

Gate Control Theory of Pain

According to the gate control theory of pain, pain signals that originate in an area of injury or disease do not travel directly or automatically to the brain. Rather, there exists within the spinal cord a 'gate mechanism', which determines the degree to which pain signals are transmitted to the brain. When the gate is wide open, more pain signals get through than when it is closed. Generally, rather than being completely open or shut, the gate is open to varying degrees.

Factors which:	OPEN the pain gate	CLOSE the pain gate
Physical	<ul style="list-style-type: none"> • -Extent of the injury • -Readiness of the nervous system to send pain signals • -Inappropriate activity level 	<ul style="list-style-type: none"> • -Application of heat or cold • -Massage • -Relaxation skills (to lower readiness of the nervous system) • -Appropriate activity level
Emotional	<ul style="list-style-type: none"> • Depression • Worry • Anxiety • Tension • Anger 	<ul style="list-style-type: none"> • Avoiding excessive emotions • Positive emotions • Managing stress
Mental	<ul style="list-style-type: none"> • Focusing on the pain • Boredom due to minimal involvement in life activities • Non-adaptive attitudes 	<ul style="list-style-type: none"> • Distraction away from pain • Increased social activities • Positive attitudes
Behavioral	<ul style="list-style-type: none"> • -Withdrawal from positive life activities • -Poor health habits 	<ul style="list-style-type: none"> • -Increased positive life activities • -Appropriate exercise • -Healthy eating • -Refraining from unhealthy habits

Pacing Yourself

When people first injure themselves, pain serves as a signal that harm has been caused to the body. The natural and healthy response is to stop doing whatever is causing the pain (e.g., walking on a sprained ankle, lifting with a strained back). In this case, harm is being done to the body and the body's warning system (pain) is working properly. However with chronic pain, healing has usually occurred but pain remains. Thus, the body's warning system is no longer working properly. In other words, the pain no longer indicates harm is being done to the body. Therefore, stopping the activity that causes the pain is often not indicated.

People with chronic pain are often very inactive during episodes of severe pain; laying or sitting for extended periods. Through the course of the natural pain cycle, they eventually experience some pain relief. In response to this decreased pain, they often try and make up for all the things they were unable to do during the severe pain episode (i.e., they over do it). Since their body has lost strength and endurance during these extended periods of inactivity, even resumption of normal life activity can result in increased pain. As a result, a cyclical pattern of 'under-doing' it followed by 'over-doing' it is created. Pacing activity differently enables pain patients to break this cycle.

How to pace

- Stop or change an activity when your pain level goes two points (on a 10 point scale) above your normal pain level.
- Do something less active until your pain returns to your normal level.
- If this rule is followed throughout the day, then pain will be no worse at the end of the day than at the beginning.

What to expect when pacing

- It will be challenging to learn the right combinations of up and down times. You may find it works best to tackle small portions of your daily routine at a time rather than changing your entire day at once. Start with activities that are most important to you or that increased pain causes the greatest challenge to you.
- Avoiding over activity, which can result in severe pain episodes and longer downtimes, will increase your success at engaging in effective pacing.
- Expect to reassess your pacing plan on a regular basis (increasing uptime and decreasing downtime as appropriate). In the beginning of pacing you may find that your uptimes are shorter than you would like and your down times are longer than you would like. What you should find is that your uptimes gradually increase and your downtimes gradually decrease.

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- Setting realistic goals for yourself may help keep you from getting frustrated and disappointed with the slow rate of improvement as you gradually recondition your body.

By planning your activities in this way, you can accomplish more (and have more fun) in a day without significantly increasing your pain. The attached worksheet can be used to help you determine your 'up' and 'down' times.

Setting Realistic Goals for Taking Control of Your Life

Unfortunately, being pain free is rarely a realistic goal. More realistic goals might include: reducing impact of pain on activities, learning to live with the pain, learning to enjoy life, regaining control of your life, increasing activity, etc. Talk with your doctor about what physical limitations you have and do not do those activities. Instead, focus on gradually resuming those that hurt but are not harmful. Setting realistic goals provides a focus for your energy and enables your goals to be achieved. Also, when you are devoting your time and energy to things you really want to do and can accomplish, there is less time to think about your pain. The less you think about your pain, the less you will suffer.

Establishing Goals

1. **Is the Goal is Realistic?** Is the goal statement realistic? Can the goal actually be achieved? Is it possible to achieve at your pain management skill level?
2. **Is there a Target Date for Completion?** When will the goal be accomplished? It's a good idea to set a target date to act as a guideline and then re-set if needed.
3. **Is the Goal Measurable?** Can you evaluate when the goal has been reached? Will the goal be measured in some way?

For example:

- Minutes spent doing some activity such as exercise or relaxation.
 - Specifics type and number of pleasurable activities to engage in each week.
4. **Is The Goal Broken Down Into Small, Realistic Parts?** Remember to start at a point that you already know you can do, and build onto it from there. Program the steps for a sense of early success to help give you the boost and momentum to keep you going.
 5. **Is the goal "I" centered?** Are "you" the one engaging in the actions or behaviors to be measured?

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6. **Once Accomplished, What Rewards Will You Use?** Remember, actions that are rewarded are more likely to reoccur.
7. **Is the Goal Desirable or Personally Meaningful?** Do you want the outcome enough to put forth the effort? You are much more likely to strive toward a goal that you care about.
8. **Is A Relapse Plan Clearly Established?** What happens if you do not reach to goal as you originally planned? What will you do to get started again?