

Living with Ulcerative Colitis

Our Mission:

To cure and prevent Crohn's disease and ulcerative colitis through research, and to improve the quality of life of children and adults affected by these digestive diseases through education and support.

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UNDERSTANDING THE DIAGNOSIS

Your doctor has just told you that you have a disease called ulcerative colitis. Quite possibly, you have never even *heard* of this condition before. (Most people, in fact, are unfamiliar with ulcerative colitis.) And now you have it. And, to make matters worse, your doctor has said that ulcerative colitis doesn't go away.

If you feel overwhelmed and scared right now, that's only natural. You probably have a ton of questions, starting with "Just what *is* ulcerative colitis?" But you're also wondering how you got it and, more important, how it will affect you — both now and down the road. For example, you'll want to know:

- Will I be able to work, travel, exercise?
- Should I be on a special diet?
- Will I need surgery?
- How will ulcerative colitis change my life?

That's the purpose of this brochure: to answer those questions and to walk you through the key points about ulcerative colitis and what you may expect in the future. You won't become an expert overnight, but gradually you'll learn more and more. And the more you know, the better you'll be able to cope with the disease and become an active member of your own health care team.

WHAT IS ULCERATIVE COLITIS?

Ulcerative colitis belongs to a group of conditions known as *inflammatory bowel disease (IBD)*. Another illness in this group is Crohn's disease. Both conditions cause diarrhea (sometimes bloody), as well as abdominal pain. Because the symptoms of these two illnesses are so similar, it is sometimes difficult for doctors to make a definitive diagnosis. In fact, approximately 10% of cases are unable to be pinpointed as either ulcerative colitis or Crohn's disease.

While Crohn's disease may affect any part of the gastrointestinal (GI) tract, ulcerative colitis is limited to the colon—also called the large intestine. The inflammation begins at the rectum and extends up the colon in a continuous manner. There are no areas of normal intestine between the areas of diseased intestine. In contrast, such so-called “skip” areas may occur in Crohn's disease. And whereas Crohn's disease can affect the entire thickness of the bowel wall, ulcerative colitis only involves the innermost lining of the colon—causing it to become inflamed. Tiny open sores or ulcers form on the surface of the lining, where they bleed and produce pus and mucus. In short, ulcerative colitis is an inflammatory disease of the lining of the colon.

The more you know, the better you'll be able to cope with the disease.

What does “chronic” mean?

No one knows exactly what causes either ulcerative colitis or Crohn's disease. Also, no one can predict how the disease—once it is diagnosed—will affect a particular person. Some people go for years without having any symptoms, while others have more frequent flare-ups of disease. However, one thing is sure: ulcerative colitis—like Crohn's disease—is a chronic condition.

Chronic conditions are ongoing situations. They can be controlled with treatment but cannot be cured. That means that the disease is long-term, but it does *not* mean that it is fatal. It isn't. Most people who have ulcerative colitis lead full and productive lives.

A BRIEF INTRODUCTION TO THE GI TRACT

Most of us aren't very familiar with the gastrointestinal tract (GI), even though it occupies a lot of “real estate” in our bodies. Here's a quick tour:

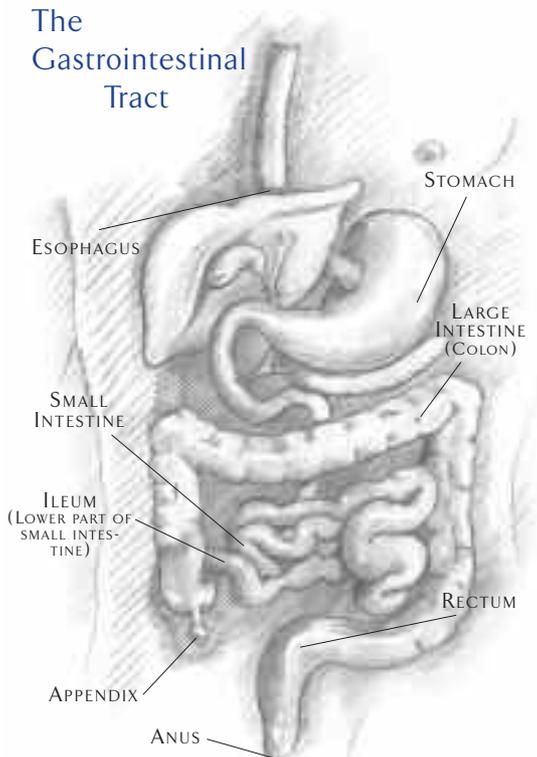
The GI tract actually starts at the mouth. It follows a twisting and turning course and ends, many yards later, at the rectum. In between are a number of organs that all play a part in processing food and transporting it through the body.

The first is the esophagus, a narrow tube that connects the mouth to the stomach. After that comes the stomach itself. Moving downward, the next organ is the small intestine. That leads to the colon, or large intestine, which connects to the rectum.

The principal function of the colon is to absorb excess water and salts from the waste material (what's left after food has been digested). It also stores the solid waste, converting it to stool, and excretes it through the anus.

The inflammation in ulcerative colitis usually begins in the rectum and lower colon, but it also may involve the entire colon. Ulcerative colitis may be called by other names, depending on where the disease is located in the colon.

- **Ulcerative proctitis:** involves only the rectum
- **Proctosigmoiditis:** affects the rectum and sigmoid colon (the lower segment of the colon before the rectum)
- **Distal colitis:** involves only the left side of the colon
- **Pancolitis:** affects the entire colon



WHO GETS ULCERATIVE COLITIS?

Up to 1.4 million Americans have either ulcerative colitis or Crohn's disease. That number is almost evenly split between the two conditions. Here are some quick facts and figures:

- About 30,000 new cases of Crohn's and colitis are diagnosed each year.
- Ulcerative colitis can occur at any age.
- On average, people are diagnosed with ulcerative colitis in their mid-30s.
- More Caucasians than people from other racial groups develop ulcerative colitis.
- The disease tends to occur more often in Jews (largely of Eastern European ancestry) than in people of non-Jewish descent.
- Both ulcerative colitis and Crohn's disease are diseases found mainly in developed countries, more commonly in urban areas rather than rural ones, and more in northern climates than southern ones.

The genetic connection

Researchers have discovered that ulcerative colitis tends to run in certain families.

In fact, up to 20% of people with ulcerative colitis have a first-degree relative (first cousin or closer) with either ulcerative colitis or Crohn's disease. So genetics clearly plays a role, although no specific pattern of inheritance has been identified. That means there is no way to predict which, if any, family members will develop ulcerative colitis or Crohn's disease.

WHAT CAUSES ULCERATIVE COLITIS?

As we noted before, no one knows the exact cause or causes. One thing is clear, though: Nothing that you did made you get ulcerative colitis. You didn't catch it from anyone. It wasn't anything that you ate or drank or smoked. And leading a stressful lifestyle didn't bring it on. So, above all, don't blame yourself!

Now, what are some of the likely causes? Most experts think there is a *multifactorial* explanation. This simply means that it takes a number of circumstances working together to bring about ulcerative colitis—including these top three suspects:

- Genes
- An inappropriate reaction by the body's immune system
- Something in the environment

It's likely that a person inherits one or more genes that make him or her susceptible to ulcerative colitis. Then, something in the environment triggers an abnormal immune response. (Scientists have not yet identified this environmental "trigger." It could be a virus or bacterium, but not necessarily.) Whatever the trigger may be, it prompts the person's immune system to "turn on" and launch an attack against the foreign substance. That's when the inflammation begins. Unfortunately, the immune system doesn't "turn off." So the inflammation continues, damaging the lining of the colon and causing the symptoms of ulcerative colitis.

Nothing that you did made you get ulcerative colitis. Leading a stressful lifestyle didn't bring it on.

WHAT ARE THE SIGNS AND SYMPTOMS OF ULCERATIVE COLITIS?

As the intestinal lining becomes more inflamed and ulcerated, it loses its ability to absorb water from the waste material that passes through the colon. That, in turn, leads to a progressive loosening of the stool—in other words, diarrhea. The damaged intestinal lining also can produce a lot of mucus in the stool. Moreover, ulceration in the lining can cause bleeding so the stool also may be bloody. Eventually, that blood loss may lead to anemia.

Most people with ulcerative colitis experience an urgency to have a bowel movement as well as crampy abdominal pain. The pain may be stronger on the left side. That's because the colon descends on the left.

Together, diarrhea and abdominal pain may result in loss of appetite and subsequent weight loss. These symptoms also can produce fatigue, which is a side effect of anemia as well. Children with ulcerative colitis may fail to develop or grow properly.

Beyond the intestine

In addition to having symptoms in the GI tract, some people may also experience ulcerative colitis in other parts of the body. Signs and symptoms of the disease may be evident in:

- eyes (redness and itchiness)
- mouth (sores)
- joints (swelling and pain)
- skin (bumps and other lesions)
- bones (osteoporosis)
- kidney (stones)
- liver (hepatitis and cirrhosis)—a rare development

All of these are known as *extraintestinal* manifestations of ulcerative colitis because they occur outside of the intestine. In some people, these actually may be the first signs of ulcerative colitis, appearing even before the bowel symptoms. In others, they may occur right before a flare-up of the disease.

People who have had ulcerative colitis for eight to ten years have a higher risk of getting colon cancer. You should talk to your doctor about what you can do to help prevent cancer and lower your risk.

The range of symptoms

Approximately half of all patients with ulcerative colitis have relatively mild symptoms.

However, others may suffer from severe abdominal cramping, bloody diarrhea, nausea, and fever. The symptoms of ulcerative colitis do tend to come and go. In between flare-ups, people may experience no distress at all. These disease-free periods can span months or even years, although symptoms do eventually return. The unpredictable course of ulcerative colitis may make it difficult for doctors to evaluate whether a particular treatment program has been effective or not.

For more information on the management of symptoms and complications related to ulcerative colitis, visit CCFA's Web site at www.ccfa.org.

Managing the symptoms

The medications that your doctor has prescribed are aimed at reducing the intestinal inflammation of ulcerative colitis. However, they may not get rid of all the symptoms that you are experiencing. You may continue to have occasional diarrhea, cramping, nausea, and fever.

Talk to your doctor about which over-the-counter (OTC) medications you can take to help relieve those symptoms. For example, you should be able to take loperamide (Imodium®) on a long-term basis to control the diarrhea. Most anti-gas products and digestive aids are also safe to use, but you should ask your doctor about these first. To reduce fever or ease joint pain, take acetaminophen (Tylenol®) rather than non-steroidal anti-inflammatory drugs (NSAIDs)—such as aspirin, ibuprofen (Advil®, Motrin®), and naproxen (Aleve®), which may irritate your digestive system. Again, make sure to discuss the use of any and all medications with your doctor and be sure to follow the guidelines and instructions on the over-the-counter products that you do take.

But managing symptoms involves more than just medication. Making changes in your diet can help as well. There is no one single diet or eating plan that will do the trick for everyone with ulcerative colitis. Dietary recommendations must be tailored just for you—depending on what part of your intestine is affected and what symptoms you have. Ulcerative colitis varies from person to person and even changes within the same person over time. What worked for your friend with ulcerative colitis may not work for you. And what worked for you last year may not work now.

Keeping a food diary can be a big help. It allows you to see the connection between what you eat and the symptoms that may follow. If certain foods are causing digestive problems, then try to avoid them. Although no specific foods worsen the underlying inflammation of Crohn's disease, certain ones tend to aggravate the symptoms. Bearing that in mind, here is some general advice:

- Reduce the amount of greasy or fried foods in your diet, which may cause diarrhea and gas.
- Eat smaller meals at more frequent intervals.
- Limit consumption of milk or milk products if you are lactose intolerant.

- Avoid carbonated beverages.
- Decrease the amount of poorly digestible carbohydrates in your diet to decrease symptoms of gas, bloat, cramps, and diarrhea.
- Restrict your intake of certain high-fiber foods such as nuts, seeds, corn, and popcorn. Because they are not completely digested by the small intestine, these foods may cause diarrhea. That is why a low-fiber, low-residue diet is often recommended. For more information, talk to your dietitian.

MAKING THE DIAGNOSIS

How does a doctor establish the diagnosis of ulcerative colitis? The path toward diagnosis begins by taking a complete family and personal medical history, including full details regarding symptoms. A physical examination is next.

A number of other conditions can cause diarrhea, abdominal pain, and rectal bleeding. That's why your doctor relies on various medical tests to rule out other potential sources, such as infection.

Stool tests can eliminate the possibility of bacterial, viral, and parasitic causes of diarrhea. They also can reveal the presence of blood. Blood tests may be performed to check for anemia, which could suggest bleeding in the colon or rectum.

Blood tests also may detect a high white blood cell count, which indicates the presence of inflammation somewhere in the body.

Looking inside the colon

The next step is an examination of the colon itself, either through a *sigmoidoscopy* or a *colonoscopy*. With a sigmoidoscopy, the doctor inserts a flexible instrument into the rectum and the lower part of the colon. This permits visualization of those

areas to see if there is inflammation and, if so, how much. A colonoscopy is similar, but the advantage is that it allows visualization of the entire colon.

Using these techniques, physicians can detect inflammation, bleeding, or ulcers on the colon wall. They also can determine the extent of disease.

During either of these procedures, the examining doctor may take a sample of the colon lining (a biopsy) to send to a pathologist for further study. In that way, ulcerative colitis can be distinguished from other diseases of the colon that cause rectal bleeding—such as Crohn's disease of the colon, diverticular disease, and cancer.

TREATMENT

As we mentioned earlier, there is no medical cure for ulcerative colitis. But there are treatments available that can control it. They work by quieting the abnormal inflammation in the lining of the colon. This permits the colon to heal. It also relieves the symptoms of diarrhea, rectal bleeding, and abdominal pain.

The two basic goals of treatment are to achieve remission (the absence of symptoms) and, once that is accomplished, to maintain remission. Some of the medications used for these two aims may be the same, but they are given in different dosages and for different lengths of time.

There is no “one-size-fits-all” treatment for everyone with ulcerative colitis. The treatment approach must be tailored to the individual because each person's disease is different.

Investigating different approaches may result in increased options for the treatment of inflammatory bowel diseases.

MEDICATIONS FOR ULCERATIVE COLITIS

CLASS OF DRUGS	EXAMPLES	INDICATION	ROUTE OF DELIVERY
Aminosalicylates (5-ASA)	<ul style="list-style-type: none"> • sulfasalazine (<i>Azulfadine</i>®), • mesalamine (<i>Asacol</i>®, <i>Lialda</i>®, <i>Pentasa</i>®, <i>Rowasa</i>®), • olsalazine (<i>Dipentum</i>®), • balsalazide (<i>Colazal</i>®) 	Effective for mild-to-moderate episodes of ulcerative colitis. Also useful in preventing relapses of disease.	Oral or rectal
Corticosteroids	<ul style="list-style-type: none"> • prednisone (<i>Deltasone</i>®) • prednisolone (<i>Pediapred Oral Liquid</i>®, <i>Medrol</i>®) 	For moderate-to-severe ulcerative colitis. Also effective for short-term control of flares.	Oral, rectal, or intravenous (by vein)
Immunomodulators	<ul style="list-style-type: none"> • azathioprine (<i>Imuran</i>®, <i>Azasan</i>®) • 6-MP (<i>Purinethol</i>®) • cyclosporine (<i>Neoral</i>®, <i>Gengraf</i>®, <i>Sandimmune</i>®) • methotrexate 	Indicated for use in people who have not responded adequately to aminosalicylates and corticosteroids. Useful for reducing dependency on corticosteroids. May take up to 3 months to work.	Oral
Biologic therapies	<ul style="list-style-type: none"> • infliximab (<i>Remicade</i>®) 	For people with moderate-to-severe ulcerative colitis. Effective for maintaining remission and for tapering people off steroids.	Intravenous (infliximab)
Antibiotics	<ul style="list-style-type: none"> • metronidazole (<i>Flagyl</i>®) • ciprofloxacin (<i>Cipro</i>®, <i>Proquin</i>®) 	For infections of ulcerative colitis.	Oral or injection

Some medications used to treat ulcerative colitis have been around for years. Others are recent breakthroughs. The most commonly prescribed drugs fall into four basic categories:

- **Aminosalicylates:** These include aspirin-like compounds that contain 5-aminosalicylate acid (5-ASA). Examples are sulfasalazine, mesalamine, olsalazine and balsalazide. These drugs, which can be given either orally or rectally, work at the level of the lining of the GI tract to decrease the inflammation there. They are effective in treating mild-to-moderate episodes of ulcerative colitis. They also are useful in preventing relapses of the disease.
- **Corticosteroids:** These medications, which include prednisone and prednisolone, also affect the body's ability to launch and maintain an inflammatory process. In addition, they work to suppress the immune system. Corticosteroids are used for people with moderate-to-severe disease. They can be administered orally, rectally, or intravenously. They are also effective for short-term control of acute episodes (that is, flare-ups); however, they are not recommended for long-term or maintenance use because of their side effects. If you cannot come off steroids without suffering a relapse of your symptoms, your doctor may need to add some other medications to help manage your disease.
- **Immunomodulators:** These include azathioprine, 6-mercaptopurine (6-MP), and cyclosporine. This class of medications basically overrides the body's immune system so it cannot cause ongoing inflammation. Usually given orally, immunomodulators generally are used in people in whom aminosalicylates and corticosteroids haven't been effective or have been only partially effective. They may be useful in reducing or eliminating dependency on corticosteroids. They also may be effective in maintaining

remission in people who haven't responded to other medications given for this purpose. Immunomodulators may take up to three months to begin to work.

- **Biologic therapies:** Biologic therapies are the newest class of drugs used for people suffering from moderate-to-severe ulcerative colitis. These drugs are made from antibodies that bind with certain molecules to block a particular action. The intestinal inflammation of ulcerative colitis is a result of various processes, or "pathways." Because a biologic drug targets a specific pathway, it can help reduce inflammation. That targeted action also keeps side effects to a minimum.

ANTI-TNF

Within the last decade, a class of biologics known as anti-TNF was introduced for use in Crohn's disease, and also ulcerative colitis. These drugs bind to and inactivate tumor necrosis factor (TNF). This is a protein in the immune system that plays a role in inflammation. Although the first anti-TNF drug approved for Crohn's disease was infliximab (Remicade®) in 1998, infliximab was only recently approved for use in ulcerative colitis. It is used for people with moderately-to-severely active ulcerative colitis who haven't responded well to conventional therapy.

In addition, there is a "pipeline" of drugs that are in the very early stages of development. These include many more biologic drugs with different modes of action. They are structured to interrupt the out-of-control signaling within different pathways in an immune system that simply won't shut off. By uncovering additional mechanisms, investigators expect to generate increased options for the treatment of chronic inflammatory diseases—including ulcerative colitis.

THE NEXT WAVE

It is a very exciting time in the development of new therapies, as researchers reveal the culprits involved in ulcerative colitis and technology makes it possible to target those culprits to block inflammation. With more than 80 experimental treatments for inflammatory bowel disease in clinical trials, experts predict that a wave of new therapies for ulcerative colitis is on the way. Genetic studies are also expected to yield important insights that will drive the search for new therapies. The hope is that these may be capable of reversing the damage caused by intestinal inflammation and even prevent the disease process from starting in the first place. Finally, because there are several sub-types of ulcerative colitis, there is a great need for an individualized approach to treatment. Accordingly, researchers have begun to evaluate therapies based on cells and proteins derived from the individual patient in order to determine the best treatment course for that person.

This is just an overview of the medications commonly used in the treatment of ulcerative colitis. You can find more specific information about these medications by visiting CCFA's Web site at www.ccfa.org.

SURGERY

Most people with ulcerative colitis respond well to medical treatment and never have to undergo surgery. However, between 25% and 33% of individuals may require surgery at some point.

Sometimes surgery is indicated to take care of various complications related to ulcerative colitis. These include severe bleeding from deep ulcerations, perforation (rupture) of the bowel, and a condition called *toxic megacolon*. Caused by severe inflammation, this is extreme abdominal

distension accompanied by fever and constipation. If medical intervention aimed at controlling inflammation and restoring fluid loss doesn't bring about rapid improvement, surgery may become necessary to avoid rupture of the bowel.

Surgery may be considered to remove the entire colon. This is called a *colectomy*. It may be a desirable option when medical therapies no longer control the disease well or when precancerous changes are found in the colon. Unlike Crohn's disease, which can recur after surgery, ulcerative colitis actually is "cured" once the colon is removed.

Surgery may be a desirable option when medical therapies no longer control the disease well.

Depending on a number of factors—including the extent of disease and the person's age and overall health—one of two surgical approaches may be recommended. The first involves the removal of the entire colon and rectum, with the creation of an ileostomy (an opening on the abdomen through which wastes are emptied into a pouch).

Today, many people can take advantage of new surgical techniques that offer another option. This procedure, called an *ileoanal pouch anal anastomosis (IPAA)*, also calls for removal of the colon, but it avoids an ileostomy. By creating an internal pouch from the small bowel and attaching it to the anal sphincter muscle, the surgeon preserves bowel function and eliminates the need for an external ostomy appliance.

For more information on surgery in ulcerative colitis, see CCFA's Web site at www.ccfa.org.

THE ROLE OF NUTRITION

You may wonder if eating any particular foods caused or contributed to your ulcerative colitis. The answer is “no.” However, once the disease has developed, paying some attention to diet may help you reduce your symptoms, replace lost nutrients, and promote healing. For example, when your disease is active, you may find that bland, soft foods may cause less discomfort than spicy or high-fiber foods. Smaller, more frequent meals also may help.

Maintaining proper nutrition is important in the management of ulcerative colitis. Good nutrition is essential in any chronic disease, but especially in this illness. Abdominal pain and fever can cause loss of appetite and weight loss. Diarrhea and rectal bleeding can rob the body of fluids, nutrients, and electrolytes. These are minerals in the body that must remain in proper balance for the body to function properly.

But that doesn't mean that you must eat certain foods or avoid others. Except for restricting milk products in lactose-intolerant people, or restricting caffeine when severe diarrhea occurs, most doctors simply recommend a well-balanced diet to prevent nutritional deficiency. A healthy diet should contain a variety of foods from all food groups. Meat, fish, poultry, and dairy products (if tolerated) are sources of protein; bread, cereal, starches, fruits, and vegetables are sources of carbohydrates; margarine and oils are sources of fat. A dietary supplement, like a multivitamin, can help fill the gaps.

Good nutrition is essential. You may find that smaller, more frequent meals may help.

Probiotics and prebiotics

Researchers have been looking at other forms of intestinal protection for people with ulcerative colitis and Crohn's disease. That's where probiotics and prebiotics come in.

What are these substances? *Probiotics*, also known as “beneficial” or “friendly” bacteria, are microscopic organisms that assist in maintaining a healthy GI tract. Approximately 400 different types of good bacteria live within the human digestive system, where they keep the growth of harmful bacteria in check. A proper balance between good and bad bacteria is key. If beneficial bacteria drop in number or the balance is otherwise thrown off, that's when harmful bacteria can overgrow — causing diarrhea and other digestive problems. In people with already damaged GI tracts, like those with ulcerative colitis, symptoms may be particularly severe. Mounting evidence suggests the use of probiotics — available in capsules, powders, liquids, and wafers — may represent another therapeutic option for people with IBD, particularly in helping to maintain remission.

Prebiotics are non-digestible food ingredients that provide nutrients to allow beneficial bacteria in the gut to multiply. They also stimulate the growth of probiotics.

More information on diet and nutrition in ulcerative colitis can be found at CCFA's Web site at www.cdfa.org.

THE ROLE OF STRESS AND EMOTIONAL FACTORS

Some people think it takes a certain personality type to develop ulcerative colitis or other inflammatory bowel disease. They're wrong. But, because body and mind are so closely interrelated, emotional stress can influence the *symptoms* of ulcerative colitis—or, for that matter, any chronic illness.

Although the disease occasionally recurs after a person has been experiencing emotional problems, there is no proof that stress *causes* ulcerative colitis.

It is much more likely that the emotional distress that people sometimes feel is a reaction to the symptoms of the disease itself. Individuals with ulcerative colitis should receive understanding and emotional support from their families and doctors. Although formal psychotherapy usually isn't necessary, some people are helped considerably by speaking with a therapist who is knowledgeable about IBD or about chronic illness in general. CCFA offers local support groups to help patients and their families cope with ulcerative colitis and Crohn's disease.

Plan ahead

You'll learn that there are numerous strategies that can make living with ulcerative colitis easier. Coping techniques for dealing with the disease may take many forms. For example, attacks of diarrhea or abdominal pain may make people fearful of being in public places. But that isn't necessary. All it takes is some practical advance planning. Find out where the restrooms are in restaurants, shopping areas, theaters, and on public transportation. Carrying along extra underclothing or toilet paper is another smart maneuver. When venturing further away or for

longer periods of time, speak to your doctor first. Travel plans should include a large enough supply of your medication, its generic name in case you run out or lose it, and the names of doctors in the area you will be visiting.

LIVING A NORMAL LIFE WITH ULCERATIVE COLITIS

Perhaps the most difficult period for you is right now, when you have just learned you have this chronic illness called ulcerative colitis. As time goes on, though, this fact will not always occupy the top spot on your mind. In the meantime, don't hide your condition from family, friends, and co-workers. Discuss it with them and let them help and support you.

Try to go about your daily life as normally as possible, pursuing activities as you did before your diagnosis. There's no reason for you to sit out on things that you have always enjoyed or have dreamed of doing one day. Learn coping strategies from others—your local CCFA chapter offers support groups as well as informational meetings—and share what you know with others, too. Follow your doctor's instructions about taking medication (even when you are feeling perfectly well) and maintain a positive outlook. That's the basic—and best—prescription. While ulcerative colitis is a serious chronic disease, it is not a fatal one. There's no doubt that living with this illness is challenging—you have to take medication and, occasionally, may be hospitalized. But it's important to remember that most people with ulcerative colitis are able to lead rich and productive lives.

Remember, also, that taking maintenance medication can significantly decrease flare-ups of ulcerative colitis. In between disease flares, most people are free of symptoms and feel well.

HOPE FOR THE FUTURE

Laboratories all over the world are devoted to the scientific investigation of ulcerative colitis. That's good news when it comes to the development of new therapies for this disease. CCFA-sponsored research has led to huge strides in the fields of immunology, the study of the body's immune defense system; microbiology, the study of microscopic organisms with the power to cause disease; and genetics. Through CCFA's continuing research efforts, much more will be learned and eventually a cure will be found.

For more brochures and fact sheets on Crohn's disease and ulcerative colitis, please call CCFA at 888.MY.GUT.PAIN, or visit us on the Internet at www.ccfa.org.

KNOWLEDGE IS POWER!

Find the answers you need to help control your Crohn's or ulcerative colitis by joining CCFA.

Discover great ways to manage your disease and work for a cure! To join the Crohn's & Colitis Foundation of America, complete and send the application on the next page today.

By joining CCFA, you'll get:

- *Take Charge*, our national magazine
- *Under the Microscope*, our newsletter with research updates
- News, educational programs, and supportive services from your local CCFA chapter
- Discounts on select programs and merchandise

Established in 1967, the Crohn's & Colitis Foundation of America, Inc. (CCFA) is the only private, national nonprofit organization dedicated to finding the cure for IBD. Our mission is to fund research; provide educational resources for patients and their families, medical professionals, and the public; and to furnish supportive services for people with Crohn's or colitis.

In addition to supporting these key programs, CCFA donations are vital to our advocacy efforts. CCFA has played a crucial role in obtaining increased funding for IBD research at the National Institutes of Health, and in advancing legislation that will improve the lives of patients nationwide.

Start getting the latest information on symptom management, research findings and government legislation that can help you. Join CCFA today by calling (800) 932-2423, visiting www.ccfa.org, or completing and sending the application on the next page to:

Crohn's & Colitis Foundation of America

Attn: Membership
386 Park Avenue South
17th Floor
New York, NY 10016

"Over and over, CCFA has helped me find the strength I need to go on. CCFA's local network of people go through what I go through; they also meet the challenges I face every day with ulcerative colitis."

