Get lots of exercise.
- Do relaxation activities.
- Breathe slowly and deeply, as often as you think about it.
- As often as you think of it, try to let your mind go quiet, and notice what you're focusing on, as if you're a neutral observer of your own mind.
- Before meals, do things that are relaxing for you.
- Avoid arguments or TV shows that make you angry, especially at bedtime or meal time.
- Get at least 7 hours' sleep a night—8 or 9 if possible
- Try not to sit with your neck angled forward (it puts pressure and tension on your neck, and increases the stress in your brain and the rest of your body).
- Get as much exercise as is healthy and safe for you.
- Spend more time with kind, positive, trustworthy people.

- Avoid people who tend to say negative things, annoy you, insult you, argue with you when it's not necessary, talk too much, etc.
- Take an honest look at how much you're trying to do, how much responsibility you've taken on, and how many hours you're spending under stress or time pressure.
- Ask for help if you need it, and let people know the kind of help you need.
- Pay attention to nature's little "wake-up calls" that tell you it's time to start lowering your stress and taking care of yourself.
- Avoid foods that raise inflammation and eat foods that lower it.

### **Promoting chemical health (alcohol, drugs, medicines):**

- Remember that alcohol, caffeine (in coffee, chocolate, most soft drinks), street drugs, and overuse of prescription drugs all make stress and its effects worse, even if they seem to help at first.
- If you're over-using alcohol or medicines, or using street drugs:
  - If you can cut down, or drink something else instead of alcohol, do it.
  - If you can't cut down or quit—or if you can quit for a while, but when you start up again it's still a problem—go to a recovery group and/or addiction treatment.
  - If you're taking sedatives, get medical help to taper down, because withdrawal can be dangerous.
- If you have long-term or chronic pain, be careful **not** to turn to opioid pain relievers. You'll need a different solution. You can consult a pain-management specialist, and/or do an internet search on pain management techniques. As one woman said, "The pain can't kill me, but the opioids **can** kill me."

### **Healthy eating and weight loss (if needed):**

- Quit or cut down on caffeine (especially energy drinks), nicotine, alcohol, street drugs, and overuse of prescriptions. Watch out for opioid pain medicines.
- Cut down on sugar and carbohydrates (Start looking on food labels. You'll be amazed.)
- Eat more fruits, vegetables (potato chips don't count), and protein.
- Eat less at a time—5 or 6 **small** meals or snacks spread out during the day. It can give you more energy, cut down on headaches and dizziness, and make you lose weight.
- If you get a headache or feel dizzy, lightheaded, or weak between meals, eat some protein, vegetables, or complex carbohydrates (whole-grain foods) with very little sugar
- Avoid foods that raise inflammation and eat foods that lower it.

### **Screening and evaluation:**

- If you have symptoms of chronic illnesses, it's important to get screened and find out what you're dealing with. It's never a good idea to wait and pretend it will get better on its own.

- Most medical offices have a variety of screenings they can do. These might include screening questions about symptoms, blood tests, urine tests, cultures, and other ways of telling if you need further evaluation.
- If you want to check it out before you go to the doctor, you can find simple screening tests for a lot of physical, mental, and behavioral health conditions on the internet or in your community.
- Make sure you choose screening by reliable sources, like medical organizations or governmental agencies. Stick with sites that don't try to sell you things.
- The HealthFinder site is great. It has links to various screenings and tips for asking questions of your health provider. Its web site is located at: (<https://healthfinder.gov/HealthTopics/Category/doctor-visits/screening-tests/get-screened>)
- Who should get screening for illnesses related to stress and trauma? For example:
  - If you're getting counseling or medical help for depression, posttraumatic stress, anxiety, etc., that's wonderful. But the stress may also have increased your risk for some illnesses that are thought of as purely physical.
  - If you've lived or served in a war zone, you may not just have to watch out for physical and psychological effects of stress, trauma, grief, and/or moral injury. You might also have some health risks related to chemicals used in these places. For example:
    - In Vietnam, Agent Orange sowed the seeds of many serious illnesses, including a wide variety of cancers, AL amyloidosis, chloracne, type-2 diabetes, ischemic heart disease, Parkinson's, peripheral neuropathy, and porphyria cutanea.
    - Many Gulf War veterans have developed service-related illnesses, including chronic fatigue syndrome, fibromyalgia, functional gastrointestinal disorders, and a variety of chronic symptoms not linked to any diagnosed illness (examples include abnormal weight loss, fatigue, cardiovascular disease, muscle and joint pain, headache, menstrual disorders, neurological and psychological problems, skin conditions, respiratory disorders, and sleep disturbances).
  - If you've worked in a highly stressful or dangerous job (like a firefighter, police officer, or air traffic controller), or held a stressful life role (like being a caregiver for a loved one), the stress may well have raised your risk of chronic illness.
- What are some examples of tests for chronic illnesses?
  - The test for lupus and some other chronic auto-immune illnesses is called an ANA test.
  - A "glucose tolerance test" can test you for hypoglycemia (which makes your blood sugar rise after eating and then fall very quickly).
  - A common test for diabetes is called an A1C.
  - One test that measures inflammation is called a CRP (or C-reactive protein) test, named after the protein the body uses to fight inflammation. If your CRP is high, they can do more tests to find out why.





## Appendix B: Endnotes

The notes that follow have many different kinds of information – some explanations, some examples, some information sources, and some links to resources that can give you more information on the topic. As mentioned in “About the Science...” (Page ii), much of the information here comes from a commonly known body of very basic information on health, so the booklet isn’t documented with all source materials, the way a scholarly article would be. Instead, these endnotes just provide a little more information, mixed with a few resources that might be helpful.

Of course, these notes don’t address all of the topics mentioned in the book, and many of these topics are described in greater detail on the internet. But first, some important things to remember about Google searches and Wikipedia – plentiful sources of information (good and bad) on the internet:

- Googling is not a substitute for seeking and taking medical advice. Resources found through Google and other internet search engines have undoubtedly saved lives (through accurate information on health risks, illness prevention, and what symptoms might mean), taken other lives (through false or misleading information), and led many doctors and nurses to curse the day Mr. Google was born. It’s a great place to start your search, but a very dangerous place to end it. Please remember that some sites are reputable, but some sites that look reputable are wrong or meant to mislead you. If it’s about your health, please check it out with your medical team. And if you need a second opinion, a web site doesn’t count.
- Wikipedia is a free, “crowd-sourced” encyclopedia. Anyone can write an article and anyone can edit it. One Wikipedia page says, “**Wikipedia is not a reliable source.** Wikipedia can be edited by anyone at any time...any information it contains at any particular time could be vandalism, a work in progress, or just plain wrong.” ([https://en.wikipedia.org/wiki/Wikipedia:Wikipedia\\_is\\_not\\_a\\_reliable\\_source](https://en.wikipedia.org/wiki/Wikipedia:Wikipedia_is_not_a_reliable_source)) That said, in *New York Magazine* – not a blog, but a real magazine – Brian Feldman wrote that the Wikipedia model forces a level of collaboration that makes accuracy much more likely. “Wikipedia articles also have stringent requirements for what information can be included. The three main tenets are that (1) information on the site be presented in a neutral point of view, (2) be verified by an outside source, and (3) not be based on original research.” (<http://nymag.com/intelligencer/2018/03/why-wikipedia-works.html>) One advantage of technical Wikipedia articles about medical conditions and terminology is that the people who are likely to write and edit these articles are often “science works” (hard-working scientists who look into many technical details) who are proud of their accuracy and safeguard it carefully. But for this material, and anything else you find on the internet, please check it out with your medical team.

The endnotes begin here.

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<sup>1</sup> There are many definitions of the word “trauma.” In this booklet, it is used to mean a normal human response to distressing experiences that overwhelm our ability to cope. This could be a physical or a psychological response, and often it’s some combination of the two. But the word “trauma” is **not** used here as a synonym of posttraumatic stress disorder, which is a diagnosis in the *Diagnostic and Statistical Manual of Mental Disorders*. We’re talking about the very common human experience of being overwhelmed by distressing or disturbing

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experiences, with reactions that range from mild and temporary “jitters” to serious physical and/or mental health challenges. If you want to learn more about trauma and recovery, a very good place to start would be a book called *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma*, by Bessel van der Kolk. There are also many other prominent authors/researchers in the trauma field, including John Briere, Christine Courtois, Edna Foa, Julian Ford, Judith Herman (who wrote the foundational 1992 book *Trauma and Recovery*), Peter Levine, Elaine Miller-Karas, Alexander McFarlane, Lisa Najavits, Pat Ogden, Bruce Perry, Stephen Porges, Babette Rothschild, Robert Scaer, Allan Schore, Francine Shapiro, Daniel Siegel, Rachel Yehuda, and many more. A good and reliable source of free information (including articles) on trauma is David Baldwin’s Trauma Pages, at <http://www.trauma-pages.com>

- <sup>2</sup> A continuum is a way of thinking about and measuring something that either changes gradually over time or might be a little different from case to case—in properties like size, number, quantity, seriousness, how much you agree with different statements, etc. If you think of things along a continuum line, that gives you more useful information. For example, your bathroom scale can tell you, not only whether you’ve gained or lost weight, but also how much you’ve gained or lost.
- <sup>3</sup> An instinct is often described as an innate (“built-in”) pattern of behavior in an animal (yes, that includes us), although those behavior patterns are often inspired and supported by physical reactions, including the release of specific natural chemicals and the changes in body functioning that those chemicals produce and regulate. The survival instinct might be thought of as a large and complicated pattern of choices and behaviors supported by a network of physical reactions—often split-second reactions, choices, and behaviors. Its whole aim is to keep us—and perhaps the species as a whole—alive.
- <sup>4</sup> In this booklet, the term “stress system” is used more as a metaphor than anything else. You might think of it as a combination of several bodily systems working together to keep us alive and in balance. One of these is the immune system, which uses a number of chemicals to attack invading infections and heal wounds, and in the process produces a lot of inflammation—swelling, redness, and pain. Another important part of the stress system is the autonomic nervous system, the largely unconscious system that controls heart rate, digestion, breathing, blood pressure, and many other essential bodily functions.
- <sup>5</sup> This is sometimes called the “triune brain theory.” The three brain layers have both official scientific names and more common names that reflect the point in our evolution at which the author of that theory (Paul D. MacLean) believed they developed. The part we’re calling the “basic brain” is the “brain stem”—sometimes called the “reptilian brain”—whose three parts are the midbrain, the pons, and the medulla oblongata. The part we’re calling the “emotional brain” is the “limbic system”—sometimes called the “mammalian brain.” And the part we’re calling the “thinking brain” is the cerebral cortex. At <https://www.quora.com/What-is-the-current-scientific-status-of-the-triune-brain-theory-proposed-by-MacLean> you’ll find a blog that challenges MacLean’s theory and proposes that we think of it more as a useful metaphor than a provable scientific hypothesis.
- <sup>6</sup> In terms of available reading materials and other resources, resilience is a very popular subject. A Google search will net you plenty of information, including lists of good books on resilience in a variety of situations. Many web sites have well thought-out packages of information, like the American Psychological Association’s “Road to Resilience” (<https://www.apa.org/helpcenter/road-resilience.aspx>). And here are two web pages that list and review popular apps for building resilience: <https://www.in-equilibrium.co.uk/apps-for-resilience-mindfulness-mental-health/> and <https://www.sallyspencerthomas.com/dr-sally-speaks-blog/2017/10/8/15-top-apps-for-resilience-mental-health-promotion-suicide-prevention>
- <sup>7</sup> Much of the material you’ll find on toxic stress focuses on children and child development, including the excellent resources at Harvard University’s Center for Child Development, <https://developingchild.harvard.edu/guide/a-guide-to-toxic-stress/>. But this topic is relevant to all ages, because toxic stress (chronic high levels of stress) at any age can compromise health and speed up the aging process. You can find information and ideas for and policy responses to toxic stress in an excellent article by Andrea Blanch and David Shern (published by Mental Health America) at <http://trauma-informed.ca/wp-content/uploads/2013/04/MHA-Germ-Theory-Paper.pdf>
- <sup>8</sup> The freeze response is less common than the fight and flight responses, but it’s interesting. Some trauma experts think the freeze response might be caused by a combination of fast- and slow-system chemicals, and it might cause or contribute to some of the physical problems (like shaking and unexplained pain or numbness) that people can develop after trauma. Two good books that focus on this are *Waking the Tiger: Healing Trauma*, by Peter A. Levine; and *The Trauma Spectrum: Hidden Wounds and Human Resilience*, by Robert Scaer.
- <sup>9</sup> You get high blood pressure when your blood vessels aren’t able to carry the amount of blood that your heart is pumping. There may be too much blood, or your arteries might be too thick, so they don’t let enough blood go through fast enough. High blood pressure puts a strain on your heart and your blood vessels, and it can cause

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- problems in many areas of your body and your life. High blood pressure itself often has no symptoms, so it's important to have your blood pressure tested regularly—and ask about the results and what they mean.
- <sup>10</sup> The term “heart disease” is an “umbrella term” that covers many different kinds of illnesses, including diseases of the blood vessels or the heart muscles, problems with heart rhythm, or heart defects that you were born with. Of course, these illnesses all have different treatments, and all need proper diagnosis and doctors' care.
- <sup>11</sup> We're talking here about the kind of appetite loss that can come from tension and high adrenaline levels. Your body thinks it has to prepare you for a fight or a quick escape, so it doesn't want to use up any of your energy in digesting food. In general, many medical conditions can cause loss of appetite, so it's important to get checked out by a doctor and see if there's a more serious medical reason for it.
- <sup>12</sup> Tension in the back and neck muscles, or holding your neck extended forward (like over a computer or a smart phone screen) can cause a stiff neck. But if a stiff neck is accompanied by a severe headache and nausea (with or without fever, dizziness, and/or ear ache) that might be a very dangerous sign—especially in children. The combination of severe headache, stiff neck, and nausea can in some cases be a sign of meningitis, which would need immediate diagnosis and treatment. So if you have this combination, please see a doctor as soon as you can. It might just be the flu—especially if you know it's the flu (for example, you're also coughing and sneezing, or you work with people who had the exact same set of symptoms and they all turned out to have the flu). But it's important to get medical care for the flu, too (so it doesn't make you vulnerable to pneumonia), so there's no reason **not** to get help from a doctor who can figure out what's really going on and help you get well!
- <sup>13</sup> Migraines are intense, focused, pulsing headaches that usually concentrate just above and/or behind the eyes on one side of the forehead, but may in some cases spread to the back of the head. This is sometimes combined with nausea and vomiting. People with migraines are also very sensitive to light (it can make the headache worse, or even trigger a headache), and sometimes to sound. In some cases, people can get “halos” (circles or flashes of light around their field of vision) and other visual problems before the actual headache starts. And while some migraines may be connected with stress, they're different from tension headaches.
- <sup>14</sup> How are these different from migraines? Tension headaches often have dull, squeezing pain on the sides of the forehead, as if your head were in a vise. Sometimes they also have dull pain across the forehead and/or the shoulders and neck.
- <sup>15</sup> There are five types of conditions that are officially called “anxiety disorders.” These involve generalized anxiety (chronic, exaggerated worry and tension), obsessive-compulsive (repetitive unwanted thoughts or compulsive behaviors), panic (unexpected, repeated episodes of intense fear and physical symptoms), post-traumatic stress (a combination of physical, emotional, and behavioral symptoms that can follow exposure to intensely frightening or painful experiences), and social anxiety (overwhelming anxiety and self-consciousness in everyday social situations). Adrenaline doesn't cause these conditions, but it plays a part in making people more vulnerable to developing these conditions, and it “fuels” some of the symptoms of these conditions.
- <sup>16</sup> If your body has too much adrenaline, the kinds of substances that can temporarily slow you down or calm you down might seem like the answer. Unfortunately, they're addictive, and in many cases rapidly addictive. The addiction tends to raise a lot more tension and anxiety, so life can get a lot worse in ways that make it a lot harder to get relief.
- <sup>17</sup> If you're regularly taking tranquilizers or sedatives—especially benzodiazepines—you need to get medical help to withdraw from them safely. Benzodiazepines are drugs that slow down the central nervous system, and they have dangerous and very uncomfortable withdrawal symptoms. Some of the more commonly used benzos are Ativan, Klonopin, Xanax, Valium, Librium, and Serax (and, of course, the generics for these medicines).
- <sup>18</sup> If you're dependent on heroin or other opioids, you might consider getting medication-assisted treatment. Recovery from opioid dependence can be very difficult because of the damage that opioids do to receptors in the brain. Medicine can help that, some are available from your doctor, and some (like buprenorphine) have ingredients that can make sure people don't become physically dependent on the medicine or get high from it. But even with medication, it's important to have medical support, peer support for recovery, and in many cases professional treatment for substance dependence.
- <sup>19</sup> If you're interested in the role of the immune system in responding to stress and trauma—and how that affects physical health—Kathleen Kendall-Tackett has an interesting article from *Psychological Trauma: Theory, Research, Practice, and Policy* at [http://www.kathleenkendall-tackett.com/kkt\\_pni\\_trauma.pdf](http://www.kathleenkendall-tackett.com/kkt_pni_trauma.pdf)
- <sup>20</sup> Conditions like hypoglycemia, “metabolic syndrome,” and Type 2 diabetes are important for everyone to understand, because even if you're not at risk for these, you probably care about someone who is. These conditions are all related to the way your body processes sugar, using the chemical insulin. In hypoglycemia, the body has learned to overreact to the presence of sugar and carbohydrates in the food you eat by sending out

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- too much insulin, usually because you've been in the habit of eating a lot of refined sugar (like in candy and pop) and simple carbohydrates (like white bread and other processed foods). This rush of insulin leads to a "crash" that can include fatigue, daytime sleepiness, dizziness, headaches, trouble thinking and remembering, and trouble sleeping at night. A more advanced version of this is called "insulin resistance," because the body sends out too much insulin, but still doesn't break down the sugar the way it's supposed to. Metabolic syndrome is a cluster of problems that increases the risk of high blood pressure, heart disease, stroke, Type 2 diabetes, and dementia. Those problems often include insulin resistance, high blood sugar, high blood pressure, too much fat around the waist, low levels of HDL ("good") cholesterol, and high levels of triglycerides (a type of fat in your blood). In Type 2 diabetes, your body needs medicine to process food and keep your blood sugar at a safe and healthy level, and not keeping your sugar under control can put you at serious risk.
- <sup>21</sup> If you Google the words "food" and "inflammation," you'll see links to many sites with full listings of foods that cause inflammation and/or foods that reduce inflammation. One example among many is this link to Harvard Women's Health Watch: <https://www.health.harvard.edu/staying-healthy/foods-that-fight-inflammation>
- <sup>22</sup> This is a test to measure the presence of C-reactive protein, a protein that your body uses to fight inflammation. They can use this test to find out if there's raised inflammation, though it won't show what's causing it.
- <sup>23</sup> Behind many opioid-use problems are health conditions that cause severe or chronic pain. It's important to know about the pain-management options that are right for your condition. Just one example of this kind of information is an article on WebMD web site: <https://www.webmd.com/pain-management/guide/pain-management-treatment-care>
- <sup>24</sup> There is a strong nationwide response to the problem of opioid dependence in the United States. If you want to learn more about the treatment options for opioid use disorders, here is a link to an article posted by the National Institute on Drug Abuse (Under the National Institutes of Health): <https://www.drugabuse.gov/publications/effective-treatments-opioid-addiction/effective-treatments-opioid-addiction>
- <sup>25</sup> Sometimes declarative memories are called "explicit" memories and non-declarative memories are called "implicit" memories. The terms used in this booklet were chosen because declarative memories include (among other things) language, the story of what happened, and the things we try to memorize, including facts and figures. These are all things we can say, or "declare." And the non-declarative memories include things that are more rooted in the senses, like sights, sounds, smells, textures, temperatures, sensations, and emotions.
- <sup>26</sup> A good place to find more basic information about the effects of trauma on memory is a brochure by the Sidran Institute that you can find at <https://www.sidran.org/resources/for-survivors-and-loved-ones/what-are-traumatic-memories/> For more detailed technical information, you might look up Bessel van der Kolk's article, "The Body Keeps the Score: Memory and the Evolving Psychobiology of Post-traumatic Stress," available online at [http://www.franweiss.com/pdfs/sensorimotor\\_vanderkolk\\_1994.pdf](http://www.franweiss.com/pdfs/sensorimotor_vanderkolk_1994.pdf)
- <sup>27</sup> What if you don't know how to find a good therapist who specializes in psychological trauma? Psychology Today has a database where therapists describe their services and give their contact information, and you can search it by city, zip code, or the therapist's name, at <https://www.psychologytoday.com/us/therapists/trauma-and-ptsd> The Sidran Institute has a good article on finding and choosing a trauma specialist, at <https://www.sidran.org/resources/for-survivors-and-loved-ones/how-to-choose-a-therapist-for-post-traumatic-stress-and-dissociative-conditions/> If your post-trauma effects are (or may be) connected with a particular experience (like being service member or veteran, a refugee, or a survivor of intimate violence), the agencies designed to serve people with these experiences may be able to help you find someone who is particularly well qualified to work with you and your experiences.
- <sup>28</sup> For information about finding a trauma specialist, see the links given in endnote #15, above. Matching the therapeutic approach to your needs, your goals, your choices, and your stage of trauma recovery will be important to your health and well-being. If you're new to trauma recovery and/or having serious challenges (like thoughts of suicide, overpowering memories or feelings, drinking too much or using street drugs, hurting yourself or other people, or other things that threaten your stability), the therapist's first goal should be to help you get safe and stable. And there's no timetable for the stabilization process: It takes as long as it takes. This is not the time for you to focus on uncomfortable memories, as people do in exposure-based approaches to trauma treatment. It might be that at some point you'll find it useful to practice remembering painful or frightening things, so they can lose their power over you. If those techniques turn out to be appropriate for you, and you choose them willingly, they can be very helpful. But with this or any other approach, it's most important that you freely choose it, and that it's done in a way that protects your safety and your emotional stability. Otherwise, you might give up and not get any more help, or your condition might get worse.

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- <sup>29</sup> Whether or not you need (or you're getting) medical care and/or professional counseling, peer support—listening and support from people with whom you share important experiences—can be a powerful source of strength, hope, and life-changing strategies. There are many non-professional peer support organizations (ranging from the many 12-step organizations (like Alcoholics Anonymous, Narcotics Anonymous, and Al-Anon) to religious or secular peer support organizations. In many areas, mental health and substance use disorder systems and agencies also have trained peer supporters, who work with treatment staff. For veterans, agencies such as Veterans Affairs hospitals also have peer support staff, the counselors who work at Vet Centers are also veterans, and there's also a growing number of veterans' peer support organizations. And all or most of these programs and organizations have web sites where you can read more about them.
- <sup>30</sup> Healthfinder.gov has a web-based tool with a lot of good suggestions, at <https://healthfinder.gov/healthtopics/category/doctor-visits/regular-check-ups/take-charge-of-your-health-care>
- <sup>31</sup> You can find a scale that lists Anticholinergic drugs according to the strength of their anticholinergic effects (called their "anticholinergic burden"). These drugs have side effects that can be uncomfortable or annoying for many younger people but harmful or disabling for many older adults. Effects of anticholinergics include dry mouth, thirst, drowsiness, constipation, blurred vision, increased heart rate, feeling hot, and not remembering things very well. So, for example, after taking medicine for allergies or motion sickness, a young adult might just have a dry mouth, heavy thirst, constipation, and slight problems with memory. But because of the way aging affects the body, anticholinergic effects might be very strong and debilitating in an older adult, and lead to other medical conditions that further limit their abilities. Older adults are often prescribed a lot of medications, often by multiple doctors who may not be working in collaboration, and many of these drugs might have anticholinergic effects. And in the long term, whatever your age, if you take anticholinergic drugs regularly over time, you might be at higher risk of developing dementia. So it's a very good idea to keep track of the anticholinergic burden of all your medicines, and share the whole list with each doctor who is treating you.
- <sup>32</sup> In 2011, *The New Yorker* published a fascinating article called "The Poverty Clinic." It tells the story of a doctor whose work with patients led her to a deeper understanding of the relationship between childhood adversity and chronic illness throughout the life span. It describes the challenges her patients brought in, what she learned about Adverse Childhood Experiences (ACEs) and the ACE Study conducted by the Centers for Disease Control and Prevention and Kaiser Permanente, and how this learning transformed her practice. You can read the article at <https://www.newyorker.com/magazine/2011/03/21/the-poverty-clinic> and find more about ACEs and the ACE Study at <https://www.cdc.gov/violenceprevention/acestudy/index.html>