



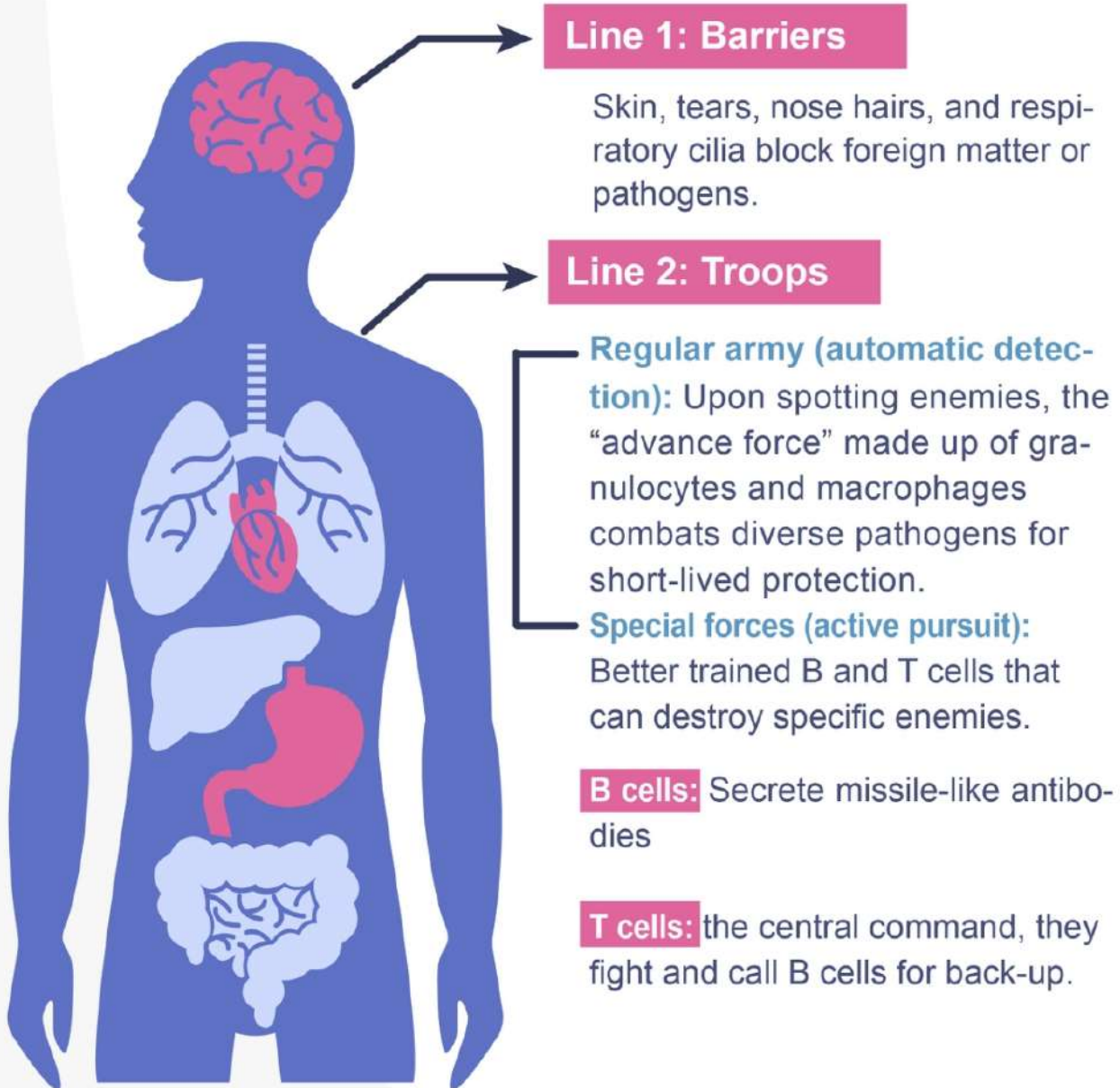
# ***Understand CAR-T therapy in one go!***

*Breakthrough of the century in hemato-  
logical cancer immunotherapy.*



# How Does the Immune System Combat Cancer?

As the body's defense force, the immune system recognizes and combats pathogens through 2 lines of defense:





Normally troops destroy the mutant "cancerous" cells that may appear; however, cunning cancer cells can appear "friendly" to evade detection and pursuit.



# Immunotherapies for Hematological Cancers

“Immunotherapy” helps the immune system recognize cancer cells and augments its response to destroy them.

Currently there are 6 main types of immunotherapies for hematological cancers:

Hematopoietic stem cell transplantation (HSCT)		i.e., bone marrow transplantation (BMT)
Antibody drugs		<ul style="list-style-type: none"> <li>● Antibody-drug conjugates (ADC)</li> <li>● Bispecific antibody drugs</li> </ul> 
Immune checkpoint inhibitors		Bolster the immune system’s anti-cancer effects
Cancer vaccines		Incorporate cancer cell antigens that trigger an immune attack 
Cell therapy	Cell therapy technique (ALET) <b>(Not genetically modified)</b>	Draw blood, isolate immune cell troops for “training” ex vivo, and inject strengthened cells back into the body to kill cancer cells.
	Chimeric antigen receptor T-cell therapy (CAR-T) <b>(Genetically modified)</b>	Draw blood, isolate T cells, “ <b>modify</b> ” and equip them ex vivo with radar and mechanical arms, and inject them into the body to replicate en masse, allowing precise cancer cell recognition and destruction.

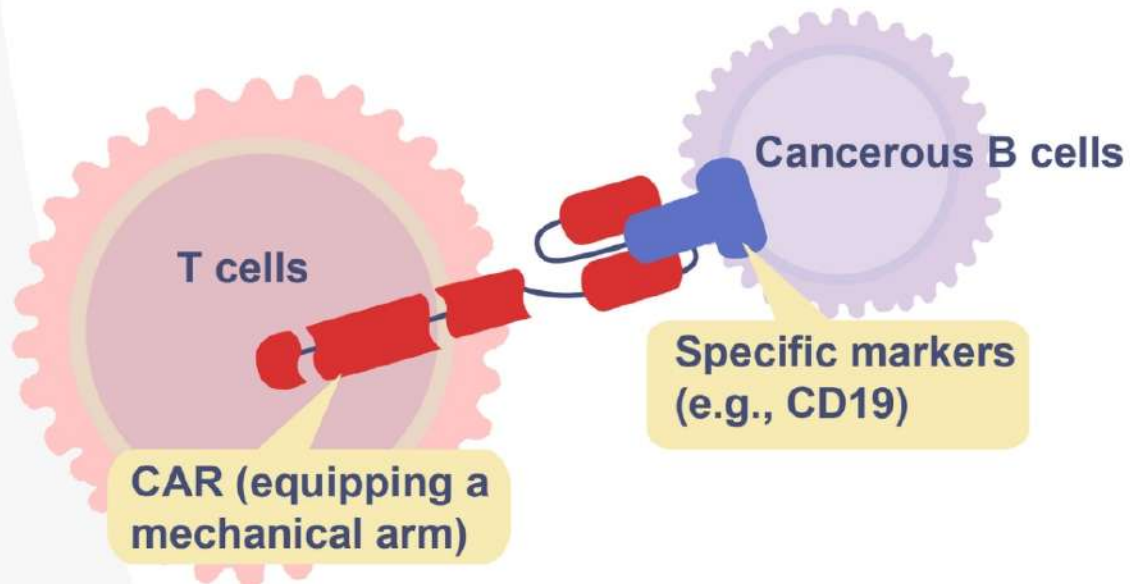
★ Highly discussed

CAR-T therapy features cell modification, strengthening, and precise attacks, offering new hope for refractory hematological cancers; following domestic approval at certain hospitals, CAR-T therapy has sparked much discussion.

# Who Is Eligible for CAR-T Treatment?

Currently the most commonly used and best-developed form of CAR-T targets cancers arising from immune **B cells (i.e., cancerous B cells)**.

B cells have specific markers. Modifying T cells to recognize these markers and infusing them into the body allows them to kill cancerous B cells with these specific markers.



## CAR-T therapy indications:

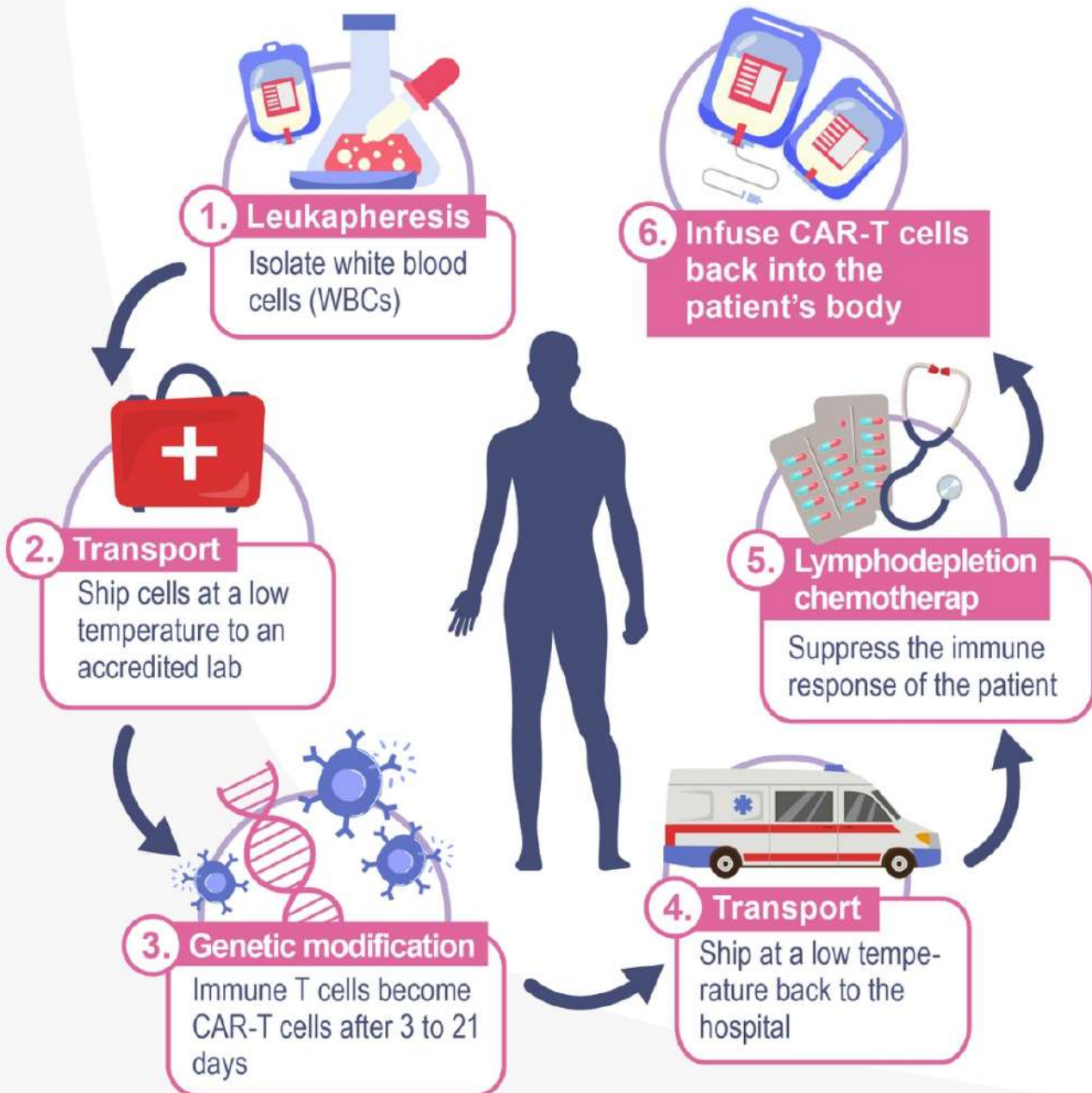
Immune B cell-derived cancers	Lymphoma	*Diffuse large B-cell lymphoma(DLBCL)
		Mantle cell lymphoma (MCL)
		Follicular lymphoma (FL)
		Primary mediastinal large B cell lymphoma (PMBL)
	Leukemia	*Acute lymphoblastic leukemia (ALL)
	Multiple myeloma (MM)	

Note: \*CAR-T indications currently approved in Taiwan



## How Is CAR-T Implemented?

- **Number of treatment cycles:** One. You may discuss with your doctor whether to collect and freeze cells in advance for leukapheresis, to preserve T cells with better activity.
- **Treatment length:** About 1.5 months. The complex CAR-T treatment course requires precision equipment and strict quality control at every step.






# Potential Adverse Effects (AEs) of CAR-T Therapy

When the modified CAR-T cells attack cancer cells, excessive expansion may cause a dramatic immune response; such AEs often occur within 2 weeks of infusion.

In addition, CAR-T cells may suppress normal B cell function, so patients should watch out for infection after CAR-T therapy.



## Potential AEs of CAR-T therapy:





<b>Cytokine release syndrome (CRS)</b>	<ul style="list-style-type: none"> <li>● Fever</li> <li>● Hypotension</li> <li>● Shortness of breath</li> <li>● Coma</li> </ul> 
<b>Immune effector cell-associated neurotoxicity syndrome (ICANS)</b>	<p>Symptoms of central neurotoxicity caused by immune cells include:</p> <ul style="list-style-type: none"> <li>● Headaches</li> <li>● Tremors</li> <li>● Dizziness</li> <li>● Irritability</li> <li>● Seizures</li> <li>● Aphasia</li> <li>● Delirium (sudden-onset cerebral cognitive deficits)</li> <li>● Impaired consciousness</li> </ul> 
<b>Hemophagocytic syndrome (Less common)</b>	<p>Abnormally activated WBCs attack the body itself and ingest other blood cells. Symptoms include:</p> <ul style="list-style-type: none"> <li>● Fever</li> <li>● Hepatosplenomegaly</li> <li>● Lymphadenopathy</li> <li>● Jaundice</li> <li>● Organ failure</li> </ul> 

International treatment guidelines in accordance with the severity of CAR-T-induced AEs are currently available. Medical teams can prevent and precisely manage associated AEs.



# Comparing CAR-T and Traditional Immunotherapy

CAR-T therapy is completely different from traditional methods. It only requires one cycle, but its high cost poses a great challenge for patients.

	Immune drug therapy	Cell therapy	CAR-T cell immunotherapy
Treatment mechanism	Remove the brakes on T cell troops to let them actively recognize and attack cancer cells	Isolate immune cells (e.g., NK cells), train them ex vivo, and inject them back to destroy cancer cells	Isolate immune T cells, perform genetic modification, and infuse them back, greatly improving cancer cell recognition and destruction capabilities
Treatment frequency	Multiple cycles approx. once every 2-3 weeks.	Approx. 6 doses per cycle; may induce immune memory in a subset of immune cells	Continual effects after just 1 cycle (1 injection)
Regulations	TFDA-approved	In accordance with the Regulations of Special Medical Techniques	TFDA-approved
Treatment costs	Approx. NT\$150,000 per cycle; meets NHI coverage criteria for certain conditions	NT\$1-2 million per cycle; no NHI coverage	More than NT\$10 million per cycle; no NHI coverage
Health care facility availability	Most major hospitals  	20+ approved hospitals  	Only a few medical centers



In order to choose the most suitable treatment for your condition, we recommend discussing in full detail with your primary physician and care team all the available options!



A distinguished physician thoroughly explains CAR-T treatment



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Strategies Against Hematological Cancers



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