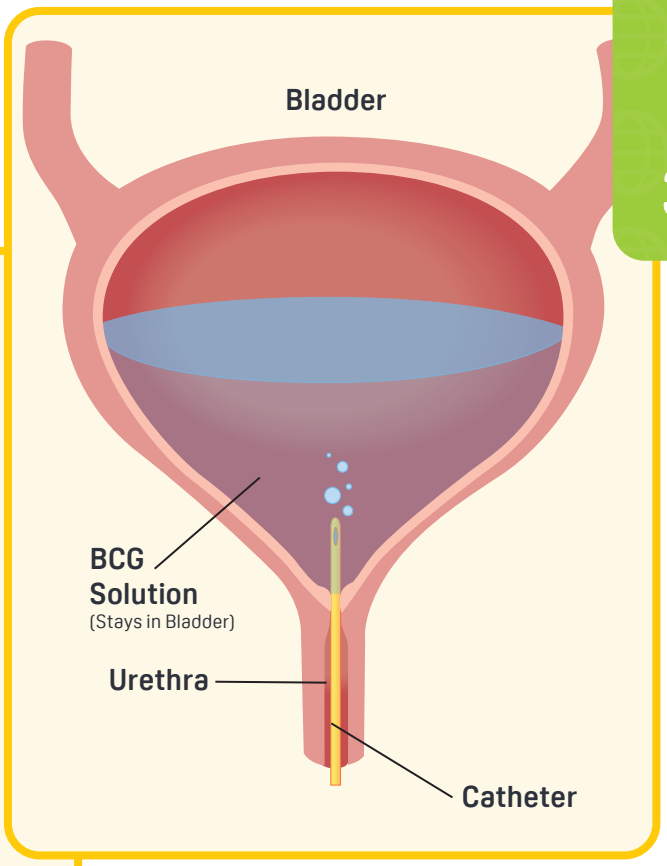
FACTSHEET 3

Understanding BCG treatment for bladder cancer

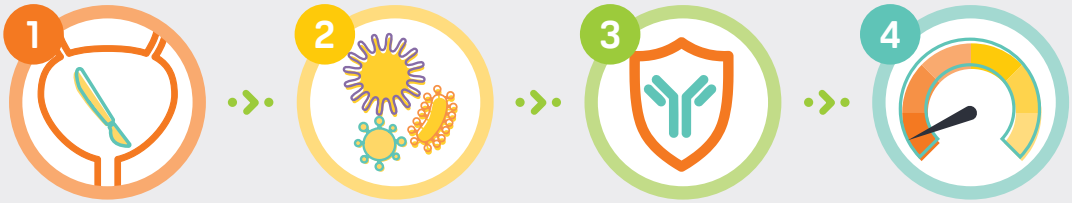


What is BCG treatment?

BCG stands for Bacillus Calmette-Guérin. It is a form of therapy placed in the bladder, which mainly acts as local immunotherapy) used to treat non-muscle-invasive bladder cancer, NMIBC. NMIBC that has not grown into the deeper muscle layer of the bladder wall. BCG is the same bacteria that is used in the tuberculosis vaccine. When placed directly into the bladder, BCG helps the immune system to attack cancer cells in the bladder.

The goal of BCG treatment is to reduce the likelihood that bladder cancer will come back after surgery and to slow or prevent progression of the disease to a higher stage.

Treatment Journey



1. TURBT tumour removal
2. BCG placed in the bladder
3. Immune system activation
4. Lower risk of recurrence

Why is BCG recommended?

Patients with localised bladder cancer typically undergo TURBT. It is a small operation in which a surgeon removes bladder tumours using a thin camera inserted through the urethra without making a cut in your abdomen. Importantly, tumour can arise in other areas of the bladder. Additionally, in a form of bladder cancer called Carcinoma In Situ (CIS), an aggressive type of bladder cancer that stays on the surface lining of the bladder as flat or very thin tumours, microscopic cancer cells can remain in the bladder even when all visible tumour cells have been removed.

BCG helps the body's immune system recognise and destroy new cells that grow. This lowers the risk that the cancer will come back or grow deeper into the bladder wall. It is a standard treatment for many patients with high-grade NMIBC and CIS. Thus, BCG helps many patients retain their bladder instead of needing more aggressive treatments.

How does BCG work?

BCG is given directly into the bladder. It stays in contact with the bladder lining and stimulates local immune responses. This local immunological effect helps target abnormal or cancerous cells, specifically. BCG is not the same as intravesical chemotherapy. It works by activating the immune system rather than damaging cells directly.

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Before you start BCG treatment

BCG treatment is usually started 4 weeks after your bladder has had time to heal following TURBT. The exact timing varies by patient and the judgment of your care team. Your doctor or nurse will explain when it is appropriate to begin.

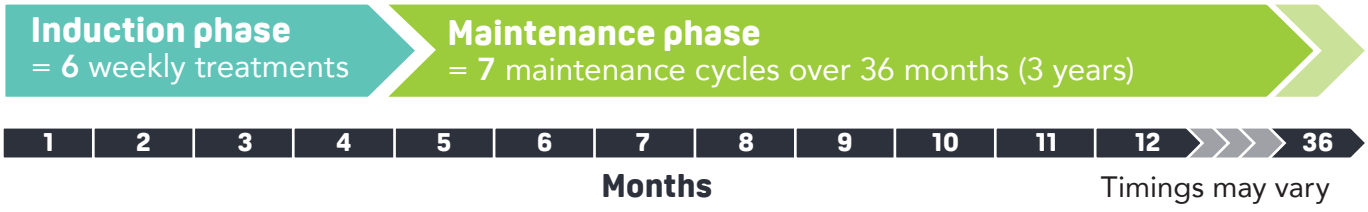
You may be asked to limit fluids before treatment and to provide a urine sample to check for infection first. If there is a urinary tract infection, treatment is usually delayed until the infection clears to avoid complications.

During a BCG treatment session

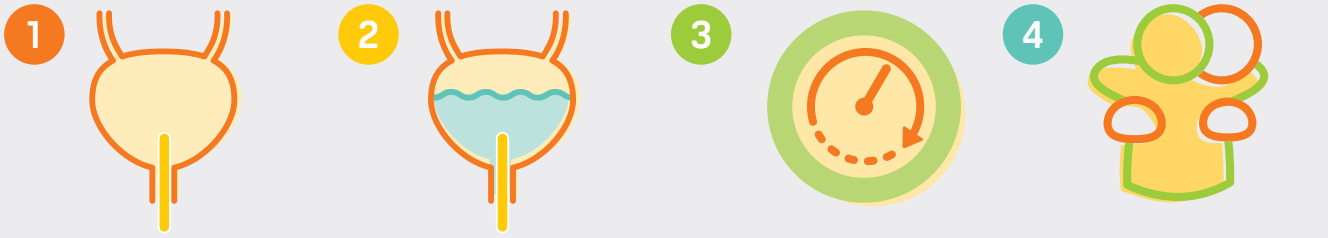
BCG is placed into your bladder through a thin catheter passed through the urethra as a liquid. Once the BCG is instilled, you will be asked to hold it in your bladder for about two hours so that it can coat the bladder lining evenly. A typical BCG course begins with weekly instillations for six weeks, known as the induction phase. After induction, ideally, patients receive additional maintenance BCG, which is typically done in cycles of three weekly instillations every 3 - 6 months to further reduce the risk of recurrence.

Treatment Timeline

Full programme runs up to 3 years



What happens during one treatment session



What to expect afterwards

After each treatment, you can usually go home the same day. As BCG is live bacteria, you will be given specific safety and hygiene instructions to reduce the chance of transmitting BCG to others. These may include sitting when urinating, flushing the toilet twice, and washing hands thoroughly for a period after treatment.

Safety Instructions

Possible side effects

As BCG stimulates the immune system, irritation of the bladder lining is common. Many people experience symptoms such as burning during urination, increased frequency or urgency of urination, mild blood in the urine, fatigue, or mild flu-like symptoms. These effects usually resolve over a few days and medications such as painkillers are occasionally needed.

Some patients develop fever, muscle aches, or flu-like symptoms after treatment. If you experience high fever, severe pain, chills or prolonged symptoms, you should contact your doctor as soon as possible.

Side Effects: what to look out for

- Needing to urinate more often
- Sudden urgency
- Burning or pain when urinating
- Mild blood in urine
- Feeling tired or fatigued
- Mild Flu like symptoms

Contact the doctor urgently: **high fever, severe pain, chills, or prolonged symptoms.**

Benefits of BCG

BCG is effective at reducing cancer recurrence and is the most commonly used immunotherapy for NMIBC. It targets abnormal cells in the bladder because the treatment is confined to the bladder. It also offers a non-invasive option compared with more radical surgery for many patients.

- Reduced recurrence risk
- Helps preserve the bladder
- Avoids more aggressive surgery
- Standard treatment for high-risk NMIBC

Who is eligible for BCG?

BCG is generally given to people with high-grade tumours, CIS, higher-risk low-grade tumours, or other forms of NMIBC with higher risks of recurrence or progression. Your doctor will consider tumour grade, size, number of tumours, past recurrence history, and overall health when recommending BCG.

What happens if BCG does not work?

Some patients may not respond sufficiently to BCG, or the cancer may return despite treatment. In these cases, options include additional intravesical therapies, clinical trials, or in selected patients, surgery to remove the bladder, such as cystectomy. There are newer approved therapies specifically for BCG-unresponsive NMIBC, which work in different ways and can be used with or after BCG treatment.

- BCG may be combined with other therapies in the bladder or systemically (through an IV) depending on your risk of recurrence."

Follow-up and long-term care

Even after completing BCG therapy, regular cystoscopy and urine testing remain important because bladder cancer can recur. Your doctor will create a monitoring schedule that is personalised based on risk.

Cystoscopy

Doctor visits

Regular follow-up after BCG treatment

Urine testing

Questions to ask your healthcare team

- Why is BCG recommended for my specific diagnosis?
- How long will induction and maintenance therapy last?
- What should I do to prepare for each treatment?
- What symptoms are expected and which should prompt immediate contact with your clinic?
- What safety measures should I follow at home after treatment?
- If BCG is not effective, what are the next steps?
- Are there clinical trials or alternative therapies suitable for me?

Notes

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Continue Over

Intravesical BCG treatment / Cystoscopy schedule

Dates may be completed by the administering clinician or the patient. Please bring this log with you to all your appointments. This will help your clinician to easily determine the status of your therapy.

the table for BCG was published in Kamat et al. Journal for ImmunoTherapy of Cancer (2017)

MONTH	BCG Dates		Cystoscopy Dates	
	BCG Induction			
	BCG #1			
	BCG #2			
	BCG #3			
	BCG #4			
	BCG #5			
	BCG #6			
3	**6-8 weeks after the 6th BCG**		**Cystoscopy**	
	BCG Maintenance #1 - start within 0-3 weeks			
	BCG #1			
	BCG #2			
	BCG #3			
6	**Approximately 9-12 weeks from the last BCG**		**Cystoscopy**	
	BCG Maintenance #2 - start within 0-3 weeks			
	BCG #1			
	BCG #2			
	BCG #3			
9	**Approximately 9-12 weeks from the last BCG**		**Cystoscopy**	
12	**~3 months from last Cystoscopy**		**Cystoscopy**	
	BCG Maintenance #3 - start within 0-3 weeks			
	BCG #1			
	BCG #2			
	BCG #3			
15	**Approximately at months 3, 6, and 12 from last BCZ**		**Cystoscopy**	
18	**~ 3 months from last Cystoscopy**		**Cystoscopy**	
	BCG Maintenance #4 - start within 0-3 weeks			
	BCG #1			
	BCG #2			
	BCG #3			
21	**Approximately at months 3, 6, and 12 from last BCG**		**Cystoscopy**	
24	**~ 3 months from last Cystoscopy**		**Cystoscopy**	
	BCG Maintenance #5 - start within 0-3 weeks			
	BCG #1			
	BCG #2			
	BCG #3			
30	**Approximately at months 3, 6, and 12 from last BCG**		**Cystoscopy**	
	BCG Maintenance #6 - start within 0-3 weeks			
	BCG #1			
	BCG #2			
	BCG #3			
36	**Approximately at months 3, 6, and 12 from last BCG**		**Cystoscopy**	
	BCG Maintenance #7 - start within 0-3 weeks			
	BCG #1			
	BCG #2			
	BCG #3			

Notes: Your doctor may modify schedule based on your individual needs.

The World Bladder Cancer Patient Coalition gratefully acknowledges the support of our Global Impact Partner: Johnson & Johnson, and our Premier Partners: Astellas and Ferring Pharmaceuticals, and our Sponsor: ImmunityBio. This factsheet has been reviewed for accuracy by the World Bladder Cancer Patient Coalition Scientific Advisory Board (SAB).