



Provincial Health Services Authority

For the Patient: Management of CRS and ICANS

Other Names: Management of Cytokine Release Syndrome and Immune Effector Cell-Associated Neurotoxicity Syndrome

CRS = Cytokine Release Syndrome

ICANS = Immune Effector Cell-Associated Neurotoxicity Syndrome

Immunotherapy uses your own immune system to fight your cancer. Some forms of immunotherapy use your T cells (a type of white blood cell) to find and attack cancer cells. This type of therapy can sometimes cause some serious or even life-threatening side effects. Early treatment of these side effects is essential, as symptoms can worsen quickly.

Cytokine Release Syndrome (CRS)

As the T cells multiply and attack the cancer cells, they can release large amounts of proteins known as *cytokines* into your blood, which can over stimulate your immune system. This is known as Cytokine Release Syndrome or CRS. If this occurs, it usually happens at the start of your treatment, when you are receiving the **first few doses** of your immunotherapy. To help prevent CRS, your immunotherapy may be started at a lower dose and slowly increased over time.

Symptoms can include:

- Fever (temperature over 38°C by an oral thermometer) and/or chills
- Trouble breathing, shortness of breath
- Nausea, vomiting, and/or diarrhea
- Headaches, feeling dizzy or lightheaded
- Fast heartbeat
- Feeling very tired
- Muscle and/or joint pain
- Skin rash

Nervous system problems (ICANS)

Serious side effects involving your nervous system can also occur with immunotherapy. If this occurs, it usually happens at the start of your treatment when you are receiving the **first few doses** of your immunotherapy. Rarely, these side effects may be delayed and occur later in your treatment.

Symptoms can include:

- Headaches
- Loss of consciousness or fainting

- Feeling confused or anxious (nervous)
- Shaking or twitching (tremors)
- Seizures
- Trouble speaking or thinking
- Loss of balance, trouble walking

Immediately contact your healthcare team at the first signs of CRS or ICANS.

Do not drive or operate machinery if you are experiencing any symptoms of CRS or ICANS.

| BC CANCER CENTRES | CONTACT INFORMATION AND PROCESS |
|----------------------|--|
| Abbotsford | <p>Between 8:00 am – 3:30 pm Monday to Friday (excluding Statutory holidays) call:</p> <ul style="list-style-type: none"> • Telephone Nurse Line call (604) 870-7451. <p>Outside these hours, call the Abbotsford Regional Hospital and Cancer Centre switchboard at (604) 851-4700 and ask for the on-call medical oncologist.</p> |
| Kelowna | <p>Between 9:00 am 4:00 pm Monday to Friday (excluding Statutory holidays) call:</p> <ul style="list-style-type: none"> • Telephone Nurse Line call (250) 712-3944. <p>Outside these hours, call the Kelowna General Hospital switchboard at (250) 862-4000 and ask for the on-call medical oncologist.</p> |
| Prince George | <p>Between 8:00 am – 3:30 pm Monday to Friday (excluding Statutory holidays) call:</p> <ul style="list-style-type: none"> • Telephone Nurse Line call (250) 645-7313. <p>Outside these hours, call University Hospital of Northern British Columbia switchboard at (250) 565-2000 and ask for the on-call medical oncologist.</p> |
| Surrey | <p>Between 8:30 am – 4:00 pm Monday to Friday (excluding Statutory holidays) call:</p> <ul style="list-style-type: none"> • Telephone Nurse Line at (604) 930-4053. <p>Outside these hours, call the Surrey Memorial Hospital switchboard at (604) 581-2211 and ask for the Surrey Centre on-call medical oncologist.</p> |
| Vancouver | <p>Between 8:30 am – 5:00 pm Monday to Friday (excluding Statutory holidays) call:</p> <ul style="list-style-type: none"> • Telephone Nurse Line at (604) 877-6025. <p>Outside these hours, call the BC Cancer Inpatient unit at (604) 877-6000 and press 1, and ask for the on-call medical oncologist.</p> |
| Victoria | <p>Between 8:30 am – 4:30 pm Monday to Friday (excluding Statutory holidays) call:</p> <ul style="list-style-type: none"> • Telephone Nurse Line at (250) 519-5596. <p>Outside these hours, call the Royal Jubilee Hospital switchboard at (250) 370-8000 and ask for the on-call medical oncologist.</p> |