

## **Bruxism: Grinding Teeth**

Feeling good about yourself now, release all feelings of guilt or aggression.

Things don't bother you like they did in the past. Things that used to upset you or make you nervous, hurt your feelings, embarrass you, or make you angry no longer have such a profound effect on you. You can now see them more clearly for what they are and not allow them to upset you.

Anytime you clench or grind your teeth you become aware on a conscious or subconscious level of what you are doing. As the awareness occurs you automatically relax every muscle in your body.

Clenching or grinding your teeth is an aggressive or nervous outlet. Instead of grinding your teeth, you now can take a deep breath and completely release the tension.

You no longer grind your teeth as an outlet, that is a thing of the past ... just let it go like a thought that is not important to you.

Now take a deep breath and notice how relaxed you become when you exhale. You are relaxed and in control. You will remain calm relaxed and in control.

## **Migraine Headaches**

(Make sure you are not dealing with tumor, poor eyesight, tooth decay, infectious disease, high blood pressure, head injury, etc.)

Relax and shape and form the headache and throw it away. As you relax you do not need the headache. Anytime you feel a headache coming on, you release it. Place the tips of your fingers on the back of your neck and apply a very gentle pressure and the tension goes away.

Whenever the muscles start to tighten or you start to squint your eyes, you become aware of it immediately and relaxation begins immediately.

If you have pressure behind the eyes, very gently use your fingertips to brush your eyelids with an outward motion and the pressure will subside.

A deep breath will relax the muscles and the headache cannot materialize.

(Deepen by having the client go down a staircase.)

At the bottom of your staircase design a release valve for the escape of the tension or nervousness. Anytime you are in a situation that tension is building, see yourself at the bottom of your stairs and pull the release valve. Do not let the tension build

# **Fibromyalgia and Pain Management Techniques**

**by Darlene Cheek,**

While researching Fibromyalgia, I learned a lot of different things about pain. I have the usual "over 30" daily aches and pains, and my husband is just reaching that point; but how do you recognize that this is something that isn't just going to go away? Some of the Fibromyalgia patients remember "growing pains" as a child where they laid in bed at night with a heating pad and cried. There's a good possibility that their fibro symptoms had started that early (this does not mean that everyone with growing pains has Fibromyalgia).

Some of the patients started feeling the constant pain with the onset of a trauma, such as a car accident... or even emotional trauma, such as divorce or childhood abuse. With some, it just started one day, and two weeks later was so bad they had to go to the doctor. Also, with Fibromyalgia, there are some days better than others... and some days with "flares" that are so bad the patient can't stand for a sheet to touch their body. So, once you realize that you have something wrong with you that is going to cause you pain... what do you do?

I'd like to share with you some of the things the Fibromyalgia patients I've spoken with have shared with me. Then I'd like to add to the script in last week's article and help you with a hypnotherapy method for pain management. At the end of the article, I will give you a short hypnosis technique that you can do in five minutes. Try these different approaches as "YOU" feel like doing them. Just because something works for someone else, doesn't mean it's perfect for you. If you have any questions, especially with exercises, please ask your physician.

Some of the patients do gentle stretching exercises to keep their muscles and joints more limber and toned. This is an excellent idea and doesn't take more than a few minutes. Another great suggestion was water aerobics or low impact aerobics in the senior's class because they understand pain more and go at a slower pace. Again, do what you are able to do... no more. Some of the fibro patients use Yoga. Yoga doesn't have to be a head-stand routine where you have to balance for an hour. The benefits of yoga go beyond exercise into the areas of meditation, relaxation and focus.

Another friend receives Acupuncture. Along the same lines of eastern healing methods, I highly recommend Reiki, a Japanese method of energy healing that treats the body, mind and spirit. One especially great thing about Reiki is that anyone can be attuned by a Reiki Master, and you can treat your physical symptoms yourself at Level I. Also suggested, was Massage Therapy.

## **Pain Management Script:**

(One note: In hypnotherapy, we do not use the word "pain" while hypnotized... pain hurts... we use "discomfort"... it puts the mind on a more susceptible level, not thinking about "pain.") (begin) Just imagine yourself in your magical place of relaxation... you hear water

gurgling in the background and look to see where it is coming from... you notice a beautiful waterfall pouring into a mirror clear pool... there is a large, soft float near the edge... just go over now and lie down on the float and drift into the pond... there is no reason to feel any fear of water here... this is just our imagination at work... you are completely safe... and relaxed... just like a beautiful dream...

You begin to feel something enchanting about this place... you realize that this water has healing powers... it is warm... and calming... healing... allow the water to wash away any discomfort that is left in your body... and it floats away... gently cleansing... renewing... you can feel the healing energy flowing through every cell of your body... allow it to work... allow the water to take away everything negative in your mind, body and spirit...

The discomfort slips away like a distant memory... when you return, your discomfort will be under your control... all you have to do is take a deep breath, close your eyes, and remember this place and the feeling that you have at this moment... your mind has the power, and your thoughts are the greatest of all healers... (end)

At this point, you may drift on to sleep by finishing the script for sleep therapy, or allow yourself to wake up simply saying to yourself "and when I awake, I will feel refreshed and have more energy than I've had in a very, very long time"... count to five and open your eyes.

Once you practice this and come to a point where you can ease the discomfort without completing the entire script, I use a technique where I visualize a sliding scale. On this scale, there are numbers from 1-12 and a red arrow that slides up and down. See the number where your discomfort is presently, and imagine it sliding down the further your "discomfort" subsides... then imagine yourself with a hammer and nail (or whatever you want) and nail the red arrow into place at the lower number. Most of my pain management clients can be into hypnosis in five minutes and have that arrow nailed down to at least 1 or 2. Remember the three most important words in self-hypnosis... practice, practice, practice.

You can add any visualization or positive suggestions to these scripts that you like. Be creative, and use your imagination. If you prefer a beautiful green valley to lie down in, imagine yourself there and allow the earth to soak away the pain... imagine the sun's rays healing your body. Sometimes I stand on top of a mountain and allow the wind to whisk the discomfort away on the breeze. Use whatever works for you, and enjoy many more pain-free days of life.

## **Pain Control**

Pain is a warning device from your body. You do not need to be warned about your (specific pain problem) any more. You know the problem is there and you are correcting it.

If you need to know about a change, if you need to be warned, you will feel a tingling in the area instead. You will then see that any new problem is taken care of.

You no longer feel any pain connected with (specific pain problem) but this in no way alters your warning pain signals for any other reason.

I want you now to concentrate a healing light in the area where you desire the pain to go away and stay away. Set up rapid and instantaneous healing with the healing light. Feel all tension leaving the area. All pain is completely gone from the area. Feeling soothed, relaxed and painless. As though the entire area has been anesthetized without taking away any motor response what-so-ever. You have complete muscle and motor response but the area has no pain.

Do no call back the pain. You do not need it. You do not want it. It no longer belongs to you.

## **Anxiety control**

You are going to now learn the art of controlling anxiety. As a result of this session you will no longer suffer from anxiety and you will be in control at all times. You will feel happy and so confident that you are now in control.

What I would like you to do right now is to use your imagination ... I want you to imagine a scene in your mind ... to visualize yourself at a wonderful place ... a place where there is no anxiety whatsoever ... It could be some place that you have been before, or if you cannot think of an anxiety free place you may go ahead and create one in your mind ... it can be a fantasy place, or a real place ... just visualize it and imagine it ... Maybe you can see it clearly in your mind ... and maybe you can't ... if you can't imagine it ... just think about it and the same purpose is being served ... You can even surround yourself with things and activities that you find extremely enjoyable, without any stress at all. Take a few moments and create this scene in your mind ..... and as soon as you have this scene in your mind, nod your head for me ... so that I know you have it... (wait until they nod their head before continuing.) Now in just a few words ... describe, or tell me what the scene is that you are imagining right now... (Wait for their response. If no response, asked them again) Good ... now visualize that place and see it very clear in your mind. It's a wonderful place isn't it.

Now while you are in your comfortable place right now I would like you to take a deep breath and as you exhale allow yourself to feel twice as comfortable and wonderful as you do right now ... and take your second deep breath ... and as you exhale allow yourself to relax even more ... and on the third deep breath, as you exhale, allow yourself to feel wonderful ... realizing that you are in a place where nothing affects you, where there is no anxiety, where you are completely safe ... Now commit this place to memory ... every detail ... because in the future, any time you find yourself confronted by what used to be an anxiety provoking situation, or any kind of stress whatsoever, all you need to do is take your three deep breaths and allow yourself to remember ... and come back to this wonderful anxiety free, stress free place, that you have created for yourself.

Let's go ahead and try it right now to insure you understand the concept. Right now, I would like you to think of something or a situation that may have caused you a small amount

of anxiety in the past ... and as soon as you feel a little bit of anxiety, nod your head for me so I will know ... (wait for the response, repeat if necessary)

Take a deep breath and just let the negativity flow away ... take your second deep breath and allow yourself to feel wonderful, coming back to your special place ... and take your third deep breath, and allow yourself to relax completely ... You are now anxiety free ... It feels great doesn't it.

## **childbirth**

See yourself completely relaxed, breathing easily. You are about to give birth to your child.

You feel no pain what-so-ever because the pain in childbirth comes from fear, tension and anxiety. You do not now nor will you ever experience any fear, tension or anxiety about childbirth, therefore you will not experience any pain during, before or after the birth of your child.

As the baby enters the birth canal you enter a beautiful state of consciousness completely disassociated with the pain of childbirth. In the beautiful "I am" stage you remove your consciousness from the body and look back on your body as it gives birth, thoroughly enjoying the experience. If you prefer, you can enter the "I am" stage and go anywhere and anytime you would like to be.

You leave enough awareness within you body so it responds to the demands and commands of the doctor during the labor and birthing.

As soon as the baby is born you then re-associate with the body and enjoy your child not having experienced any pain or discomfort.

You can enjoy every moment of the birth seeing the beauty and perfection of the birth experience and of your child. You experience total and complete love untainted by fear or pain. You have only positive thoughts and emotions concerning you child. If you choose to re-associate with the body during the birth process, you will feel no pain, just joy.

# TECHNIQUES

## Building a Pain Control Dial

By: Adam Sargant

*This hypnosis script assumes that the subject is already in a state of induced trance. It is intended for generic use in allowing the subject to realize greater control in managing specific, chronic pain. The script uses phonetic and syntactic ambiguity to create a mild confusional state, so will not read as a grammatically correct piece of prose.*

In a profound state of relaxation, you can notice what you notice as you relax, still, further. And, relaxing, still further, you can notice how you can perceive yourself in all sorts of new and exciting ways. You can wonder, for example, what it might be like to see your self as only you can see your outer and inner self. I don't know just how you might make an inner sense of all this, but I do know that you clearly know ways of making that inner sense right now, so as you can clearly see yourself, all the inner experiences are clearly seen too. Allow your attention to wander to that area that has been experiencing the pain, you may give yourself the opportunity simply to notice just how you see that sense of pain, while you remember that pain is just a signal from the body to yourself telling you to be aware. This pain is neither good nor bad, but an important message you give yourself. And just as a message over a radio can be turned up and down while retaining its importance, so too you can learn new ways to attend to the signals your body sends you.

So, as you continue to relax still further, and continue to breathe in and out automatically, just notice how you relax further each time you breathe out that which you no longer need, and how you breathe in only that which is useful to you. And just as there is one you, in your mind you can create in image of this you as you too, one imagined and one imagining a picture of yourself. And I don't know just how you see those areas of pain, but as you do, in a minute just imagine that they change in whatever way is needed to make them less intrusive. Just as with a radio dial, you can move the dial down from 5 to 4 and the sound gets just a little bit quieter and the sensation becomes just a little less intrusive as the way you picture these areas of pain changes, maybe in intensity, or brightness or colour. And as you move the dial from 4 to 3, the image changes so that as the numbers go down, the area simply becomes number still. As the dial moves from 3 to 2, and everything gets quieter, those sensations can become less and less intrusive, moving further into the background. And as you turn the dial from 2, to 1, just notice how your two you self can become clearer and moves more to the fore as those unwanted sensations move further back still. And you can ask yourself, what would happen if I move the dial all the way down to zero?

*Pause*

And this dial is one that can go with you, so that any time you need it, you can simply count down from 5, to 1, breathing in only that which is useful and breathing out all that you no longer need. With each number, the sensation simply becomes number for only as long as is useful to you at that time.

*(at this stage the hypnotist can let the subject rest for a while, before bringing them out of trance with suggestions to reinforce the work already done).*

## **Creating Numbness-Glove Anesthesia**

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Begin with your favorite induction and deepener.

In hypnosis you can give yourself suggestions - and for the purpose that you require. I'm going to show you a way that you can give blood for your tests and still feel calm and relaxed - your arm can feel light and comfortable - maybe it will feel as though it doesn't even belong to you - and even though you will be aware of certain sensations there 0 these sensations will not bother or disturb you. It will be just as though they are happening to someone else.

Focus your attention now upon your right hand - notice how your right hand feels slightly different from your left hand - be aware of the tiny ripples of air gently caressing the skin of the right hand - and I wonder - can you create a certain feeling of coolness in the right hand - and a feeling of coolness will allow you to drift even deeper into hypnosis - into that calm, relaxing feeling.

This coolness can change - to a feeling of numbness - you don't have to do anything at all - it happens all by itself - we've all experienced the sensation of numbness in certain parts of our body - and I wonder if you can remember that feeling - maybe the numbing of gums at the dentist after the injection of cocaine or perhaps sometime you have lain on a part of your body and it has felt so cold and so numb - the feeling that a certain part of you has gone to sleep.

You can remember that numb feeling now as it spreads from your hand and into the arm - cold and numb - cold and numb - and go deeper and deeper relaxed.

Focus now on that feeling of coldness and numbness - allow it to grow stronger - colder - even more number - like the feeling that ice can create when you touch it - cold and numb - cold and numb - and take a deep breath.

Cold and numb are your key words for post hypnotic conditioned response. When you are in hypnosis you can repeat those words - cold and numb - and your right hand and arm will become cold and numb - cold and numb - and you can go into hypnosis easily and effortlessly - by telling yourself - I am going into

hypnosis now - taking three deep breaths - and taking yourself deeper and deeper - the way that works best for you.

While your doctor or nurse takes blood from your arm - it will remain cold and numb - cold and numb and you will remain calm and relaxed the whole of the time - even though you are aware that blood is being taken from the arm - it will remain - comfortably cold and numb.

Cold and numb are your key words - by practicing this technique every day - it will become a conditioned response - and you will find yourself able to create those sensations of cold and numb - easily - effortlessly - instantly.

Now you that that in the event of an emergency situation - or it at anytime during your self hypnosis you should need to bring yourself to full awakening consciousness - you can do so easily - effortlessly - merely by counting the numbers from one to five - and at the count of five you will be wide awake, refreshed and relaxed.

Good - now when you're ready - I'm going to count from one to five and at the count of five you'll be wide awake.

One, two, three, four, five.



## **Changing Negative Thoughts About Yourself to Positive Ones**

You may be giving yourself negative messages about yourself. Many people do. These are messages that you learned when you were young. You learned from many different sources including other children, your teachers, family members, caregivers, even from the media, and from prejudice and stigma in our society.

Once you have learned them, you may have repeated these negative messages over and over to yourself, especially when you were not feeling well or when you were having a hard time. You may have come to believe them. You may have even worsened the problem by making up some negative messages or thoughts of your own. These negative thoughts or messages make you feel bad about yourself and lower your self-esteem.

Some examples of common negative messages that people repeat over and over to themselves include: "I am a jerk," "I am a loser," "I never do anything right," "No one would ever like me," "I am a klutz." Most people believe these messages, no matter how untrue or unreal they are. They come up immediately in the right circumstance, for instance if you get a wrong answer you think "I am so stupid." They may include words like *should*, *ought*, or *must*. The messages tend to imagine the worst in everything, especially you, and they are hard to turn off or unlearn.

You may think these thoughts or give yourself these negative messages so often that you are hardly aware of them. Pay attention to them. Carry a small pad with you as you go about your daily routine for several days and jot down negative thoughts about yourself whenever you notice them. Some people say they notice more negative thinking when they are tired, sick, or dealing with a lot of stress. As you become aware of your negative thoughts, you may notice more and more of them.

It helps to take a closer look at your negative thought patterns to check out whether or not they are true. You may want a close friend or counselor to help you with this. When you are in a good mood and when you have a positive attitude about yourself, ask yourself the following questions about each negative thought you have noticed:

- Is this message really true?
- Would a person say this to another person? If not, why am I saying it to myself?
- What do I get out of thinking this thought? If it makes me feel badly about myself, why not stop thinking it?

You could also ask someone else—someone who likes you and who you trust—if you should believe this thought about yourself. Often, just looking at a thought or situation in a new light helps.

The next step in this process is to develop positive statements you can say to yourself to replace these negative thoughts whenever you notice yourself thinking them. You can't think two thoughts at the same time. When you are thinking a positive thought about yourself, you can't be thinking a negative one. In developing these thoughts, use positive words like *happy*, *peaceful*, *loving*, *enthusiastic*, *warm*.

Avoid using negative words such as *worried, frightened, upset, tired, bored, not, never, can't*. Don't make a statement like *"I am not going to worry any more."* Instead say *"I focus on the positive"* or whatever feels right to you. Substitute *"it would be nice if"* for *"should."* Always use the present tense, e.g., *"I am healthy, I am well, I am happy, I have a good job,"* as if the condition already exists. Use *I, me, or your own name*.

You can do this by folding a piece of paper in half the long way to make two columns. In one column write your negative thought and in the other column write a positive thought that contradicts the negative thought as shown on the next page.

You can work on changing your negative thoughts to positive ones by —

- Replacing the negative thought with the positive one every time you realize you are thinking the negative thought.
- repeating your positive thought over and over to yourself, out loud whenever you get a chance and even sharing them with another person if possible.
- writing them over and over.
- making signs that say the positive thought, hanging them in places where you would see them often-like on your refrigerator door or on the mirror in your bathroom-and repeating the thought to yourself several times when you see it.

<b>Negative Thought</b>	<b>Positive Thought</b>
I am not worth anything.	I am a valuable person.
I have never accomplished anything.	I have accomplished many things.
I always make mistakes.	I do many things well.
I am a jerk.	I am a great person.
I don't deserve a good life.	I deserve to be happy and healthy.
I am stupid.	I am smart.

It helps to reinforce the positive thought if you repeat it over and over to yourself when you are deeply relaxed, like when you are doing a deep-breathing or relaxation exercise, or when you are just falling asleep or waking up.

Changing the negative thoughts you have about yourself to positive ones takes time and persistence. If you use the following techniques consistently for four to six weeks, you will notice that you don't think these negative thoughts about yourself as much. If they recur at some other time, you can repeat these activities. Don't give up. You deserve to think good thoughts about yourself.

# **3 Ways To Cure Negative Thoughts Fast**

Do you ever find yourself getting stuck in negative thought patterns and expecting the worst possible outcome in every situation? It's a far too common mind-set that can be near impossible to change, even when you've finally decide you've had enough. Much like weeds, negative thoughts tend to multiply on their own, even when you're not consciously trying to think negatively. The good news is turning a negative outlook into a positive one requires just a little patience and persistence.

Here's three simple steps to begin forming positive expectations on a daily basis:

## **1) Develop self-awareness to recognize negative expectations.**

One problem with negative thoughts is that they often form below your conscious level of awareness, and you get so used to them being in your head that you hardly notice anymore. To turn from negative to positive, you'll have to develop a stronger level of self-awareness. One good way to start is by performing self-checks several times a day. Pay attention first to how you feel. If you're feeling positive and productive, most likely you've been thinking positive thoughts. However, if you notice that you are feeling stressed, pessimistic or irritable, you're probably focusing more on negative thoughts. When that happens:

## **2) Challenge and change the negative thoughts.**

Believe it or not, it's fairly easy to challenge and change negative thoughts with a little willpower and concentration. For example, if you find yourself feeling doubtful about your ability to finish your work on time, you might engage in a bit of self-talk like this: "Okay, so I'm feeling a bit worried right now, but really everything is okay. I'm strong, I'm smart and I'm capable of finishing my work on time. I'll do my best and everything will work out fine." Even though nothing has changed in your outer circumstances, this type of self-talk can get you thinking and feeling more positive.

## **3) Work on developing positive expectation.**

At the same time, while you're changing negative thoughts to positive, work daily on developing a general positive expectation habit. Each day when you wake up, affirm confidently, "Today is going to be a great day! Everything will go my way and I'll enjoy plenty of lucrative opportunities and fun!"

When you encounter obstacles or problems, see them as opportunities to learn, grow and strengthen yourself. Perception is 99% of the game! If you simply work on shifting the way you look at the experiences of your life, you can easily conquer your negative thought habits.

The more you focus on changing your perspective to emphasize the positive, the more you'll empower yourself to create better circumstances in your life. Before you know it, you'll be enjoying better and more frequent opportunities and attracting other like minded, successful people to connect with.

Thoughts are powerful things; whatever you put your focus on will grow. Imagine that your mind is a garden. You can fill your mind with beautiful flowers or let it become overgrown and out of control with weeds. What is it to be? We can't have two opposing thoughts at the same time! If you want a flourishing garden; out must come the weeds.

Positive thinking leads to a positive attitude. Maintaining a positive attitude is really a decision to be happy, it's your choice. Buddha summarized how to remain happy no matter how bad things may seem when he said, "Let us rise up and be thankful, for if we didn't learn a lot today, at least we learned a little, and if we didn't learn a little, at least we didn't get sick, and if we got sick, at least we didn't die; so, let us be thankful.

Positive thinking is not easy to achieve as we are geared from a young age to think the worst of most situations. Look at the daily news headlines, its all doom and gloom.

Positive thinking is something we can all profit from and we need to be reminded of this often. It might be reading a quote every morning or getting up each morning and saying, "Today I will think positively". Positive thinking is quite literally just that. Replace thinking about the things that could or have gone amiss, with the things that you have executed well or those things that have worked out as you anticipated or better. It will become an actual lifestyle that is the basis for everything that you do.

Positive thinking is like a pair of eyeglasses. Having the right pair can make all the difference. There is a technique called re-framing. I guess it is taking that pair of glasses off and putting on another pair. Re-framing would be choosing to interpret the situation in a positive way which you would previously be looked at in a negative way.

Re-framing is an excellent way to break the negative attention cycle, and it helps prevent you from getting pulled into the negative downward spiral. Once it becomes a habit, the whole world and everyone in it are seen in terms of "what is right" rather than "what is wrong". It is a way of presenting old situations in another frame. It is seeing the glass half full; not half empty.

This requires practice! That right its a practice! This type of thinking is incredibly powerful.

You don't want to live next to an abattoir? It could be worse, it could be an ammunition factory run by psyco's. It's a paradigm shift. It's looking at life and events in life in a new context. It's like looking at a painting - you can choose where to focus your attention and from there base what you will feel. Its a powerful stratagem. It changes our perceptions about the situation, and will therefore effect our actions.

In fact research makes it clear that positive thinking and attitude is more important than any other factor when it comes to ensuring success. Negative emotions may suppress the immune system for up to 6 hours following the negative emotional experience.

Positive thinking should be the mechanism we use to support good outcome in our lives. It will maximize positive emotions and therefore productiveness and therefore a better quality of life.

## Breathing Techniques

When you are anxious, your breathing may be quick and shallow. This does not allow enough oxygen to reach your organs, and it can cause hyperventilation. Proper breathing techniques can alleviate this condition.

Whenever you feel your anxiety begin to build, practice the deep-breathing exercises. Our yoga infocenter describes in detail how to conduct proper deep breathing exercises. Two techniques that are particularly effective for anxiety disorders are alternate nostril breathing and Ujjayi (Victorious Breath.)

### Breathing Exercise for Anxiety

Stand with your feet slightly apart. Let your arms hang at your sides. As you inhale, raise your arms slowly out to the sides, palms up, and over your head. Exhaling, clasp your fingers and turn your palms toward the ceiling or sky. Now inhale again, stretching up and tilting your head slightly back. As you exhale, drop your head down and let your arms slowly return to your sides. Repeat this exercise several times.

This breathing exercise is very useful before an acupuncture session or before doing exercises.

### Breathing with Muscular Action

This exercise comes from Paul Wilson, author of 'Instant Calm'. The exercise is performed while you are lying flat on your back.

1. With your palms and outstretched fingers resting on your lower abdomen, distend your stomach muscles so that the entire lower stomach area protrudes.
2. Suck in your stomach muscles as far as you can. Your chest will rise as a result.

Repeat these steps over and over again until you can perform a rocking motion: lower abdomen, to chest, to lower abdomen, to chest, and so on.

Once you have learned this muscle control, you are ready to regulate your breathing with this muscular action.

Try to make your breathing as smooth and as effortless as possible, with the breath flowing in and out of your lungs in one seemingly endless stream. Try not to hold your breath after inhaling.

Now we will add breathing to synchronize with the learned muscular motion. Do the following breathing exercises slowly with full awareness.

Breathe in through your nostrils as your lower abdomen rises.

Breathe out through your mouth noisily as your abdomen falls.

Breathe in through your nostrils as your abdomen rises.

Breathe out through your mouth -noisily -as your abdomen falls.

Breathe in as your abdomen rises. Now 'force' the oxygen into the extremities of your body such as your hands, feet and skull. Feel it spreading through your bloodstream to these parts.

Breathe out noisily as your abdomen falls.

As you breathe out, feel the tension flood out of your body and into the floor. Feel it flow through your pores; feel it dissolve through the skin of your back at those places where it comes in contact with the floor. Feel your muscles relax as this tension flows out.

According to Wilson, the pattern you are establishing here is the essence of Power Breathing. He recommends that you continue the same muscular action when you are standing. Practice several times a day until you feel comfortable with it. With practice, this exercise will create a familiarity for you with the sensation of breathing powerfully.

"Apart from its health-giving benefits, the beauty of Power Breathing is that it soothes the nerves and quickly induces a state of peace and calm," according to Wilson.

### **The Power Breathing Technique**

1. Take in a deep breath through your nostrils. Do this without exertion, neither raising your shoulders nor puffing out your chest.
2. Hold it for a second. 'Force' the oxygen into the extremities of your body such as your hands, feet and skull.
3. Slowly breathe out, noisily, through your lips.
4. Repeat a few times -smoothing out the inhalation and exhalation so that there is one apparently seamless inflow and outflow of air.
5. As you breathe out, feel the tension melting from your body into the floor. As the breathing becomes more automatic, concentrate on that tension passing from your body, through the soles of your feet (if you're standing), or through the skin of your back (if you're reclining) into the floor.

Breathing techniques will not cure anxiety, but they can help you to relax so that you can then utilize other treatments effectively.

## **GLOSSARY OF COMMON MEDICAL TERMS**

ABASIA - Lack of motor or muscular coordination in walking.

ABATEMENT - A decrease in the severity or intensity of a symptom.

ABLATION - Surgical removal of a part of the body, such as amputation of a limb.

ACAMPSIA - Inability to bend or extend a joint.

ACANTHESHSIA - A feeling of "pins and needles."

ACROAGNOSIS - Lack of sensation in an arm or leg.

ACRONESTHESIA - Loss of sensation in one or more limbs.

ACROCYANOSIS - Blueness of the hands and feet caused by a disturbance in the blood vessels and their ability to contract and expand.

ACROEDEMA - Swelling of the arms and feet.

ACROHYPERHYDROSIS - Excessive sweating of the hands and feet.

ACROTIC PULSE - A very weak pulse.

ACTINOCYMOGRAPHY - X-raying an organ while it is in motion.

ACUPUNCTURE - Needling of deep structures in order to relieve pain.

ACUTE - Rapid; short, sudden, severe. Not Chronic.

ADRENERGIC - Referring to sympathetic nerve fibers that produce an adrenalin-like substance.

ADRENERGIC BLOCKING AGENT - A substance that blocks responses to sympathetic nerve activities.

A FEBRILE - Without fever, usually referring to a patient who's temperature is normal.

AGLUTITION - Difficulty in swallowing.

AGONY - Extreme pain. AKINESTHESIA - Loss of sense of movement, as in a muscle.

ALGESIC - Painful.

**ALGOLOGY** - The science and study of pain phenomena. An algologist is a student, investigator, or practitioner of algology.

**ALKALOID** - Any one of the digitalis, etc.

**ALLODYNIA** - Extreme pain is produced by any stimuli that would not normally induce pain (such as touch, pressure and warmth).

**AMBULATORY** - Not bedridden, able to walk by oneself.

**AMBULATORY SURGERY** - Surgery performed either in a special ambulatory care unit or doctor's office. Outpatient surgery.

**AMPUTATION** - The surgical removal of a limb or part of a limb.

**AMYOTONIA** - Absence of muscle tone.

**ANALGESIA** - Absence of pain in response to stimulation that would normally be painful.

**ANALGESIC DRUGS** - Pain-relieving medications (anodynes) such as aspirin.

**ANEMIA** - Insufficiency of red blood cells, either of quality or quantity.

**ANESTHESIA** - Loss of sensation, usually produced in order to permit a painless surgical operation.

**ANESTHESIOLOGIST** - A physician who specializes in the administration of anesthesia.

**ANGINA PECTORIS** - Pain in the chest, sometimes radiating to the left arm, caused by a spasm of the coronary artery of the heart.

**ANKYLOSIS SPONDYLITIS** - An inflammatory disease of the spine, causing pain and often leading to painful alterations of the vertebral articulations, as well as stiffness of the spine.

**ANKYLOSIS** - Stiffening or fixation of a joint.

**ANTAGONIST** - A drug which neutralizes the effect of another drug.

**ANODYNE** - Any medication that relieves pain.

**ANTIDEPRESSANT MEDICATIONS** - Those that aid in combating a mentally depressed state.

**ANTI-INFLAMMATORY DRUGS** - Medication which is used to reduce inflammation.

**APNEA** - A temporary stopping of breathing, often occurring during sleep.

**ARRHYTHMIA** - Lack of rhythm, applied especially to irregularities of heart beat.

**ARTHRITIS** - Inflammation of a joint. **ARTHROSCOPY** - A procedure wherein an orthopedist looks into a joint with a specially designed lighted hollow instrument.

**ASYMPTOMATIC** - Without symptoms. Usually referring to someone who previously did have symptoms.

**ATROPHY** - The withering of an organ or tissues which had previously been normally developed due to degeneration of cells.



**AUTONOMIC NERVOUS SYSTEM** - The portion of the nervous system over which there are no voluntary, conscious control, including heart beat, breathing, intestinal movements, sweating, etc. **BETA BLOCKERS** - Drugs that tend to slow the heart rate and the force of heart contractions and lower the blood pressure.

**BIO FEEDBACK**- Giving information to an individual, through visual or auditory means, on the state of some of his physiological responses such as heart rate, etc.)so that the individual can gain some voluntary control over these procedures.

**BONE DEOSSIFICATION** - Demineralization of bone.

**BONE SCAN** - A process used to check for the presence of damage or changes in the bones which enables them to be seen long before they become visible on an ordinary X-ray. Although they can sometimes show the presence of RSD, they do not always successfully detect it.

**BRAWNY EDEMA** - Thickening and dusky discoloration of edematous tissue.

**CARPAL TUNNEL SYNDROME** - Numbness, weakness and pain in the hand, involving especially the index, middle and ring fingers, due to compression of the medial nerve at the wrist.

**CATHETER** - A hollow rubber, plastic, or glass tube for passage into a structure, for the purpose of injecting or removing fluid or blood.

**CAT SCAN** - The simultaneous taking of many x-rays from many angles, thus giving a highly defined set of pictures of an organ or organs. Also called a CT Scan or Computerized axial tomography.

**CAUDA EQUINA** - The "tail" end of the spinal cord composed of the nerves which proceed to the lower part of the trunk and lower extremities.

**CAUSALGIA** - A burning sensation in the palms, soles or digits, thought to be due to irritation or disease in the nerves supplying these areas.

**CENTRAL PAIN** - Pain associated with a lesion of the central nervous system.

**CENTRAL VENOUS CATHETER** - A hollow plastic tube inserted into a vein in the arm or neck, and pushed forward until it reaches the vena cava in the chest. It is often used for giving medication.

**CHIROPRACTOR** - One who treats disease by a system of healing which employs manipulation and specific adjustment of body structures ( such as the spine).

**CHONDRITIS** - Inflammation of cartilage.

**CHRONIC** - Lasting of long duration. Not acute.

**CHRONIC FATIGUE SYNDROME** - An unusual illness, of uncertain cause, that is characterized by unexplained fatigue, weakness, muscle pain, lymph node swelling and malaise.

**CLUSTER HEADACHE** - A chronic headache condition, also called migrainous neuralgia.

**COMPENSATION CASE** - An injury or disease incurred because of the work one performs.

**CONNECTIVE TISSUE DISORDER** - A group of diseases including rheumatoid arthritis, systemic lupus erythematosus, rheumatic fever, scleroderma and other, that are sometimes referred to as rheumatic diseases. They probably do not affect solely connective tissues but the diseases are linked in various ways and have interesting immunological features which suggest that they may be autoimmune in origin.

**CONTRACTURE** - The shortening of a muscle, tendon or other structure so that it can not be straightened or readily flexed and extended. Scar tissue often results in contractures.

**COSTOCHONDRITIS** - Inflammation and pain in the area where the cartilages join the breastbone.

**CROHN'S DISEASE** - An ulcerative condition of the small and large bowel.

**CRYESTHESIA** - Sensitivity to cold.

**CRYMODYNIA** - Pain which comes on in cold or damp weather. Common in those who suffer from arthritis and other pain disorders.

**CUBITAL** - Referring to the forearm or elbow area.

**CYANOTIC** - Bluish color of the skin and mucous membranes, usually due to poor circulation and insufficient oxygen in the bloodstream.

**DEAFFERENTATION PAIN** - Pain due to loss of sensory input into the central nervous system, as occurs with avulsion of the brachial plexus or other types of lesions of peripheral nerves or due to pathology of the central nervous system.

**DENERVATE** - To cut a nerve going to or from an organ or structure. This is sometimes done surgically to relieve pain.

**DEPRESSION** - A mental state of depressed mood characterized by feelings of sadness, despair, discouragement, inability to concentrate, insomnia, and feelings of rejection and guilt.

**DIASTOLIC PRESSURE** - The blood pressure level during the time the heart muscle is relaxed. **DISEASE** -A disturbance in the body or function of an organ or organs.

**DORSAL COLUMN STIMULATOR** - Also called a Spinal Cord Stimulator, it is a specialized device, which stimulates nerves by tiny electrical impulses via small electrical wires placed on the spinal cord.

**DORSUM** - The back of an organ or body part.

**DYSBASIA** - Difficulty in walking.

**DYSESTHESIA** - An unpleasant abnormal sensation, whether spontaneous or evoked.

**DYSTONIA** - Impaired tone, often referring to abnormal muscle tone. **DYSTROPHY** - Abnormal development, progressive changes, and degeneration that may result from defective nutrition of tissue.

**ECHOCARDIOGRAPHY** - A test in which sound waves are directed at the heart. The recordings give important information on the health of the heart muscles and heart function.

**EDEMA**- Excessive accumulation of fluid in the body tissue which causes swelling.

**ELECTROCARDIOGRAPHY** - The recording of the electrical impulses of the heart. Such tracings often give an accurate picture of heart abnormalities and disease. (EKG, ECG)

**ELECTROENCEPHALOGRAPHY** - The recording of brain waves. Such tracings often give an accurate picture of brain disease or injury. (EEG)

**ELECTROMYOGRAPH** - An instrument which records the electrical impulses that pass through a muscle as it contracts and relaxes. (EMG)

**ENDOSCOPE** - An instrument used to look into body cavities and openings, such as a gastro scope used to examine the stomach.

**ERYTHEMA** - A patch of redness of the skin.

**ETIOLOGY** - The study of the cause of a specific disorder or disease.

**EXACERBATION** - Flare-up or relapse of a condition or disease.

**FASCIA** - Connective tissue located in various places throughout the body, such as beneath the skin, in between muscles, around blood vessels or nerves, etc.

**FEBRILE** - Feverish; relating to an elevation in body temperature above 98.6° F.

**FIBROMYALGIA** - Sometimes called fibrositis, this is a common condition that is associated with widespread aching, stiffness and fatigue, and originates in muscles and soft tissues.

**FIBROSIS** - Thickening and scarring of connective tissue which replaces the normal components of a structure.

**FLUOROSCOPY** - X-Raying a part of the body and recording the rays on the fluorescent screen. This is carried out in order to view various organs in motion.

**FUNCTIONAL DISEASE** - One associated with an upset in function rather than a change in structure, such as migraine headaches, mucous colitis, etc.

**GASTROESOPHAGEAL REFLUX DISEASE** - GERD is a digestive disorder that causes acid indigestion or heartburn by the return of acidic stomach juices, or sometimes food, back up into the esophagus.

**GANGLION CYST** - A cyst of the sheath of a tendon, frequently appearing about the wrist.

**GLUCOSE TOLERANCE TEST** - A blood test to determine the presence of diabetes or a tendency towards its development. It is also used to determine the presence of hypoglycemia.

**GOUT** - A type of arthritis or inflammation about a joint caused by excess uric acid in the blood. Attacks occur suddenly and are accompanied by great pain. The big toe is a frequent site.

**HEMATEMESIS**- Vomiting of blood.

**HOLISTIC MEDICINE** - That type which considers the individual as a whole, and places responsibility for maintenance of health upon the individual himself.

**HOMEOPATHY** - A branch of medicine, characterized by the treatment of illness with small doses of drugs that produce, in a healthy person, symptoms like those of the illness being treated .

**HORNER'S SYNDROME** - Drooping of the eyelid, contraction of the pupil, and flushing of the face, seen in persons who have had sympathetic nerve destruction in the neck. Symptoms are often seen temporarily after a stellate ganglion block.

**HYDROSIS** - Excessive perspiration.

**HYPALGESIA** - Decreased sensation to pain.

**HYPERALGESIA** - Extreme sensitivity to pain and lowered threshold to painful stimuli. Hyperalgesia of the skin may be manifested by great pain even on light pinching or touch. Many cases of hyperalgesia have

features of allodynia.

**HYPERASTHESIA** - Over-sensitivity to touch and light pressure.

**HYPERBARIC CHAMBER** - A specially devised room in which the oxygen content is greater than under ordinary atmospheric conditions.

**HYPERESTHESIA** - Excess sensitivity, such as to touch or pinprick.

**HYPERGLYCEMIA** - Excessive sugar in the blood.

**HYPERHYDROSIS** - Excessive sweating.

**HYPERPATHIA** - A painful syndrome, characterized by increased reaction to a stimulus, especially if repetitive. Hyperpathia may occur with hyperesthesia, hyperalgesia, or dysesthesia. Faulty identification and localization of the stimulus, delay, radiating sensation, and after-sensation may occur. The pain is often explosive in character.

**HYPERPIESIS** - High blood pressure; hypertension.

**HYPERPNEA** - Rapid and exceptionally deep breathing.

**HYPERPYREXIA** - High fever.

**HYPERTENSION** - High blood pressure.

**HYPESTHESIA** - Decreased sensitivity, as lessened appreciation of the sense of pain or touch.

**HYPOALGESIA** - Diminished sensitivity to noxious stimulation.

**HYPOESTHESIA** - Diminished sensitivity to stimulation, excluding special senses.

**HYPOGLYCEMIA** - Too little sugar in the blood.

**HYPOREFLEXIA** - Diminished reflexes. **HYPOTENSION** - Low blood pressure.

**HYPOTHENAR** - The fleshy part of the palm of the hand in the region of the ring and little fingers.

**HYPOTONIA** - Lessened muscle tone.

**IDIOPATHIC** - Of unknown cause.

**IMMUNE SYSTEM**- The body mechanism that protects against harmful invaders, including the production of antibodies.

**IMPALPABLE** - Not able to be felt with the hands, such as a tumor.

**INDEPENDENTLY MAINTAINED PAIN** - (IMP) Pain which stops reacting to methods of pain relief. As RSD progresses, more of the pain becomes Independently Maintained which explains why localized pain reduction techniques (i.e. sympathetic blocks, creams etc.) no longer work. Also called Sympathetically Independent Pain.

**INDURATION** - Thickening, such as might be felt around the edges of an inflamed wound.

**INDWELLING CATHETER** - One that is left in place for prolonged periods of time.

**INFLAMMATORY RESPONSE** - Irritation of the involved extremity, which may include localized heat, swelling, redness, pain, and limited movement and occur when tissues are injured by viruses, bacteria, trauma, chemicals, heat, cold or any other harmful stimulus.

**INFLAMMATION** - The reaction of tissues to injury, manifested by pain, heat, swelling, and redness.

**INTRACTABLE** - Incurable; impossible to control.

**INTRATHECAL PUMP** - A method of pain relief which uses a small pump that is surgically placed under the skin of the abdomen to deliver morphine or other medications directly into the intrathecal space (where fluid flows around the spinal cord). The medication is delivered through a small tube called a catheter that is also surgically placed.

**IRRITABLE BOWEL SYNDROME (IBS)** - One in which there are intermittent periods of abdominal cramps and diarrhea.

**ISCHEMIA** - Lack of blood supply to an organ or part due to a spasm or shutting down of the artery which supplies it.

**LANCINATING PAIN** - A shooting, knife-like, sudden, severe pain.

**LIGHTENING PAINS** - Severe, sharp pains caused by nerve irritation.

**LUPUS ERYTHEMATOSUS** - An acute or chronic disease of the skin, evident mostly on the face and hands. The face rash is red, scaly, blotchy and often extends across the nose to the cheeks in a "butterfly" formation.

**LYME DISEASE** - A condition thought to be transmitted through the bite of a tick, characterized by a ring-shaped rash surrounding the bite area, fever, and attacks of pain and stiffness that resembles arthritis.

**MAGNETIC RESONANCE IMAGING (MRI)** - A technique for viewing internal organs and bones; and for creating many of the images formerly revealed only by X-rays. MRI's use no radioactive rays.

**MALAISE** - A feeling of being ill or unwell.

**MELAGIA** - Pain in the arms or legs. **MIGRAINE** - Severe headache often associated with spots before the eyes, nausea and vomiting. The attacks tend to come on suddenly and are recurrent.

**MINIMALLY INVASIVE SURGERY** - Operations performed through an endoscope or laparoscope, utilizing the smallest incisions, some no more than approximately two-thirds of an inch in diameter.

**MULTIPLE SCLEROSIS** - A chronic disease of the nervous system leading to partial paralysis, changes in speech, inability to walk, etc.

**MUSCLE RELAXANTS** - group of drugs that subdue or reduce the intensity of muscle spasms and thus tend to relieve the pain accompanying the spasms.

**MYALGIA** - Pain in muscles, as in lumbago, rheumatism, etc.

**MYELOGRAM** - A diagnostic procedure where a radiopaque contrast dye is injected into the spinal canal. X-rays are then performed which reveal the anatomy of the spinal canal. Can be used to diagnosis disk disease, spinal stenosis and tumors of the spinal canal. MRI and CT scanning have largely displaced the use of this more invasive test.

**MYOCLONUS** -Abnormal muscle twitching.

**MYOFASCIAL PAIN SYNDROME** - Muscular pain in numerous body regions that can be reproduced by pressure on trigger points, localized hardenings in skeletal muscle tissue. Pain is referred to a location distant from the trigger points.

**MYOFASCITIS** - Inflammation of muscle and the fibrous coverings of muscle and surrounding ligaments. Seen as one of the common causes of chronic lower back pain.

**MYOFIBROSIS** - Replacement of muscle tissue by fibrous tissue, often the result of long-standing inflammation of a muscle.

**MYOMALACIA** - Degeneration of muscle.

**MYOSITIS** - Inflammation of muscle.

**MYOTONIA** - Spasm of muscle.

**NATUROPATH** - A non-medical practitioner who tries to cure or treat illness by giving "natural" remedies derived from such things as foods, herbs, water, etc.

**NERVE BLOCK** - The injection of an anesthetic agent into or around a nerve in order to blot out impulses which travel through it and to produce loss of sensation to the area supplied by the nerve.

**NEURALGIA** - Pain along the route of a nerve.

**NEURITIS** - An inflammatory or degenerative condition of a nerve.

**NEUROLOGIST** - A physician who specializes in diseases of the nervous system.

**NEUROPATHIC PAIN** - Any pain syndrome originating in peripheral nerves and nerve roots. The pain is due to neurovascular damage such as diabetic neuropathy or sympathetically maintained pain (SMP).

**NEUROPATHY** - Any disease of nerve tissues.

**NEUROVASCULAR** - A term that pertains to both the neurologic and vascular structures.

**OCCUPATIONAL THERAPY** - Education and retraining for an injured or handicapped person.

**ORTHOPEDIST** - A Physician who specializes in diseases and conditions of the bones, joints muscles, tendon, ligaments, and cartilage.

**OSTEOARTHRITIS** - A form of arthritis associated with bone and cartilage degeneration; seen mostly in aging people.

**OSTEOCHONDRITIS** - Inflammation of a bone and cartilage.

**OSTEODYNIA** - Pain in a bone.

**OSTEOPATHIC PHYSICIAN** - One who uses the ordinary medical diagnostic and treatment measures, plus manipulative procedures which emphasize diseases of the bones.

**OSTEOPOROSIS** - A loss in bony substances producing brittleness and softness of bones; often seen in aging people or those with debility (weakness).

**PAIN** - An unpleasant sensory and emotional experience most often associated with tissue damage.

**PAIN KILLER** - A substance such as a medication or herb) used to relieve pain.

**PAIN THRESHOLD** - The point at which one feels pain. A person with a low pain threshold feels pain sooner than one with a high threshold.

**PAIN TOLERANCE LEVEL** - The greatest level of pain that a subject is prepared to tolerate. Because the pain tolerance level is the subjective experience of the individual, the same considerations limit the clinical value of pain tolerance level as pain threshold.

**PALLIATIVE** - A medication given to relieve, not to cure; or a form of treatment directed toward relief rather than a cure applied when true cure is not possible.

**PALMAR SURFACE** - The palm or grasping side of the hand.

**PARASYMPATHETIC NERVOUS SYSTEM** - The involuntary or autonomic nervous system which supplies nerves to the eyes, glands, heart, lungs, abdominal organs, etc.

**PARESTHESIA** - A burning, tingling sensation often felt in neuritis.

**PAROXYSMAL DYSESTHESIA** - Spontaneous sharp jabs of pain in the affected region that seem to come from nowhere.

**PERIPHERAL NERVE STIMULATION** - Works in a similar way to the Spinal Cord Stimulation, but the lead is placed on the specific nerve that is causing pain rather than near the spinal cord. **PERIPHERY** - The part of the body away from the center. **PILOMOTOR CHANGES** - Changes in the amount of goose bumps due to chilling effect on skin. **PHYSIATRICALS** - Physical medicine, including physical therapy and rehabilitation techniques. Physiatrists specialize in restoring optimal function to people with injuries to the muscles, bones, tissues, and nervous system (such as stroke victims).

**PHYSICAL THERAPY** - Treatments with manipulation, exercises, message, heat, cold, stimulators, etc. used to assist recovery and movement of limb after injury or surgery.

**POLYARTHRITIS** - Inflammation of several joints.

**POLYMYOSITIS** - Inflammation of several groups of muscles.

**POST-TRAUMATIC SYNDROME** - Multiple symptoms including headache, dizziness, weakness, blurred vision, muscle aches and pains, occurring and persisting after an injury has apparently healed.

**PSYCHIATRIST** - A physician who specializes in disorders of the mind.

**PSYCHOLOGIST** - A specialist, not necessarily a physician, who studies the function of the mind.

**RADICULAR** - Referring to the nerves originating in the spine.

**RADICULITIS**- Inflammation of the root of a nerve, particularly of a nerve going to the spinal cord. It is accompanied by excruciating pain along the course of the nerve.

**RADICULOPATHY** - Disease of the spinal nerves.

**RADIOLOGIST** - A physician who specializes in the use of X-rays and radioactive substances, both for diagnostic and for treatment purposes.

**RAYNAUD'S DISEASE** - A disease in which there is chronic constriction and spasm of the blood vessels and digital arteries in the fingers, toes, tip of nose, etc. causing pallor (blanching). It can occasionally lead to gangrene of the affected area.

**REBOUND REACTION** - A flare-up of symptoms when medication is abruptly terminated.

**REFERRED PAIN** - Pain which is felt some distance from the site of its origin.

**REFLEX** - An uncontrollable (involuntary) response to a particular stimulation.

**REFLUX**- Flowing in a backward direction, as the flowing of the intestinal contents back to the stomach.

**REMISSION** - A clearing up of a disease or its symptoms.

**RESPIRATORY RATE** - The number of breaths per minute. The normal adult inhales approximately twenty times per minute.

**RHEUMATOLOGIST** - A specialist in diseases involving the joints, particularly arthritic conditions.

**RHIZOTOMY** - Surgery to cut the roots of spinal nerves, carried out to relieve incurable pain.

**ROMBERG**- Inability to keep one's balance when standing with eyes closed.

**SALICYLATE DRUGS** - Medications particularly useful in relieving pains in muscles and joints.

**SCIATICA** - A condition in which there is severe pain in the lower back and down the back of the thigh and leg along the route traveled by the sciatic nerve. It is associated with an inflammation of the sciatic nerve and may lead to numbness, tingling, and wasting of the muscles supplied by the sciatic nerve.

**SCLEROSING TENOSYNOVITIS** - An inflammation and overgrowth of a tendon sheath causing intense pain, most often seen in the wrist near the base of the thumb.

**SEROTONIN** - A chemical found in the blood which causes blood vessels to constrict and contract.

**SHORT TERM MEMORY** - The ability to remember recent events.

**SHOULDER-HAND SYNDROME** - Pain, stiffness and numbness, leading to shrinking of the muscles; all in the shoulder, arm and hand. Thought to be brought on by the lack of proper function of the nerves supplying this area of the body.

**SPASM** - An abrupt and forceful contraction of a muscle usually associated with marked pain or discomfort.

**SPINAL CORD STIMULATION** - (SCS) A method of pain relief which uses a small neurostimulation system that is surgically placed under the skin to send mild electrical impulses to the spinal cord. The electrical impulses are delivered through a lead (a special medical wire) that is also surgically placed. These electrical impulses block the signal of pain from reaching the brain.

**STIMULUS** - Something which stimulates (arouses action) in the muscles, nerves or other excitable tissue and results in a specific reaction.

**SUBCUTANEOUS** - Underneath the skin.

**SUBLUXATION** - A slight dislocation of a bone or joint.

**SUDECK'S ATROPHY** - Degeneration of bone following an injury.

**SUDOMOTOR CHANGES** - Increased or decreased sweating.

**SYMPATHECTOMY**- Removal of some of the sympathetic nerves.



**SYMPATHETICALLY MAINTAINED PAIN - (SMP)** pain is very responsive to local pain reduction efforts, especially notably sympathetic nerve blocks. Most of our pain in the early stages of RSD is Sympathetically Maintained Pain .

**SYMPATHETIC NERVOUS SYSTEM-** The involuntary part of the nervous system, such as that which controls blood vessel contractions, sweating, etc.

**SYNCOPE** - Fainting.

**SYNDROME-** A group of symptoms and signs which, when appearing simultaneously, form a definite pattern of a specific condition, disease or abnormality.

**SYSTOLIC BLOOD PRESSURE** - The force with which blood is pumped when the heart muscle is contracting. **TELAGIA** - Pain radiating to another part of the body; referred pain.

**TEMPOROMANDIBULAR JOINT-** The junction of the lower jawbone (the mandible) and the temporal bone, located just in front of the ear. **TENDER POINTS-** Areas on the body which hurt where pressed, but do not refer pain elsewhere. They usually occur in pairs on various parts of the body, therefore usually equally distributing the pain on both sides of the body.

**THENAR REGION** - The palm of the hand, especially that region located adjacent to the base of the thumb.

**THERMOGRAPHY** - A technique for measuring the heat given off by a particular organ or region of the body. A thermo gram is extremely sensitive and records small temperature changes. While these will show RSD in many cases, a negative result does not mean the patient does not have RSD.

**THORACIC** - Referring to the chest.

**THORACIC OUTLET SYNDROME** - Condition due to compromise of blood vessels or nerve fibers between the armpit (axilla) and base of the neck.

**TRANS ESCHERIC ATTACKS - (TIA)** A temporary paralysis, numbness, speech difficulty or other neurologic symptoms that start suddenly and recovers within 24 hours and is caused when the nerves clamp down on the veins and restrict the blood flow to the heart, brain and other organs.

**TRIGGER FINGER** - A dislocation of a tendon so that the flexion or extension of a finger is temporarily halted. **TRIGGER POINT** - A hypersensitive area or site in muscle or connective tissue, usually associated with myofascial pain syndrome. When touched or pressed they bring on a painful response and referred pain. They can also be felt as painful lumps of hardened fascia.

**TROPIC** - Resulting from interruption of nerve supply.

**ULNAR NERVE** -A major nerve of the upper extremity. In humans, the fibers of the Ulnar nerve originate in the lower cervical and upper thoracic spinal cord (usually c7 to t1), travel via the medial cord of the brachial plexus, and supply sensory and motor innervations to parts of the hand and forearm.

**ULTRASOUND** - A type of imaging technique which uses high-frequency sound waves.

**VALGUS** - The turning out of the foot.

**VASCULAR SYSTEM** - Blood vessel system.

**VASOCONSTRICTION** - The narrowing and contraction of blood vessels.

**VASODILITATION** - The enlargement or dilation of blood vessels.

VASOMOTOR MECHANISM - That which regulates the contraction or dilation of blood vessels. Vasomotor changes may produce a sensation of coolness or warmth.

VASOSPASM - Marked contraction and narrowing of a blood vessel or a segment of a blood vessel.

VERTIGO - Dizziness, especially the feeling that one's surroundings are whirling.

VOLAR - Pertaining to the palm or sole surfaces.

## Theories of How Hypnosis Works

Beginning with Mesmer's advancement that a magnetic ether explained the effects he observed, theorists have put forward mechanisms to explain the phenomenon observed in hypnosis. It is now generally accepted that any adequate theory of hypnosis must use concepts compatible with general psychological models of consciousness.

The key theories of hypnosis, historical and current, are presented here. For the more recent models some knowledge of cognitive psychology is useful. Within psychology most current models of what is termed 'executive function' make use of the concept of an executive control system (**Norman & Shallice, 1980/86**) - **a description of what is meant by executive control is given on this page.**

### Dissociated control theory (DCT)

**Bowers (1992) / Woody & Bowers (1994)**

This theory applies the **Norman and Shallice model of executive control** to explain hypnotic responding. When highly hypnotizable individuals are hypnotized the DCT model proposes that the SAS has become functionally dissociated from the CS - that is, these two levels cease to work together effectively. With the higher level control system partly disabled when high-hypnotizables are hypnotized, the individual is more dependent upon CS-based automatic processes. Contextual cues and influence from the hypnotist influence the contention scheduling system, and this determines the hypnotized person's experience.

A number of studies have been conducted to test hypotheses generated by DCT and are reviewed in more detail in **Jamieson & Woody (2007)**. One study using a difficult version of the Stroop task (difficult so that it should require strong SAS involvement) found that highly susceptible individuals in hypnosis produced more errors than low hypnotizables - a result predicted by DCT. However, some other studies have found evidence for enhanced attentional control under hypnosis - contrary to what DCT would predict. **Jamieson & Woody (2007)** conclude that current data do not support a simple global shutdown of frontal functioning during hypnosis.

**Woody & Sadler (2008)** presented an integrative model of dissociative theories of hypnosis, shown above. and their chapter provides a comprehensive overview of this topic. In their model, a theory of dissociated experience involves the weakening of path c, and possibly of path e. A theory of dissociated control involves the weakening of path b, and possibly of path a. A theory of second-order dissociated control involves the weakening of path d.

## **Dissociated-experience theory**

### **Kihlstrom (1985)**

Argues that high hypnotisables execute hypnotic responses effortfully, but that this effort is dissociated, or blocked, from consciousness.

## Social-cognitive theory / Response set theory

### **Lynn, Rhue & Weeks (1990) / Kirsch & Lynn (1997)**

This theory argues that the experience of effortlessness in hypnosis results from participant's motivated tendencies to interpret hypnotic suggestions as not requiring active planning and effort, i.e. the experience of effortlessness stems from attributional error. The attribution of volition depends on the kind of response-set which has been put into place. **Implementation intentions** are a representation of the form:

*'When x happens, I will do y'*

whereas **response expectancies** are representations of the form:

*'When x happens, y will occur'*

Kirsch and Lynn (1997) propose that subjects in a hypnotic situation have a generalized response expectancy that they will follow the hypnotists's instructions and produce behaviours that are experienced as involuntary. A consequence of this is that these subjects attribute hypnotic responses to external causes and experience them as involuntary. According to this theory hypnotic responses are initiated by the same mechanisms as voluntary responses, the difference is in how the behaviours are experienced.

One important factor to note when considering socio-cognitive theories of this sort is that they do not imply that subjects are always 'faking', or not really experiencing a hypnotic response. Although these models use terms such as 'role enactment' or 'self-presentation' they are still entirely consistent with the notion that hypnotised participants have unusual experiences. (**See an elaboration of this point on the state/non-state page**)

## **Neodissociation theory (Hilgard, 1979, 1986)**

### **Hilgard (1979, 1986)**

Hilgard's Neodissociation theory proposes that hypnotic phenomenon are produced through a dissociation within a high level control systems (note that this is unlike the dissociation between high and low level control systems in dissociated control theory). Essentially, the hypnotic induction is said to split the functioning of the executive control system (ECS) into different streams. Part of the ECS functions normally, but is unable to

represent itself in conscious awareness due to the presence of an 'amnesic barrier'. Hypnotic suggestions act on the dissociated ECS and the subject is aware of the results of the suggestions, just not the process by which they came about.

Hilgard's theory was inspired by his experiments with the 'hidden observer' phenomenon whereby a 'hidden part' of the mind of a subject experiencing suggested hypnotic analgesia could be encouraged to elicit reports of the 'true' pain experience. The hidden observer remains a controversial notion and is still the topic of investigation, the idea that the hidden observer demonstrates the presence of conscious and unconscious executive systems in hypnosis is controversial (**Heap et al, 2004; Kirsch & Lynn, 1998**).

An illustration of Hilgard's hierarchical model of cognitive control is shown above (**Hilgard, 1973**). **Woody & Sadler (2008)** note that Hilgard's ideas of an 'amnesic barrier' and the 'hidden observer' do not sit comfortably with cognitive or physiological psychological models.

## **Neurophysiological theory**

### **Crawford & Gruzelier (1992) / Gruzelier (1998)**

These models propose that 'highs' have better executive function than 'lows' and can thus deploy their attention in different ways. Gruzelier (1998) presents a model of hypnosis characterised by changes in brain function. The model is described in three stages, each with its own characteristic pattern of brain activity. Like some of the other dissociation theories Gruzelier's account emphasises that changes in the way the attentional control system functions in hypnosis renders the subject more susceptible to suggestion. In the first stage of the induction the subject pays close attention on the words of the hypnotist and activity is increased in predominantly left-sided fronto-limbic brain regions. In the second stage the subject 'lets go' of controlled attention and gives control to the hypnotist. In this second stage there is a reduction in left frontal activity. The third stage sees an increase in right-sided temporo-posterior systems as the subject engages in passive imagery. By exhausting their frontal abilities during the induction the highs end up frontally impaired in a hypnotic state (Dienes & Perner, 2007).

Gruzelier's model finds some support from behavioural and neurophysiological evidence and complements other state-like accounts of hypnotic functioning. However, interpretation of much of the evidence critical to such models is questioned by sociocognitive theorists (e.g. **Wagstaff, 2004**). Crucially, the predictions of enhanced executive skills in high hypnotizables are testable.

## **Integrative cognitive theory**

### **Brown & Oakley (2004) / Brown (1999) / Oakley (1999)**

Placing emphasis on the nature of perception and consciousness, Brown & Oakley (2004) incorporate ideas from both dissociated control and response set theories. They include the DCT concept that suggested responses may be facilitated by an inhibition of high-level attention, and the response-set idea that suggested involuntariness is an interpretation or attribution about the causes of behaviour.

## **Cold control theory**

### **Dienes & Perner (2007)**

This recent theory considers the distinction between control and awareness in terms of Rosenthal's (2002) HOT (higher order thought) theory. According to Rosenthal we are conscious of mental states by having thoughts about those states. A thought about being in a mental state is a second-order thought (SOT), because it is a mental state about a mental state (e.g. 'I see that the cat is black'). Third-order thoughts (TOTs) are also possible, by becoming aware of having an SOT (e.g. 'I am aware that the cat I am seeing is black'). The cold control theory of hypnosis states that a successful response to hypnotic suggestions can be achieved by forming an intention to perform the action or cognitive activity required, without forming the HOTs about intending that action that would normally accompany reflective performance of the action.

**[Read a full description of cold control theory on Zoltan Dienes' page](#)**

## **Ego-psychological theory**

### **Fromm (1979, 1992)**

Based on Shor's idea that the depth of a hypnotic trance is related to the degree to which the participant loses awareness of the distinction between imagination and reality, termed the 'generalized reality orientation' which is characteristic of normal psychological functioning. Distinguishes between primary processes (emotional, holistic, illogical, unconscious, developmentally immature) and secondary processes (affect-free, analytical, logical, conscious, developmentally mature). Whereas normal adult functioning is biased towards secondary processing the induction of hypnosis makes the subject 'let go' of some secondary process activity. **Heap et al (2004)** characterise the evidence for ego-psychological theory as mixed.

## **Conditioning and inhibition theory**

### **Barrios (2001)**

In this theory a hypnotic induction is defined as the giving of a set of suggestions so that a positive response to a previous suggestion conditions the subject to respond more strongly to the next suggestion. This induction is placed in a conditioning paradigm. A hypnotic induction is explained as the conditioning of an inhibitory set, which increases responsiveness to suggestion by inhibiting stimuli and thoughts which would contradict the suggested response.

