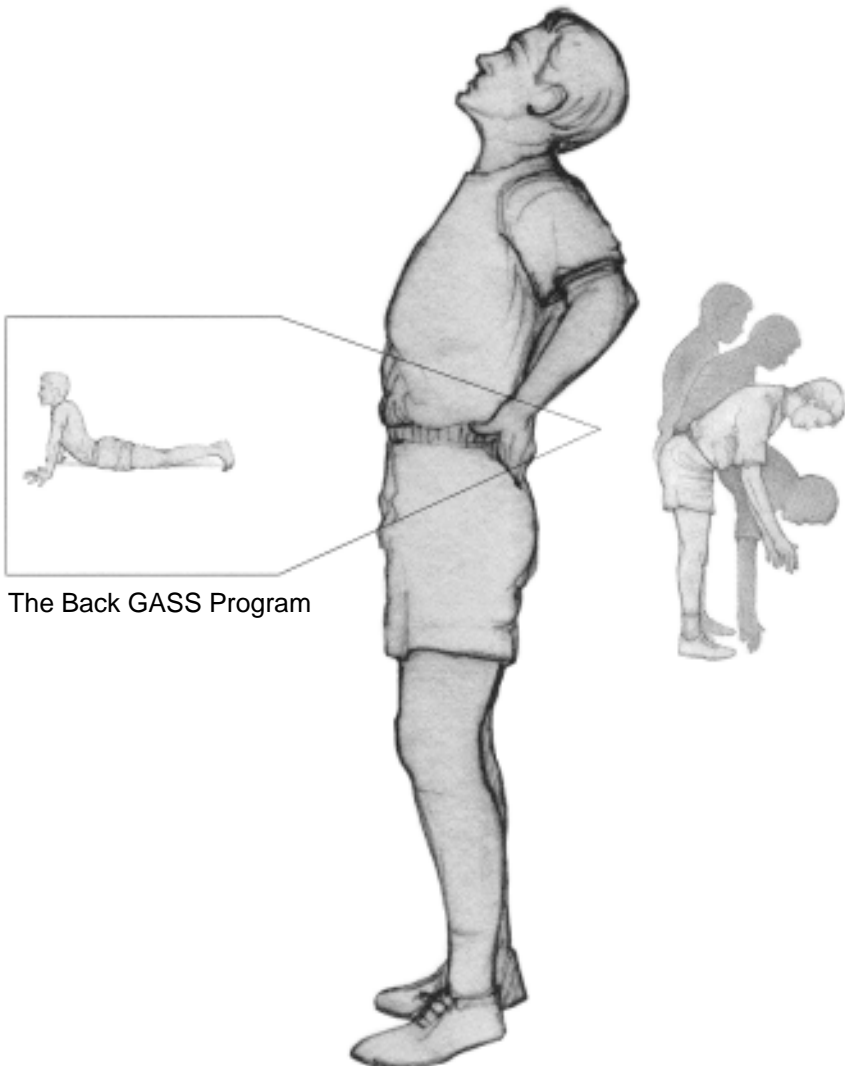


# A First Approach to Back Pain



The Back GASS Program

## A First Approach to Back Pain

Nearly everyone experiences back pain at some time in their life. Pain or disability can be caused by injuries sustained at home or work, while involved in sports and recreation, during accidents and falls, or from medical conditions such as arthritis, osteoarthritis or osteoporosis. In most cases, back pain can be resolved through medical management, exercise, physical therapy and other related treatments. On occasion, surgical treatment is appropriate.

### Factors that increase your risk of back pain:

- Heavy lifting
- Being overweight
- Sitting for long periods of time
- Driving
- Smoking

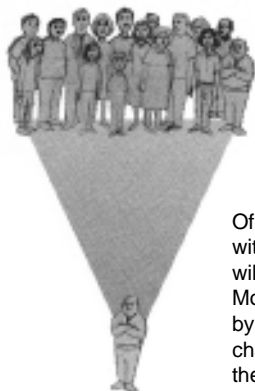
### What is the G.A.S.S. Program?

GASS is a four-point program consisting of:

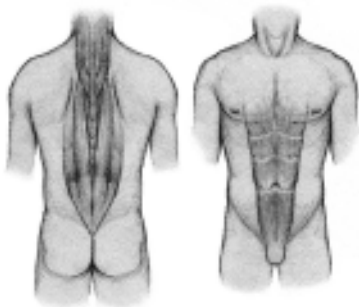
- I. **General Health Promotion**
- II. **Aerobic Exercise**
- III. **Stretching Exercises**
- IV. **Strengthening Exercises**

### Why is the GASS program important?

Many patients find pain relief through this program. It can help them in two ways: first, by decreasing or eliminating pain and second by helping them recover more quickly if surgery should become necessary. Surgery is always a treatment of last resort. Strict adherence to each portion of the four-point program is essential to your recovery from back pain.

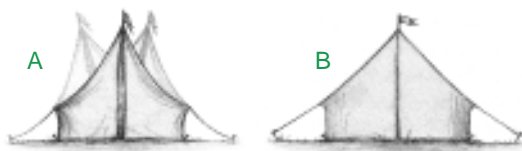


Of the many people with back pain, few will require surgery. Most can be treated by the lifestyle changes outlined in the GASS program.



### How Your Spine and It's Muscles Work

Your lower back (lumbar spine) is supported by two different muscle groups. Together, the muscles on the front and back of the body give the spine stability, flexibility and support. They help you bend forward (flex) and bend backward (extend).



The spinal column can be compared to a tent pole in a windstorm. The ropes of tent A are not pulled tight allowing too much motion during the windstorm. Notice the ropes of tent B are supportive and strong. Therefore, if your muscles supporting your spine (abdominal and paraspinal) are weak like the tent ropes (tent A) your spine may also experience excessive motion on one side or another and a muscle imbalance may occur. Your spine will not be able to tolerate daily wear and tear, as the tent will not be able to tolerate remaining upright in the windstorm. The tent functions better if the ropes are tight. You may function better, perhaps without pain, if the muscles supporting your spine are tight.

## I. GENERAL HEALTH PROMOTION

Improving your general physical well-being translates into improving your overall health. This is done by quitting smoking and achieving or maintaining a healthy weight. These changes help reduce pain and speed recovery after surgery, should it be necessary.

### Weight Loss and Nutrition

Managing your weight and eating healthy will contribute to your overall well-being and pain reduction. Doing this means making changes in eating habits. With a positive attitude, these adjustments can be very reasonable. A registered dietician (a person specializing in nutrition) can provide education about the benefits of healthful eating, help you plan meals that meet your needs and show you how to incorporate other small but important modifications into your diet. For tips on healthy nutrition see pages 8 and 9.

### Quitting Smoking

For most people, it's hard to quit smoking. Your body is used to getting regular doses of nicotine from cigarettes. When you stop smoking, your body craves it. This is called an addiction.

#### By quitting smoking, you can:

- Decrease or eliminate spinal pain. Several studies have shown a correlation between smoking and spinal pain. The amount you smoke does not seem to matter. Smoking even small amounts seems to be harmful.
- Prolong your life.
- Improve your overall health and decrease your chances of getting lung cancer, throat cancer, emphysema, heart disease, high blood pressure, ulcers and gum disease.
- Reduce your children's risk of developing diseases related to second-hand smoke.

There are additional tips to help you quit smoking on page 9. Use the Progress Record in the back of this booklet to help you keep track of your improvements in smoking cessation. If you are having difficulty quitting, talk to your physician about the types of support available and pharmacological treatments that may help.

## II. AEROBIC EXERCISE

An aerobic exercise program can help reduce pain and also leaves you with a sense of accomplishment and an improved self-image. Aerobic exercise is any physical activity that elevates your heart rate for a sustained period of time.

### How does aerobic exercise benefit you?

- Increases energy levels
- Improves your body's use of oxygen
- Lowers blood pressure
- Strengthens your heart and lungs
- Strengthens and builds bones
- Improves sleep
- Improves endurance
- Reduces body fat
- Reduces stress, tension, anxiety and depression
- Improves self-image and self-esteem
- Increases muscle tone and strength

### How much exercise will I need?

Only 20 to 30 minutes of activity, at least three times each week is required (preferably on different days). If you are just beginning a program, start your activity at 20 minutes each session and build up to 30 minutes gradually.

### Before you begin

Make sure to start out slowly, warming up for 5 to 10 minutes by stretching or slowly beginning the exercise. Cool down at the end of your workout by slowing down or stretching. **DO NOT STOP EXERCISING ABRUPTLY.**

Choose an activity you like, you will be more likely to stick with it.

Any of the following aerobic exercises can be used:

- Walking
- Running
- Cycling
- Swimming

As with all activities in this program, be sure to record your exercise progress using the charts on page 10 and 11.

Consult your primary care physician before beginning any exercise program. Be sure to tell him or her about any other conditions you have and all medications you are taking.

### III. STRETCHING EXERCISES

The direct cause of back pain is often the result of one or more of the following:

- 1 - A frozen-joint-like syndrome associated with inactivity.
- 2 - Muscle strain, occurring when a muscle gets too much use.
- 3 - Muscle spasms that take place beside the spinal column in the low back.

Stretching exercises can help in relieving and managing these causes of back pain. They can improve the mobility of your joints and muscles.

Record your progress on page 11, in the back of this book. As with the other portions of the GASS program, progress indicates improvement, motivation and an increased potential for good results.

Start each section of the program at a level that's right for you, then progress gradually forward. Stretching too much, losing an extreme amount of weight and exercising too intensely at first are not helpful and may cause more injury, weight gain and eventually more pain.

#### Stretching Exercise Program:

The following stretches should be done twice a day and held for 10 - 20 seconds at a time.

**Toe touching:** Reach for your toes with your knees locked (Fig. A), holding the lowest achievable position. You may experience soreness at first followed by muscle relaxation. The stretch should feel good. Do not bounce, this can cause pain to increase.

Measure and record the distance of your fingers from the floor and the length of time you are able to hold each stretch in the Progress Record on page 11.

**Backward bending:** With your hands on your hips, slowly bend backward (Fig. B), holding the greatest extension possible. This is a simple or beginners extension exercise, floor stretches (Fig. C) are a more advanced form of this exercise.

**Floor stretches:** Laying in a prone position, slowly lift your torso off the floor (Fig. C) until you are able to lock your elbows. The pelvis, knees and toes should not lift off of the floor. Lumbar flexibility may be accomplished by doing these exercises and focusing on progression.

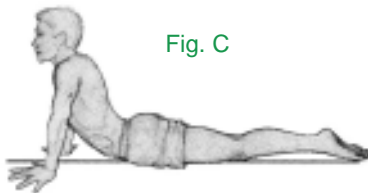
Fig. A



Fig. B



Fig. C



## IV. STRENGTHENING EXERCISES:

To be successful with the GASS program, it is important to have an appropriate strengthening program. The muscles along the spine work together to provide support and prevent the spine from moving too much. Certain activities, like running and heavy lifting, can make some muscles stronger than others. When this happens, too much stress is placed on the spine and the spine's supporting muscles are not strengthened, yet the spine is traumatized or stressed during these activities resulting in pain. By strengthening the proper muscles, you can "tighten the tent ropes", reduce pain, and slow the aging of your spine. Muscles that should be exercised include the anterior (abdominal) and posterior (paraspinous) lumbar muscles.

Specific exercises that strengthen these muscles are outlined below. (All strengthening exercises should be performed on a carpeted floor.)

### Strengthening Exercise Program:

#### Supine leg lifts

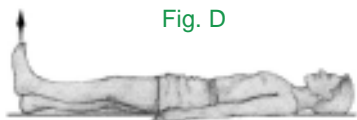
These will strengthen the abdominal muscles (Figs. D). You will be laying on your back, lifting one leg off of the floor at a time until you are able to progress into abdominal crunches.

**Level One:** Begin by lifting one leg six inches off of the floor at a time. Repeat with the other leg. Once you are able to hold the position for two minutes then progress to the next level.

**Level Two:** Hold both legs six inches off the floor at the same time. Once you are able to hold this position for two minutes then progress to the next level.

**Level Three:** At this level, you will be doing one abdominal crunch. Continue holding for as long as you can.

Fig. D



#### Prone leg lifts

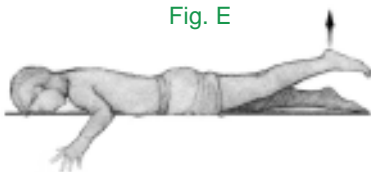
These will strengthen the lumbar paraspinous muscles. You will be laying on your stomach, lifting your legs until you are able to progress into the "airplane" (Figs. E).

**Level One:** Begin by lifting one leg six inches off of the floor at a time. Keep both legs straight. Repeat with the other leg. Once you are able to hold the position for two minutes then progress to the next level.

**Level Two:** Hold both legs six inches off the floor at the same time. Once you are able to hold this position for two minutes then progress to the next level.

**Level Three:** At this level, you will be holding (moving into) the 'airplane position', with both arms and legs off the floor at the same time. Continue holding for as long as you can.

Fig. E



For supine and prone leg lifts, start at the lowest level of each, progressing to more difficult levels only after reaching the two-minute goal. Progress with supine leg lifts will be independent of progress with prone exercises. For example, you may be able to do Level Three exercises but are only able to do Level Two exercises prone.

### Considerations when doing the strengthening exercises:

- Fatigue or pain should limit the activity.
- When doing leg lifts, your legs should be approximately six inches off the floor and legs should be kept straight.
- Record your progress in the Progress Record on page 10.
- You may notice an increase in soreness of the low back and paraspinal muscles. This is because you have put new demands on these muscle groups, and is a good indication that strengthening was needed. Being consistent with your exercises and continuing the program will help relieve this soreness. If after several days the pain does not subside, you should be less aggressive with the activity and notify your physician, but **DO NOT STOP THE PROGRAM.**

### Conclusion

Remember that during this program, your back muscles may be performing activities that they are not used to doing. You may experience some stiffness or pain at the beginning of the GASS program. You may do the stretching and strengthening exercises less aggressively, but **DO NOT** stop doing them.

Having a good understanding of what this program requires will help you actively participate and improve. If you have any questions about the GASS program, be sure to ask your doctor before you continue. Maintaining a positive outlook and keeping track of your progress are essential to improvement.

### Maintaining a Healthy Back

Once treatment is under way, it is strongly recommended that you keep your back strong and healthy. The following tips are useful for almost everyone with back or neck pain.

- Continue to do stretching and strengthening exercises two to three times per week for the rest of your life.
- Vary your position frequently from sitting to standing. Break up long periods of sitting by moving around periodically.
- Learn correct posture and use it at all times.
- Learn and perform exercises that stretch and strengthen the muscles of your abdomen and spine.
- If back pain awakens you, try changing positions. Sleep on your back with a pillow under your knees, or on your side with your legs bent. A firm mattress can be helpful.
- If you must lift something heavy, don't bend at the waist. Bend your knees, keeping your back straight. Hold the object close to your body and lift using the power in your legs, rather than your back.
- When standing for long periods, put one foot on a stool.
- Don't slump or slouch when driving - sit up straight. It may be helpful to place a cushion at belt level (behind the back) for lumbar support.
- See your doctor if pain persists, or if you have any questions.

## Nutritional Tips – Guidelines:

### Here are some guidelines and goals to help you get started:

- Don't starve yourself - you may end up binging, but also losing muscle instead of fat.
- Choose foods low in total fat, saturated fat and cholesterol.
- Don't choose a diet that restricts certain food. It may also lack a lot of important nutrients your body needs.
- Try to lose weight slowly, rather than all at once. People who do tend to keep it off.
- Record your weight at the same time everyday. It is best to do this first thing in the morning.

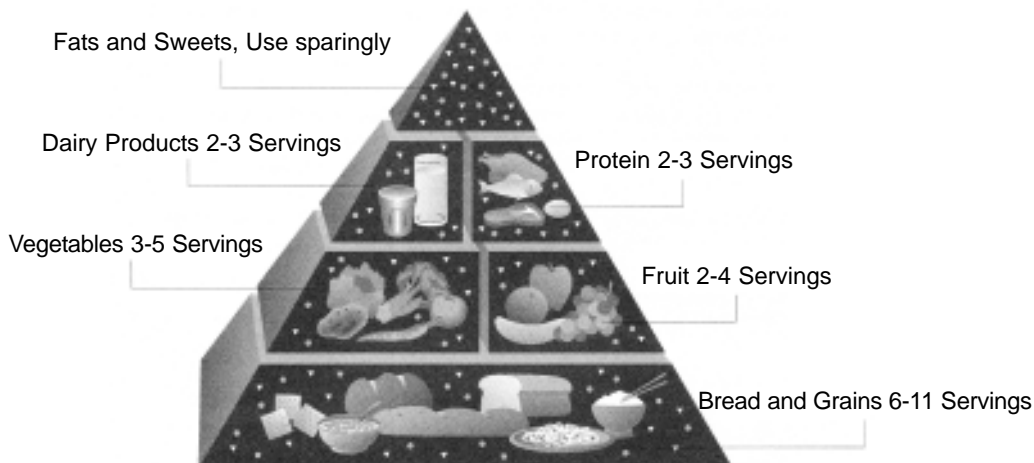
## Goals for Healthy Eating:

- Set realistic weight loss goals, such as a 1 to 2 pound weight loss per week.
- Eat fewer calories by cutting down on portions and decreasing the total amount of fat you eat to 30% or less of your total daily calories.
- Do not skip meals.
- Keep low-calorie, low-fat snacks on hand.
- To ensure you are eating healthy, keep an accurate food journal. Write down everything you eat or drink. Be honest and accurate, otherwise the journal is not as helpful. The food journal will help you learn about your eating habits and help you assess the food choices you are making.
- Eat a variety of foods to get all the nutrients you need. The Food Guide Pyramid provides an example of the number of servings you should eat from each food group every day. When weight loss is desired, aim to select the lower number of recommended servings, but remember to select from all food groups daily.

## How can I lose weight?

- When the amount of calories you eat equals the amount of calories you burn, your weight is maintained. Therefore, if you consume fewer calories than you burn, you will lose weight. For more information visit: [www.clevelandclinic.org/health/search/default2.asp](http://www.clevelandclinic.org/health/search/default2.asp)

### FOOD GUIDE PYRAMID



## Tips for Quitting Smoking

### How can I quit?

There's no one way to quit that works for everyone. Setting a plan will help.

- Pick a date to stop smoking and then get ready for it.
- Record when and why you smoke. You will come to know what triggers your urges to smoke.
- Record what you do when you smoke, like during a coffee break or after dinner. Try smoking at different times and different places. Breaking the ties between smoking and daily activities will also help you break your body's need for nicotine.
- List your reasons for quitting. Read over the list before and after you quit.
- Seek the support and encouragement of family, friends and healthcare provider.
- Try group or individual counseling or classes. These are offered through the Cleveland Clinic Department of Psychiatry and Psychology or through your local health care facility. To register for a Cleveland Clinic Smoking Cessation Program, call 216.444.5812 or 1.800.223.2273, ext. 45812.
- Ask your doctor about medications that can help you stop smoking and lessen the urge to smoke. They may not be appropriate for everyone, but they can ease the transition. These include: Bupropion SR and nicotine gum, inhalers, nasal spray, and the patch.

### When you quit

- On the day you pick to quit, start that morning without a cigarette.
- Don't focus on what you are missing. Think about what you are gaining.
- Tell yourself you are a great person for quitting. Remind yourself of this when you want to smoke.
- When you get the urge to smoke, take a deep breath. Hold it for ten seconds, then release it slowly.
- Keep your hands busy. Doodle, play a sport, knit or work on a computer.
- Change activities that were connected to smoking. Take a walk or read a book instead of taking a cigarette break.
- Don't carry your lighter, matches or cigarettes.
- Go to places that don't allow smoking, such as museums and libraries.
- Eat low-calorie, healthful foods when the urge to smoke strikes. Carrot and celery sticks, fresh fruits and fat-free snacks are good choices.
- Drink a lot of fluids. Cut down on the alcohol and caffeine. They can trigger urges to smoke. Select water, herbal teas, caffeine-free soft drinks and juices.
- Exercise. Exercising will help you relax.
- Hang out with non-smokers.
- Get support for quitting. Tell others about your milestones with pride.

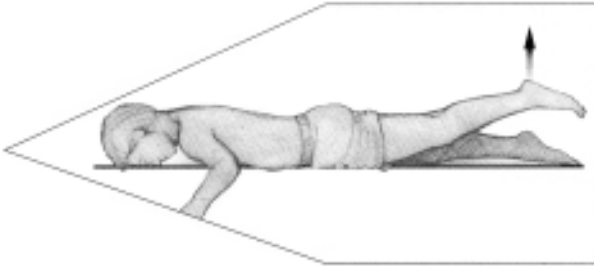




# TUCSON ORTHOPAEDIC

INSTITUTE, P. C.

2424 N. Wyatt Drive  
Tucson, Arizona 85712  
(520) 784-6200  
www.tucsonortho.com



**Disclaimer:**

This book is not intended to be used in place of professional advice provided by your physician.

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- A medical spine specialist who coordinates the evaluation and treatment of each patient.
- Prompt initiation of active therapy.
- An emphasis on patient involvement in the treatment plan.
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Authors: Edward C. Benzel, MD  
Ann M. Henwood, RN, MSN  
Designer: Kenneth M. Lennon, Jr., MFA  
Illustrator: Joseph Kanasz, BFA, CMI