Your Gastric (Stomach) Cancer Surgery
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First edition

Developed by Allina Health.

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Introduction

Tip

Please keep this booklet. Bring it to the hospital for your surgery.

You are having surgery to remove the tumor that is located either in your stomach or where the esophagus and stomach meet (known as the GE junction). This surgery is called a gastrectomy.

There are several different surgeries that can be used to remove the stomach. The right surgery for you depends on the type, location and size of your tumor and your overall health. Your surgeon will explain which surgery is right for you.

Your surgeon will remove some or all of the stomach and surrounding lymph nodes. He or she will reconnect your intestines to your esophagus or remaining stomach.

This booklet explains what will happen during the surgery and what to expect during your hospital stay.
Location of Your Stomach and Intestines

The stomach stores swallowed food and liquid, mixing it up with digestive juices. After breaking up the food and killing germs, the stomach empties its contents slowly into the small intestine. Mucus helps protect the stomach wall.

The small intestine finishes digesting food and liquid. It absorbs nutrients and sends the digested particles on to the large intestine.

The large intestine is a long tube that reabsorbs some water and minerals. It also makes and stores stool.
Location and Stage of Your Tumor

The results of your radiology tests and procedures will help your health care team determine the stage of your cancer. The final stage will be determined after surgery. The stage of your tumor is based on the TNM staging system:

- **T**: the size and depth of your tumor
- **N**: if the tumor affects nearby lymph nodes
- **M**: if the cancer has spread to other organs or distant lymph nodes.

Your surgeon will draw where your tumor is located.
Before Treating Gastric (Stomach) Cancer

Your surgeon may recommend additional procedures to help stage your cancer and prepare you for chemotherapy, if needed.

**Laparoscopy**

A laparoscopy is done to check if the cancer has spread or not and to biopsy any tissue that looks abnormal. During a laparoscopy, a laparoscope is inserted into the abdomen or pelvic area. A laparoscope is a thin, lighted tube. It allows your surgeon to view the abdomen and organs on a TV screen. A small amount of air is used to expand the abdomen for a better view. The surgery usually has 2 or 3 lower abdominal incisions, one of them near the navel (belly button).

**Washings**

Washings are done to stage your cancer. Your surgeon will put fluid in your abdomen and then draw out (remove) a sample. The sample will be tested and the results will show if any cancer cells have broken free from the tumor.

**Biopsy**

During a biopsy, your surgeon will take a sample of any tissue that looks to be affected by the cancer. The sample will be sent to the lab.

**Feeding tube**

It is possible that you may have trouble taking in enough food after your surgery. If so, your surgeon may recommend that you have a feeding tube placed before or during surgery. It will be used to give you liquid nutritional support after your surgery and during treatment. When you are eating well and your weight is stable, your surgeon will remove the feeding tube.

**Ports**

Your surgeon may recommend that you have a port placed during surgery. A port is a small metal and plastic device with a hollow space in the middle. It is connected to a catheter (thin, flexible tube) that goes under your skin and into your bloodstream. A port will make it easier and more comfortable for you to receive chemotherapy.
Types of Surgery

There are three different types of stomach cancer surgeries. Each surgery can be done two different ways.

- Open surgery: An incision (cut) is made on your abdomen to reach the stomach.
- Minimally invasive surgery: Small incisions are made on your abdomen. The surgeon will insert medical instruments and a camera through the incisions to do the surgery.

Your surgeon will talk with you about the type of surgery you will be having and how it will be done.

- **Wedge resection**

A wedge resection removes only the tumor and a small amount of healthy tissue around the tumor.

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Did You Know?

Lymph nodes act like filters that remove dead cells, bacteria (germs) and even cancer cells from the body and keep them out of the bloodstream.

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A wedge resection removes only the tumor and a small amount of healthy tissue around the tumor.
Partial (subtotal) gastrectomy

A partial gastrectomy removes the lower part of the stomach. The rest of the stomach is attached to the small intestine. Lymph nodes and other tissues may also be removed during surgery.

Before a partial (subtotal) gastrectomy.

After a partial (subtotal) gastrectomy.
**Total gastrectomy**

A total gastrectomy removes the entire stomach. Lymph nodes and other tissues near the tumor will also be removed. The esophagus is attached to the small intestine.

Roux-en-Y reconstruction means that when your esophagus is attached to your small intestine, it will look like a “Y.”
Risks or Complications of Surgery

Possible risks or complications (problems) of surgery can include the following:

- general anesthesia risks
- bleeding that requires a blood transfusion or another surgery
- leak from anastomosis (surgical connection)
- the surgical connection doesn’t heal
- infection at an incision site
- feeding tube complications
- pneumonia
- reflux (heartburn)
- dumping syndrome
- not being able to eat normally, needing to eat several smaller meals each day, or both
- ulcer disease
- other respiratory problems that require breathing support
- heart attack, stroke or blood clots
- weakness, loss of muscle strength that requires rehabilitation
- scarring or tightening of the stricture (the new connection between the esophagus or the stomach and small intestine
- the possibility you may need a rehabilitation stay after surgery
- the possibility that the cancer can’t be removed.

You may have others that are not on this list. Please talk with your surgeon about any concerns or questions you have.
Quit Tobacco For Your Surgery

Did You Know?
Tobacco products contain more than 7,000 chemicals. More than 70 are known to cause cancer.

Tobacco and surgery risks
Tobacco products include cigarettes, electronic nicotine delivery systems (ENDS, includes e-cigarettes and JUUL®), smokeless tobacco (dip or chew), cigars, hookahs and pipes.

Using tobacco increases your risk of the following during and after surgery:
- heart problems
- lung problems (complications) such as pneumonia
- infections such as infections of your surgery site (incision)
- blood clots
- slower healing of your surgery site
- higher levels of pain and more problems with pain control.

Tobacco use keeps oxygen from reaching your surgery site and it can increase your recovery time.

Benefits of quitting
- Research shows that quitting 4 weeks before surgery can reduce any problems after surgery up to 30 percent.
- People who quit smoking report having better pain control.
- Your body responds quickly to quitting:
  - **8 hours**: the carbon monoxide level in your blood drops to normal. The oxygen level in your blood increases to normal.
  - **48 hours**: Nerve endings start to grow again.
  - **2 weeks**: Your circulation improves and your lung function increases. *(Source: World Health Organization)*

Important
Secondhand smoke causes as much damage to healing as if you were smoking.

If you live with someone who smokes, ask him or her to smoke outside for at least the time of your recovery.

Did You Know?
Using your surgery as a motivator to quit tobacco increases your success rate of quitting for good.

When you should quit
Ideally, you should quit as soon as possible. Research shows that:
- the harmful effects from cigarettes begin to go down about 12 hours after your last cigarette smoked
- at least 8 weeks without cigarettes is the best way to reduce problems almost as low as people who do not smoke.

The American College of Surgeons recommends at least 4 weeks without cigarettes.
You should not use tobacco the day of surgery up to 1 week after your surgery. Your doctor may tell you when to quit before your surgery.

If you quit for surgery, you double the chance of staying off cigarettes for good. Many people report they have no cravings while in the hospital.

**Not ready to quit? Consider taking a break!**

If quitting tobacco makes you feel nervous and seems overwhelming, consider taking a break or a vacation from tobacco use.

- You will get the physical benefits for the period of time that you are not using tobacco.
- You will reduce your risk of problems during surgery and still increase your chances of a smooth recovery after surgery.

If you can, set a goal to stop using tobacco for 1 month after your surgery. This will allow your body to heal the best after your surgery.

**Ways to quit or take a break**

- abrupt stop (cold turkey)
- nicotine replacement therapy* (gum, lozenge, patch or inhaler)
- medicines (Chantix® and Zyban®)
- behavioral strategies (such as calling a friend or going for a walk)
- aromatherapy (black pepper oil)
- take a break (vacation) from tobacco.

Any step you take without tobacco is going to help you. Small steps are better than nothing!

*Nicotine replacement therapy (NRT) can nearly double your chances of successfully staying off cigarettes. It works best if you use it with the help of a doctor or counselor. Ask your doctor about using NRT around the time of surgery. Go to quitforsurgery.com to learn more.
Resources

**Allina Health**

- Tobacco Intervention Program at Abbott Northwestern Hospital  
  — 612-863-1648
- Tobacco Intervention Program at Mercy Hospital  
  — 763-236-8008
- Tobacco Intervention Program at River Falls Area Hospital  
  — 715-307-6075
- *United Hospital Lung and Sleep Clinic Tobacco Cessation Program*  
  — 651-726-6200
- *Penny George™ Institute for Health and Healing* (LiveWell Center) tobacco intervention coaching  
  — 612-863-5178

**Other**

- Minnesota Department of Health  
  — health.state.mn.us/quit
- Quit Smoking Hotline  
  — 1-800-QUIT-NOW (7848-669)
- online tobacco cessation support  
  — smokefree.gov
- American Lung Association/Tobacco Quit Line  
  — 651-227-8014 or 1-800-586-4872
- Chantix® GetQuit Support plan  
  — 1-877-CHANTIX (242-6849) or get-quit.com
- financial aid for Chantix® or Nicotrol® inhaler  
  — 1-866-706-2400 or pfizerhelpfulanswers.com
- *Mayo Clinic Nicotine Dependence Center’s Residential Treatment Program*  
  — 1-800-344-5984 or 1-507-266-1930
- Plant Extracts aromatherapy  
  — 1-877-999-4236

*There may be a cost to you. Check with your insurance provider.*
Preparing for Your Surgery

You will receive a call from your surgeon’s scheduler with the
date and time of your surgery. He or she will give you other
pre-surgery instructions.

If you have not received a call within 2 or 3 days of your surgery
planning appointment, or if you have other questions about your
surgery, please call your surgeon’s office.

Activity

- During the days before your surgery stay active, walk or
  continue with your normal physical activity routine. This will
  help your recovery while in the hospital.

- It is usually OK to take a short trip or vacation before surgery
  but please talk with your surgeon or nurse coordinator before
  making any travel plans.

Nutrition

Proper nutrition is important to help with recovery from
your surgery.

- In the days before surgery try to eat a well-balanced diet,
  including food from all food groups. If you have lost weight
  you may want to use nutritional supplements to add
  extra calories.

- Your nurse can give you specific nutrition information.

Food and Liquid Directions Before Surgery

- Usually the night before your surgery you will not be able to
  eat or drink anything after midnight. (You will be able to take
  your medicines with a small amount of water. Follow your
  surgeon’s instructions.)

- Do not drink alcohol up to 24 hours before your scheduled
  arrival time.

- Do not smoke, vape, use chewing tobacco or use any
  other tobacco products up to 24 hours before your scheduled
  arrival time.
Other Preparations

How to Get Started

Allina Health offers three ways to help you get started:

- Sign up for a free advance care planning class. Call 612-262-2224 or 1-855-839-0005 to register.
- Fill out a free, secure health care directive online. Go to account.allinahealth.org to create an account.
- Print out a health care directive at allinahealth.org/acp.

Advance care planning

Planning for your future health care

Advance care planning is the process of giving information to others about your health care choices in case illness or injury prevents you from telling them yourself.

Talk with members of your care circle (family, friends or others close to you) about your health care choices. This is a time for you to share:

- what kind of care and treatment you do or do not want
- your wishes, goals and values and how they relate to your health care choices for the future.

You can put your health care choices in writing by creating a health care directive. Members of your care circle and your health care providers will use this document to interpret and understand your wishes, goals and values for your future health care needs.

How to wash your skin before your surgery

Washing your skin with Techni-Care® or Hibiclens® before surgery removes most of the bacteria that is normally found on your skin. This helps prevent infections at the incision sites during your recovery.

Use the Techni-Care given to you at your pre-surgery appointment or buy an 8-ounce bottle of Hibiclens at your local drugstore or pharmacy.

You will need to take one shower or bath the night before surgery and one shower or bath the morning of surgery.

- The night before surgery, shampoo your hair with your own shampoo and take a shower or bath using 4 ounces of the Techni-Care or Hibiclens.
  1. Gently cleanse your entire body for 5 minutes.
  2. Avoid getting the soap in your eyes.
  3. Rinse well. Pat dry with a clean towel and put on clean underwear and clothing.
  4. Do not apply skin lotions, oils, powders, perfumes or deodorant.
- The morning of surgery take another shower or bath using 4 ounces of the Techni-Care or Hibiclens. Repeat steps 1 through 4. (You do not have to shampoo.)
Preparing Your Mind and Body for Surgery

More Information

For more information about mind-body skills and the Penny George Institute, visit allinahealth.org/pennygeorge.

Studies have shown that if your mind and body are ready for surgery you may sleep better and have less anxiety and pain. Your hospital stay may also be shorter.

Your health care team can teach you a set of mind-body skills to help you during your hospital stay and recovery. These skills may include:

- meditation and relaxation techniques
- breath work
- guided imagery
- biofeedback
- self-care practices
- pain management techniques.

The Penny George™ Institute for Health and Healing also offers services to help you as you prepare for and recover from surgery. Some of these services include:

- acupuncture
- acupressure
- aromatherapy
- healing coach
- healing touch
- massage therapy
- music therapy
- reflexology.

The services available to you before and after your surgery vary, depending on where you’re having surgery. Ask your health care team which services are offered at your hospital.
What To Expect In The Hospital

Day of surgery

The surgery takes 3 to 4 hours but can vary depending on your situation. Your family will be shown where the surgery waiting areas are located. After surgery you will be taken to the Post Anesthesia Care Unit (PACU). You will be monitored closely.

Your surgeon will speak with members of your family when you are in the PACU. They will be able to visit with you when you are awake and in your hospital room, which may be in the ICU or on the hospital surgery floor.

During your hospital stay, some of the following equipment may be used:

- **Endotracheal tube.** This tube is put into your mouth and down your windpipe. It helps control your breathing during surgery. The tube will be removed as soon as you are able to breathe on your own. This is usually done before you wake up after surgery.

- **Oxygen.** You will be given extra oxygen if needed. Oxygen is given through a small tube in your nose or through a face mask placed over your nose and mouth.

- **Heart monitor.** A heart monitor records your heartbeats. Three to five sticky pads will be placed on your chest. The pads are attached to wires and a monitor that records your heartbeats.

- **Nasogastric tube (NG tube).** This flexible tube is inserted through your nose and passes into your stomach or intestines. It will help drain fluid and air from your stomach. This tube will stay in place for several days. You may have congestion and a sore throat.

- **Jejunostomy tube (J-tube).** If you have a feeding tube, it will be used to give you liquid nutritional support after your surgery. It is placed before or during surgery.

- **Foley catheter.** This tube is inserted into your bladder to drain urine. The catheter will be removed when you can urinate on your own.

- **Incentive spirometer.** This breathing device helps maintain healthy lungs after surgery. Use it along with deep breathing and coughing exercises.

- **Sequential compression device (SCD).** These stockings are used to increase circulation and help prevent blood clots.
Managing Your Pain

There are two different ways to manage your pain after surgery.

- Patient controlled analgesia (PCA) machine. The PCA machine allows you to give your own pain medicine. It has safety features that reduce the risk of getting too much medicine.

- Epidural. An epidural is a catheter that delivers medicines to the nerves near your spine. It is used to control your pain after surgery. The epidural (small plastic tube) is placed in your back. The tip of the catheter rests in the area just outside the spinal cord. This area is called the epidural space. Medicines are injected through the catheter into the epidural space to control pain. The epidural is placed before your surgery.

You will be able to talk about how to manage your pain with the anesthesiologist on the day of your surgery.

Your Recovery

The following is the average recovery time. Your overall health may affect your recovery time.

<table>
<thead>
<tr>
<th>After Surgery Day 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A hospitalist (a medical doctor) may join your health care team. He or she will help in the follow up of any other health issues you may have (such as diabetes or high blood pressure).</td>
</tr>
<tr>
<td>You will receive an intravenous (IV) pain medicine or an epidural to keep you comfortable.</td>
</tr>
<tr>
<td>You will not be able to drink or eat anything. You can use a sponge to keep your mouth moist.</td>
</tr>
<tr>
<td>You will have a nasogastric (NG) tube in your nose.</td>
</tr>
<tr>
<td>You will have a Foley catheter in your bladder.</td>
</tr>
<tr>
<td>You will need to take deep breaths and cough every 1 to 2 hours to keep your lungs clear and help oxygen flow. You should have an incentive spirometer at your bedside. You may need extra oxygen during this time.</td>
</tr>
<tr>
<td>You will be given shots (injections) of a blood thinner each day to help prevent blood clots.</td>
</tr>
<tr>
<td>The nursing staff will help you to dangle your legs at the bedside or get up in chair.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue with IV pain medicine or an epidural.</td>
</tr>
<tr>
<td>Continue with breathing exercises. Use the incentive spirometer every 1 to 2 hours.</td>
</tr>
<tr>
<td>Continue with nothing to eat or drink. Your tube feedings will be started through the feeding tube placed in your intestine during surgery.</td>
</tr>
<tr>
<td>Increase your activity. Walk in the hall with help.</td>
</tr>
<tr>
<td>Your Foley catheter may be removed.</td>
</tr>
</tbody>
</table>
Day 3

- Same as day two.
- Continue to increase activity. Walk in halls with help 2 to 3 times.
- You may have a swallow study to make sure there is not a leak at the location where the esophagus and intestines are connected.
  - Your surgeon will determine how well you are healing and if you need the swallow study. Sometimes the NG tube is removed without having the study.
  - If you have the swallow study:
    - This test is done in the Radiology Department.
    - You will be asked to swallow a small amount of contrast.
    - If the radiologist doesn’t see any evidence of a leak you will be able to have the NG tube removed and start on a clear liquid diet.
- Either today or in the next few days the dietitian will teach you about the recommended diet to follow. The tube feedings will continue until you are able to eat at least half of the recommended amount of food.

Days 4 to 7

- You may meet with a social worker to begin to talk about your discharge arrangements.
- Depending on how you tolerate food by mouth, your diet will be advanced to a full liquid diet then a soft regular diet.
  - Food is OK to eat if you can cut it with a fork.
  - Right now, avoid hard, chewy breads and food, and crunchy vegetables.
  - If you are unsure about what is OK to eat, ask your nurse. You will likely need to eat several smaller meals each day.
- Continue to increase your activity. If you have had problems regaining your strength you may meet with physical therapy staff.
- The nursing staff will show you and your family how to care for your feeding tube and how to give the tube feedings (if needed).
- The social worker will meet with you to talk about home care plans.
- Your nurse coordinator will help in your discharge planning and follow-up appointments with your surgeon.
Your Recovery After Your Hospital Stay

Diet and nutrition

- A dietitian will meet with you and your caregiver to talk about diet recommendations.

- In general:
  - eat several smaller meals each day (6 instead of 3)
  - avoid sugary and sweet foods.

- For the first few weeks after surgery, you should eat only food that is easy to cut with your fork. That means it is tender.

- For 4 weeks after surgery, avoid hard, chewy breads and crunchy vegetables.

Feeding tube (if you have one)

- The nurses will teach you and your caregiver how to care for the feeding tube and the skin around it.

- If you will be going home with the tube feedings, a hospital social worker will meet with you and help you make arrangements for delivery of supplies and formula.

- You will receive instructions from home care staff on how to manage your feedings at home.

Reflux (heartburn)

- After surgery, your stomach is either smaller or gone. Because your stomach or intestines cannot hold as much food as it did before, you are more likely to have reflux.

- To prevent reflux, try these suggestions:
  - Eat smaller meals more often during the day.
  - Do not eat 2 to 3 hours before going to bed.
  - Try not to lie flat. Keep the head of your bed elevated (raised) or use several pillows.
  - Ask your doctor about medicine to prevent reflux.
Activity

- It may take several months before you regain your normal energy level. For your recovery, it is important to get regular physical activity.
  - Walk every day at a pace that is comfortable to you.
  - You may climb stairs as tolerated.
  - You can go outdoors.
  - Take rest periods during the day. If you sleep too much during the day it can affect your sleep at night.
- Do not drive until your surgeon says it is OK.
- Do not lift more than 10 pounds for the first 4 weeks after surgery.

Returning to work

- Talk with your surgeon or nurse about when you can return to work.
  - The time away from work will depend on your situation. In general, you will need at least 3 to 4 weeks (sometimes more) to recover from surgery.

Support

- You may feel down or depressed. This is normal. You have been through a lot and have some lifestyle changes to make.
- Sharing meals with family and friends is important. If you are planning to eat out, you may want to plan what you will eat and how much.
- You may wish to share some of your eating changes with your dining partners.
- If you have other concerns, please talk with your surgeon or nurse coordinator. There is help available, such as:
  - Coping With Change Support Group
  - licensed psychologists
  - licensed social workers
  - The Penny George™ Institute for Health and Healing.
Follow-up appointments

- Your nurse coordinator will help you set up your follow-up visit with your surgeon.
- Your first visit is usually within 1 to 2 weeks after you leave the hospital.
- If you have questions about your appointment, call the Virginia Piper Cancer Institute at 612-863-0200, Monday through Friday from 8 a.m. to 4:30 p.m.

When to call the surgeon

Your surgeon’s office has a surgeon on call at all times. Call your surgeon’s office if you have any of the following symptoms during your recovery.

- swelling of your neck or upper chest
- new or worsening shortness of breath
- new or worsening cough
- swelling, warmth, redness, drainage or pain at the incision sites
- new or worsening pain
- temperature of 101.5 F or higher
- throwing up (vomiting)
- uncontrolled diarrhea
- flushing (warmth or redness of your cheeks, sweats)
- cramping after eating
- unable to eat or drink recommended amounts
- feeding tube problems (not able to get the formula in, tube falls out, or pain or skin irritation around the tube.

Tip

For problems with the pump or supply issues, please call the home care agency that provides your equipment.
Get better communication and faster answers online with your Allina Health account.

Health is a journey that happens beyond the walls of your clinic or hospital and we will be there to help you – whether it’s a question that pops into your head at midnight or recalling the date of your last tetanus shot. When you sign up for an Allina Health account online, you get better communication with your clinic, hospital and provider; faster answers and your (and your loved one’s) health information organized and at your fingertips anytime.

Sign up for your account at allinahealth.org

*Availability varies by location. Ask your clinic or hospital if this service is available.

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Allina Health:
- provides free aids and services to people with disabilities to communicate effectively with us, such as:
  - qualified sign language interpreters, and
  - written information in other formats (large print, audio, accessible electronic formats, other formats)
- provides free language services to people whose primary language is not English, such as:
  - qualified interpreters, and
  - information written in other languages.

If you need these services, ask a member of your care team.

If you believe that Allina Health has failed to provide these services or discriminated in another way on the basis of race, color, national origin, age, disability, gender identity or sex, you can file a grievance with:

Allina Health Grievance Coordinator
P.O. Box 43
Minneapolis, MN 55440-0043
Phone: 612-262-0900
Fax: 612-262-4370
GrievanceCoordinator@allina.com

You can file a grievance in person or by mail, fax or email. If you need help filing a grievance, the Allina Health Grievance Coordinator can help you.

You can also file a civil rights complaint with the U.S. Department of Health and Human Services, Office for Civil Rights, electronically through the Office for Civil Rights Complaint Portal, available at https://ocrportal.hhs.gov/ocr/portal/lobby.jsf, or by mail or phone at:

U.S. Department of Health and Human Services
200 Independence Avenue, SW Room 509F, HHH Building
Washington, D.C. 20201
1-800-368-1019, 800-537-7697 (TDD)
