FRANKLY SPEAKING
ABOUT CANCER
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IMMUNOTHERAPY FOR BLADDER CANCER

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GILDA'S CLUB

What is Immunotherapy?

This booklet describes how immunotherapy uses the body's natural defenses to treat the most common form of bladder cancer. Transitional (or urothelial) cell bladder cancer accounts for more than 90 percent of all bladder cancers. Several immunotherapy drugs are approved for its treatment. One has been used for over 25 years. The others have gained approval since 2016. More are being tested for future use. Immunotherapy does not work for everyone. There is still a lot to learn. Researchers study these drugs to determine which are the safest and most effective, how to tell which patients will benefit, and when to use them.

Immunotherapy is a type of cancer treatment that uses the body's natural defenses (immune system) to identify, attack, and kill cancer cells. The immune system is designed to attack any cell it sees as unhealthy or abnormal.

Today, there are multiple kinds of immunotherapy treatments. They help fight cancer by:

- Boosting the immune system. A "revved up" immune system can be better at fighting the cancer.
- "Marking" cancer cells so that your immune system can see them better to find and destroy them. This keeps the cancer from being able to hide from the immune system.
- Helping the immune system find cancer cells and delivering treatment directly to the cancer cells. This treatment can include chemotherapy, radiation, or even T cells, a type of white blood cell that are the immune system's "soldiers."

HOW IS IMMUNOTHERAPY GIVEN?

The use of immunotherapy is rapidly increasing as more immunotherapies are approved to treat people with more types of cancer. Most immunotherapy is given using an IV infusion (through a vein). You may receive immunotherapy in a doctor's office, in a clinic, or as a day patient in a hospital. Different immunotherapies are given on different schedules. Some may be given in combination with other therapies or with a different immunotherapy.

Is Immunotherapy Right for Me?

"Keep pushing until you get the answers you are looking for, because they are out there." —Steve, immunotherapy clinical trial patient

Most people who get immunotherapy today have cancers that are advanced or metastatic. Their cancers have either returned and spread after initial treatment or were diagnosed in an advanced stage. Some immunotherapy drugs are now approved to treat certain early stage cancers. Researchers are testing immunotherapy in new cancer types and at earlier stages. Some people cannot receive immunotherapy because of serious health problems (like autoimmune disorders) that make it unsafe to take these drugs. Ask your health care team if immunotherapy is right for you.

How Immunotherapy Compares

Some of the most common cancer treatments include:

Immunotherapy works by making the immune system stronger so it can fight cancer better. The immune system helps your body fight infections and other diseases, like cancer. But sometimes cancers learn how to escape from the immune system and grow anyway. Immunotherapy helps your own immune system fight cancer better. Common side effects include fatigue, skin problems, fever, and shortness of breath. Most side effects are mild, but some can be severe.

Surgery is an operation to remove the cancer (or part of it) from your body. It is not always possible or helpful. Surgery is often used as a treatment option for early-stage cancers that have not spread to other parts of the body. When it is thought that cancer can be removed completely, it is often the first treatment. The most common side effects of surgery are pain, fatigue, bleeding, swelling around the surgical site, and infection.

Chemotherapy (also called chemo) uses drugs to kill cancer cells. These very strong drugs attack fast-growing cells like cancer. Chemo can cause side effects like hair loss, nausea, mouth sores, and low white blood cell counts.

Radiation Therapy uses energy beams, such as very strong x-rays, electrons, or protons, to kill cancer cells and shrink tumors. Radiation can also damage normal tissue or organs, so it is carefully focused to reduce that damage. You may experience redness, burns, or hair loss in the area being treated. Other possible side effects include fatigue, loss of appetite, and nausea.

Targeted Therapies are drugs that "target" changes in cells that cause cancers to grow, divide, or spread. Doctors test tumors for these changes (biomarkers) to find out if targeted therapy should work. Diarrhea and skin problems, including rashes, are the most common side effects.

KEY THINGS TO KNOW

- It is very important that anyone receiving immunotherapy let their health care team know right away if they develop any side effects.
- Although there are promising results, immunotherapy does not work for every patient who tries it.
- There is still a lot that researchers don't know about immunotherapy.
- Here are some questions researchers are trying to answer about immunotherapy treatments:
- Why do they work so well in some people and not at all in others?
- How can they be combined with other treatments?
- When is the best time to use them?
- What are the long-term side effects?

WHAT DOES IT COST?

Many new treatments, including immunotherapy, can be very expensive. Patients who are being treated through a clinical trial may have those costs covered. Talk to your health care team upfront about the financial issues involved in your treatment. Many treatment centers have resources to help patients obtain insurance coverage or access programs designed to help cover costs of treatment.

IMMUNOTHERAPY DRUGS APPROVED FOR BLADDER CANCER

These are the classes of immunotherapy drugs that are FDA-approved to treat bladder cancer as of November 2021. Some are injected directly into the bladder through a catheter. Others are given into a vein through an intravenous (IV) line. You may receive them at your doctor's office, at an infusion clinic, or as a day patient at a hospital. Which drug you receive may depend on your biomarker testing results, overall health status, what you prefer, and your insurance. Work with your health care team to determine the best course of treatment and if immunotherapy is right for you.

This list changes often. Approvals for these drugs expand to include more types of bladder cancer. For information on specific drugs and the latest approvals for bladder cancer, go to **www.CancerSupportCommunity.org/bladder-cancer**. Refer to Cancer Support Community's Immunotherapy booklet or **www.CancerSupport Community.org/Immunotherapy** for more information on immunotherapy and how it works.

BCG Therapy

Common Side Effects

- Bladder discomfort (burning in bladder)
- Changes to urine output
- Flu-like symptoms including: fever, headache, fatigue, chills
- Blood in urine

Things to Know

- For treatment of Non-Muscle Invasive Bladder Cancer
- Injected directly into the bladder through a catheter
- Usually given multiple times over weeks

Monoclonal antibody

Common Side Effects

- Itching
- Musculoskeletal pain
- Changes in appetite
- Changes in liver function
- Hair loss
- Numbness and tingling in hands and feet
- Skin changes
- Dry eyes
- Changes in blood counts
- Changes to blood sugar levels
- Changes to electrolyte levels
- Fatigue
- Cough
- Shortness of breath
- Nausea
- Diarrhea

Things to Know

- For treatment of Muscle Invasive Bladder Cancer
- Can be used for patients with PD-L1 biomarker
- Given using IV infusion (through a vein)

If you are on immunotherapy, it is important to let your health care team know immediately if you notice any change in side effects or symptoms. Most side effects can be managed if they are treated early.

Types of Immunotherapy

CHECKPOINT INHIBITORS

The immune system has safeguards in place to prevent it from attacking healthy cells. These safeguards are called checkpoints. They slow down or stop the immune system from attacking healthy tissue. Some cancers have learned how to activate these checkpoints to avoid being found and killed by the immune system. They trick the body into turning its own defenses off. Checkpoint inhibitors block these checkpoints, helping the body fight cancer.

Most patients who receive immunotherapy today are on one of two kinds of checkpoint inhibitors: PD1/PDL-1 or CTLA-4 inhibitors. However, not all cancers can be treated with these drugs. Currently, checkpoint inhibitors only work for up to a third of patients who are given them. But that number depends on your cancer type. These drugs may be given in combination with other therapies, such as chemotherapy or other immunotherapy drugs. Researchers are also studying giving checkpoint inhibitors in combination with radiation therapy.

5 MAJOR KINDS OF CANCER IMMUNOTHERAPY

New treatments become available all the time so this may not be a complete list. This list does not include clinical trials. **These are the immunotherapies that are available as of November 2021.** For the latest information go to **www.CancerSupportCommunity.org** and search for your tumor type to find out if new immunotherapy drugs have been approved.

CANCER IMMUNOTHERAPY	DESCRIPTION	GIVEN BY	APPROVED TO TREAT
CHECKPOINT INHIBITORS	Prevents tumor from turning off cancer-fighting cells	IV	Melanoma, Hodgkin lymphoma, Merkel cell and cutaneous squamous cell carcinoma, head and neck cancer, triple negative breast cancer, and lung, colorectal, kidney, bladder, cervical, endometrial, liver, and stomach cancers as well as any non-blood cancers that test positive for the biomarkers MSI-high/dMMR
CELL THERAPY	Modifies the body's own immune cells to become a cancer treatment drug	IV	CAR T therapy for leukemia and lymphoma
CYTOKINES	Boosts the body's immune system generally	IV	Advanced melanomas and kidney cancers
TREATMENT VACCINES	Teaches the body's immune cells to find cancer cells	IV	Prostate cancer
ONCOLYTIC VIRUS THERAPY	Uses viruses to fight cancer cells	IV	Advanced melanoma

CHECKPOINT INHIBITOR SIDE EFFECTS

We tend to think of immunotherapy as "natural"—as our body's own defense system. However, immunotherapy can still have side effects. These effects are generally different from those caused by chemotherapy or radiation therapy. In many cases, they are not severe and may be short-lived or easy to manage. Less often, side effects can be very severe and even life-threatening.

Common Side Effects

- Flu-like symptoms (fever, chills, headache, nausea, cough, loss of appetite)
- Fatigue (some people get extreme fatigue)
- Rashes, redness, or itching
- Pain or soreness
- Muscle or joint pain
- Infections

Less Common Side Effects

- Colitis or other gastrointestinal problems (stomach pain, diarrhea)
- Problems with the thyroid, liver, kidneys, heart, or other glands or organs
- Lung problems (cough, shortness of breath)
- Other serious autoimmune conditions (such as pituitary disorders or diabetes)

Sometimes the side effects do not occur right after treatment is given. They may show up several months later. Little is known at this time about whether there are any long-term side effects. If you are on immunotherapy, it is important to let your health care team know immediately if you notice any change in side effects or symptoms. Most side effects can be managed if they are treated early.

"It is important to call your health care team even with the slightest change of the person's symptoms, because symptoms can escalate very quickly. No question or call is wrong, so always call." —Heather DiFilippo, Nurse Practitioner (Abramson Cancer Center, Hospital of the University of Pennsylvania)

There are several checkpoint inhibitors approved to treat cancer. Your doctor may test your PD-1/PD-L1 levels before using these drugs. In some cases, the drugs are only used on cancers with certain levels of PD-1/PD-L1. In others, the results may predict how well your cancer will respond to this treatment.

These drugs have been shown to successfully treat a growing number of cancers. In addition, at least one PD-1 inhibitor is approved to treat any solid tumor (non-blood cancer) that tests positive for the biomarkers MSI-high (microsatellite instability-high) or dMMR (mismatch repair deficient).

OTHER MONOCLONAL ANTIBODIES

Checkpoint inhibitors are one type of monoclonal antibody (mAb). Other types let the immune system find and destroy cancer cells using targets that aren't checkpoints. Still others take radiation or chemotherapy drugs directly to cancer cells. Each mAb is made to find and attach to a specific protein that occurs in cancer cells. Not all mAbs are immunotherapies, some are targeted therapies. Most mAb treatments that aren't checkpoint inhibitors are used in blood cancers. To learn more, see our Immunotherapy and Blood Cancers page at **www.CancerSupportCommunity.org/IOBlood.**

CELL THERAPY

In cell therapy, the body's own cells are removed from a person with cancer, taken to a lab, and modified. Once returned to the person, these modified cells find and destroy cancer cells. The most common form of this treatment is CAR T cell therapy. It is now approved in certain leukemias and lymphomas and being tested in several other cancer types. For more information on CAR T cell therapy, visit: **www.CancerSupportCommunity.org/CART**.

Researchers are also studying cell therapies called TIL, TCR-T, and CAR NK for other cancers including melanoma, cervical cancer, and blood cancers.

CYTOKINES

Cytokines have been used for years. They do not target cancer cells like some newer treatment methods. Rather, they work by speeding up the growth of T cells and activating other immune cells, boosting the immune system generally. They do not provide a targeted response like some newer treatment methods. Interleukins and interferon are examples of cytokines that have shown some success in treating advanced melanomas and kidney cancers.

TREATMENT VACCINES

Treatment vaccines are designed to "teach" T cells to find and attack cancer cells that have specific proteins. There are different ways to do this. Currently, there is only one approved cancer vaccine which treats advanced prostate cancer. It is made from the patient's own white blood cells. These cells are sent to a lab where their ability to recognize and fight prostate cancer cells is boosted. They are then re-infused into the patient. Researchers are studying possible vaccines for other cancers including melanoma, brain, breast, cervical, colon, kidney, lung, ovarian, pancreas, and blood cancers, among others.

ONCOLYTIC VIRUS THERAPY

Oncolytic virus therapy uses viruses to fight cancer cells. The one oncolytic virus therapy currently approved in the U.S. is used to treat specific types of melanoma. Several other viruses are being tested in clinical trials for cancers such as brain, breast, colon, and pancreas.

To see if we have more information on immunotherapies in your cancer type, visit **orders.CancerSupportCommunity.org** or call our Cancer Support Helpline at 888-793-9355.

Immunotherapy Being Studied for Bladder Cancer

Immunotherapy is a major area of bladder cancer research. Doctors and scientists study the immune system, bladder cancer, and their relationship. The overall goal of this research is to extend and improve the lives of people affected by bladder cancer. Scientists aim to make better and safer drugs. They look for new ways to strengthen the immune system to fight bladder cancer. Research also focuses on better knowing which people with cancer might benefit from immunotherapy.

Examples of areas of current research for bladder cancer include:

- Combining immunotherapy with other drugs or forms of treatment
- Different types of checkpoint inhibitors
- Monoclonal antibody treatment
- Oncolytic virus therapy
- Adoptive cell therapies
- Personalized cancer vaccines

Ask your health care team if clinical trials might be right for you. Refer to **www.CancerSupportCommunity.org/finding-clinical-trial** for more information on clinical trials and how to find them.

IS A CLINICAL TRIAL RIGHT FOR ME?

Be sure to ask your health care team about clinical trials.

Clinical trials are research studies to test new treatments or learn how to use existing treatments better.

- A clinical trial may be the only way to get some of the newest, most promising treatments. Talk with your health care team about clinical trial options.
- The U.S. FDA and local review boards oversee all U.S. clinical trials to keep patients safe. Participating in a clinical trial means that you will receive the best available standard of care for your cancer or a new approach that may offer improved outcomes.
- Almost no one receives a placebo or "sugar pill," and you will be specifically told if this is a possibility.
- If you join a clinical trial, you can leave the trial at any time and continue to get standard treatment by your doctor.
- Every doctor does not offer the same trials. Even if another doctor is in charge of the trial, your doctor may still help with your care.
- Most often, the trial pays the costs of the drug being studied, and your health insurance only has to pay for "standard" treatment costs. However, your health insurance may not pay for everything. Be sure to ask your health care team.

QUESTIONS TO ASK YOUR HEALTH CARE TEAM:

Do you recommend immunotherapy for me? If so, what type?

Should my tumor be tested for biomarkers? If so, what would the results mean for me?

Are there any clinical trials for immunotherapy that would be right for me?
How do I find out more about them?

For each treatment or clinical trial that is recommended:

Why are you recommending this type of therapy for me?

What is the goal of this treatment? What are the risks?

How will I receive this treatment?

How often will I receive this treatment? How long will each session take?

Where will I go to receive treatment?

What side effects should I expect (short and long term)?

What can I do to prepare for immunotherapy treatment?

Will I need someone to drive me home after treatment?

Can/should I eat before or after treatment?

How long will I need to be on this treatment?

How will we know if this therapy is working?

How much will this therapy cost?

Will I need other cancer treatments at the same time?

How will this treatment impact my daily routine? Will I be able to do my usual daily activities?

Whom should I call if I have questions or problems during office hours?

Name: _____ Phone Number:_____

After hours and weekends?

Name: _____ Phone Number:_____

John's Story: Be an Advocate for Yourself

John was diagnosed with bladder cancer in 2014 at age 42. At the time, neither he nor his wife, Terese, knew anything about cancer. Now, they've become experts. What they've learned has made them feel rather fortunate.

"There have not been many advances in bladder cancer in decades," says Terese. "If we had gotten this news five years ago, his only treatment options would have been surgery, chemotherapy, and radiation." Adds John, "I had incredible timing by virtue of simply getting such an aggressive kind of cancer as bladder cancer at a time when immunotherapy treatments were emerging."

Treatment advances allowed John to enter a clinical trial investigating a new immunotherapy drug. His response to the drug has made him feel optimistic. It's also taught him the importance of self-advocacy. "It is vital to reach beyond your regular physician if you don't get the answers that you want to hear," he says. "There is a drastically fine line between doctors who are engaged in the latest therapies and those that are stuck in the past. You have to be an advocate."

Adds Terese, "As a caregiver, you can help find information, but remember that it is the person going through the cancer who makes the ultimate decision. It's their cancer plan. It is their treatment. You need to support whatever decision they make."

BLADDER CANCER INFORMATION, SURVIVORSHIP, AND SUPPORT

Cancer Support Community · 1-888-793-9355 · **www.CancerSupportCommunity.org**
American Cancer Society · 800-227-2345 · **www.Cancer.org**
American Cancer Society Bladder Cancer Page · **www.Cancer.org/cancer/bladder-cancer**
Bladder Cancer Advocacy Network · 888-901-2226 · **www.BCAN.org**
CancerCare · 800-813-4673 · **www.CancerCare.org**
CancerCare Bladder Cancer Page · **www.CancerCare.org/diagnosis/bladdercancer**
Cancer.net · 888-651-3038 · **www.Cancer.net**
National Cancer Institute (NCI) · 800-422-6237 · **www.Cancer.gov**
NCI Clinical Trial Information · 800-422-6237 · **www.Cancer.gov/ClinicalTrials**
Patient Advocate Foundation · 1-800-532-5274 · **www.PatientAdvocate.org**

CANCER SUPPORT COMMUNITY RESOURCES

Cancer Support Helpline® — Have questions, concerns or looking for resources? Call CSC's toll-free Cancer Support Helpline (888-793-9355), available in 200 languages Mon-Fri 9am-9pm ET and Sat-Sun 9am–5pm ET.

Open to Options® — Preparing for your next appointment? Our trained specialists can help you create a list of questions to share with your doctor. Make an appointment by calling 888-793-9355 or by contacting your local CSC or Gilda's Club.

Frankly Speaking about Cancer® — Trusted information for cancer patients and their loved ones is available through publications, online, and in-person programs.

Services at Local CSCs and Gilda's Clubs — With the help of 170 locations, CSC and Gilda's Club affiliates provide services free of charge to people touched by cancer. Attend support groups, educational sessions, wellness programs, and more at a location near you. **www.CancerSupportCommunity.org/FindLocation**.

Cancer Experience Registry® — Help others by sharing your cancer patient or cancer caregiver experience via survey at **www.CancerExperienceRegistry.org**.

MyLifeLine — CSC's private, online community allows patients and caregivers to easily connect with friends and family to receive social, emotional, and practical support throughout the cancer journey and beyond. Sign up at **www.MyLifeLine.org**.

Grassroots Network — Make sure your voice is heard by federal and state policy makers on issues affecting cancer patients and survivors by joining our Network at **www.CancerSupportCommunity.org/become-advocate**.

This booklet is available to download and print yourself at **www.CancerSupportCommunity.org/Immunotherapy**. For print copies of this booklet or other information about coping with cancer, visit **Orders.CancerSupportCommunity.org.**

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