SURGERY

The need for any type of operation, major or minor, raises many questions that require very specific answers from your surgeon. If you are planning, or are advised, to have surgery, you should be aware of all facts. This chapter will help you plan for surgery and know what to expect before and after the procedure. The most important things to know are the preparations for surgery, how the operation is performed, the type of anesthesia to be used (the drugs used to relieve pain), the necessary rehabilitation, and the appropriate recovery period. Since each operation is different, your physician and/or staff will brief you on the details that relate to your particular case before the decision is made for surgery. This is known as informed consent.

PLANNING AHEAD

In an elective surgery (planned), you will want to know where and when it will take place and what to do for the preparation.

This includes:

- The reason for the surgery (informed consent).
- The financial arrangement, including the co-payment and deductible of your insurance coverage.
- Be sure that the physician and the hospital or surgical facility are covered under your health insurance plan.
- Your physician, or the designated staff, can inform you about the type of facility in which the operation will be performed and any special instructions you should follow. This is often in the form of a written description. You also may expect to hear from the surgical facility or hospital on instructions regarding admission and discharge. Often, the facility will confirm the insurance coverage with your health insurance carrier. This information should be available for the interview.

In emergency surgery, the time for this planning and information is not applicable, but informing your health care insurance representative should be done as soon as possible.

SURGICAL FACILITIES

AMBULATORY SURGERY CENTERS

Outpatient surgery may take place in a specialized facility, such as a doctor's office, ambulatory surgical center, clinic, or the outpatient department of a hospital.

The patient is treated and discharged on the same day. This is called ambulatory or same-day surgery. Surgical procedures may be performed safely in an ambulatory center, avoid admission to a hospital, and provide the postoperative period for monitored observation and pain control prior to discharge from the facility.

HOSPITALS

Inpatient surgery usually takes place in a hospital. In most cases the patient checks in on the morning of the surgery and remains for several days postoperatively. When the monitoring necessary for safety and pain control has occurred, discharge will take place. This could be direct discharge to home (with or without home health nursing), to a rehabilitation unit, or a nursing home, depending on the complexity of the surgery.

THE PATIENT'S RESPONSIBILITY

If you smoke, you should stop smoking before your operation. Any period of nonsmoking is helpful, but you should quit at least two weeks before surgery. A general anesthesia (any drug that makes you unconscious during surgery) will temporarily change the normal function of your lungs. If you do this, you will be able to tolerate the anesthesia better, you won't cough as much during and after the anesthesia, and the risk of infection is decreased (smoking causes decreased blood supply making it vulnerable to infection).

- If you are taking any drugs (whether prescribed or over the counter), ask your physician whether you should keep taking them before or after the surgery. Some medications (as for hypertension) should be continued up until surgery with small amounts of water. Other medication should not be taken, while still others may interfere with those drugs your doctor may prescribe while in the hospital and should be avoided. Inform the surgeon and the anesthesiologist of all the medications used.
- Your doctor may ask you to follow a special diet or to take iron supplements before your surgery to build up the red blood cells in the bloodstream.
- Any kind of surgery, no matter how minor, can be stressful, both physically and emotionally. Take it easy — avoid becoming overtired in the days before and after your operation.
- If you are planning inpatient surgery or if there is a risk of a need for transfusion, you may want to donate your blood before surgery. In most major operations, the patient loses some blood. If the loss is great enough, the patient will need a transfusion (blood obtained from a donor). Ask to donate your own blood in advance of the surgery so that it can be used if a transfusion is necessary.
- Tell your doctor about any changes in your health, even minor infections or colds, that occur prior to the surgery. For women, it does not usually matter if you are having a period (menstruation) when the operation is scheduled, but it is important not to have elective surgery if you are pregnant.

QUESTIONS TO ASK BEFORE SURGERY

One mistake the majority of Americans make is to simply accept medical opinions and advise without question.

Ask your physician:

1. What are the alternatives to this procedure? There may be alternatives, so it is best to discuss this with your surgeon.
2. How much experience do you have with this procedure? Studies show that surgeons who perform specific procedures more often tend to do them better — but experience is not the only factor. A second opinion may be valuable if you are doubtful.
3. What are your fees? You should ask and get the expected fees in writing. Sometimes this is negotiable in conjunction with the insurance coverage including the deductible, co-payment, or in the case of cosmetic surgery, the entire fee, since it may not be covered by health insurance.

Ask the hospital or surgical facility:

1. What is your infection rate (those that are developed in the hospital)? About 10 percent of all patients may get a hospital-based infection. If the answer is 5 percent, the hospital is probably doing a good job controlling infections.
2. What kind of training and experience does the surgical support staff have? Discuss whether the person giving anesthesia is an anesthesiologist (MD) or a certified nurse anesthesiologist (CRNA) and ask who will assist during the entire operation.
3. How do you handle emergencies? This is important in surgeries performed outside the hospital. Does the facility have a written agreement with a nearby hospital to accept patients immediately. This is called a transfer agreement although rarely is it needed.
4. How often is this procedure performed in this facility? (Recovery rates for coronary bypass surgery are shorter in hospitals where 100 or more cardiovascular procedures are done annually).

Ask the anesthesiologist:

1. What kind of anesthesiology will be used? It is helpful to know what type of anesthesia is planned and why.
2. What is going to happen to me? Your anesthesiologist can be helpful by explaining exactly what you'll experience while preparing for surgery, what happens while you are "under," and what side effects might occur after the surgery is complete.

These kind of questions may seem detailed but they serve two important functions. (1) They provide you with valuable information, and (2) your questions alert doctors and hospital personnel that you are informed and interested.

ARRIVING FOR SURGERY

- You will be asked to arrive at the ambulatory center or hospital ahead of time so some things can be done to prepare for the surgery. How far in advance will determine the time of day your surgery is scheduled. This varies from simply registering for laboratory work, x-ray studies, or special preparations such as cleansing enemas.
- It is vitally important to have an empty stomach before surgery. Do not eat or drink anything for eight hours before your surgery is scheduled to prevent aspiration of the stomach contents while under anesthesia. If you happen to ingest food or the surgery is an emergency, be sure to tell your physician. Those persons taking vital medications sometimes are allowed to take them with a small amount of water up to the time of surgery.
- It is wise to leave your valuables and jewelry at home. If you do wear jewelry, you will be asked to remove it before the operation. If you are staying overnight, bring only the personal items you will need.
- Your physician may ask you to leave all medications at home, including over the counter medication. Prescribed medications will be provided by the hospital pharmacy and administered by the nursing staff.
- You will be asked to fill out financial forms relating to the payment arrangement. It will help to have insurance information available if the admitting department has not already preadmitted you from information furnished from home. When everything is in order, you will be given an ID bracelet with your name and admission number.
- If your surgery is inpatient, certain laboratory tests may be done in preparation for the type of surgery scheduled. Generally, this could include a urinalysis, and venipuncture for blood samples. Occasionally, a chest x-ray or electrocardiogram may be done if you have heart or lung disease.
- The Informed Consent for the surgery should be done when the surgery is scheduled. This is the full disclosure or informed consent process for the complete understanding of the procedure or treatment. It should include:
    - The surgical procedure
    - The medical and surgical indications for the surgery
    - The risks of both the surgery itself and the alternative risks of no surgery
- It is important that you understand this information. Don't be afraid of asking your physician to go over anything that is not understood. The document will vary in form but most consent forms spell out exactly what the surgery is, who will perform it, what condition it is intended to remedy, and the major risks involved. Read the consent form carefully before signing.

THE PREOPERATIVE PREPARATION (PREOP PREP)

- The area of the body where the doctor will be operating may be shaved if this has not been done at home.
- For certain gastrointestinal and pelvic procedures, a laxative or enema may be ordered or performed at home.
- You will be asked to remove the following items (many should be left at home):
  - Dentures or bridges
  - Hearing aids
  - Contact lenses and glasses
  - Nail polish
  - Wigs, hair pins, combs, and barrettes
  - Jewelry
  - Tampons
  - Artificial parts and prostheses
- You will be taken to a preoperative holding area. Sometimes, your family or friends may be with you.
- A tube (catheter) may be inserted into your bladder. This is usually done under the anesthesia to avoid discomfort. A needle (IV) may be placed into a vein in your arm or wrist. This is attached to a tube and infusion bottle containing electrolytes and dextrose to supply your body with fluids, medication, or blood during and after the surgery.

ANESTHESIA

Anesthesia is a painless state brought about by various drugs called anesthetics. Anesthesia is used during many medical and surgical procedures, childbirth, some diagnostic testing, and occasionally for control of pain. An anesthesiologist recommends the type of anesthetic to be used — the decision is influenced by the physical and emotional status of the patient and the type of operation being done. The three types of anesthesia include:

General Inhalation anesthesia refers to the fact that the medications are administered through the lungs (by breathing). It causes effects on the brain rendering the patient unconscious and unable to be awakened or feel pain until the anesthetic has worn off.

Regional Affects a section of the body, such as an arm or both legs.

Local Affects only the area involved in the procedure.

If a medical or surgical procedure is planned, it is important to know about the type of anesthesia that will be used. An anesthesiologist must know a person's health history to avoid drug reactions (eg, a history of allergies, which is essential before being anesthetized). If you are to receive anesthesia, do not eat, drink, or smoke for a specified time before surgery. By having an empty stomach, the risk of choking and aspirating the stomach contents into the esophagus is limited. This risk is taken only for surgical emergencies.

GENERAL ANESTHESIA

The preoperative interview is important. A patient will meet with the anesthesiologist to discuss anesthesia, the risks, and the benefits of the procedures. The anesthesiologist will need to be informed about:

- Recent health history
- Chronic medical conditions
- All medications that are currently being taken, including prescription, over the counter, or street drugs, if used
- All known allergies
- Past experience with anesthesia, and any unfavorable experiences of close family members
- A history of alcohol, tobacco, or illegal drug use. The interview will be confidential

Following an assessment by the anesthesiologist, an intravenous (IV) line is started. Anesthetic drugs are injected into the bloodstream through a thin tube placed in the vein of the arm or hand. Oxygen and anesthetic agents are inhaled through a face mask. Immediate feelings of drowsiness occur followed by loss of consciousness. When completely anesthetized, the mask may be replaced by an endotracheal tube that is passed either through the nose or mouth and into the trachea or windpipe. The anesthesia will continue until the surgical procedure is completed. Since the bodily functions slow down, the anesthesiologist will use special equipment to monitor the heartbeat, blood pressure, and other vital signs. A ventilator is sometimes used to supply oxygen and remove carbon dioxide through the mask or endotracheal tube. When the surgery is completed, the anesthesiologist will give medication to reverse the effects of the anesthesia and allow the patient to wake up.

General anesthesia involves risks which, under careful monitoring, can be prevented or treated effectively with modern equipment. The major risks are aspiration (by vomiting) of stomach contents, respiratory arrest, and pneumonia. Minor risks such as headache, nausea and vomiting are all reversible with treatment. When awakening, pain may be experienced. Analgesic agents will be administered to relieve the pain, if necessary.

REGIONAL AND LOCAL ANESTHETICS

Regional or local anesthetics numb only a part of the body. They may be used for less complex procedures or for a procedure that requires only a part of the body to be numb (eg, leg). Local anesthesia can be administered by injection; drops; ointment or in a topical application to the eyes, throat, and skin as a cream. Wherever the anesthetic is applied, numbness will occur in the affected area. The anesthetic blocks the nerves and prevents them from sending signals to the brain. Because the brain is not affected, the patient will remain awake but may be given a sedative (through the IV) for relaxation and reducing anxiety. Regional anesthesias include several types of procedures:

■ NERVE BLOCKS

The anesthetic is injected into a cluster of nerves, numbing an entire area (eg, arm or leg).

■ EPIDURAL BLOCK

The anesthetic is injected through a needle into the lower back, into the space just outside the covering of the spinal cord. This blocks the nerve sensation for the lower half of the body. This is useful for managing the pain of child birth or for procedures that are especially painful after surgery.

■ SPINAL

The anesthesia is injected through a thin needle into the fluid surrounding the spinal cord from the back of the body. It numbs either the entire lower half of the body or just one side, depending on the positioning of the injection and the anesthetic agent.

■ BIER BLOCKS

A tourniquet is wrapped around a limb to briefly stop the blood flow. An anesthetic is injected into the empty veins to numb the limb. After surgery, the tourniquet is removed, and the blood flow and feeling returns. All of these blocks can be enhanced by the injection of a sedative or relaxation drug during the procedure.

RISKS OF REGIONAL AND LOCAL ANESTHETICS

The major risks of a local and regional anesthetic are:

1. Inadvertent injection of a large volume of local anesthetic into a vein causing seizure
2. Nerve damage related to needle trauma
3. Bleeding and infection

AFTER SURGERY

The patient will be transferred from the operating room to a recovery room either awake, partially awake, or still sleeping. The recovery room is staffed with skilled attendants to assist in waking, breathing, and pain treatment, if necessary. This requires frequent checking and monitoring of vital signs. Some people have side effects from the anesthetic (eg, sedation). These side effects are not life-threatening but can be unpleasant. They will, however, resolve.

If a general anesthetic is used, thirst, nausea, vomiting, memory lapses (temporary), and soreness in the throat and jaw may occur. The patient will be asked to breathe deeply and cough to open the airways and clear the mucus upon leaving the recovery room, the patient will be transferred to a waiting area before being released (if an outpatient), or to a hospital room (if an inpatient). Following anesthesia, it is important that the patient does not drive, operate machinery, drink alcohol, or be alone for several hours.

ANESTHESIA IN PAIN MANAGEMENT

Being in constant pain is a main concern of patients with cancer, AIDS, neurological disorders, or other major illnesses. Pain specialists are emerging from anesthesia groups and offer pain management to patients with these serious and often terminal illnesses.

A primary care physician usually gives an appropriate referral to a pain clinic for pain management (see resources in the Pain chapter); however, a Board Certified pain management specialist if fully capable of handling all types of patients including those who are self-referred.

GOING HOME

FROM OUTPATIENT SURGERY

After outpatient surgery, you will probably be able to go home within a few hours. Before you leave, either a doctor or nurse will go over any instructions on diet, medication, and care of the incision. Prescriptions for pain medication, antibiotics, if indicated, or other medications will be given.

FROM A HOSPITAL

If you have had inpatient surgery, you will be transferred from the recovery room to a nursing unit where you will be monitored and given medication as needed for pain. This will continue until it is safe for you to be released from the hospital. Lengths of stay in the hospital are getting shorter due to good anesthesia, prompt recovery, the cost of the inpatient care, and the risk of infection.

RECOVERING AT HOME

The return-to-normal activities varies for the procedure performed and your bodily response to the healing process. Your doctor will prepare you for the recovery by both written and verbal instructions. If there is any question, these instructions should be given in the presence of a family member or friend to help you understand. Communication and monitoring from the surgeon should continue to a point of recovery and release to the primary care provider, internist, or physician referring you to the surgeon. This varies from several days to several months. In some cases, such as cardiovascular procedures, a cardiologist rather than the surgeon may assume this responsibility. In some cases, such as orthopedic surgery, a physical therapist or physiatrist may participate in the rehabilitation process. Clarification of responsibility before surgery is essential.

MOST COMMON SURGICAL PROCEDURES

OUTPATIENT SURGERY (AMBULATORY)

System Procedure Performed On	Number Annually
Digestive System	6,200,000
Eyes	4,600,000
Musculoskeletal System	3,700,000
Skin (Dermatological)	2,800,000
Female Genital Organs	2,100,000
Nose, Mouth & Pharynx	2,000,000
Urinary System	1,400,000
Nervous System	979,000
Ears	870,000
Cardiovascular System	688,000
Respiratory System	341,000

INPATIENT SURGERY (HOSPITALIZATION)

System Procedure Performed On	Number Annually
Obstetrical	6,400,000
Digestive System	5,100,000
Cardiovascular System	4,840,000
Musculoskeletal System	3,100,000
Skin (Dermatological)	1,300,000
Urinary System	1,100,000
Respiratory System	1,041,000
Nervous System	954,000
Cancer Related	363,000
Nose, Mouth, Pharynx	353,000
Eyes	269,000

Source: Centers for Disease Control and Prevention - National Center for Health Statistics FASTATS
Data: Outpatient (1994), Inpatient (1995)

ON THE HORIZON

Dermabond, recently approved by the FDA, is a medical glue that is a faster and easier way to seal wounds and could replace sutures in one-third of the 11 million wounds treated in emergency rooms each year.