

# **Getting Well: Understanding and Overcoming Obstacles to Mental Wellness**

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## Foreword

For years I have struggled to explain what a contemporary psychiatrist does, and it usually helps to start with the difference between a psychologist and a psychiatrist. A psychologist is one trained in therapy and psychological testing and who receives the credentials of PhD, or doctor in philosophy, upon the completion of four or five years of post-graduate study. A psychiatrist is one who has completed four years of medical school (either an MD or DO medical school) and then chooses the medical specialty of psychiatry, which requires a minimum of four years of residency (apprenticeship) training to become skilled at the diagnosis and treatment of mental illness.

The duties of a contemporary psychiatrist vary depending on his or her interests, and particular aptitudes (i.e. training in and desire to do psychotherapy), as well as the population of patients with whom he or she works. Factors such as a limited supply of psychiatrists, financial restrictions of third party payers, growing numbers of medication therapies, or biological therapies, along with the need and demand to provide competent use of these biological therapies have all served to redefine the role and function of the modern psychiatrist.

It is rare to find a psychiatrist, whose principal function is that of a psychotherapist or psychoanalyst, spending the day in 50-minute therapy sessions over the course of months or years. Psychologists, social workers, and licensed counsellors of various kinds, now provide the majority of so-called “psychotherapy,” while the typical psychiatrist spends the majority of each day engaged in the clinical role of diagnostician and medication prescriber/advisor. I might add that in my practice and that of many psychiatrists, psychotherapy of a sort does occur but it happens in brief, abbreviated fashion, blended into the fabric of an initial evaluation or medication follow-up visit.

In large measure, gone are the days of couches, free-association, lengthy and time-intensive sessions delving into the nethermost parts of the mind in pursuit of insight as to the “deep seated” urges, fears and desires that result in mental illness. Gone also are the days when “asylums” housed hundreds, or even thousands, who spent their lives as wards of the state, with marginal expectations for recovery.

The best theories to explain mental illness and the associated treatments of old have all been abandoned in favor of more sophisticated models that account for the ever-growing nature of the science which strives to ease the burden mental illness brings to its sufferers and their families. Contemporary thought synthesizes the available evidence about mental illness and treatment into a formulation known as the “biopsychosocial” model. This formulation of possible causative elements and corresponding treatment approaches attempts to integrate what we have learned about biological (i.e. genes, epigenetics or those elements involved in genetic expression, and medical conditions), psychological (the things we think, believe and tell ourselves) and social (gender, personal relationships, communities, cultural influences, etc.) factors which combine to establish the basis of our mental wellness, or mental illness, as the case may be.

Today, it is increasingly uncommon for psychiatrists to practice “solo” or independent of other mental health or substance abuse counselors. Psychiatric care is often carried out in tandem with another mental health practitioner (i.e. psychologist or social worker) who offers psychotherapy in addition to medication therapy prescribed by the psychiatrist. Commonly, psychiatrists work as part of a multidisciplinary team which may consist of occupational, recreational or music therapists, nurses, substance abuse counsellors and case managers. A psychiatrist uses his/her broad and extensive training background to oversee the development and implementation of the most effective and time-efficient modalities available.

Despite this more contemporary function of the psychiatrist, it is most often the case that outdated and inaccurate ideas about mental illness or psychiatry serve to prevent many of those who could be helped from receiving needed treatment. Resistance to seeing a psychiatrist, as opposed to any doctor about your health, is most often the result of stigma. Most often, the antidote for stigma is education and information but this takes time.

For this reason, I have written this manual with learning questions at the end of each chapter to promote learning. It is my hope that this educational process, consisting of my time spent to write the manual and patient and family time spent to learn from it, will achieve the following:

1. Combat stigma by offering information and perspectives which counter the myths, misinformation and shame which needlessly hampers those with mental illness;
2. Improve treatment outcome and experience through an improved communication process emphasizing the need for patients to take responsibility for their recovery or journey to optimal mental wellness;
3. Improve collaboration between patient and doctor through early establishment of a working diagnosis, goals and expectations of treatment, to achieve the desired result of promoting mental wellness;
4. Educate about the prevalence of mental illness, putative role of genes, environment and the combination of both in the explanation of how we become mentally unwell.
5. Educate about the mutual education process, doctor educating patient and patient educating doctor as healthy and healing factors of trust, respect, empathy, open-mindedness and honesty are promoted in the therapeutic relationship.
6. Increase recognition of signs and symptoms of unwellness, theories as to how we become unwell, and the role of stress in exploiting vulnerabilities.

7. Explain how treatments focusing on the mind can and do affect the brain and how those affecting the brain can and do result in changes in the mind.
8. Review medication treatments, the risks and benefits of each, as well as the clinical monitoring that accompanies treatment with the various classes of medications.

Importantly, one must first vault the obstacle of stigma in order to begin the process of becoming as mentally well as possible. In many cases, for families and not just patients, shame and fear must be dismissed as they serve as the guardians of stigmatized thinking that prevent one from acknowledging psychological or emotional problems, much less seeking and receiving needed help. Understandably, some avoid contact with mental health practitioners because of the fear, the shame of being "labelled" or stigmatized. What I try to explain to patients is that my intention is not to offer a "label" that compounds emotional or psychological suffering with the addition of shame or possible rejection. Rather, my intention is to validate one's distress and suffering and to offer a name for it. Thus, by overcoming the silence and speaking in confidence to me, one takes the first step along the path leading to help or alleviation of needless distress with the hope of restoration of full functioning.

I have a medical colleague who refers to health as a fluid, daily and constant process<sup>1</sup>. I support this view of how we approach taking care of ourselves. "Getting in shape" is not a singularly obtained event but rather a matter of sustained fitness or wellness over time. I think that the same is true of mental wellness. One could choose to think about seeing a psychiatrist as a step towards improving emotional/psychological fitness. If a diagnosis is offered then that may mean that treatment over the course of a lifetime may be necessary in order to achieve a maximal degree of fitness. It also suggests that one can accept personal responsibility for mental wellness, create partnerships with those who can support you in this rather than view trained professionals or others as hostile to your mental wellness or responsible to make changes that each must make for himself.

Lastly, to those who view a psychiatric diagnosis or mental illness as a label, as something signifying a personal defect or flaw, let me say a few more words. Personal worth and value are independent of any diagnosis, be it related to a condition in the body (meaning and including the brain) or the mind. To assume that one controls all of the factors of mind and brain (or other organs of the body) that relate to wellness is to suggest that one has conscious control over body and mind that is supreme, without limit. This, obviously, is not so. That we can take steps, make decisions to influence our health is undeniable and sure. It is also the basis for saying that needless suffering can be avoided, that functioning can be enhanced and life's experiences lived to the fullest. More accurately, a diagnosis can be viewed as a starting point, one which attempts to account for those aspects of your brain and mind functioning, your past experiences, genetic endowments and present functioning.

Any diagnosis is only as accurate as the information given and received in order to support it. Further, no fixed, immutable outcome can be offered or assumed simply by

the diagnosis itself, but rather by numerous circumstances and factors that are specific to the expression of the disorder in the person and the person's management of the disorder. Thus, I see my role as helping people pursue a path, a journey or process, towards becoming as mentally well as possible.

# Chapter 1

## What is stigma and where does it come from?

It goes without saying that going to the doctor is typically not something we look forward to or something we do to increase our sense of pride and self-confidence. We go to doctors because there is or might be a problem for which treatment is sought in order to render one as healthy and well as possible.

If this is your first visit with me and your first visit to a psychiatrist then let me reassure you that it is not my goal to add stress to your life by having you now deal with the stigma of having seen a “shrink”. Whatever is concluded today about the problems with which you are struggling, please do not go away with the idea that you have been labelled as being “crazy” or “nuts”. The use of this type of language is pejorative and insensitive. It also reflects the continuing problem of society’s ignorance and misinformation, which has fostered negative attitudes and myths associated with mental illness. Stigma is one of the biggest barriers for individuals to overcome in order to receive help. Your evaluation with me today is for the purpose of promoting greater mental wellness through increased understanding of the mind, brain and body.

The term stigma comes from the Latin word *stigmata* meaning a sign of reproach, “characteristic of a defect”<sup>2</sup>. I would suppose that for as long as verbal communication has been around, terms have been used and twisted to serve as marks of reproach for anyone who acts or thinks outside what is deemed “the norm”. Unfortunately, mental illness has been poorly understood for much of history and much of what we have learned about the complex basis for mental illness has only come about in the last 2 or 3 decades. Many of the negative attitudes and beliefs associated with mental illness are the result of years of ignorance, fear and misinformation. There is a tendency to fear that which we do not understand, especially if it threatens us. Moreover, inappropriate explanations for behaviors associated with mental illness have been offered over the years serving to create unhelpful and, at times, harmful notions as to what explains these behaviors and what causes them to occur.

Additional sources of stigma sprout from the garden of scepticism and cynicism. Out of this garden comes the argument that if you “label” every misbehavior as a “disorder” then good old-fashioned self-control is no longer necessary, as a “disorder” is something beyond their control. That notion is a half truth and distorts the reality that we all have varying inclinations and aptitudes to do things not in our best interest. There is no easy way to displace responsibility for oneself unless the impairment is so gross and evident as to make it obvious in need and to pursue a legal opinion in that regard. Even in the case where a legal guardian is appointed, there always remains some expectation that the individual, and not just the legal guardian, ought to take responsibility for his or her own wellness and face up to the challenges that life and mortality bring.

Others may seek to avoid acknowledgement of mental health problems and the attendant responsibility by firmly grounding themselves in denial. If one can simply deny that there is a problem, then listening to and working with his or her doctor becomes unnecessary and life can go on as before. Sadly, both the patient and loved one are vulnerable to this sort of thinking and eventually further disappointment, frustration and a distorted image of possibilities for the afflicted individual. In the most unfortunate of circumstances, patients or family members start to view those trained to help and assist as adversaries rather than partners. The thinking may become crystallized in statements such as “they” –family members, friends, mental health providers – anyone who is not aligned in the position of denial, “are the ones with the problem, not me.”

One further reason I see for resistance among patients to accept a mental illness or substance abuse diagnosis is related to the idea that acknowledgement of such a diagnosis invalidates their individual worth or value. The reasoning is often as follows, "If I have depression, then I must be weak" or "I have these thoughts and so there must be something wrong with me as a person", and on and on the thoughts can go. Sadly, many are unaware of how their mental life is directly related to their brain and bodily functioning. Further, many want to own each and every thought that may pass through their mind as though we are engaged in the process of making each and every thought. Thus, the distinction is often lost that we are unique, valuable and worthwhile regardless of external, social definitions of worth. Every great leader and thinker of history has made the case for individual worth independent of physical or external aspects of our body that might generate “social” value. Similarly, random thoughts of the mind brought about by the whimsy of the brain do not determine our worth and value. Rather, our worth and value as human beings are fixed and immutable and reside, partly, in our capacity, potential and ability to create, as well as in our unique identity as living beings.

Making the distinction between one’s body and mind and one’s identity is often a challenge and worth addressing in more depth. Just as with infectious microbes that might infect our body without our awareness and produce symptoms of illness, we need to be aware of those thoughts, behaviors and moods which tip us off to the workings of our mind in ways that reflect that there is a problem with the mind and that it has nothing to do with our character or personal attributes, much less our worth as human beings.

Whatever the circumstances that have brought you to this point today, I’m glad that you have chosen to make the effort to sit down and share with me what has been going on in your life. Whether this is your first visit to a psychiatrist or one of many, let me share with you what you can expect from a visit with me today.

Chapter 1 Learning Questions:

1. What is stigma?
  
2. What examples of stigma can you identify in society?
  
3. Do you possess stigmatized ideas about mental illness or substance abuse disorders? If so, what are they?
  
4. Where does stigma come from (in general terms) and how did you come by it in your life?

## **Chapter 2**

### **II. Creating an Effective Working Relationship With Your Doctor**

Over the years, I have found it helpful to discuss with my patients those factors or elements that contribute to an effective working relationship. It is common knowledge that the nature of the relationships in our lives can have a positive or negative impact on us psychologically and emotionally. The relationship with one's doctor is particularly important because oftentimes the intimate and very personal nature of what is discussed will impact one's attitude or willingness to benefit from treatment. With that in mind, let's talk specifically of some of the elements that my patients and I have found to be critical factors in an effective, collaborative working relationship.

#### **Communication**

Effective communication involves the successful exchange of information between doctor and patient for the purpose of facilitating mental wellness. Let's break down the elements of this exchange and review the responsibilities of each partner in respect to the various components of the exchange, including verbal, nonverbal, and active listening.

#### **Verbal**

Most people think they know what it means to communicate verbally. This certainly refers to the words we choose as well as the tone, volume, rate, accent and other more subtle aspects of our verbal speech. How we communicate through the use of tone and words can vary substantially. Our tone can sometimes get in the way of what we are saying with our words. Further, the volume of our speech sometimes has the opposite effect as what was intended. A teacher who falls into the habit of shouting over her chatty class may learn that the students respond better to her requests to "listen" if she adopts a soft, whispered tone. Further, with any given sentence we can send a multitude of messages to another based on the language, diction, accent, rate, tone, etc. aside from the words we choose to use.

#### **Nonverbal**

Nonverbal communication refers to the use of facial expressions, hand and body gestures, posture and stance, as well as dress and demeanor. Our nonverbal cues communicate more than we think in our interactions with others, and often set the tone for the entire discussion. During my psychiatric training I was required to videotape my psychotherapy sessions for review with a supervisor. Those videotapes were exceptionally effective in helping me recognize and appreciate the importance

of my nonverbal communication by observing my posture, use of my hands, eye contact, etc.

During any given interaction there are numerous messages being sent and received. The verbal message may or may not conflict with the nonverbal message. In particular, nonverbal communication such as one's observed mood (affect), clothing, personal appearance and hygiene, posture, gestures and facial expressions can go a long way in reinforcing or refuting the verbal message. Further, the absence or presence of spontaneous body movements, as well as frequency of such movements also communicates information about one's psychological or emotional state.

For example, if one were to respond to a greeting by saying "I'm great," yet do so with a flat expression, monotone voice and no spontaneous movement, it would certainly raise some question as to how the person is really feeling. Hence, the words may be irrelevant if the tone is flat or sarcastic or angry, and depending on the accompanying facial expressions and bodily movement. The voicing of confusion about the intended message, be it verbal or nonverbal, along with an attempt to express your understanding of the intended message is referred to as clarification. Clarification by the listener often reflects that the receiver of the communication is practicing the valuable communication skill of active listening.

### **Active Listening**

Listening intently to the message or messages being expressed, both verbally and nonverbally, and not just to the words someone is using is active listening. It suggests that the receiver is taking an active part in the conversation even though he or she may be saying very little. It also means that the receiver is making him- or herself as available as possible to all that the other may be trying to communicate. Inherent in this process is the verbal and/or nonverbal feedback that the receiver provides as proof of engagement in the communication process, and may involve some rephrasing or reflecting of what is being received.

Active listening can help to bring into awareness those aspects of ourselves, including our thoughts and behaviors that may be operating outside of our conscious awareness. Further, it can help correct misperceptions, validate assumptions, and facilitate a more solid relationship with your doctor in promoting the best outcome possible for your treatment. For example, active listening skills on my part are essential when meeting someone for the first time. After asking about the reasons and motivations for coming to see me, I will reflect back the various verbal and non-verbal messages that appear to be most relevant to the problems encountered. As I relate my summarized understanding of the patient's stresses, symptoms and concerns, I am looking for the patient's acknowledgement that I have correctly understood how they are feeling and thinking about their life and problems.

## Honesty

Honesty seems to be an obvious element for inclusion in the components of an effective working relationship. The question I have frequently asked patients in the groups that I facilitate is, "Why would someone not be honest with their psychiatrist?" A number of revealing answers have been offered and are listed below. I would like to emphasize that dishonest behavior (or speech) is a message and communicates much to me about the person that I have an obligation to treat.

Although many reasons for dishonesty might be offered, I have chosen to focus on only a few. The first reason for dishonesty in the clinical relationship might be that the person finds enjoyment or pleasure in deceitful behavior. This type of behavior is labeled a primary gain as it meets the immediate goal of self-satisfaction. In my experience and opinion, I have found this to be rare. Next, there are a number of secondary gains, such as time off from work, financial compensation as part of a legal course of action, or the attention of others paid to them when they assume a sick role. Again, these types of issues have rarely been encountered in my day to day practice.

Although not entirely removed from the above examples, I have found that dishonesty tends to be driven more by a desire to control another and is more typically about meeting one's immediate desires in favour of an honest disclosure that progresses along a more prolonged path to its conclusion.

For example, control issues are at work when a patient seeks to leave the hospital and, in hopes of a speedy discharge, minimizes or distorts the events or circumstances precipitating his or her admission to the hospital. Additionally, one might report or suggest full compliance with medication when in fact the regular taking of medication has not been occurring. The occurrence of dishonesty in this manner, between the patient and the treating physician, is often based on the desire to distort the facts, or the reality of one's circumstances, in order to avoid having to accept unpleasant certainties or possibilities. Sadly, such dishonesty creates a false sense of security and collaboration that will only serve to jeopardize the trust of others. Without honesty, collaboration is limited and the ability to receive appropriate and meaningful treatment is compromised as a result.

The minimization of signs and symptoms is often a defensive posture assumed by someone who is feeling pressured or forced by others to accept treatment. This distortion of reality and the facts can lead to further problems in the therapeutic relationship based on an inability to trust the incoming information because of the covert agenda of wanting to appear well at the expense of being open to the possibility of having a mental illness. One's ability to accept the opinions of others, to look at things from another's perspective, is part of being open minded and more will be said about that shortly.

Sadly, the insistence on seeing and accepting only those facts that fit with one's perspective impairs the creation of an effective therapeutic relationship and, more importantly, it hampers the growth of trust.

I have found that discussing the motivations for dishonest behaviour and self-deception is helpful in containing it, while also fostering the development of trust. Ultimately, honesty in the therapeutic relationship sets one on course for the best possible outcomes by breeding the elements of trust and hope, whereas dishonesty and self-deception foster only disillusionment and disappointment.

### **Trust**

For lack of a better analogy, I have often explained to colleagues and friends that the currency with which I trade with patients is trust. The trust of a patient is essential for initiating or adjusting any medication, and/or initiating any psychotherapy or other undertaking that may prove beneficial for them. I need to be able to trust what is said to me, especially concerning the patient's commitment to following through on the agreed-upon treatment plan. Conversely, patients need to have confidence in the course of treatment recommended and feel they have been given the information necessary to make an informed decision. This feeling of confidence will free their minds from worry and apprehension about the process of intervention.

Trust can be established or eroded over time. Trust is often bolstered by consistency and reliability. Timeliness of appointments is one thing, but the emotional environment and perceived sense of safety experienced in the therapeutic relationship go even further in fostering trust. Predictability in the therapeutic setting allows one to feel safe and secure in the discussion and review of one's personal matters without condemnation, critique, betrayal or rejection. I do the best I can to create this environment at each visit so that the tough decisions and commitments that may be required can be achieved, in part through reliance on a trusted relationship.

From the psychiatrist's or clinician's standpoint, creating and maintaining a trusting relationship is critical to helping the patient achieve the best possible outcome.

### **Empathy**

During my psychiatric training I had a discussion with one of my supervisors about the ingredients of effective psychotherapy. I was introduced to some of the research on this topic that revealed that the most important predictive factors for a good outcome in psychotherapy are for the patient to feel understood and that his or her therapist cared about him or her. I will often ask a group of patients to define empathy and the response I commonly get is 'to feel bad' or to "feel sad for someone else'. That response more closely defines sympathy. Others know exactly what empathy is and have offered responses like, "Knowing what it's like to be me" or "Really understanding how someone feels". Empathy is the ability of your psychiatrist or therapist to experience what you are feeling emotionally, to know and

understand what you are feeling. The ability to understand another, and to feel as he or she feels, creates emotional resonance, as well as forging a sense of trust and confidence in the therapeutic process. The sense that one is understood and that someone cares are essential components in the creation of an effective psychotherapy relationship and in the relationships I seek with my patients.

### **Respect**

In the therapeutic relationship, it is important that each patient feel recognized and validated for who he or she is. It means that each person has value and importance and that no person is worth more than another. Title, status, degrees, money, etc. are all superficial social creations that do not determine a person's worth or value. Each person has incalculable worth and value. Each person is unique and marvelous in his or her capacity and potential, being able to offer unique and lasting contributions to others and themselves.

This tenet is often a source of debate, as some patients have seen themselves or others as having limited or variable value. One can be tempted to alter the value and worth of others based on what they have or have not done. The value or worth of an individual is independent of actions or behaviors, even if those actions have been regrettable or objectionable. Respect means that value and worth are acknowledged and accorded to each person, especially themselves, without being tempted to think of others in any sort of hierarchy of worth. True, some remarkable people in history may be singled out for their virtue or barbarity but all are worthy of respect as human beings.

### **Open-mindedness**

This means that one is willing to learn. I suppose it could be thought of as incorporating elements of humility and meekness, as well as inquisitiveness. Closed-mindedness might include elements of contempt, disdain, arrogance or paranoia. Conversely, open-mindedness is seen in someone who is willing to hear and listen to another. It assumes some level of respect and it is reflected in one's ability to tolerate and consider opinions and perceptions different from one's own. Openness is critically important in helping one to achieve change. If one does not listen, if one is not willing to entertain ideas different than those already held, treatment will be particularly hampered. Oftentimes, treatment does not progress or cannot be offered or continued when one is not open to receiving another's point of view. This can often be the case in schizophrenia, when a patient suffers from anosognosia as one of the symptoms of their illness. Anosognosia is the inability to recognize that one is ill or the signs and symptoms of his or her illness. This term came into use in the late 1800's and is borrowed from neurologic conditions such as strokes involving the right frontal lobe, and is thought to result from damage to that area of the brain. For some, it seems to be a fixed symptom of the illness, whereas the ability to recognize one's symptoms and signs of illness varies with the course of the disorder. In any case, patients with anosognosia represent some of the most difficult patients to treat

because of their closed mindedness (based on brain dysfunction) to accepting information that is foreign to their own perception of reality.

Chapter 2 Learning Questions:

1. What are three important components of effective communication?
  
2. How do we often send “mixed signals” with our communication?
  
3. How can you make sure that good communication skills are part of your relationship with your doctor?
  
4. What is the difference between empathy and sympathy? What is important about empathy in terms of working with your doctor?
  
5. How might dishonesty impair one’s ability to become as well as possible?
  
6. How does honesty relate to trust and vice-versa?
  
7. How is respect reflected in the relationship with your doctor?
  
8. Define anosognosia.

## Chapter 3

### III. Mutual Education

My initial goal is to learn as much as possible about you. In essence, you are telling me about what it is like to be you and that is one element of mutual education. My job is to listen and to organize what you tell me into something meaningful for both of us.

Typically, there is only a brief time for this to occur with initial appointments ranging from 30 to 60 minutes. Certainly, to really understand and know someone takes more than just a single visit. That said, a brief 30-minute meeting can reveal much about what can be done to help you and serves as an initial orientation for the process that lies ahead.

**Mutual education** is the term I use to describe the process during which I learn about you, how you think, feel and experience life, while at the same time, you learn to trust and commit to a collaborative working relationship. This means that we commit to defined plans and goals to be implemented at the end of each visit and then reassessed continually over the course of treatment.

Practically speaking, by the end of our first visit (and after each subsequent visit) we will need to put our mutually acquired education to work with you committing to a course of action based on the treatment recommendations discussed. The process of mutual education continues, at each visit, as you continue to share your experiences and history, and I share information about the workings of the mind and brain pertinent to your diagnosis or treatment recommendation.

My overarching goal is to help you function as well as possible. Committing to treatment means taking a path that will bring changes in how you think, behave and feel. My role is to serve as a trusted and empathic advisor and consultant. Treatment approaches are general recommendations but always need to be tailored to the individual, and his or her history and situation. It is my job to be straightforward (honest) and to direct you along a path of self-education about the social and personal circumstances that might be operating outside of your conscious thought. I will encourage your learning by giving you information to read and to discuss at subsequent visits as well as asking that you do some work between appointments such as journaling, writing, listening and watching audio-video material that will educate you about the mind and brain in general, and your mind and brain, in particular.

#### The Initial Evaluation: What to expect

It all begins with getting to know you. If I see you in a clinic or outpatient setting, I will probably request that you complete a personal history form that I call the Self-Assessment Packet. This is completed prior to your initial visit with me to help move the process along and to allow for more time to develop a treatment plan during our first visit. Alternatively, you may see a social worker, a nurse or another health care provider whose reports should be available to me to supplement the initial evaluation. Whether you complete that packet or not, time is spent in the initial visit learning and gathering

information about you, your life and what has been going on in recent days, weeks and months. Also, learning about your upbringing, family and other important relationships, and your family's mental and addictive disorder history will help me to form preliminary conclusions about how the combination of genetics, relationships, personality and life experiences (especially those that were traumatic) may be contributing to the difficulties you are having at this time.

It is very important that you think about the factors which have led to your coming forth for treatment at this time. In other words, what has happened to prompt you to seek treatment at this specific time as opposed to weeks, months or, even, years ago? Second, decide on 2 or 3 things that you want to address in our first meeting. Last, you may want to rank, on a 0 to 10 scale with 10 being the greatest, what your present motivation is for pursuing a path toward improved mental wellness.

You may already know or have an idea what you would like to have happen as a result of our first meeting. Let's say that you have been taking a medication for several months from another provider, but the outcome has been unsatisfactory. Let's say that the problem is "depression" and you and/or your provider thought you should see a specialist in the area of depression (me!). You may want to ask about an increase in the dosage or perhaps a change to a different antidepressant which, let's say, your friend said worked "great" for her. Even as straightforward as that situation may appear, I will need to spend time doing a thorough evaluation in order to provide you with a meaningful and careful recommendation about what course of treatment to follow in order for you to feel and do as well as you can.

### **The Initial Evaluation: Establishing a diagnosis**

The majority of time in the first interview will be spent gathering and organizing as much information as possible in order to help us understand your situation and then decide which treatment options might be most helpful for you. An initial diagnosis will be established and discussed with you in order to set the stage for a discussion of treatment options and recommendations. The working diagnosis may be revised as time, education and treatment reveal other considerations that enhance my understanding of what diagnosis or treatment options might be most helpful for you.

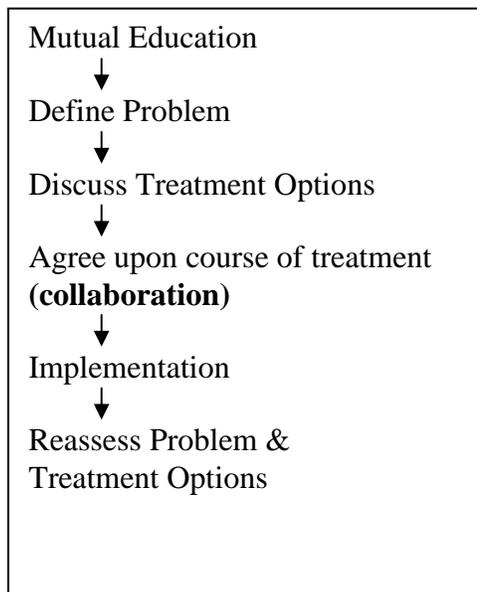
It is important to point out that pharmacologic treatment options can be quite similar despite having a change in diagnosis over time. There is always the possibility that the initial treatment may not work fully, but only time and a review together of any and all progress will yield the agreed upon next step. Typically, more conservative interventions are offered first and then only with heightened illness severity and acuity are more risk-laden treatments considered. Keep in mind, if you are prescribed an antibiotic for pneumonia based on your cough, fever, and duration of the condition, but without a sampling of your throat secretions, it is only your doctor's best guess as to which organism is responsible and which medication might work for your problem. Expending the time, effort and money to do a more thorough evaluation is only warranted only by the urgency and seriousness of the entire clinical picture.

With treatment in mind, let me review the vast number of therapeutic options available

although the most simple, safest, cost effective and easily applied treatments are attempted initially. The following information is meant to help you understand that there is wide variety of options and for you to remain hopeful as treatment moves forward.

Chapter 3 Learning Questions:

1. Describe what is meant by mutual education.
2. What is the patient's responsibility in the process of mutual education? And the doctor's?
3. How can you prepare (before the appointment) for what you want to see happen as a result of each appointment?
4. What are the specific, over-arching goals that you want to achieve as a result of treatment? Define these goals in functional terms? (i.e. go back to work part-time, complete coursework for job re-training, etc.)
5. Explain how the flowchart below relates to initial and subsequent appointments with your treating psychiatrist.



## Chapter 4

### IV. Treatment Options: Somatic and Non-somatic Therapies

#### Somatic Therapies

Simply stated, there are two general approaches to treatment. First, somatic (bodily) therapies are those that work on the brain to bring about a desired change in the mind. The effects in the mind may be immediate (within a few minutes to 1 hour), short term (occurring within days to weeks) and long term (over months to years). Examples of somatic therapies include:

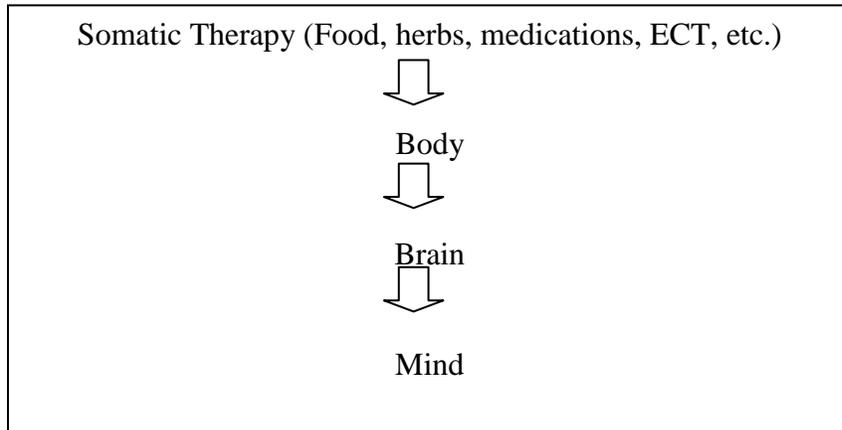
- Foods
- Herbs
- Vitamins
- Odors/pheromones
- Prescription medications
- Electroconvulsive therapy (ECT) \*
- Light therapy
- Acupuncture
- Massage
- Exercise
- VNS (Vagal Nerve Stimulation) \*\*
- rTMS (Repetitive Transcranial Magnetic Stimulation)\*\*\*
- 

Somatic therapies consist of physical things that we take into our body in order to effect a change in how the brain functions. The goal is to target specific brain areas, systems and functions in order to bring about a desirable alteration of the brains production of mental functions. This effect on mental functioning, or the mind, is what is then perceived, felt or generated by the reduction or elimination of the signs and symptoms experienced as manifest by the disorder (i.e. changing how you think, feel and behave).

Somatic therapies are delivered in a physical or tangible manner. This would include:

- Chemical - in the form of pills, liquids and foods with the administration of herbs, vitamins, prescription medications, odors, pheromones, etc.
- Mechanical – such as those administered through the skin as with massage/acupressure, acupuncture, etc.
- Electrical - ECT, rTMS, VNS all of which rely on electrical stimulation being delivered to the brain or nervous system. Bright light therapy involves light energy/waves in a specified manner.

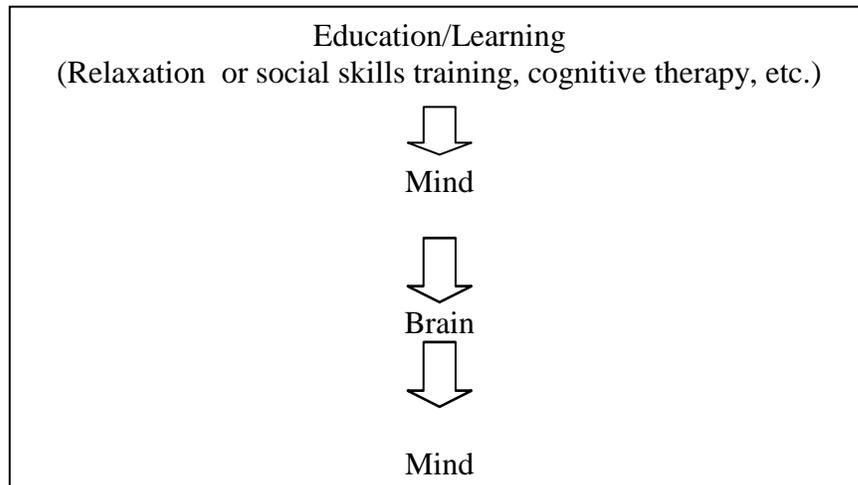
Figure 1. Schematic illustrating how somatic therapies are delivered and how they achieve their goal of altering the functioning of the mind, via the body/brain:



### **Non-Somatic Therapies**

Non-somatic (non-bodily) therapies are directed at and make use of the mind (mental functioning) to bring about changes in the brain that produce a desired mental state. Since our mental functions are based in brain functioning, a change in the mind is reflected in brain functioning and vice versa. For example, the mental function of sleep can be monitored and assessed using a machine that registers changes in the electrical activity of the brain. Your efforts to learn relaxation techniques that help you fall asleep or to achieve a state of calm would be reflected in the activity of the brain. In essence, the result of your learning and education relies on mental processes (which are brain based) and the use of mental skills (i.e. deep breathing) to influence brain functioning (alteration in brain neuronal activity) which results in mental calm or sleepiness (altered mental alertness/consciousness). See Figure 2, on the following page.

Figure 2. Schematic representation of how therapy (learning) results in a change in mental functioning.



Examples of non-somatic therapies include:

- Relaxation training (through the use of breathing techniques, mental imagery, meditation, etc.);
- Social skills education and training (learning and implementing communication skills, relationship skills of empathy, trust, responsibility taking, etc.);
- Coping skills education (learning distraction methods and healthy self-soothing techniques);
- “Psychotherapy” or “talk therapies” which include different methods of learning to monitor and change one’s beliefs, habits/behaviors, perceptions about self, others and the world that influence how we feel.
  - Examples include:
    - Supportive Therapy
    - Cognitive-Behavioral Therapy
    - Interpersonal Therapy
    - Psychodynamic Psychotherapy (what most people think about when seeing a psychiatrist or when people talk about being “psychoanalyzed”)
- Other formats and styles of “talk therapies” include:
  - Couples’ Therapy
  - Family Therapy
  - Group Therapy
  - Counselling

The appropriateness, feasibility, practicality and utility of therapy for you will depend upon many factors including your interest in learning, motivation, social and financial

resources, as well as the geographic availability of various therapies. Current training requirements for psychiatrists mandate training in “talk therapy” but personal interest, aptitude and a limited number of psychiatrists, combined with lower reimbursement for these therapies, limit the number of psychiatrists who will actively provide such treatment. Non-somatic therapies are almost entirely provided by other mental health professionals such as psychologists, social workers or licensed counsellors.

### **Therapy is Learning!**

I tell patients that “therapy” is another word for learning. Learning impacts the structure, function, and processes of the brain. For example, when we learn to ride a bicycle, this reflects an alteration in the organization and functioning of brain cells in various regions of the brain. Also, processes of the brain, such as the production and experiencing of emotions, are changed by learning to ride a bike. The fear of crashing to the cement and scraping your skin is greatly reduced as you learn how to balance and develop more confidence in turning, starting, stopping, etc. Consequently, the way we feel is altered by the empowerment we experience through the acquisition of a new concept (a thought or belief such as, “I can do this”) or skill.

Think for a moment about how you would feel if you were asked to land an airplane (assuming you had no prior knowledge of how to do so). Frightening! Then imagine how you would feel if you had already acquired knowledge of how to fly and had some experience operating the airplane in question. Your confidence and hopefulness would be vastly improved. The point is that learning changes your brain, and if the learning is specifically tailored to your challenges, then a change in how you feel and what you are able to accomplish, given the same challenges you now face, will be much different.

Let me provide one last example. Once you learn about clinical depression, its manifest signs and symptoms, how it disturbs your moods and distorts thoughts in an irrational way, it becomes possible to correct one’s mood by learning to refute and correct irrational thinking. Recognition of the signs and symptoms of mental illness is a learning process. Developing an awareness of triggers for changes in one’s mood is learning. Identifying distorted thoughts such as “I’m a loser” and replacing them with more accurate, less critical and punitive self talk is all part of learning how to feel and function as well as possible.

It is my belief that life will teach you. The questions are: “What are you learning?” and “What are you willing to be taught?” For example, what beliefs do you hold about yourself, others and the world? How reasonable and healthy are the things that you believe about yourself? Another way of getting at this question is how well are you functioning in your life and in your relationships with others? You need to be honest but not harsh in making this assessment. It is usually helpful to gather opinions from others in this regard in order to arrive at a more balanced answer to such a question.

The purpose of therapy is to review your past experiences, personal beliefs and perceptions and to determine what things may be holding you back from achieving your potential. My hope is that you will see the benefit of using therapy as a way to invest in

yourself and your potential, and to view me as an asset in helping you to achieve meaningful goals and a better level of functioning in your life.

Making the commitment to enter therapy is choosing to learn at an accelerated rate and in a more focused and directed manner. I like the Serenity Prayer used in Alcoholics Anonymous, which goes as follows:

**God, grant me the serenity to accept the things I cannot change; the courage to change the things I can; and the wisdom to know the difference.<sup>3</sup>**

I see therapy as an opportunity to accelerate acquisition of the wisdom spoken of here, to re-evaluate suppositions about ourselves and others, and to correct our course in life through a more conscious awareness of how we have come to think as we do.

Ultimately, the purpose of therapy is to learn to be more content with yourself and your life, to become more flexible in response to things you can't change, and to be more firm and steady in pursuit of those things you can change.

Let's explore the role of prescription medications in one's quest for mental wellness.

### **Medications and Preparing to Learn**

Some years ago I read an article from a seasoned psychiatrist who talked about how the attitudes and roles of medication and psychotherapy have changed over the last half century.<sup>4</sup> Psychotherapy was once thought of as the "talking cure" for all mental illnesses which were lumped into a simplistic dichotomy of "neuroses" and "psychoses". When medications first came along they were viewed primarily as symptomatic solutions, not able to address what was fundamentally a psychologically based problem. Our view of mental illness today leans more toward the perception of mental illness as both a result and a consequence of altered brain structure and functioning, which may bring about numerous possible psychological manifestations and presentations interacting with the personal and cultural aspects that define who we are. Hence, mental illness is a dyadic expression of mind and brain which renders a person impaired in a number of functional ways. So, keeping in mind that both mind and brain are implicated in the "pathology" of mental illness, it is preferable to think of treatments that are good for the mind and brain, while remembering that changing the brain can change the mind and vice versa. That both somatic and non-somatic therapies work by making use of and by impacting on the function of the brain is not in question. Similarly, few think of a "cure" for mental illness, but the idea of effective treatment with substantial or full symptomatic relief is very much the goal of treatment today. While today's treatments do not promise a "cure," they do offer hope, ease suffering and unnecessary impairment, promote independence and can help the person afflicted to live in such a way that they can reclaim their sense of self, purpose and direction in life. With that in mind, it is important to learn about one's illness and to identify the signs and symptoms with which treatment can help.



## **Chapter 5**

### **V. Signs and symptoms**

During your first as well as subsequent appointments with me, you will become familiar with my use of the terms “signs” and “symptoms”. A **sign** is what *others* perceive and notice about you that might be the result of a mental illness. You may or may not share this perception, much less agree that any particular sign might indicate a mental illness. You may or may not be aware of others’ perceptions of your behavior unless you talk with others and ask that they share them with you.

A **symptom** refers to a subjective element, *your* perception, of how you are thinking, feeling and behaving. This would include your report of your emotional state, what thoughts occupy your mind, and your attitudes about yourself, others and the world. The fact that you feel “sad” is a symptom because only you can state what you are feeling.

Diagnosis is a term used to define a collection of co-occurring signs and symptoms that persist over time. The importance of a diagnosis is, in part, that it helps provide a direction for treatment in hopes of achieving a remission of the disorder, in addition to offering the chance to learn about the associated **prognosis**, or probable course of the disorder. Further, treatments are applied and studied based on a diagnosis, allowing for one to arrive at some idea as to the relative helpfulness of a particular treatment in order to improve the prognosis. For example, the lifetime risk of suicide among patients with Bipolar Disorder or Schizophrenia is around 10 to 15%. Consequently, treatment is offered not only to treat the symptoms but to prevent recurrences of the disorder that carry increased risk of vulnerability to suicidal thinking. I think what you mean here is to **decrease** periods of vulnerability to suicidal thinking, but that isn’t what it says.

### **Fostering awareness**

Your role in working with me is not to censor information about yourself, or to rationalize or minimize your signs or symptoms. Doing so will only complicate efforts to develop an accurate understanding about you and to determine what, if any, diagnosis would be appropriate in your situation.

It is important to remember that the brain is an organ of the body just like the heart, lungs, pancreas, kidneys, etc. Just like these other organs, your brain can and does undergo physiologic changes that can result in alterations in sleep, perception, mood and behaviour to an extent or duration of time that suspicion of a (mental or psychiatric) disorder is warranted based on the potential to alter the prognosis associated with the diagnosis. One example of this is delirium, a waxing and waning impairment in one’s mental functioning that can result in hallucinations, delusions, confusion and disorientation. Delirium is typically the result of underlying medical disturbances, such as a post-operative infection. The disturbance of mental functioning can be eased with medications while medical interventions are made to address contributing medical

factors.

People suffering from mental illness are often unaware of the various phases of the disorder or the respective signs and symptoms when they are acutely ill or even after they have recovered. Others may minimize the presence and seriousness of the signs and symptoms by telling themselves and others that they're just going through a "rough time". This is called **rationalization**. A similar but more rigid way of perceiving events is called **denial**. This is when someone refutes the presence or reality of signs and symptoms of illness and distorts reality by offering an alternative explanation that accounts for their reaction as just a "normal" reaction to stress.

The use of the word "normal" deserves further discussion. One needs to understand what stress is, what constitutes a "normal" or "ideal" response to stress, how a diagnosis is made, and how treatment can be helpful.

### **The Brain and Getting Sick**

First, being human and mortal means that one will get "sick". So, being "sick" is part of "normal" life yet we all seek to be as healthy as possible. That said, many things that can and do make us "sick" are beyond our control (cancer, diabetes, arthritis, etc.) but are "normal" diseases of life. Hence, we all seek to be well, to avoid the hopelessness associated with having a chronic disorder that is not self-limited and beyond our ability to control.

Accepting that one has a mental illness does not imply that one has no control over the disorder or that one should succumb to feelings of hopelessness or helplessness. A critical question to keep in mind when entertaining information about being ill is, "How can I function as well as I can and as close to the "ideal" as possible?" Education about your disorder needs to include health promotion and sign/symptom management and prevention by identifying triggers that can render us "sick". We can seek to understand those things we can't change about ourselves (our parents, genetics, how we were raised, etc) and focus on things we can influence and alter in order to function as well as possible. That means if we want to reduce our risk of lung disease and lung cancer, then we can work toward quitting smoking. For mental illness, it means learning all you can about the brain, body and mind, learning to recognize signs and symptoms of mental illness and how to help a brain and mind in distress.

### **A Long But Not Inclusive List of Signs and Symptoms**

Being the most complex organ of the body and the least well understood by most, mental wellness is rooted in the brain and in understanding mental (mind) functions such as perceiving, reasoning, feeling, initiating and completing tasks just to name a few functions of the mind.

There are a great number and variety of manifestations that can accompany mental illness. Below is a list which, though not "all-inclusive", does contain many of the signs

and symptoms which one might experience as a manifestation of a mental illness. Many of these signs and symptoms are not necessarily “pathologic” and only when taken in context and in conjunction with others signs and symptoms, can a diagnosis be reliably made. Additionally, this list of signs and symptoms should be viewed from an historical perspective along with an appreciation of the associated impact on functioning; at work, school, in relationships, etc.

**Signs that may suggest the presence of a mental illness:**<sup>5</sup>

Social withdrawal  
 Hostility  
 Grandiosity  
 Suspiciousness  
 Unusual thought content  
 Bizarre behavior  
 Self-neglect  
 Disorientation  
 Blunted emotional express  
 Emotional withdrawal  
 Motor retardation (slowed movements)  
 Uncooperativeness  
 Excitement  
 Distractibility  
 Motor hyperactivity (constant or enhanced physical activity)  
 Mannerisms and posturing  
 Irritable mood  
 Less interest in usual activities  
 Trouble concentrating  
 Suicidal statements  
 Self-injurious behavior  
 Loss of energy  
 Disturbed sleep patterns

**Symptoms that may suggest the presence of a mental illness:**<sup>6</sup>

Sad or depressed mood  
 Feeling guilty  
 Withdrawal from or avoidance of people  
 Find it harder than usual to do things  
 Feelings of worthlessness  
 Trouble concentrating  
 Difficulty making decisions  
 Suicidal thoughts  
 Recurrent thoughts of death  
 Spend time thinking about suicide plan  
 Low self-esteem  
 See future as hopeless  
 Self-critical thoughts

Tiredness or loss of energy  
 Weight loss or decrease in appetite  
 Decrease in sexual desire  
 Feeling nervous  
 Frequent worrying  
 Muscle tension, muscle aches, muscle soreness  
 Restlessness  
 Easily tired  
 Shortness of breath  
 Rapid heartbeat  
 Sweating not due to the heat  
 Dry mouth  
 Dizziness  
 Nausea, diarrhea, or stomach problems  
 Flashes  
 Trouble swallowing or “lump in the throat”  
 Feeling keyed-up or on edge  
 Quick to startle, jumpy  
 Trouble falling or staying asleep  
 Avoiding places where you might be anxious  
 Feeling unable to cope or overwhelmed  
 Frequent thoughts that something bad will happen

### **Caveats**

A word of caution in terms of understanding how a diagnosis is made: it is important to note that these signs and symptoms need to occur with a certain frequency and intensity and result in personal distress and/or impaired social and/or occupational functioning. I will often ask how one’s signs and symptoms are interfering with his or her day to day functioning. To say that one struggles with low self-esteem, poor energy and concentration, disturbed sleep and irritability is part of the process of arriving at a diagnosis. One must also seek to identify impairments in social, occupational, or academic functioning. Thus, monitoring of functional status as treatment progresses is essential in order to validate impressions of therapeutic benefit.

The impairment that might result from a specific disorder can vary substantially. The associated impairment can be relatively mild such as in a specific phobic disorder involving a fear of closed spaces (claustrophobia) leading someone to avoid using elevators. However, there may be tremendous functional impairment imposed by a severe case of Schizophrenia in which signs and symptoms such as marked changes in personality, disinterest in bathing and personal hygiene, impaired ability to organize and express one’s thoughts in a logical manner, severe fearfulness (paranoia) and misperception of internally derived stimuli (i.e. one’s own thoughts) perceived as voices from an external source, all contribute to unemployment, social isolation and homelessness.

Hence, each disorder carries with it a variety of possible signs and symptoms, a range of

possible functional impairments, a fluctuating course of illness and a variable prognosis based on individual circumstances and co-occurring disorders.

Chapter 5 Learning Questions:

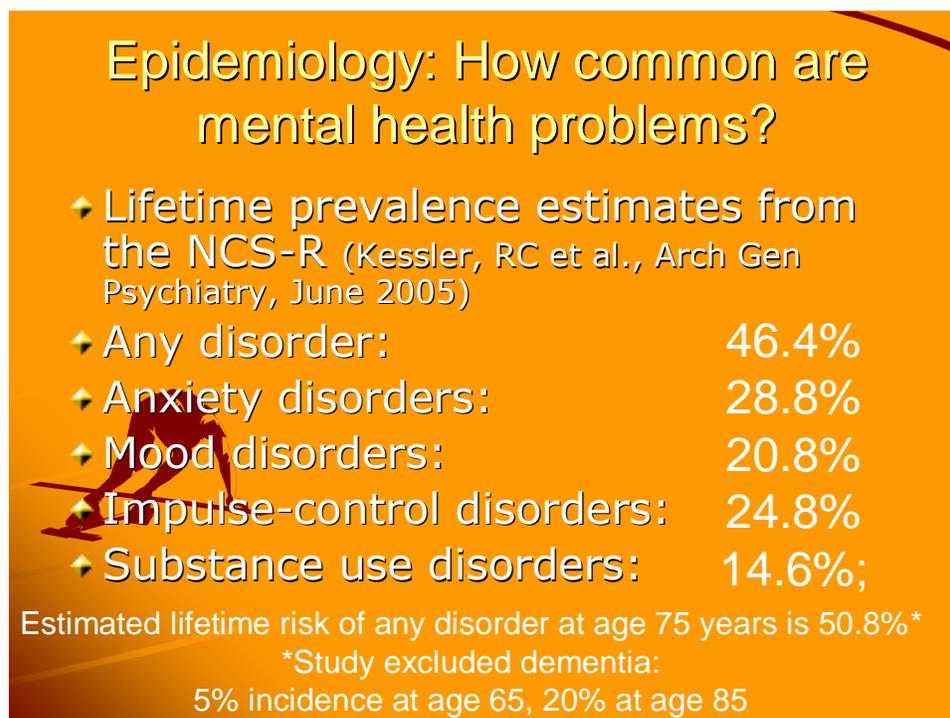
1. Define the terms:
  - a. Signs
  
  
  - b. Symptoms
  
2. With the benefit of hindsight, list the signs and symptoms that you have experienced that are part of early expressions of your disorder. (For example, someone with asthma might report that chest tightness or mild, occasional coughing and wheezing are early warning expressions of the signs and symptoms of illness.)
  
3. What are the signs and symptoms of a full recurrence or expression of your disorder?

## Chapter 6

### VI. How common are mental health disorders?

Most people are stunned to learn how common mental health disorders are in the general population. It appears that the presence of mental disorders among adults in the United States has not changed much over the last decade, based on the results of two large studies done in the early 1990's and again 10 years later <sup>7</sup>.

Table 1. Results of large US study looking at the lifetime occurrence of mental health and substance abuse disorders <sup>8</sup>.



Some of the important points that are worth remembering when thinking about mental health disorders include:

- More than half of the population will meet criteria for a diagnosable mental health disorder in their lifetime;
- 27% of the population will have two or more diagnoses over a lifetime;
- 17% of the population will have three or more diagnoses over a lifetime;
- The 4 most common groupings of mental health disorders, along with examples of each disorder, are:

- A. Anxiety disorders: Specific phobias (i.e. snakes, closed places, etc.), Social Phobia, Generalized Anxiety Disorder, OCD, Panic Disorder, PTSD, etc.;
- B. Impulse Control Disorders: ADHD, Intermittent Explosive Disorder (i.e. “road rage”), Oppositional Defiant Disorder (in children or adolescents), etc.;
- C. Mood Disorders: Major Depressive Disorder, Bipolar Spectrum Disorders (i.e. types I, II and NOS), Dysthymia, Substance Induced Mood Disorders;
- D. Substance Use Disorders: Nicotine Dependence, Alcohol, Cannabis, Amphetamine/Stimulant, Opioid (i.e. heroin, Lortab, Oxycontin, etc.), Hallucinogen abuse and dependence disorders.

- Half of all lifetime disorders start by age 14;
- 75% of all disorders start by age 24;
- Major Depressive Disorder is roughly twice as common in women as in men;
- Men are more likely than women to have a substance dependence disorder;
- Schizophrenia and Bipolar Disorder type 1 occur at equal frequency in men and women.

Table 2. Age of onset and co-occurrence of mental health disorders<sup>9</sup>.



One of the many myths that exist in relation to mental health is that disorders only occur

in those who are “old”. Sadly, most disorders are not respecters of age and some of the most devastating mental health disorders occur in children (i.e. Autism, ADHD, etc.) or first manifest in adolescence (i.e. Schizophrenia, Bipolar Disorder, Substance Abuse, etc.) and can carry a less favourable prognosis as a result. The hope behind much of the ongoing research of the brain and mind is that early recognition and intervention can lead to prevention or a more favorable prognosis and avoidance of needless suffering.

### **Co-morbidity**

It is commonly the case that the prognosis for any one disorder tends to be negatively affected by the presence of another co-occurring, or co-morbid, disorder<sup>10, 11, 12</sup>. This is also one question that must be asked if one does not “get better” with usual treatment. In the past, there was a prevailing notion that one could not treat a mental health disorder, such as depression, until the co-morbid substance abuse or dependence problem had been treated. Conversely, many today seek treatment for depression or anxiety and are treated by their doctor for their depressive or anxiety disorder but fail to achieve an ideal response because of an active substance abuse problem. The best or ideal approach for co-morbid disorders is to treat both disorders at the same time<sup>13</sup>. Often, there are barriers to offering integrated treatment, such as separate and poorly integrated mental health and substance abuse treatment facilities and providers. Other barriers include lack of insurance or ability to pay for one or both treatments, stigmatized thinking about treatment for substance abuse disorders, reluctance on the patients part to recognize or acknowledge a problem with substances or minimal readiness of the affected individual to accept treatment.

My personal philosophy is that integrated treatment must be the goal and the only acceptable standard. In nearly every setting in which I have worked, co-morbid mental health and substance abuse disorders have been the rule and not the exception. One must also be realistic and accept that treatment can only begin where the person is in terms of recognition and willingness to collaborate in the treatment process. Further, personal or specific circumstances may make the “ideal” or “only acceptable” standard of integrated treatment unavailable for a time but the goal to achieve such treatment should always be kept in mind.

One caveat to our present discussion is that of medical co-morbidity. Medical conditions often co-exist with mental health problems and in some cases are the direct causes of symptoms that can mimic a mental illness. One such case I had was a patient who was admitted for an episode of “psychosis,” during which he had been found in a retail store, confused and making bizarre comments and paranoid statements to those who found him. He was subsequently evaluated by me and a medical colleague who diagnosed post-ictal confusion superimposed on a long term history of impulsive and paranoid thinking that resulted after a brain surgery many years prior. Thus, a “psychosis” diagnosis was not warranted nor was antipsychotic medication. In this case, some adjustment in his anticonvulsant medication was made in an effort to manage his seizure disorder but there was also no denying that, while some of his signs and symptoms were those of a psychotic disorder, they were not the result of a mental illness per se. It is very often the

case that medical disorders need to be optimally treated in order to achieve the desired outcome for one's depression or anxiety disorder.

Okay, so time for a quiz. What group of disorders is commonly co-morbid with Schizophrenia, Bipolar Disorder and Antisocial Personality Disorder? If you said "substance abuse or dependence disorders" then that is correct.

Nicotine dependence occurs in the range of 50 to 80% of patients with Schizophrenia<sup>14</sup>. Excluding nicotine, substance abuse still accompanies Schizophrenia and Bipolar disorder in roughly 50% of those afflicted<sup>15</sup>. Those individuals diagnosed with Antisocial Personality Disorder (defined as a history of violation of others rights and societal norms, a pattern of irresponsibility and lack of empathy beginning in childhood or adolescence) have the highest co-occurrence rate of substance abuse or misuse as compared to other mental health disorders<sup>16</sup>. Those with PTSD (Post Traumatic Stress Disorder) will have a co-occurring substance abuse/dependence disorder 20 to 50% of the time<sup>17</sup>.

Quite often, patients are confused about the affect that addictive substances are having on them and their lives. Further, this can be complicated by denial of a substance abuse problem. Some argue that severe denial, as seen in some cases of severe substance dependence is no longer a psychological defense (basically to retain some reasonably good feeling about ourselves) but is more the result of faulty perception, information recall and reasoning relevant to harm avoidance. Thus, just like a computer software that might shut down the computer if a threat is perceived, the denial seen in some severe addictive disorders may be more akin to a damaged computer hard drive causing "shut downs" as opposed to a software problem.

Regardless of the origin of the denial, mind or brain generated, many continue to use addictive substances because of the mistaken belief that these substances are *helpful* for their mental health or as a justification to self-treat a particular mental health disorder. Admittedly, addictive substances can and do "help", for a few hours or in a time-limited manner, by dulling the brain's activity and alleviating an uneasy or distressful state of mind for the duration of the substances effect or period of intoxication. Many users, however, run the risk of experiencing more anxiety or tension, sadness or paranoia or boredom than originally experienced because of withdrawal symptoms or because of an alteration in the brain itself, caused by the use of these substances, explained by changes in critical brain areas associated with the pleasure-reward system<sup>18</sup>.

One example is that of the early morning craving for a cigarette which is the brain's way of telling you it is feeling the distress of nicotine withdrawal. That first smoke in the morning alleviates the uneasy state of nicotine withdrawal (brought by sleeping through the night without smoking). Over time, the urge to smoke becomes paired with tension reduction, not that smoking relieves tension in someone who has never smoked, but because it is a stimulant and withdrawal of the stimulant leaves one tense and anxious.

Sadly, in addition to the misery of feeling sad or hopeless, scared or overwhelmed,

nervous or paranoid, etc. one who suffers from an addiction must deal with the dysphoria, discomfort and tension of cravings and the preoccupation to use again, in addition to whatever mental health disorder might be present.

### **Sub-acute Psychiatric Hospitalization:**

For over 5 years I worked at a state hospital where patients would arrive from other community hospitals for more extended treatment and evaluation. The need for inpatient treatment extending beyond a few days or even a week or two is influenced by many factors but three factors, worthy of mention at this time, are; the complexity of the case, co-morbidity of disorders and the need for better integration of care.

Over the last 40 years or more there has been a steady effort throughout the US and the developed countries of the world (such as New Zealand, where I practiced for nearly a year) to shift treatment, as much as possible, to the outpatient setting. In the United States this pressure to treat patients in the “least restrictive” setting possible has been coupled with financial forces of managed health care, rising medical costs impacting state and federal budgets and the need to deliver mental health services in the most economical way possible. Additionally, the idea of moving away from long-term hospital care is part of the movement to integrate patients into communities as part of the recovery process, moving away from the idea of patients who are “mentally ill” and disabled, to a view of patients living their lives to the best of their ability, despite limitations imposed by natural conditions of illness and disease. Economic pressures demand that care be provided in the most cost efficient manner while social and legal mandates exist to make sure that treatment occurs in the least restrictive setting possible.

With these factors in mind, what can be done for those who are so ill that with a relapse of illness they are not able to remain in the outpatient setting, yet for whom a brief stay in a community/private hospital setting is not adequate? For this and many other reasons, there remains a steady and persistent demand to provide hospitalization beyond a week or two, necessitating a treatment venue for those requiring several weeks to several months of structured assessment and care. This type of extended care can be referred to as sub-acute hospitalization and let me offer a few thoughts about the circumstances which necessitate it.

### **Co-morbidity and Complexity:**

As already mentioned, studies have found that while 46% of the population might be diagnosed with a mental health or substance abuse disorder during their lifetime, 17% will have 3 or more disorders. What I have found is that a poorly responsive or difficult to treat disorder may require intensive delivery of services that are not available in the community or cannot be offered in an integrative fashion.

For the majority of patients with mental health problems, the treatment and services needed are not significantly different, but they do need to be applied in a discriminate manner based on individual circumstances, clinical appropriateness and setting. For example, therapy designed to enable patients to cope with the stress of withdrawal and

achieving abstinence is often helpful for someone who is dealing with an anxiety disorder. Delivery of such therapy is not likely to be helpful, however, if the person is actively using and intoxicated or experiencing withdrawal symptoms. Further, patients undergoing treatment of a depressive disorder and a co-occurring alcohol use disorder will often respond quite well to integrative treatment involving medication, a supportive social environment (i.e. friends and family, AA sponsor and AA members, etc.), cognitive therapy to address thinking errors, abstinence from alcohol, and improved diet and exercise. This type of example, involving co-occurring disorders, is very common and each disorder is made more difficult to treat without attempting to treat both conditions at the same time and in an integrated manner. This sentence is contradictory to what you said just before. Thus, integration of services for complex or co-morbid cases can be initiated in the sub-acute or inpatient setting with the goal of transitioning the person to outpatient services once sufficient stability allows for the transition to occur, and coordination of after-care services can be sought while crucial treatment occurs in a structured setting.

The medical correlate of going from a community psychiatric hospital to the state hospital is analogous to moving from a general hospital bed to the ICU or extended care setting. You can think of the circumstances that typically require referral to a sub-acute psychiatric setting as being necessitated by three factors; complexity, co-morbidity and need for coordination of services. Heightened or continuing acuity of risk (danger to self or others, inability to care for oneself due to mental illness) creates an element of complexity psychiatrically that is analogous to the medical acuity that necessitates being moved to the ICU because of an acute stroke. Similarly, one can think of the medical example of being referred to an extended care setting in order to receive speech, occupational and physical therapy as a result of the co-morbid problems (impaired speech, inability to walk, de-conditioning, etc) resulting from a stroke. In like manner, patients struggling with a mental illness, hepatitis, chronic pain problems and an addictive disorder may require the structure, stability and involvement of a range of medical (psychiatric and general medical specialists), social work, psychology, drug and alcohol counselling, nursing, recreational, music and occupational therapy staff to assist in the coordination and delivery of needed services for co-morbid and complex cases.

#### Debunking More Myths about Psychiatric Care:

In the context of this discussion, a further word or two about sub-acute hospitalization, such as that provided in many state hospitals, might be helpful in debunking some of the myths that still exist regarding the treatment offered in such settings. First, a disclaimer: except in rare cases, state hospital care is not a “warehousing” of the mentally ill. Every state has different laws, procedures and criteria for admittance but a few facts can be offered about state hospitals in general. Further, great changes have occurred in the care of and attitudes toward those requiring hospitalization. By and large, attitudes of control and coercion have been replaced by reaffirmation of the need for each patient to take an active part in his or her treatment. Gone are the days of seclusion or restraint, and the misuse of effective and helpful treatment modalities (i.e. ECT) in a random and inappropriate manner. Conversely, the licensing body that oversees modern inpatient psychiatric facilities is quite aggressive and active in pursuing agendas designed to make

these facilities as therapeutic as possible.

### **Role of Gender**

Studies of men and women have shown differences in the relative frequency of disorders based on gender. Let's do a quiz to see if you can guess the relative frequency of disorders based on male and female gender.

Table 3. Relative frequency of mental illness based on gender <sup>19 20</sup>.

	More Frequent in Women	More Frequent in Men	The Same
Occurrence of:			
1. Major Depression	X		
2. Bipolar Disorder Type I			X
3. Bipolar Disorders (I, II and NOS)	X		
4. Schizophrenia			X
5. Panic Disorder	X		
6. Substance Dependence		X	
7. Generalized Anxiety Disorder	X		
8. Antisocial Personality Disorder		X	

(References: mentalhealth.com,)

No one can say for sure why these differences exist but there are various theories. Many obvious lines of study have involved hormonal influences, as hormones do have mood regulating properties. Differences are also seen in the brains of men and women with women having relatively larger anatomical areas of the brain which are implicated in emotion regulation. Further, gender differences in aggression, social dominance, cultural demands and stress are thought to play out in ways that leave one gender more vulnerable than the other to particular disorders.

### **Studies of Populations, Families and Genes**

Studies of populations around the world have found similar rates for the most serious mental disorders such as Schizophrenia and Bipolar disorder. (The occurrence of) Mental health disorders are not a new problem but have occurred through the ages. What has changed is our nomenclature for describing and identifying them along with our understanding of the brain and mind. Let me highlight some of the statistics associated with the occurrence of mental illness according to the research that has been done to date.

Schizophrenia is found in 1% of the population<sup>21</sup>. As mentioned previously, the incidence in men and women is about equal but men typically develop the disorder at an earlier age. Studies of families of individuals diagnosed with Schizophrenia have revealed a greater than expected frequency of Schizophrenia in other family members. For example, if you have one child with Schizophrenia, there is a 10% chance that another child will also develop the disorder. If one fraternal twin develops Schizophrenia, there is a nearly 25% chance that the other twin will also develop Schizophrenia. If the twins are identical, the rate of occurrence approaches 50%<sup>22</sup>. These numbers are nearly the same when looking at the research on family members of those diagnosed with Bipolar Disorder.

Studies looking at families of those afflicted with anxiety disorders, such as PTSD, Panic and Generalized Anxiety Disorder, as well as mood disorders, like Major Depressive disorder and Bipolar Disorder, show similar, increased rates of occurrence among family members.

That there is a genetic contribution to the risk of developing a mental disorder is clear but the explanation for the role of genes in the manifestation of mental illness remains an active source of research. Let me comment on a couple of studies which have provided some of the evidence for the role of genetics in the development of mental illness.

First, a recent study looked at the genes responsible for the types of chemical messenger transporters (serotonin transporters) that one might inherit and their role in the area of the brain (the amygdale) that is critical in regulating our response to stress. Because other studies have found that early childhood trauma increases the likelihood of anxiety and depressive disorders, this study sought to clarify how traumatic experience and genetic factors result in the increased likelihood of mental illness later in life. The study concluded that a specific variation of gene type, or short allele, for serotonin receptors, increased the likelihood of depression later in life. This was true among men and women, although women were at a greater risk than men even when comparing groups with the short allele.

Second, another study identified a gene on Chromosome 8 as one risk factor for some of the changes in brain structure seen in patients with Schizophrenia<sup>23</sup>. At this point, the research does not suggest that there is any one gene or genetic defect responsible for any one mental health disorder. The explanation for how one becomes unwell will likely prove to be quite complex and detailed. The brain is incredibly complex and explanations for any one behavior are likely to include numerous psychological factors. As a result of the numerous brain areas, simple genomic explanations are likely to prove inadequate to explain the variety of (sometimes) subtle yet sophisticated mental processes involved in the expression of a mental illness. That said, one can take hope in the present direction of much of the brain/mind research and learning that is helping to sort out genetic elements at play in this most amazing dyad of mind and brain. One can draw some conclusions about what factors are likely to play a role in mental illness but before we discuss that further, let's first touch upon some history and define a few terms.

Chapter 6 Learning Questions:

1. Name the four most common types of disorders that one might experience as per a recent, large US study.

2. What percentage of the entire population will meet criteria for a mental disorder during their lifetime?

a. What percentage will meet criteria for 2 disorders?

b. What percentage will meet criteria for 3 disorders?

3. What is meant by the term co-morbidity?

4. What disorders are most frequently co-morbid with Schizophrenia and Bipolar Disorder?

5. What is/are your diagnosis/es?

6. If you are in the hospital, what written document is provided to you that provides documentation of your diagnosis (es)? What else is found in this document?

7. What factors often explain the requirement for sub-acute hospitalization?

## Chapter 7

### VII. Stress, Resiliency and Wellness

24 25 26 27 28 29 30

A definition of some terms will help with our discussion of how we all deal with day to day pressures. Early in the 20<sup>th</sup> century a psychologist named Hans Selye introduced into the world's lexicon the word and concept of psychological stress. In western cultures today it is a universally used term. For our purposes, **stress** is defined as the requirement to adapt or change in response to some force. The forces at work on a person each day are numerous and can be categorized as internal or external.

Internal stress would include those forces emanating from our body/brain and mind. Bodily/brain stress includes tasks of health maintenance (eating, sleeping, exercise, etc) and illness response to viruses, bacteria, diseases, toxins, etc. One could argue that viruses, bacteria and other infectious processes are external sources of stress, which is true, but once they become internalized, entering into our bodies and inserting themselves into our body and brain, they become internal sources of stress. Mind stress (mental stress) includes the vast array of conscious and unconscious processes of thought, perception, feeling and action.

External stress arises from our relationships, vocational or educational circumstances, cultural demands and customs including financial, legal and religious factors. Discord with a spouse, death of a loved one, an arrest, filing for bankruptcy, etc. all serve as environmental or external forces that impact our internal or mental stress. The impact of the sum total of internal and external stress on an individual, resulting in illness, is the current focus of research. Much research has been done to understand the effects of stress on the mind and body and the term **resiliency** is used to describe our ability to bounce back and adapt favorably to stress. The nature, type and amount of change, as well as the amount of effort required to adapt varies immensely. Resiliency varies tremendously from person to person. Some of the factors which relate directly or indirectly to resiliency include one's temperament or personality, early life experiences and the quality of parental or caregiver relationships, health status and disease burden, social and cultural influences and exposure to addictive substances.

Many attempt to label stress as "good" or "bad". To be sure, there are those situations that all might agree on as "bad" stress, such as losing a loved one to illness or accident. Many other experiences that we have might be considered "good" or "bad" stress depending on our perception of things at that time. For example, is getting married a "good" or "bad" stress? It depends on the circumstances and the meaning attached to such an event. What about loss of employment? What if it leads to a new career and a greater sense of fulfilment and satisfaction in the years that follow? There is wisdom in not rushing in to pronounce judgement, to define every event, at the moment that it occurs, as a "good" or "bad" stress. These are simply events that may be mixed blessings but in terms of our life, they represent the need to adapt and change. With this in mind, let me emphasize two points as they pertain to our health.

First, we are all different, and have unique individual circumstances with varying interests, experiences and proclivities to adjust and to adapt to stress. Second, stress is part of life. It is inherent to existence and is not easily dichotomized into “good” or “bad” categories from a physiological perspective. Our “stressed” state is a mixed bag in terms of affecting our health and more will be said about that later. Individual resiliency is largely dependent on things over which we have little control and is contextually dependent. What many fail to recognize is that the physical (body and brain) and mental (rooted in body and brain functioning) processes that endow us with resiliency to external and internal stress are occurring without conscious control or effort. We tend to busy ourselves every day with plans and activities, routinely dealing with stress of all kinds beginning at conception and on a daily basis thereafter. Only when we become unwell, unable to “bounce back” or to function as we would like, do we pause to consider why that might be.

As Robert Sapolsky, a renowned science writer and researcher has pointed out, stress does not make us ill but it does render us vulnerable to disease and that which can make us unwell. I like to use the term **wellness** to describe our desired state of being and have defined it as the ability to thrive physically and mentally. Inherent in this definition is the notion that wellness both encompasses and endows emotional and psychological contentment despite the ever present demand to adapt to stress. Achieving wellness is less a destination and more of a process. It is not the journey’s end but more the quality of life, the experiencing of each moment that serves as the reward found in the journey itself. In the pursuit of wellness one learns to respect and care for self and others, striving for a balance in life that allows one to be as resilient as possible.

### **Spokes of a wheel (Neuroprotective Filter)**

I have used various analogies over the years to try and explain the variety of factors that are presumed to be involved in the development of a mental illness. Often, a patient or his/her family member will ask, “What causes schizophrenia (or depression or panic disorder, etc.)?” Because of what we have learned about the brain, the physiology of stress, the human capacity for resiliency to promote wellness, I have preferred to rephrase the question as “what protects us from developing a mental health or substance abuse disorder?” This question of resiliency and, for those who like to think of the glass as half empty, vulnerability, is far from being fully answered at this time. Still, I like to explain some of what we do know and theorize about how this information helps shape our evolving model of vulnerability to mental unwellness and to our understanding of resiliency to stress.

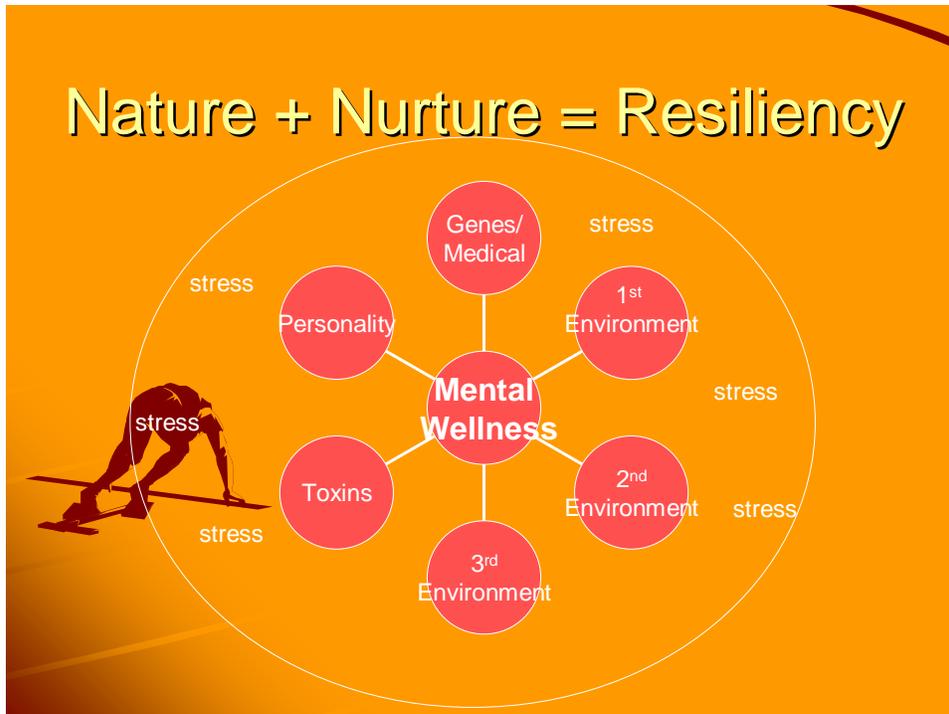
For years I used the analogy of a filter to explain how mental unwellness could be explained by leaks or “holes” in the layers of a filter which protected one against the emergence of mental illness. I have since thought of using a bicycle rim or wheel to represent wellness, or rolling “smoothly” over the bumps and along the ups and downs of the road of life. A typical bicycle rim relies on the spokes of the wheel to provide strength or resiliency when the stress of use is applied. The extension of the spokes from the rim to the center hub must be in good condition, not bent or loose, in order to provide

the necessary integrity to keep the wheel round and allowing it to thrive under the stress of use. An example from some years ago may prove entertaining and illustrative of my point.

Some years ago, my brother-in-law joined me for a mountain bike ride that consisted of climbs and plateaus for 90 minutes or so before turning into a fast, 25 minute descent back to our starting point. As an avid mountain biker, his reward for sweating and straining up the mountain is the promise of a fast, bending and twisting trail back to the truck. This ride offered such a reward with a tortuous (not torturous!) path laced with fallen logs, corkscrew turns, steep straightaways and descents eased by occasional berms of dirt and the criss-crossing of creek water, just to add to the variety experience. It was during the descent that, with measured use of friction to temper the power of gravity, that my brother-in-law embraced the richness of the mountain trail in the blink of an eye. He crashed to the ground inflicting more pain and worry of injury than actual physical harm to himself. Instead, the damage associated with the crash involved his bicycle rim which now had the appearance of a hard taco shell! The force, or stress, at work on his wheel was sufficient to overcome the capacity of the rim to retain its round shape. To be sure, his body weight (around 200 lbs), velocity and gravity had created enough force (or stress) to overwhelm the integrity of the particular rim in question but not just any rim. Further discussion and thinking on this matter revealed that the rim in question had been neglected and possessed some loose and bent spokes that, with enough stress applied, had probably resulted in a vulnerability to deformity in the shape of a taco shell. Thus, it was not just the “environment” of riding downhill, or the “nature” of the rim in terms of its design and components that necessarily resulted in the collapse. Rather, the combination of many factors contributed to the relative vulnerability of the rim and ultimately led to the “tacoing” of the rim.

In like manner, we can think of our wheel of mental wellness as having six spokes, as illustrated in Figure 3. Further, it is the integrity of the spokes and rim that endow the wheel with resiliency to withstand the forces (stress) applied so that the wheel retains its functional properties that we might refer to as wellness. The first spoke I want to touch upon is that of one’s genes and other related medical conditions that can serve to make one vulnerable or resilient when stress is applied.

Figure 3. Allows you to view the various spokes that make up the wheel of mental wellness.



## Genes/Medical Conditions 31 32 33 34 35 36 37 38 39 40

As has already been mentioned, the role of genetic factors associated with specific mood and psychotic disorders is unquestioned but still being worked out. The role of genetic susceptibility for the most severe mental illnesses, such as Schizophrenia and Bipolar Disorder, has been implicated through family, twin, adoption and genetic linkage studies. Some of the genes involved in rendering one vulnerable to Alzheimer's Dementia have been identified. Other genes, such as those thought to be involved in alcohol dependence have also been identified. Numerous medical conditions have been found to have a greater than expected co-occurrence with mental health disorders and include multiple sclerosis, Parkinson's Disease, Strokes, Heart Attacks, Chronic Pain disorders and Migraine headaches, as seen in Figure 4. The reasons for this are almost certainly numerous but lines of research have implicated damage to areas of the brain from the condition itself (i.e. a stroke), production of chemicals by the body to fight the medical conditions (i.e. Cytokines such as Interleukin 6) that have harmful effects on cells and genetic activities resulting in signs and symptoms of mental unwellness.

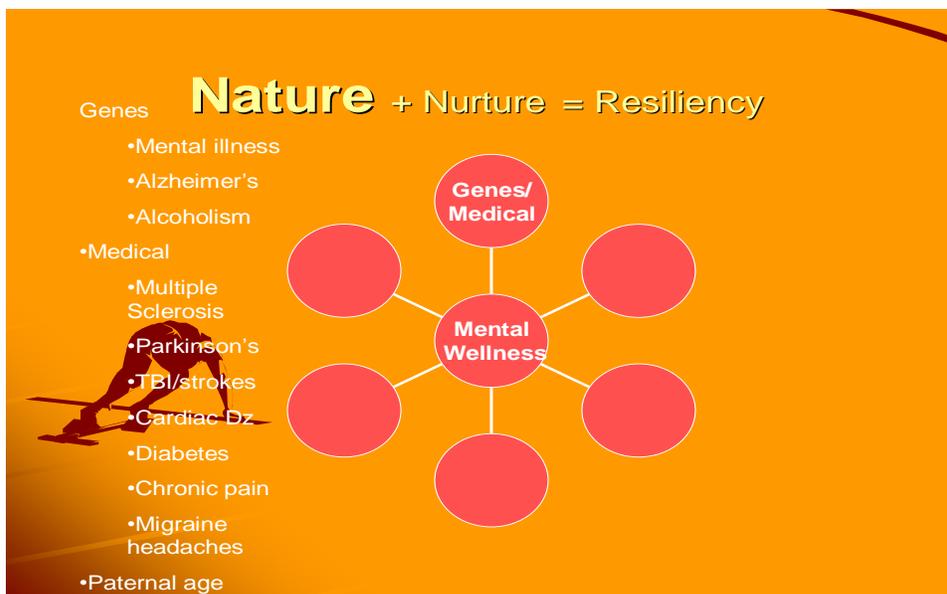
Another line of evidence implicating the role of genes is that fathers who conceive a child later in life, say after the age of 40, have a 3 fold increase in the likelihood of having a child with schizophrenia. The presumed explanation is that of increased point mutations during the making of sperm which occurs as men age.

The general consensus of those studying the genetics of mental illness is that those factors which influence the expression of genetic activity play a more pronounced role in terms of risk of mental illness than do the genes themselves. The term epigenetics is used

to describe this area of research and one clinical example may help illustrate the role of genes. Dementia is the term for the medical disorder resulting in the loss of executive functioning as manifest by loss of memory, perception, learned skills and/or marked changes in personality or temperament. Alzheimer's dementia is the most common type of dementia and various genes have been implicated in the cause of this disorder. While one can be tested for certain genes that are associated with the disorder, science is still at a loss to explain when and why this genetic player comes into play. As yet, the many factors which result in the activation of genes that can cause Alzheimer's dementia are still under study. There is scientific agreement that disorders like schizophrenia or bipolar disorder, as with Alzheimer's, are not the result of a single genetic defect but rather a matter of ongoing interactions of environment and genes, factors that influence genetic activity. Our genetic endowment is not a static thing. We have the genes we have. But the expression and activity of our genes is very much a fluid, constantly active process being modulated by the factors inside and outside our bodies.

Thus, the activity our inherited genes plays out in the context of the uterus, initially and then in the home and eventually the cultural atmosphere, locally and globally. Thus, "genetic" factors and the expression of genes is always in the context of intrauterine and various social co-variables, but still give us reason to believe that the genes themselves render some degree of vulnerability. For example, with most mental health disorders, having a parent or first degree relative with a disorder does raise the children's risk of having the disorder, aside from environmental risk factors. Even with the genetic risk of developing schizophrenia that has been revealed in twin studies of offspring whose parents have the disorder, there are other elements at play that may comprise our rim or wheel of mental wellness. Let's consider other environmental factors that may play a "modifier" role in unmasking of "genetic" vulnerabilities to mental illness.

Figure 4. Genetic and Medical factors associated with mental health disorders.



## **1<sup>st</sup> Environment (Neurodevelopmental)** <sup>41 42 43 44 45 46</sup>

The neurodevelopmental period is the next spoke in our wheel of mental wellness. We only get one shot at development during the approximately 9-month period called gestation, during which the development of our brain and nervous system is critical. That “first environment” or neurodevelopmental period in the womb is critical. What ensues from the successful union of egg and sperm is nothing short of miraculous, in that the first cell must divide and replicate itself trillions upon trillions of times in differing ways to account for all of the sophistication of the body, its numerous organ systems, and a functional brain. The brain consists of  $10^{12}$  to  $10^{13}$  cells, referred to as neurons. These neurons communicate not with just one other neuron but with hundreds to thousands of other neurons. The brain begins the interconnecting process in the womb as neurons are being created and it continues most rapidly throughout childhood and then slows significantly thereafter. By our teen years the brain tends to start pruning back some connections, presumably redundant or unnecessary connections. This pruning may equate to a gardener trimming back branches and stems in the spring, in order to increase the overall capacity and harvest in the long term.

Numerous studies have looked at the various factors at work during the gestational process that might play a role in the later development of mental illness. Some studies have found that the occurrence of alcohol, tobacco, amphetamines or cocaine, starvation, infections and delivery complications may increase the risk of mental health problems in offspring later in life as referenced in Figure 5. Specific examples include:

- Increased risk of Schizophrenia and Antisocial Personality disorder features associated with maternal starvation during pregnancy
- Increased risk for Attention Deficit Hyperactivity Disorder and Oppositional Defiant Disorder in children whose mothers smoked tobacco
- Maternal use of addictive substances and alcohol may create increased vulnerability for addictive disorders
- Increased risk of psychiatric disorders in children whose mothers abused alcohol during pregnancy
- More problems with impulsivity among children who suffered from oxygen deprivation (hypoxia) at birth

Figure 5. Things to avoid during the gestational period or First Environment (Neurodevelopment)



Neurodevelopmental factors are not thought to be causative of any specific mental illness (i.e. Schizophrenia, Major Depression, etc.) but they do impact the development, function and health of the brain at a critical time when a lasting impact can result. Certainly, the “take home” message here is for all to become educated about the importance of the neurodevelopmental period and attending to good physical and mental health practices of the mother during this critical time for the fetus.

### 2<sup>nd</sup> Environment (Family) <sup>47 48 49 50 51</sup>

As I have given my educational workshops over the years, patients have readily recognized the role of important early relationships, such as those with parents, siblings, extended family or trusted caregivers, as heavily shaping their course and struggling with their mental illness. Early life trauma, in the form of abuse (physical, sexual or emotional) or neglect, creates vulnerability for later problems with anxiety and depressive disorders.

Figure 6. 2<sup>nd</sup> Environment (Family)



Neglect of an infant’s emotional needs, such as through the absence of cuddling, smiling

and visual interaction, leads to a failure to thrive and, ultimately, death. Many things go into the making of a healthy home environment and contribute to healthy emotional bonding between child and parent/caregiver. Although too numerous to list here and requiring more elaboration than can be offered at this time, there are a few necessary components in the making of a secure and strong spoke of “2<sup>nd</sup> Environment/Family” in the rim of mental wellness, as shown in Figure 6. They are:

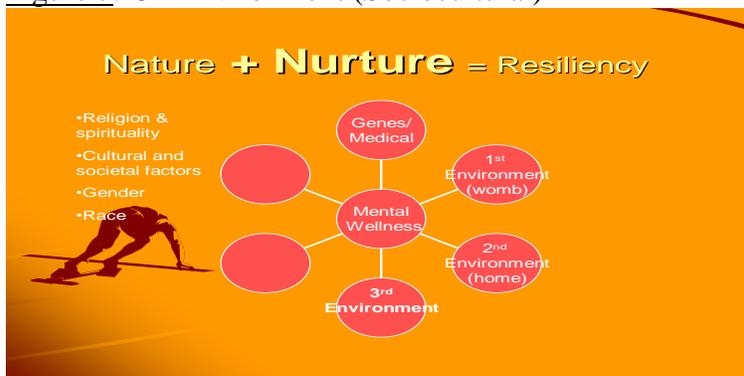
- Love and Nurturance – the unconditional positive regard and respect for the person, and the practice of healthy, fond affection
- Validation- recognition of the individual’s thoughts and feelings as important and valuable
- Consistency - in limit setting and structure of the home
- Discipline- measured and predictable responses by parents to the limit testing that is part of normal maturation
- Individuation and Autonomy - enhancement of the individual’s identity, capacity and potential accompanying maturation
- Protection and Trust - shielding from toxic interpersonal and social elements such as criticism, abuse, neglect, harsh punishment and exploitation

Again, this is not a definitive list but rather a brief list of some factors thought to be essential in the second, or family, environment of a developing infant, child and teenager. Much literature has implicated the role of abuse, neglect, victimization and other harmful practices in children and adolescents who later go on to develop mental health disorders.

### **3<sup>rd</sup> Environment (Sociocultural)** <sup>52 53 54 55 56 57 58</sup>

Numerous factors go in to the creation of cultural and social factors that create the third environment, or sociocultural spoke, in our rim of mental wellness. Specifically, elements accounted for in this sociocultural spoke include religious and political elements, community size and social interconnectedness, ethnic background and financial and educational opportunities, as seen in Figure 7.

Figure 7. 3<sup>rd</sup> Environment (Sociocultural)



For example, being poor does not jeopardize one’s mental wellness but it does impact one’s ability to access mental health services. Further, ethnicity may play a part in the

type of treatment that one would seek out or receive. Social attitudes about death and loss may significantly affect one's thoughts and behaviors as a result of religious beliefs in the family and community. Cultural and religious factors can certainly have a powerful influence over attitudes toward the use of alcohol or illicit drugs and the age of first use. These factors, and other 3<sup>rd</sup> Environment factors, are thought to contribute to the manifestation of mental illness or substance abuse disorders, and to the prognosis and course of the disorders.

Some research identifies the following social and cultural factors as favoring resiliency, hence, protective of mental health.

- Religious taboos regarding alcohol and illicit drug use may buffer exposure to alcohol and drug use, thus altering inclination to use or access to use during vulnerable periods (i.e. early alcohol use is more predictive of long term disorder)
- Religious beliefs and practices that relate to a perception of control of negative events (i.e. "God's will") may buffer stress of loss as well as offer "meaning" to otherwise arbitrary events. Beliefs may thus endow "stress buffering" benefits.
- Social support systems improve medical outcomes and reduce morbidity and mortality after heart attacks
- Living in a war torn country with exposure to or experience with trauma increases the risk of anxiety and mood related problems
- Lower relative risk of suicide in black females versus white males (in the US)
- Higher education level increases likelihood of seeking mental health treatment

### Toxins

Research is clear as it relates to the roles of alcohol, nicotine and illicit drugs and their effects on the mind and brain. I refer to alcohol, nicotine and illicit drugs as "toxins", because when these substances are used long enough or in large enough amounts, that is what they represent to the brain. I will not focus on the entire list of toxic effects which these substances, as listed in Figure 8, can have on the entire body but will limit my comments to their negative or toxic effect on the workings of the brain, and consequently, the mind.

**Figure 8.** Toxins, although offering some short-term “reward”, represent toxic entities for the brain when used in sufficient amounts or for a sufficient length of time.



I remember hearing an expert on addiction say that there are only a limited number of compounds that the mammalian brain will crave despite experiencing negative consequences associated with their use. These substances result in cravings, urges to use, which can override other parts of the mind that ordinarily provide restraint and impulse control. Thus, at the level of the brain, one definition of **addiction** is the brain’s obsession with itself. Specifically, those areas of the brain involved in motivation, planning, concentration and judgment become hijacked by those brain areas responsible for the longings created by the previous use of the substance. Examples of this are easily found in my day-to-day workings with patients, as one only needs to listen carefully as they describe the emotional, cognitive and behavioral consequences of their use.

When I encounter someone who has continued to use an addictive substance repeatedly or episodically, whose use causes social, occupational or legal problems, or whose urge and ability to control their use increases beyond their ability to control it, the cycle of addiction has already begun. The person uses, and continues to use, because they like the way it makes them feel. This may seem obvious to some, but I am quick to acknowledge this point with those patients with whom I meet who have either no or limited interest or motivation to make a change in their use of addictive substances. I readily acknowledge that the feeling of intoxication can be very desirable and that the effects of withdrawal and abstinence may seem unbearable, but the evidence is clear that **all** addictive substances carry some very dire consequences in terms of brain and mind functioning.

Here is just a partial list of things one can expect to come from alcohol, nicotine,

hallucinogen (Acid, LSD or mushrooms), cocaine or amphetamine, opioid (heroin or other prescription pain reliever such as Oxycontin, Lortab, etc), or inhalant abuse and/or dependence:<sup>59 60 61 62 63 64 65 66 67</sup>

- Increased tension and anxiety associated with nicotine dependence
- Increased risk of suicidal thinking and attempts associated with cigarette smoking
- Increased risk of depression and anxiety disorders with alcohol use
- Increased risk of violence and suicide associated with alcohol use
- Increased risk of paranoia and of developing schizophrenia with marijuana use
- Worsened memory and concentration skills with marijuana use
- Increased risk of psychosis (paranoia and auditory hallucinations) associated with methamphetamine use
- Experiencing of moderate depressive symptoms, impaired memory and concentration in weeks following withdrawal from methamphetamines

Those proponents of the use of these “toxins,” and their accompanying arguments for their use, especially in moderation, can be very persuasive at times. Absolute, however, is the sad fact that use of these toxins can result in severe emotional, behavioral and cognitive disturbances via disturbance of brain functioning which supplies mental functioning. What renders someone more vulnerable than another to addiction is an active topic of research, but it is accurate at this time to say that not all are equally at risk for addiction from all addictive substances. The risk of addiction depends on a variety of factors including a family history of mood and addictive disorders, the presence of mental health disorders, the age of first use and personality features, just to name a few. The consequence of a single episode of use will be variable but once an addiction takes hold, the ability to manage urges to use again (cravings) and to deal with stress that can intensify cravings, is undermined and becomes a separate problem for clinical attention.

While all must choose for themselves, it is also fair to say that one who is caught up in an addictive process experiences a pathology of choice; has a diminished capacity to manage urges, impulses and compulsions. That does not liberate one from responsibility but rather heightens the acuity of the problem which often requires additional clinical services, time and commitment in order to function most effectively. I emphasize to those caught in addiction that one can break the grip of addiction because people of all types, fallible and imperfect as we all are, recover their lives one day at a time following the path of abstinence.

Recovery from the depths of addiction is accomplished by learning about how to care for the brain, breaking the façade of denial about the dangers of addictive substance use, grieving the loss of the addictive life, embracing the expected and “normal” ups and downs of life while learning to live and cope in a very different manner than previously known. Additionally, one must find support and collaborate with those who can support the hope for better tomorrows while sowing the seeds of such today through the promotion of abstinence and the pursuit of all that promotes a toxin-free lifestyle. The message I try to communicate to all patients, and especially those needing to change because of an addiction is, “You can do it. I believe in you and your ability to change. Your mental health will be improved, greatly in some respects and more modestly in

others. Freeing yourself from the misery of addiction is always worth it.”

## Personality <sup>68 69 70 71 72 73 74</sup>

Much research and study have gone into the study of temperament, its contribution and relationship to the development of our personality and the consequent impact on our mental wellness. To some degree, the beginnings of our personality, the final spoke in our wheel of mental wellness, can be seen when we are toddlers. Studies on temperament have shown that children who were particularly clingy to a parent and anxious in new situations were at greater risk for anxiety disorders as adults. Additionally, disinhibition and extraversion in children and adolescents is associated with mood disorders (i.e. Bipolar Disorder) and alcohol abuse disorders later in life.

Listed in Figure 9 are the 5 domains, or components of personality that are used for the study of personality and are of particular importance in regard to predicting resiliency or vulnerability to mental illness and addiction. These domains include conscientiousness, openness, extraversion, neuroticism, and agreeability, or the “Big 5” dimensional components of personality. One can think of each on a dimensional approach, meaning that one exhibits a certain amount of the quality along a range of very high to very low. For example, neuroticism refers to proneness to worry, anger, depression and self-consciousness. Someone low in neuroticism would exhibit very little tendency to worry and fret as part of their personality and consequently would be thought of as having a lower risk for clinical depression and anxiety than someone who is high in this domain. Extraversion refers to gregariousness, warmth, assertiveness, activity and positive emotions. Thus, someone high in extraversion and low in neuroticism would likely be less stressed by social activities, gatherings and vocations than someone low in both domains. Agreeability refers to facets such as trust, altruism, compliance and straightforwardness. Taken together, someone high in extraversion and low in agreeability is more at risk for alcohol abuse disorders and problems with violations of the law and rules of society.

**Figure 9.** The “Big 5” or Five Factor Model of personality has been studied and validated in cross-cultural studies.



Since the 1980’s there has been considerable research into the contribution and

association of these personality domains with mental illness and substance abuse disorders, as well as resiliency and contentment. The findings suggest that there are correlations between these domains and disorders which, in some cases have tied together some of the genetic contributions to disorders and personality. For example, some of the genes implicated in alcoholism have been associated with extraversion thus helping to explain how personality can play a role in rendering one more susceptible to a genetic vulnerability.

Other personality traits of dependency also seem to set one up for depression later in life. High ratings in some personality traits, such as the domains of openness and extraversion might serve as positive prognostic markers for treatment response by allowing the person to benefit from group therapy to deal with genetic risks for mood disorders or in dealing with life stresses of death, loss, transitions and problematic relationships. Further, someone high in conscientiousness might benefit from such a trait in the completion of assignments and persistence at hobbies and interests that can serve as distractions from the negative “self-talk” associated with clinical depression.

The ultimate specific and scientific explanations for mental illness and addictive disorders are bound to be complex. Our current understanding of the various components that explain our “mental wellness” has grown significantly and will continue to expand in the coming years and decades. We can, however, look at the information available and, as illustrated through the example of a wheel, think about the various components that explain our relative vulnerabilities. Some things we cannot do anything about, such as our genes, what happened in the womb, how we were raised, changing traumatic events in our past, etc. We can, however, influence other things about our lives, our thinking, our behaviors and our emotions. In terms of our mental wellness, we can concentrate on learning about our illness or disorder, learning to temper unhelpful personality traits, eliminating or reducing intake of “toxins”- illicit drugs and alcohol, improving our social and interpersonal relationships, improving our coping skills, promoting our best physical health and pursuing a path that helps us adapt to the stress in our lives in the best possible manner.

To do that, we will need to talk a bit more about the physiological effects of stress and that will lead us into a more detailed discussion about how somatic and non-somatic treatments can be of help.

#### Chapter 7 Learning Questions:

1. Define the terms:
  - a. Stress:
  - b. Resiliency:
  - c. Wellness:
  
2. Draw and label the 6 “spokes” in the “rim” of mental wellness.

3. Identify those elements among the 6 spokes that may be relevant to rendering you vulnerable to becoming unwell.

## Chapter 8

### VIII. Pieces of the Mental Illness Puzzle: BDNF, Cortisol, and Vulnerable Areas in the Brain

Imagine you are driving down a rural country road, at highway speeds and it is approaching dusk. You glance at the scenery while driving and look back to the road ahead and a large deer is now poised in the middle of your lane. Is this a stress? Certainly, it fits our definition of the need to adapt in order to avoid having a large creature hurtle through the windshield for an up close encounter with nature. So, at that moment, what is happening to your body? Are you having to remember what to do, ponder upon the options of hitting the animal or not? Not really. You react largely on the basis of reflex.

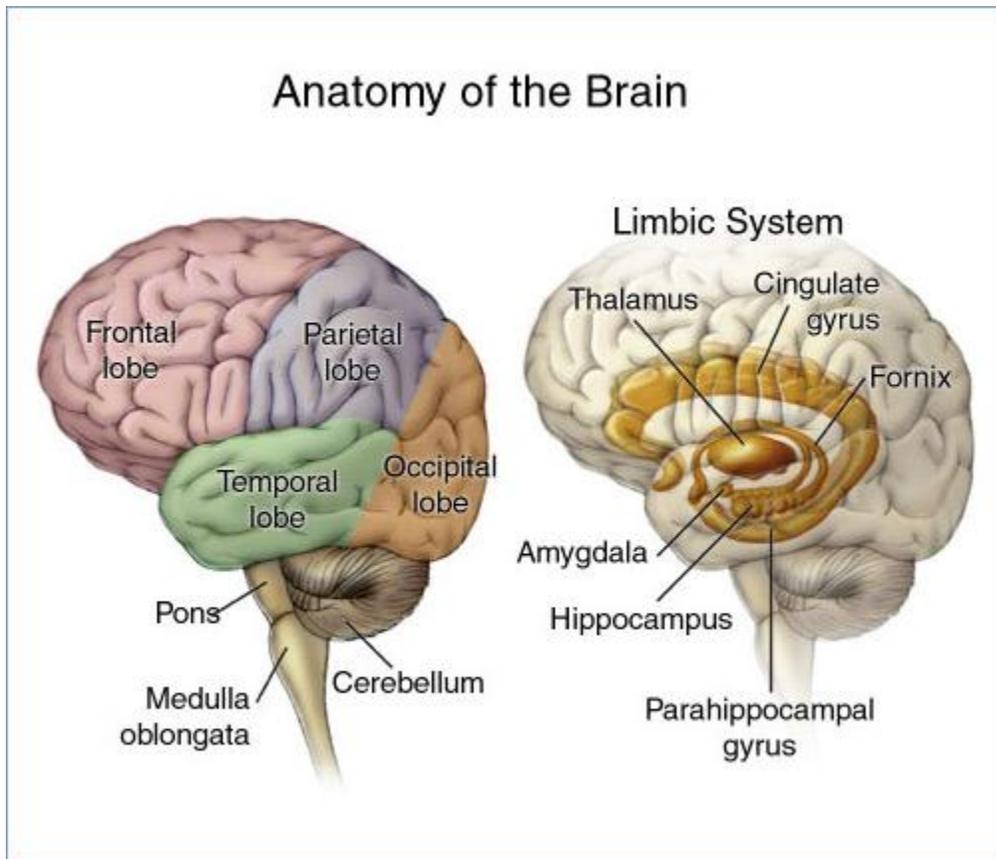
In this case your reflexive braking (based on past learning of what to avoid on the roadway) is accompanied by a firm grip on the wheel and anticipation of the need to swerve carefully if the animal does not move by the time you approach it. Imagine yourself in this scenario, one that I was in some years ago. What physiologic responses would you experience as part of your split second reflexive reaction?

First, you would become very alert and attentive. If you were starting to feel drowsy then not anymore! You probably would not be aware of it but your blood pressure and heart rate would increase. Your tense hands would reflect the activation of skeletal muscles that would be ready for action. What about your breathing? You might breathe in quickly, even hold your breath for a second but then your breathing would become more shallow and rapid. Your heightened alertness would be the result of acute activation of brain circuitry involved in perception - your sensation of sight, sound, smell and touch. The spasm of the voluntary musculature involved in defecation and urination might surge with readiness leading to a disruption of control that is sometimes experienced during a startle that results in a brief loss of urine or bowel control. Hence the punch line from an old joke about a pirate facing his demise, who called out "Fetch me my brown pants!"

This pirate had previously called for his red shirt when going into battle so that any wound and subsequent blood loss would be camouflaged by his shirt. Thus, the famous line "Fetch me my brown pants!" when he found himself surrounded by the enemy and startled by dire circumstances.

This example of the deer encounter while driving illustrates that same type of physiological response that occurs (in the body and brain) during acute psychological stress. In order to later discuss how somatic and non-somatic therapies are theorized to "work," we need to mention 3 areas of brain and mind research relating to how stress affects us. These 3 areas include: 1) brain structures/anatomy implicated in the stress response; 2) neurotransmitters, or chemical messengers, involved in the stress response and in current somatic treatments; and, 3) the proteins and hormones involved in the stress response.

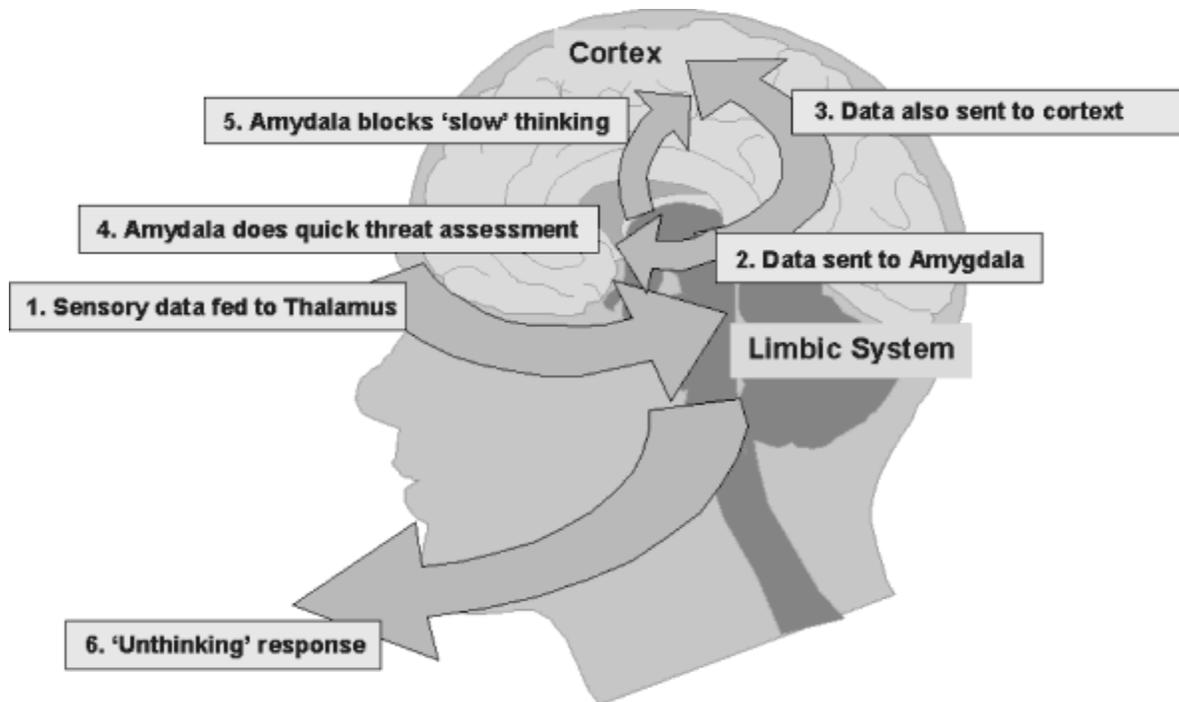
**Figure 10.** The amygdala and hippocampus are parts of the limbic system which sit beneath the cortex and are involved in emotional regulation and memory. (American Health Assistance Foundation).



### **The Anatomy**

Figure 10 includes an image of those areas implicated in the stress response and the resultant effects that may contribute to some mental disorders. The amygdale (plural form) are almond shaped areas in the temporal lobes whose functions include, among others, emotional memory and physiological arousal to stress. It is the job of the amygdale to make sense of incoming information from the thalamus (i.e. visual data sent to the thalamus that there is a deer in the road ahead!) and then initiate an immediate response to the threat. The hippocampus is located near the amygdala and receives signals from the amygdala to activate the sympathetic nervous system so that your body and brain come alive to deal immediately with the threat at hand. The hippocampus is also crucial to the process of making and keeping memories. Loss of brain cells in the hippocampus is noted in Alzheimer's Disease and hippocampal shrinkage has also been noted in research looking at patients with certain types of depression and anxiety disorders.

**Figure 11.** Role of thalamus and amygdala in the stress response. (Changingminds.org)



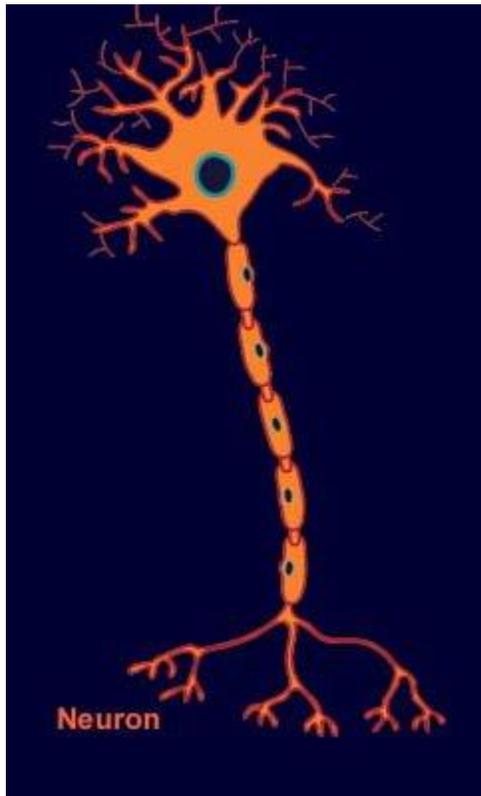
### **The Chemical Messengers**

The trillions of brain cells, or neurons (see Figure 12), communicate with each other largely through the use of chemical messengers known as neurotransmitters. Keep in mind that neurons don't just talk to one or even a few other neurons but to hundreds or thousands of other neurons. The area where one neuron "connects" with another neuron is called the synapse and it is there that neurotransmitters are released. The neurotransmitters often implicated in the stress response, as well as having some effect in the treatment of many mental health disorders, include serotonin, dopamine and norepinephrine.

These chemical messengers act in a fraction of a second to convey their message and to play a role in regulation of sleep, pain perception, body temperature, blood pressure and hormonal activity. Epinephrine and Norepinephrine are primary players in the sympathetic nervous system – the system that co-ordinates our stress response with the resulting changes in heart rate, blood pressure and gastrointestinal activity. Epinephrine is released from the adrenal gland, which sits near the "launch pad" of our kidneys to send the chemical messengers throughout the body to bring about the needed ready state known as "fight or flight." Lastly, dopamine is involved in a number of brain functions including novelty seeking and reward, as well as movement, motivation and pleasure.

The reaction to an immediate stress results in an immediate increase in the intensity of neurotransmitter activity in response. If the threat is more long term, and requires a more sustained stress response, we need to mention some of the other players in the stress response, namely, hormones and proteins.

Figure 12. Simplified diagram of a neuron with many branching, or synapses, for communication with other neurons. (Brainexplorer.org)



### **The Proteins and Hormones**

The body makes many different kinds of steroids and hormones, but cortisol is particularly important in understanding the current thinking about certain types of mental health disorders and the effects of stress. Like other chemicals involved in the stress response, cortisol is produced by the adrenal gland and serves to mobilize energy, increase arousal and attention, and promote fear learning and memory. It has numerous properties and serves us well when an immediate threat turns into a prolonged threat. Thus, should the threat of hitting a deer be realized, one will need a prolonged and protracted response of hours or possibly days, in order to survive the trauma of injury from the accident. In the future, one might only need to drive again in the car near the scene of the accident to have the memory of that incident and the fears of another accident arise, in order to experience some level of physiological arousal. Think further how such an accident might serve to leave one “stressed,” possibly as a result of grief, loss, worry and/or guilt because of the loss of a loved one from the same accident. It is known that “stressful” mental or psychological states can lead to elevations in cortisol and research has shown that sustained and elevated levels of cortisol can damage areas of the brain, such as the hippocampus and amygdala. Some neurons in the hippocampus have been shown to be particularly sensitive to sustained levels of cortisol resulting in the reduced vitality or death of those cells. Other studies have shown relative shrinkages in

the hippocampus or amygdale as a result of repeated and prolonged exposure to cortisol. Further evidence of dysfunction comes from studies showing reduced metabolic activity (i.e. glucose or oxygen utilization) in the regions of the brain thought to subserve the mental and emotional functions implicated in certain mental disorders.

If we use Major Depression or PTSD (Post Traumatic Stress Disorder) as examples, we can focus on the proven neural damage that cortisol can cause to neurons and the likely implications on brain and mind functioning. Numerous neurochemical markers have been implicated in the stress response but a simplistic discussion of one such marker, BDNF, may help you understand the relevance of all of this discussion in terms of taking medication.

BDNF is short for Brain Derived Neurotrophic Factor. It is produced by certain brain cells for the purpose of cell nourishment, maintenance and growth. You can think of BDNF as “fertilizer” or “a nutritional supplement” for your brain cells. BDNF has been shown to protect against stress induced neuronal damage, to be present at lower levels in some patients with depression, and to correlate with improvement clinically when levels of BDF are increased. Further, some studies have shown that a treatment response associated with a rise in BDNF is also accompanied by a drop in cortisol to more normal levels of production.

To be sure, the whole story of how the workings of the brain contribute to the changes in mood, thought, perception and behaviour seen in mental illness is still to be worked out and fully understood. Even so, we are beginning to understand more about how the brain works, the regions of the brain and their various vulnerabilities to stress, the likely contribution of cortisol in damaging specific neurons in the brain, and the proteins and hormones which can be manipulated by the effects of stress as well as somatic and non-somatic therapies.

#### Chapter 8 Learning Questions:

1. Give examples of acutely stressful events or situations from your life that have resulted in a physiologic stress response. Also, be sure to describe the types of things you experienced physically (what you noticed about your body), emotionally (what you remember feeling) and psychologically (what you were thinking).
  
2. Describe examples from your life of things that are psychologically stressful (marriage, divorce, death of loved one, financial worries, relationship problems, etc).

3. Define the terms:
  - a. Neurotransmitter
  - b. Neuron
  - c. Cortisol
  - d. BDNF
  
4. What is the role of:
  - a. Amygdala
  
  - b. Hippocampus
  
5. What areas of the brain are thought to be negatively affected by cortisol and what are the possible mental/emotional symptoms of such a negative disruption of cell activity in those areas?

## **Chapter 9**

### **IX. A Brain in Distress: The Effects of Treatment**

You understand a little about the role that cortisol can have in damaging neurons and disrupting brain function, and you have learned about the role of BDNF and how increasing BDNF levels might help with certain types of depressive and anxiety disorders. Now what?

Let's move to a discussion of how and why medications or ECT (which results in robust increases in BDNF production while serving as the treatment most likely to be effective for clinical depression) may help to improve the symptoms of depression, helping someone to feel better, by helping a brain and mind in distress.

It is important to realize that there is no place for a blood test for BDNF levels or for MRI scans of the brain for individual patients at this point. Aside from how costly and impractical it would be, it is largely unnecessary in that whatever treatment is offered, it should be tailored to the individual, his/her particular signs and symptoms, his/her past, belief system and style of coping. We all have stress. It is unavoidable and assumed, but the treatments appropriate for one's condition(s) need to be understood in terms of how they are thought to be working.

Remember that the purpose of medication or any somatic therapy is not to eliminate the perception of stress or the impact of that stress mentally. That is what addictive substances do, temporarily, and is part of the reason they carry the risk of becoming addictive. With the exception of benzodiazepines and stimulants, the mainstays of psychiatric medications do not carry any risk of addiction or any potential for abuse or dependence.

In the case of the first line agents for depressive and anxiety disorders, their purpose is to improve your ability to tolerate and alleviate the impact of stress through better adaptation. I tell patients that the role of medication is to act like "fertilizer" or a "supplement" and to bring one's neurons back to the point where concentration, sleep, enjoyment and energy levels were prior to the onset of the disorder. Medication can often be the first and most necessary step in achieving some abatement in the disorder, thus allowing the person to more effectively deal with whatever difficult circumstances may exist.

For example, with clinical depression, an antidepressant may result in the production of BDNF, and revitalization of neurons in brain areas that subserve sleep, energy, concentration, feelings of hope and contentment. As a consequence, this change in physiology can make one's efforts to function more fruitful in terms of working through the stressful effects of serious illness, divorce, death or other circumstance. To be sure, antidepressants do not provide a "high" or other transient emotional state as a mechanism for helping one feel better. They work by creating changes at the cellular level that

impact how adaptively you might think, feel and reason. The “supplement” or “fertilizer” effect that can occur needs to be carefully monitored on an ongoing basis in order to maintain an ongoing dialogue about the risks and benefits of treatment specific to you. Ultimately, my view of most medications is not as curative agents for an infection such as we are prone to think of some antibiotics and the microbes they are designed to kill. Rather, they are supplements that serve to enhance neuronal vitality and activity in brain regions thought to be negatively impacted (in the context of genetic vulnerabilities, traumatic life experiences, exposure to toxic/addictive substances, personality and cultural factors, etc.) by cortisol and other substances produced during prolonged periods of physiological stress.

Now a word about non-somatic therapies, such as psychotherapy and all the varieties of therapy that can equip one with the skills to deal more effectively with stress. Ultimately, the ability to adapt more easily and effectively to stress will result in a reduced tendency to experience physiological arousal. Further, these same skills represent a brain based process, established through the remodeling of cellular connections, brain regions and functioning via neurotransmitter systems in the brain. Acquisition of these skills does take more time and effort than simply taking a pill or submitting to a procedure. To be sure, somatic therapies do not endow skills or abilities that must be acquired through trial and error or experience.

For example, treatment for Panic Disorder with somatic therapies, such as the combination of Sertraline and clonazepam, might begin to work within minutes and continue to result in physiologic changes over weeks and months and result in the amelioration of many of the symptoms of the disorder. Psychotherapy, such as cognitive behavioral therapy (CBT), may require anywhere from a half dozen to 20 sessions (or more) over weeks or months, often accompanied by practicing of techniques between sessions in order to achieve maximum benefit. Medication might address the problem of panic attacks fully or partially, but only a sustained period of education and learning about panic disorder, and the acquisition of cognitive and behavioral skills through weeks and months of learning, can offer the long-term solution of effective skills to manage the disorder. Learning is thought to be facilitated indirectly by antidepressant medication that can work in areas of the brain over weeks or months to help the brain systems behave more as they were intended. Conversely, use of abusable substances, such as marijuana or alcohol, can impede the learning process and prevent the “rewiring” of the brain that occurs when one acquires skills and techniques through experiential or non-somatic therapy.

One more example might also illustrate the point of how non-somatic therapy helps effect change at a physiological or biochemical level. First, through the acquisition of coping skills or relaxation training one facilitates changes biochemically and physiologically. So, instead of reacting angrily to your child’s or partner’s thoughtless actions, you might learn to take a walk around the block and/or do some breathing exercises to dispel feelings of hostility and to alleviate the muscle tension of a physiologically aroused state. The thoughts and behaviors accompanying this behavioral technique represent brain function and structural design. Second, through cognitive or interpersonal skills training,

you might learn to reframe another person's behaviors or actions as something other than a threat or insult to you. Learning to recognize how your perceptions of others, accurate or not, can activate your memory (conscious or unconscious) of past slights or injuries is part of the learning you might need to do in order to address a problem of overreaction to events and situations with angry and/or destructive behaviors. Insight, and the accompanying change that can occur in our beliefs, our behaviors and our emotions, is a reflection of changes in the brain that are brought about by non-somatic therapy. Thus, by using our minds we can rewire our brains and achieve the desired changes in behaviour and emotion so often sought in treatment. We still have much to learn about the brain and its basis for mental processes, but researchers like Eric Kandel M.D., a psychiatrist and Nobel Prize winner, and others have done much in recent years to advance our understanding.<sup>75</sup>

Working together, then, both somatic and non-somatic therapies can be thought of as complementary rather than competing methods of achieving and maintaining mental wellness. With that in mind, let's transition to a more detailed discussion of medications, their risks and potential benefits in the treatment of mental illness.

#### Chapter 9 Learning Questions:

1. In response to somatic and non-somatic therapies, what changes have been known to occur with cortisol and BDNF?
2. What correlation to mood and anxiety signs and symptoms is seen with the changes in BDNF as a result of therapies?
3. How can "learning" result in a decreased physiologic stress response?
4. What role do medications play or what is the desired role for them to play in terms of learning?

## **Chapter 10**

### **X. Medications – What you Need to Know**

Attitudes towards medications for treatment of mental illness can vary tremendously. In large part any person's attitude towards medication will depend on what they know, or think they know, about it, its risks and potential benefits. The risks accompanying treatment with a medication should also be measured against the risks associated with no treatment.

If, for example, you were told that you had a cancer that carries with it a 15% chance of death if not treated effectively, you might be more inclined to accept the risks of that treatment even if they included temporary hair loss, nausea and vomiting, malaise, etc. Conversely, these same side effects would be unacceptable if the medication were being given for a less serious condition, such as for acne. One must also keep in mind that there is no way to guarantee what, if any, side effects might occur with use of a medication. There are, however, probabilities of certain side effects occurring based on past experience with the medication in other settings and with other patients.

With that in mind, two points are worth emphasizing. First, remember that mental health disorders can be devastating, and carry serious and significant risk of death and dysfunction. Conditions such as Schizophrenia, Bipolar Disorder and severe cases of Major Depression have a 15% lifetime risk of suicide. As already mentioned in a previous chapter, mental health disorders represent half of the top 10 conditions resulting in disability and dysfunction worldwide. Second, with the seriousness of mental health problems in mind, it is critical that you and those close to you (i.e. family and friends) have accurate information and resources available for the purpose of becoming educated about the risks of medications. A discussion with your doctor, nurse or pharmacist might help you in obtaining a list of reputable and accurate sources for learning more about the medication that is prescribed to you.

The first objective of medication therapy is to achieve the best possible outcome, or a complete resolution of the signs and symptoms of the disorder, with no side effects. That is sometimes the case. The ideal is sometimes achieved and that is very rewarding. That ideal is not possible all the time but the goal never changes. My goal is to seek a reduction, if not a resolution, of the signs or symptoms of a disorder while seeking to minimize the number and severity of potential side effects that are part of any medication (somatic) treatment process.

Keep in mind that there will always be some risks associated with any medical procedure or medical treatment. The risks of medication or any somatic therapy always need to be considered in the context of expected benefit, as well as the risk of no treatment. Table 4 lists the information that you need to keep in mind when discussing the risks and benefits of any treatment option, especially medication.

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**Table 4.** The information to keep in mind when discussing medication, or any somatic therapy, options.

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- Diagnosis
- Signs and symptoms
- Medication name(s)
- Dosage and dosing frequency
- Side effects
  - Common
  - Serious and/or rare
  - Life threatening
- Recommended monitoring

### **Diagnosis, Signs and Symptoms**

As already mentioned, after the first visit and with each subsequent visit with your doctor there will need to be a review of the target signs and symptoms associated with the presumptive or working diagnosis. The working diagnosis is validated or reconsidered as treatment proceeds and as more information is gleaned from the mutual education process and especially from observations about response to treatment.

### **Medication Names**

All medications have at least two names or more if you are a Chemistry major and want to identify the compound by its chemical name. For the purposes of treatment, it would benefit you to become familiar with both the generic and brand names of the medications prescribed to you. Once you are familiar with both names, it will be important for you to use the name that is easiest or preferable for you to use so that your doctor can try and use that name when discussing your medications with you.

The brand name is the name given by the pharmaceutical company that first receives a patent to market the medication. The generic name is not owned by any particular company and allows others to make that same medication once the manufacturer's patent has expired.

Time for another quiz. What is the brand name for the medication fluoxetine (that's the generic name)? If you guessed (or read the rest of this sentence) Prozac, that is correct. Is lithium a brand name or a generic name? It is the generic name and it has various brand names including Eskalith and Lithobid. It is not necessary to learn all of the brand names for the medication you take, but knowing at least one brand name and the generic name is important. I recommend that you write down the name that is easiest for you to remember. Knowing both names, however, will help you avoid confusion about what you are taking and this should be shared with all doctors you

see, in order to alert them to possible medication interactions that can arise with the combination of some medications.

Next, you will need to become familiar with the dosage. It is all too common for patients to refer to their medication as ‘the little blue pill’ or ‘the round one’ rather than becoming familiar with the name and dosage. The dosage refers to the potency or strength of the medication. Dosages are usually measured out in milligrams. Along with the dosage, you should know how often it is prescribed. I try to prescribe medication just once a day, but some medications will need to be taken two or three times a day. Again, along with the name and dosage, I encourage patients to write down how often they are supposed to take the medication (i.e. “lithium 300mg morning and bedtime”). This information can be contained on a paper or card that is kept in your purse or wallet for easy reference. It is also on the prescription label.

### **Understanding the Risks and Possible Side Effects**

When thinking about the risks and possible side effects of medications, I like to break them down into 2 categories. The first category would be common side effects that are typically benign. Second, there are serious side effects that are typically rare.

#### **Common and Benign**

Common means that these side effects happen with predictable regularity, based on laboratory and clinical experience with the medication. Benign means there is no potential for lasting harm or for damage to bodily tissue or function. It also means that simply lowering the dosage or stopping the medication will result in the resolution of the side effect. These side effects are usually more of an annoyance, may be brief and subside after a few days after starting a medication or raising the dosage, but they may persist for as long as you are on the medication. In general, before stopping a medication for a suspected side effect, it is important to first discuss the side effect with your doctor or nurse to see if something else can be done before changing to a different medication.

#### **Serious and Infrequent**

Serious means there is a potential for damage to tissue or body, which in some cases can be life threatening. Infrequent means that the overwhelming majority of people who have taken or who might take the medication may do so safely and without having a serious side effect. It is important to remember that a medication will not be approved for use or will be taken off the market if the risk is found to be too great in relation to its intended benefit.

I encourage every patient to become informed about the possible side effects of any medication prescribed to them and to review with me any concerns they have. My goal is to make you aware of the most common as well as the most serious (and rare)

possibilities associated with the recommended therapy. Many resources exist for you to consult including your pharmacist, nurse, printed material and that found on the internet. It is important, however, that you consult reputable sources of information and I recommend several websites that can be trusted for reliable information.

It is also important to keep in mind that any treatment for any serious condition will typically carry some risk associated with treatment. Further, one must keep in mind the risk of no treatment in the context of needless suffering, loss of income, productivity, negative impact on relationships and even loss of life. So, when it comes to risks and *possible* side effects with a somatic therapy, these risks can be best managed through careful monitoring in a collaborative endeavor with your doctor. Below I have listed groups of medications commonly prescribed in psychiatry and the types of recommended laboratory and clinical monitoring for each category.

### **SSRIs (Selective Serotonin Reuptake Inhibitors)**

There is no specific laboratory monitoring that needs to be performed with SSRI's. Common side effects can range from sexual dysfunction to GI distress, sleep disturbance or worsened anxiety. Much has been made about the risk of suicide with these agents and while there is the possibility of such a side effect, all studies suggest it is rare if it exists at all. Regardless, it is important that you notify me and stop any newly initiated treatment if you think you are experiencing a serious side effect.

### **Tricyclic Agents (TCAs)**

This older class of medications is still used on occasion for depression and anxiety. Laboratory monitoring is often necessary, with some of these agents, to determine the proper dosage that is likely to result in the desired clinical effect. There is some potential for these agents to effect the electrical activity of the heart, so an ECG (electrocardiogram) is often ordered to monitor for that sort of side effect. In overdose these medications can be especially dangerous. Consequently, safekeeping from young children or monitoring of the medication by a spouse or close family member (for the depressed and sometimes suicidal patient) is required to monitor for proper compliance and use of the medication and/or special arrangements are made with the pharmacy to dispense only a week or two of the medication at a time.

Dry mouth, urinary retention, blurred vision and weight gain are some of the more common side effects patients might experience from these medications.

### **Mood Stabilizers**

This class of medication includes lithium, valproic acid (or Depakote), and carbamazepine (or Tegretol). With lithium, monitoring of one's kidneys and thyroid, in addition to episodic checking of the lithium level, is recommended. Lithium use is discouraged during pregnancy due to possible birth defects. Lithium is a salt, is

naturally occurring in the body in trace amounts, and is treated by the body as it does sodium. The body typically retains sodium and if one becomes dehydrated through vomiting, diarrhea or inadequate fluid intake, the lithium level can rise leading to signs of toxicity. These include weakness, fatigue, tremors or confusion and the lithium should be stopped until normal fluid intake and retention are re-established.

With valproic acid, there needs to be monitoring of the white blood cells (the cells that fight infection), and the liver, and its use is not recommended during pregnancy due to the risk of spinal cord birth defects. Monitoring of carbamazepine is similar to that for valproic acid and requires monitoring of the white blood cells. Its use in pregnancy is also discouraged due to the same concerns regarding birth defects. Blood levels are also important for both agents in helping to determine a therapeutic dosage while accounting for individual variations in metabolism.

### **Antipsychotics/Neuroleptics**

This class of medication includes newer agents that work not only as effective treatments for psychosis (hallucinations, delusions, disorganization of thought or behaviour, etc.) but also for mania, severe or refractive depression and some personality disorders. Monitoring should include routine monitoring of weight, encouragement of low carbohydrate diets, increased exercise and building of lean muscle mass as well as periodic blood tests of fasting glucose and cholesterol levels.

The older antipsychotic agents, such as haloperidol and fluphenazine require clinical monitoring for any abnormal movements of the face, trunk or body in addition to pacing, restlessness, tremor, muscle jerking or twitching.

While this is not a definitive list of all somatic therapies and the necessary monitoring for each, it does give you some idea about how the risks and possible side effects associated with medication treatment are managed.

#### Chapter 10 Learning Questions:

1. List the names, dosages and frequency of dosing of the medications you are prescribed.
  
2. List a few of the common side effects possible with each medication, and any serious or life-threatening side effects of each.

3. List the laboratory or other clinical monitoring associated with the use of your medications.

## Afterword

This information should help in shortening the time frame from initial treatment request to initiation of treatment, and in helping to foster an effective, collaborative working relationship between doctor and patient. The goal of treatment is ultimately defined by each patient who must declare his or her goals. Ideally, functional goals are then spelled out to address the desired steps therapy might follow to help one achieve optimal mental wellness.

In essence, I want each patient to know that it is my goal to help him or her do as well as possible. I hope and intend to assist patients in learning to reject labels, and stigmatizing notions associated with mental illness and psychiatric treatment through approaches that affirm individual worth, responsibility and personal potential. Acknowledgement and acceptance of any problem, be it “psychologically” or “emotionally” experienced, are just as valid and important as with any other physically experienced distress.

Optimal wellness and recovery from mental illness means walking along a path of life that is bound to require suffering and distress, but it need not mean accepting the idea of personal defect or weakness. Rather, it means acknowledging and accepting the reality of illness for all, and the need to partner with others to prevent needless episodes of illness while also accepting full personal responsibility for one’s own health. It also means learning to trust others, learning about what you can do to prevent episodes of illness, and understanding that there are many things we cannot control, such as what illnesses will beset us in this life.





**Thought Awareness Record:**  
**Connecting situations and moods with thoughts!**

<b><u>Situation</u></b>	<b><u>Mood</u></b>	<b><u>Automatic Thoughts</u></b>
(Where, Day, Time, Who, Events, Etc)	(Sad, angry, afraid, tense, worried, hopeless, etc)	("Things will never get better" or "I'm a loser" or "He is lying", etc)

**Promoting Healthy Beliefs:**

**Refuting unhealthy thoughts, promoting balanced thinking and feeling better!**

<b>Evidence For</b>	<b>Evidence Against</b>	<b>Balanced Thought</b>	<b>New Mood</b>
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**My Wellness Plan: (Your name)** \_\_\_\_\_

**Learning from Illness & Staying Well after Discharge**

Please use this form to learn from what you have been through and to assist in your best efforts to remain well after discharge. Here are a few tips to help you complete this form.

- Seek information from your doctor, therapist, nurse, family members and others who can give their perspective on your behaviors and the circumstances related to your hospitalization.
- Request educational material about your diagnosis, medications, etc. so that you better understand the need for and importance of treatment after discharge.

1. What is(are) your diagnosis(es)? If you disagree with your diagnosis, please indicate what behaviors on your part led to the recommendation that you be hospitalized?

2. Is(Are) your diagnosis(es) chronic?      What outpatient treatment is recommended?

3. What is the difference between having a mental illness and being mentally ill?

4. What signs and symptoms do you experience when you are unwell/stressed?

a. Signs (what **others** notice about you when you are unwell/stressed):

b. Symptoms (what **you** notice about how you think, feel and act when unwell/stressed):

5. Please list the names and dosages of the medications you are taking. Also, list the symptoms the medications are meant to address.

Medication Name	Dosage (amount and how often)	To improve/resolve Signs and Symptoms of

**My Wellness Plan Continued, p. 2**

6. Please list all of the problems that have arisen in your life as a result of the disorder(s). Please include personal suffering as well as impairment in relationships, work, hobbies or legal problems.
  
7. Report improvement that has occurred with hospitalization.
  
8. Please list those symptoms that have not improved or resolved. Specifically, comment on any thoughts you have had related to death, dying, suicide or harming anyone else.
  
9. List warning signs and symptoms that you can look for as part of your plan to stay as well as possible.
  
10. List those things that you are planning to do in order to promote your best mental wellness. Specifically, list:
  - a. changes in daily routine:
  
  - b. changes in coping skills and strategies:
  
  - c. changes in support system and/or living situation:
  
  - d. changes in terms of medications and outpatient professional follow-up:
  
  - e. Other:
  
11. List those things that **others** can do to assist you in the event that you become unwell again in the future.

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<sup>1</sup> Personal conversation with J. Warren Willey, D.O.

<sup>2</sup> Dictionary.com

<sup>3</sup> Elisabeth Sifton's book *The Serenity Prayer* (2003) quotes this version as the authentic original.

<sup>4</sup> Alan Stone, Article in *Psychiatric Times*, circa 1997.

<sup>5</sup> Ventura, Green, Shaner & Liberman (1993) Training and quality assurance with the brief psychiatric rating scale: "The drift buster" *International Journal of Methods in Psychiatric Research*.

<sup>6</sup> Greenberger D, Padesky, CA. Mind over Mood: Change how you feel by changing the way you think 1995. Guilford Publications, Inc.

<sup>7</sup> Kessler RC et al. *N Engl J Med*. 2005 Jun 16;352(24):2515-23. Prevalence and treatment of mental disorders, 1990 to 2003.

<sup>8</sup> Kessler RC et al. *Arch Gen Psychiatry* 2005;62:593-602. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication.

<sup>9</sup> Ibid

<sup>10</sup> Mittal D et al. *Psychiatr Serv* 2006 Dec;57(12):1731-7. Impact of comorbid anxiety disorders on health-related quality of life among patients with major depressive disorder.

<sup>11</sup> Campbell DG et al. *J Gen Intern Med* 2007 Jun;22(6):711-8. Prevalence of depression-PTSD comorbidity: implications for clinical practice guidelines and primary care-based interventions.

<sup>12</sup> Conway KP et al. *J Clin Psychiatry* 2006 Feb;67(2):247-57. Lifetime comorbidity of DSM-IV mood and anxiety disorders and specific drug use disorders: results from the National Epidemiologic Survey on Alcohol and Related Conditions.

<sup>13</sup> Jane-Llopis E, Matytsina I. *Drug Alcohol Rev* 2006 Nov;25(6):515-36. Mental health and alcohol, drugs and tobacco: a review of the comorbidity between mental disorders and the use of alcohol, tobacco and illicit drugs.

<sup>14</sup> Grant BF et al. *Arch Gen Psychiatry*. 2004 Nov;61(11):1107-15. Nicotine dependence and psychiatric disorders in the United States: results from the national epidemiologic survey on alcohol and related conditions.

<sup>15</sup> Kessler RC et al. *Arch Gen Psychiatry* 1994; 51:8-19. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey.

<sup>16</sup> Compton WM et al. *J Clin Psychiatry* 2005 Jun;66(6):677-85. Prevalence, correlates, and comorbidity of DSM-IV antisocial personality syndromes and alcohol and specific drug use disorders in the United States: results from the national epidemiologic survey on alcohol and related conditions.

<sup>17</sup> Schäfer I, Najavits LM. *Curr Opin Psychiatry*. 2007 Nov;20(6):614-8. Clinical challenges in the treatment of patients with posttraumatic stress disorder and substance abuse.

<sup>18</sup> Koob GF et al. *Neurosci Biobehav Rev* 2004; 27:739-749. Neurobiological mechanisms in the transition from drug use to drug dependence.

<sup>19</sup> American Psychiatric Publishing, Inc. DSM-IV-TR 2000.

- 
- <sup>20</sup> Hasin DS et al. *Arch Gen Psychiatry* 2007; 64:830-842. Prevalence, correlates, disability, and comorbidity of DSM-IV alcohol abuse and dependence in the United States: results from the National Epidemiologic Survey on Alcohol and Related Conditions.
- <sup>21</sup> Kaplan HI, Sadock BJ. Kaplan and Sadock's Synopsis of Psychiatry. Lippincott Williams & Wilkins 2007.
- <sup>22</sup> Andreasen NA. Brave New Brain. Oxford University Press 2007.
- <sup>23</sup> Gurling HM et al. *Arch Gen Psychiatry* 2006; 63:844-854. Genetic association and brain morphology studies and the chromosome 8p22 pericentriolar material 1 (PCM1) gene in susceptibility to schizophrenia.
- <sup>24</sup> Sapolsky RA. Why Zebras Don't Get Ulcers. 2004. Henry Holt and Company, LLC.
- <sup>25</sup> Charney DS. *Am J Psychiatry* 2004 Feb;161(2):195-216. Psychobiological mechanisms of resilience and vulnerability: implications for successful adaptation to extreme stress.
- <sup>26</sup> LeDoux JE. Synaptic Self. 2002. Penguin.
- <sup>27</sup> Bradley RG et al. Arch Gen Psychiatry. 2008 Feb;65(2):190-200. Influence of child abuse on adult depression: moderation by the corticotropin-releasing hormone receptor gene.
- <sup>28</sup> Kato T et al. Comprehensive gene expression analysis in bipolar disorder. Can J Psychiatry. 2007 Dec;52(12):763-71.
- <sup>29</sup> Renthall W et al. Neuron. 2007 Nov 8;56(3):517-29. Histone deacetylase 5 epigenetically controls behavioral adaptations to chronic emotional stimuli.
- <sup>30</sup> Shelton, RC. Psychiatr Clin North Am. 2007 March; 30(1): 1-11. The Molecular Neurobiology of Depression.
- <sup>31</sup> Chwastiak LA, Ehde DM. Psychiatr Clin North Am. 2007 Dec;30(4):803-17. Psychiatric issues in multiple sclerosis.
- <sup>32</sup> **Maveux R et al. N Engl J Med. 1998 Feb 19;338(8):506-11. Utility of the apolipoprotein E genotype in the diagnosis of Alzheimer's disease.**
- <sup>33</sup> Locke PA et al. *Genet Epidemiol* 1995; 12:83-92. Apolipoprotein E4 allele and Alzheimer disease: examination of allelic association and effect on age at onset in both early- and late-onset cases.
- <sup>34</sup> Tohen M et al. *Harvard Rev Psychiatry* 2000; 8:111-125. Psychiatric epidemiology.
- <sup>35</sup> Nuyen J et al. J Clin Epidemiol. 2006 Dec;59(12):1274-84. Comorbidity was associated with neurologic and psychiatric diseases: a general practice-based controlled study.
- <sup>36</sup> Hall MH et al. Psychol Med. 2007 May;37(5):667-78. Genetic overlap between bipolar illness and event-related potentials.
- <sup>37</sup> Tharwani HM et al. Curr Psychiatry Rep. 2007 Jun;9(3):225-31. Recent advances in poststroke depression.
- <sup>38</sup> Frasure-Smith N, Lespérance F. Arch Gen Psychiatry. 2008 Jan;65(1):62-71. Depression and anxiety as predictors of 2-year cardiac events in patients with stable coronary artery disease.
- <sup>39</sup> Twillman RK. J Pain Palliat Care Pharmacother. 2007;21(4):13-9. Mental disorders in chronic pain patients.

- 
- <sup>40</sup> Frediani F, Villani V. [Neurol Sci](#). 2007 May;28 Suppl 2:S161-5. Migraine and depression.
- <sup>41</sup> Kyle UG, Pichard C. [Curr Opin Clin Nutr Metab Care](#). 2006 Jul;9(4):388-94. The Dutch Famine of 1944-1945: a pathophysiological model of long-term consequences of wasting disease.
- <sup>42</sup> Wakschlag et al, 2006, Journ AACAP
- <sup>43</sup> Williams GM et al. [Pediatrics](#). 1998 Jul;102(1):e11. Maternal cigarette smoking and child psychiatric morbidity: a longitudinal study.
- <sup>44</sup> Estelles J et al. [Behav Pharmacol](#). 2006 Sep;17(5-6):509-15. Gestational exposure to cocaine alters cocaine reward.
- <sup>45</sup> Fryer SL et al. [Pediatrics](#). 2007 Mar;119(3):e733-41. Evaluation of psychopathological conditions in children with heavy prenatal alcohol exposure.
- <sup>46</sup> Alati R et al. [Am J Epidemiol](#). 2005 Dec 1;162(11):1098-107. Early predictors of adult drinking: a birth cohort study.
- <sup>47</sup> Benjamin LS, Rothweiler JC, Critchfield KL. [Annu Rev Clin Psychol](#). 2006;2:83-109. The use of structural analysis of social behavior (SASB) as an assessment tool.
- <sup>48</sup> Massie H, Szajnberg N. [Int J Psychoanal](#). 2002 Feb;83(Pt 1):35-55. The relationship between mothering in infancy, childhood experience and adult mental health: results of the Brody prospective longitudinal study from birth to age 30.
- <sup>49</sup> Bradley RG et al. [Arch Gen Psychiatry](#). 2008 Feb;65(2):190-200 Influence of child abuse on adult depression: moderation by the corticotropin-releasing hormone receptor gene.
- <sup>50</sup> Garbarino, J. [Raising Children in a Socially Toxic Environment](#) 1995. Jossey-Bass, Inc.
- <sup>51</sup> Anda RF et al. [Eur Arch Psychiatry Clin Neurosci](#). 2006 Apr;256(3):174-86. The enduring effects of abuse and related adverse experiences in childhood. A convergence of evidence from neurobiology and epidemiology.
- <sup>52</sup> Ayalon L, Alvidrez J. [Issues Ment Health Nurs](#). 2007 Dec;28(12):1323-40. The experience of Black consumers in the mental health system--identifying barriers to and facilitators of mental health treatment using the consumers' perspective.
- <sup>53</sup> Koenig HG. [J Nerv Ment Dis](#). 2007 May;195(5):389-95. Religion and remission of depression in medical inpatients with heart failure/pulmonary disease.
- <sup>54</sup> Koenig HG, George LK, Peterson BL. [Am J Psychiatry](#). 1998 Apr;155(4):536-42. Religiosity and remission of depression in medically ill older patients.
- <sup>55</sup> Rodriguez MA et al. [Ann Fam Med](#). 2008 Jan-Feb;6(1):44-52. Intimate partner violence, depression, and PTSD among pregnant Latina women.
- <sup>56</sup> Hauff E, Vaglum P. [Acta Psychiatr Scand](#). 1993 Sep;88(3):162-8. Vietnamese boat refugees: the influence of war and flight traumatization on mental health on arrival in the country of resettlement. A community cohort study of Vietnamese refugees in Norway.
- <sup>57</sup> Lavik NJ, Hauff E, Skrondal A, Solberg O. [Br J Psychiatry](#). 1996 Dec;169(6):726-32. Mental disorder among refugees and the impact of persecution and exile: some findings from an out-patient population.
- <sup>58</sup> Gessner BD. [Suicide Life Threat Behav](#) 1997; 27:264-273. Temporal trends and geographic patterns of teen suicide in Alaska, 1979-1993.
- <sup>59</sup> Riala K et al. [Eur Psychiatry](#). 2007 May;22(4):219-22. Epub 2006 Nov 28. Heavy

---

daily smoking among under 18-year-old psychiatric inpatients is associated with increased risk for suicide attempts.

<sup>60</sup> Breslau N et al. [Arch Gen Psychiatry](#). 2005 Mar;62(3):328-34. Smoking and the risk of suicidal behavior: a prospective study of a community sample.

<sup>61</sup> Hertling I et al. [Eur Psychiatry](#). 2005 Aug;20(5-6):442-50. Craving and other characteristics of the comorbidity of alcohol and nicotine dependence.

<sup>62</sup> Isensee B et al. [Arch Gen Psychiatry](#). 2003 Jul;60(7):692-700. Smoking increases the risk of panic: findings from a prospective community study.

<sup>63</sup> Swahn MH, Bossarte RM, Sullivent EE 3rd. [Pediatrics](#). 2008 Feb;121(2):297-305.

Age of alcohol use initiation, suicidal behavior, and peer and dating violence victimization and perpetration among high-risk, seventh-grade adolescents.

<sup>64</sup> Semple DM, McIntosh AM, Lawrie SM. [J Psychopharmacol](#). 2005 Mar;19(2):187-94.

Cannabis as a risk factor for psychosis: systematic review.

<sup>65</sup> Lundqvist T. [Pharmacol Biochem Behav](#). 2005 Jun;81(2):319-30. Cognitive consequences of cannabis use: comparison with abuse of stimulants and heroin with regard to attention, memory and executive functions.

<sup>66</sup> McKetin R, McLaren J, Lubman DI, Hides L.

[Addiction](#). 2006 Oct;101(10):1473-8. The prevalence of psychotic symptoms among methamphetamine users.

<sup>67</sup> Kalechstein AD, Newton TF, Green M. [J Neuropsychiatry Clin Neurosci](#). 2003

Spring;15(2):215-20. Methamphetamine dependence is associated with neurocognitive impairment in the initial phases of abstinence.

<sup>68</sup> Goodwin RD, Gotlib IH. [Psychiatry Res](#). 2004 Apr 30;126(2):135-42. Gender differences in depression: the role of personality factors.

<sup>69</sup> Cox BJ et al. [Compr Psychiatry](#). 2004 Jul-Aug;45(4):246-53. Broad and specific personality dimensions associated with major depression in a nationally representative sample.

<sup>70</sup> Simeon D et al. [Psychoneuroendocrinology](#). 2007 Sep-Nov;32(8-10):1149-52. Factors associated with resilience in healthy adults.

<sup>71</sup> Hirshfeld-Becker DR et al. [Biol Psychiatry](#). 2003 Jun 1;53(11):985-99. Behavioral inhibition and disinhibition as hypothesized precursors to psychopathology: implications for pediatric bipolar disorder.

<sup>72</sup> Biederman J et al. [Am J Psychiatry](#). 2001 Oct;158(10):1673-9. Further evidence of association between behavioral inhibition and social anxiety in children.

<sup>73</sup> Luo X et al. [Biol Psychiatry](#). 2007 Mar 1;61(5):599-608. Personality traits of agreeableness and extraversion are associated with ADH4 variation.

<sup>74</sup> Hill SY et al. [Biol Psychiatry](#). 2000 Aug 15;48(4):265-75. Factors predicting the onset of adolescent drinking in families at high risk for developing alcoholism.

<sup>75</sup> Bailey CH, Bartsch D, Kandel ER. [Proc Natl Acad Sci U S A](#). 1996 Nov

26;93(24):13445-52. Toward a molecular definition of long-term memory storage.