

# Searching the immune system for new cancer therapies

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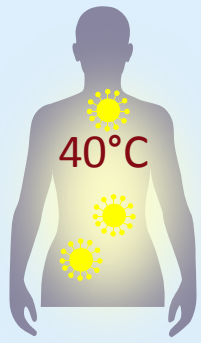


KG JEBSEN CENTER  
for Cancer Immunotherapy

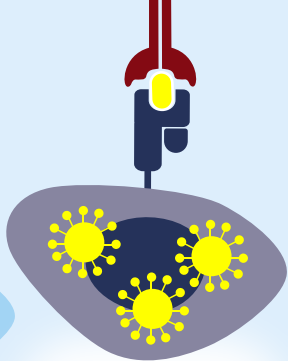


Oslo  
University Hospital

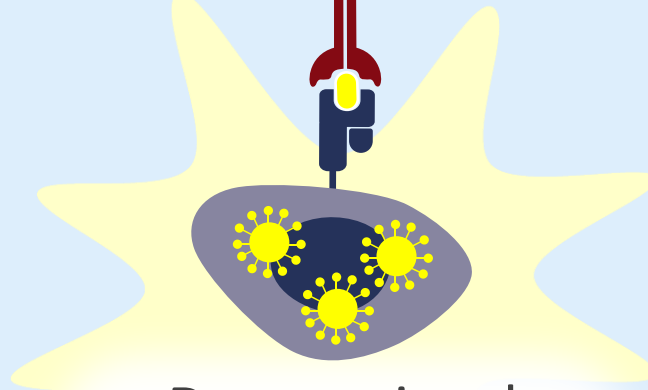
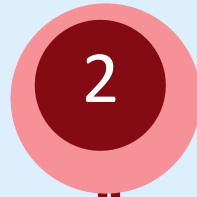




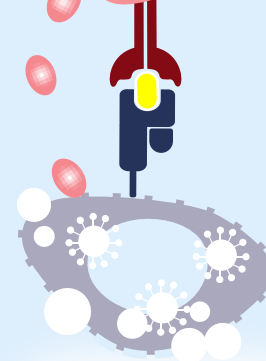
# Immune cells cure infections



Foreign



Danger signals  
→ acute inflammation

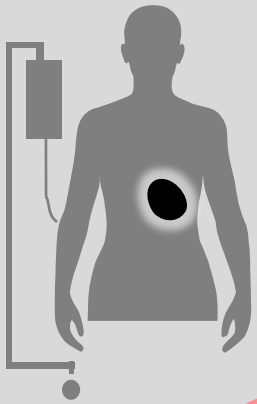


Single-cell  
surgery

Healthy cells not  
damaged

Cancer cells are partly foreign to the immune cells

- so why does cancer develop?



# Immune cells may tolerate cancer

1



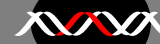
Foreign

2



NO inflammation

3



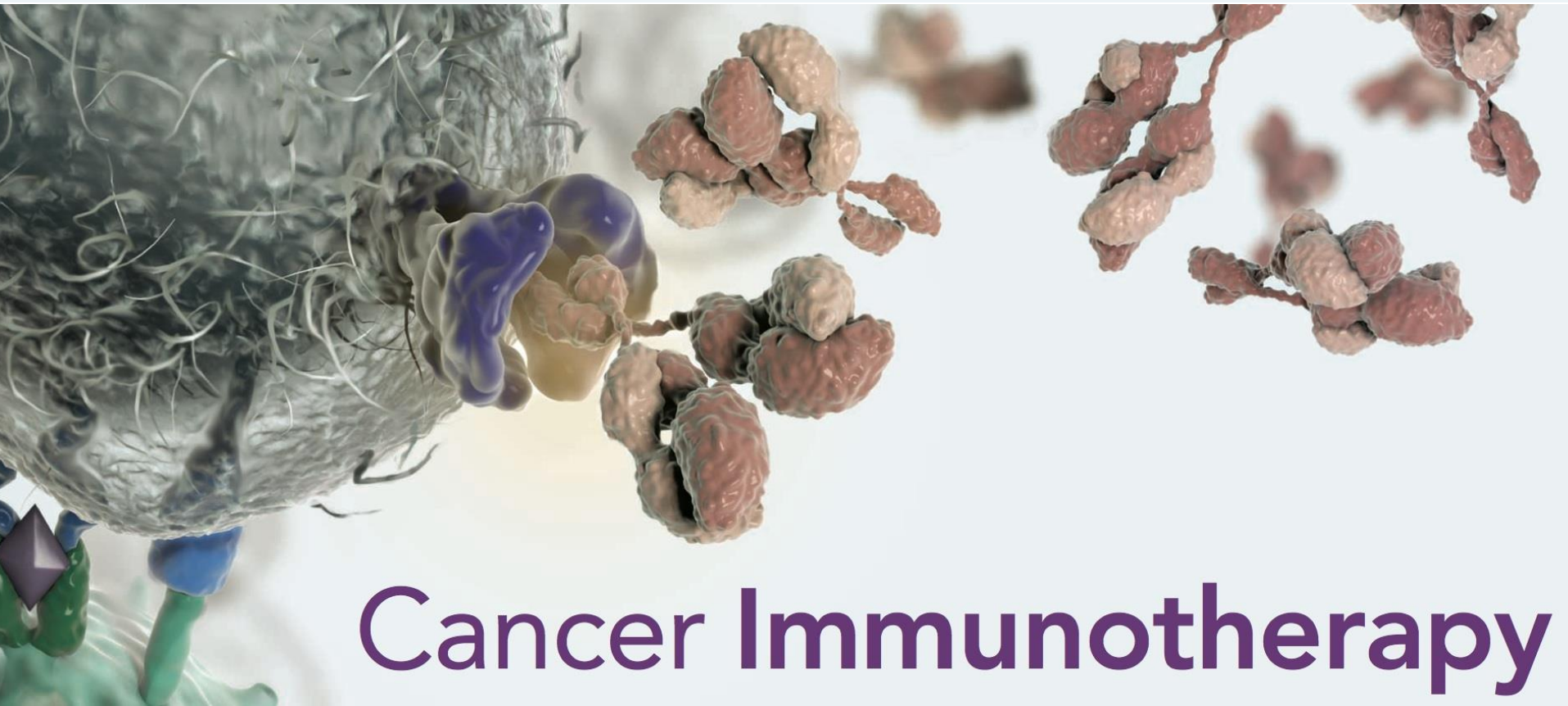
NO killing

Tumor growth

2013

*Science, Dec 20, 2013*

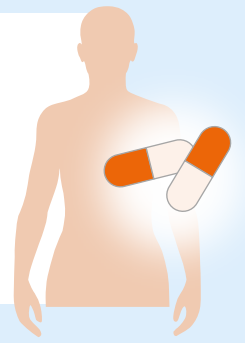
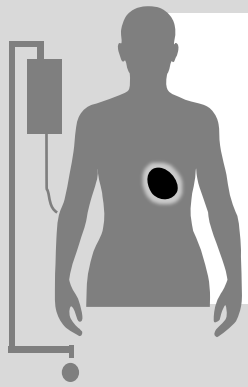
# Breakthrough of the Year



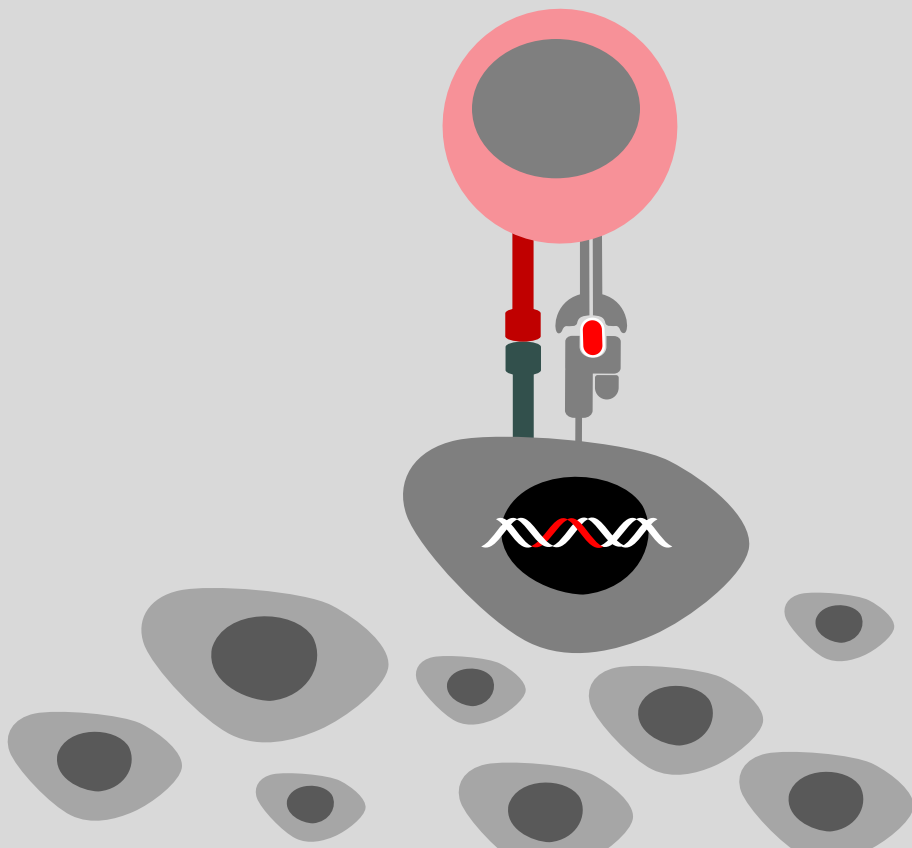
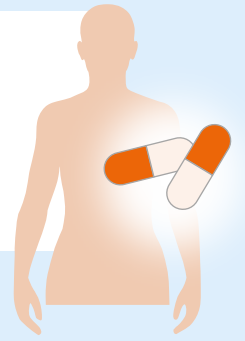
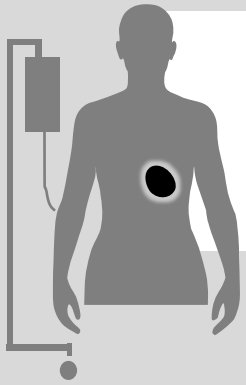
## Cancer Immunotherapy

# Unleashing the immune cells

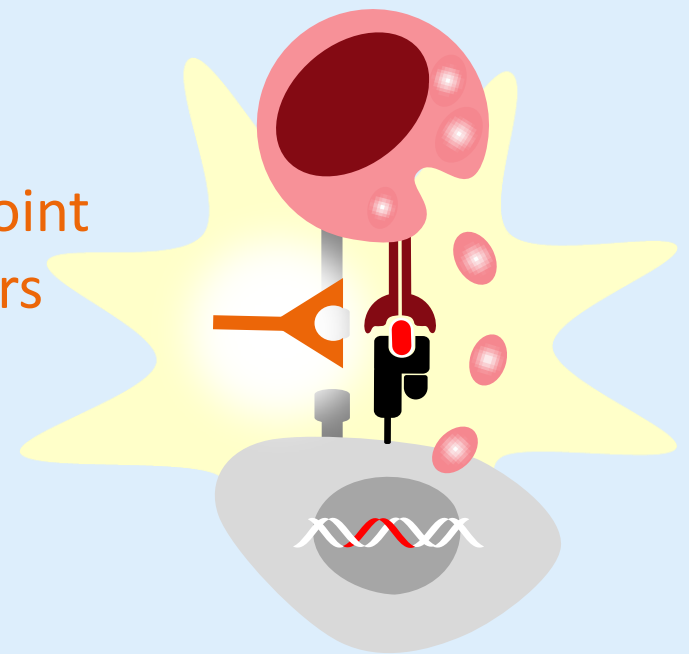
Checkpoint inhibitors



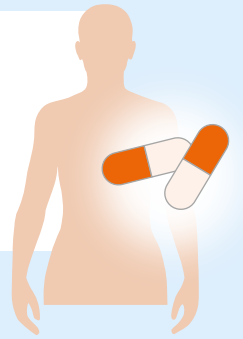
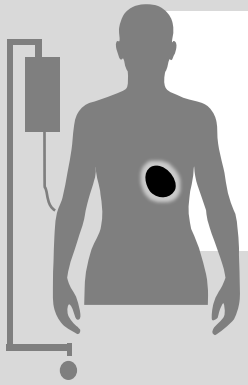
# Unleashing the immune cells



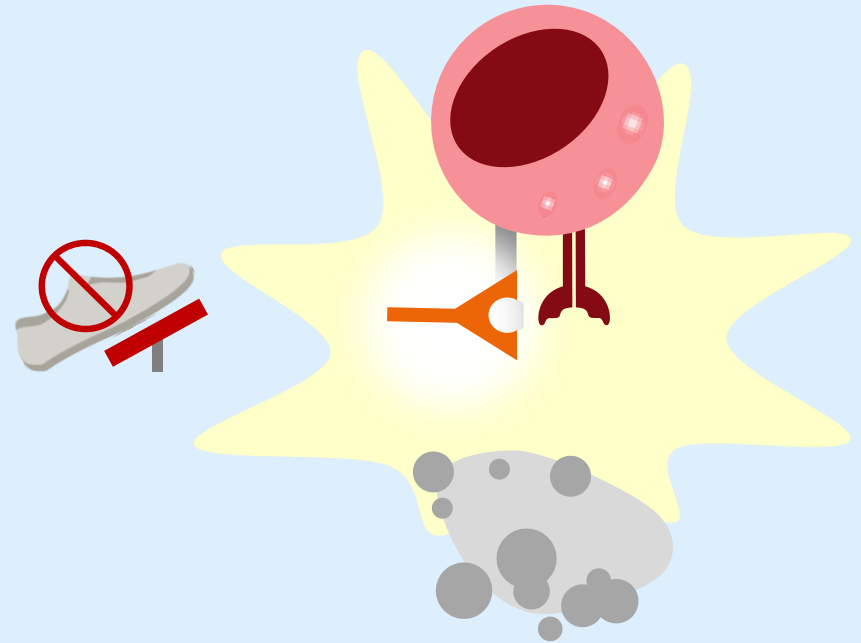
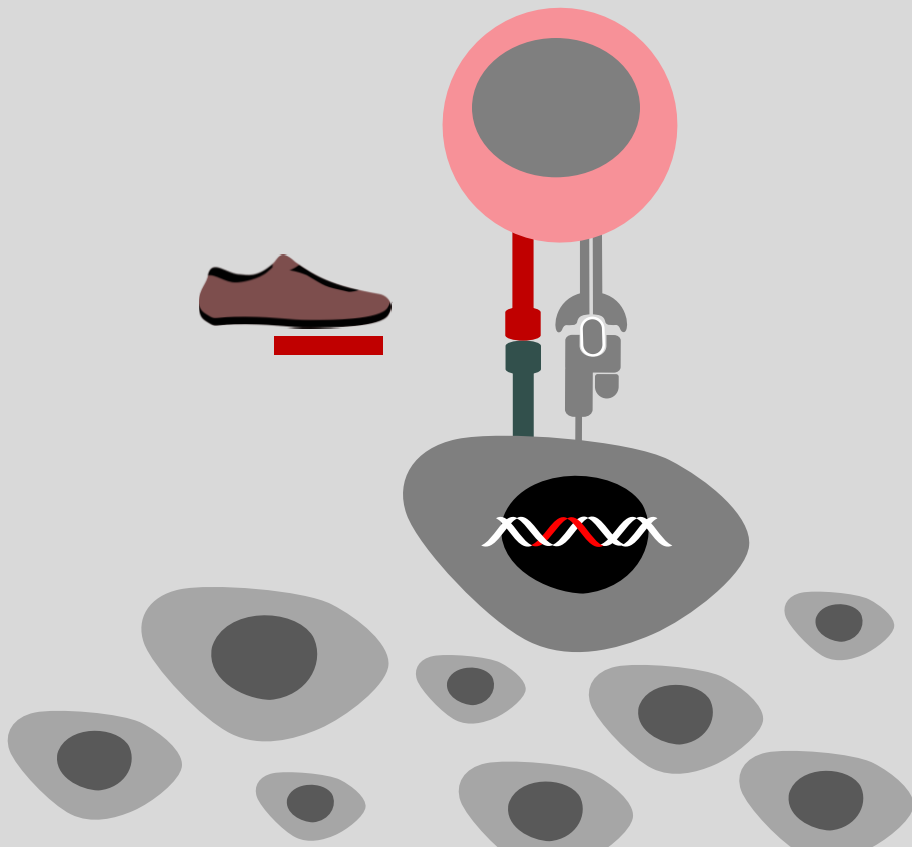
Checkpoint inhibitors



# Unleashing the immune cells



Disappearance of widespread disease in several cancer types



Simulating inflammation



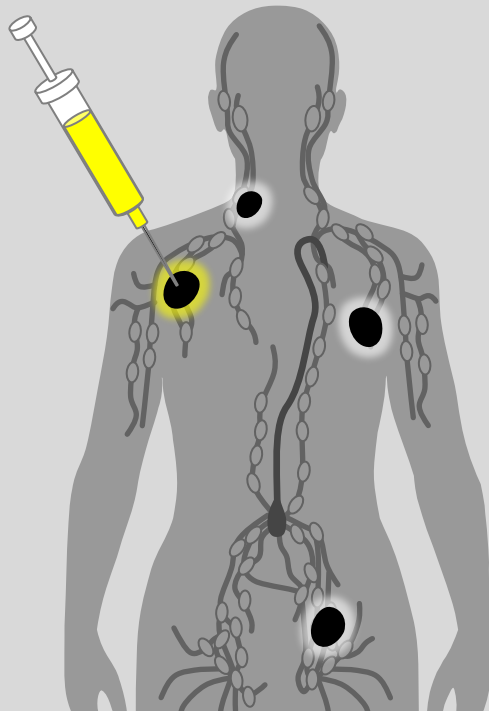
Need for  
new  
strategies

Overcoming  
immune  
tolerance to  
target cancer

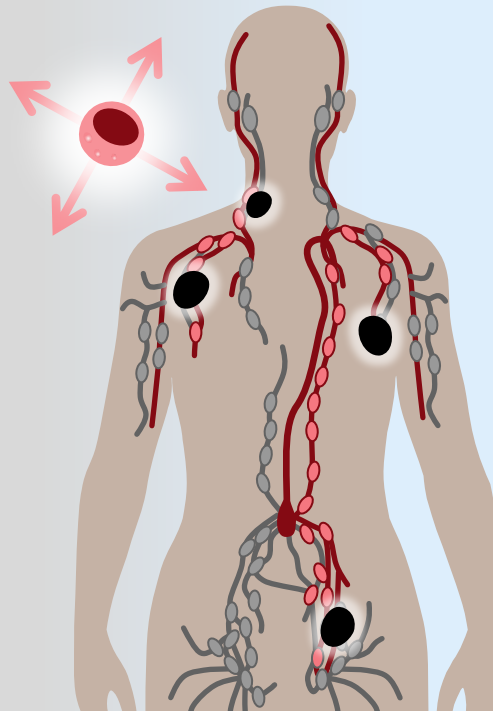
Can we make the immune system believe that cancer is an infection?

# New immunotherapy in lymphoma

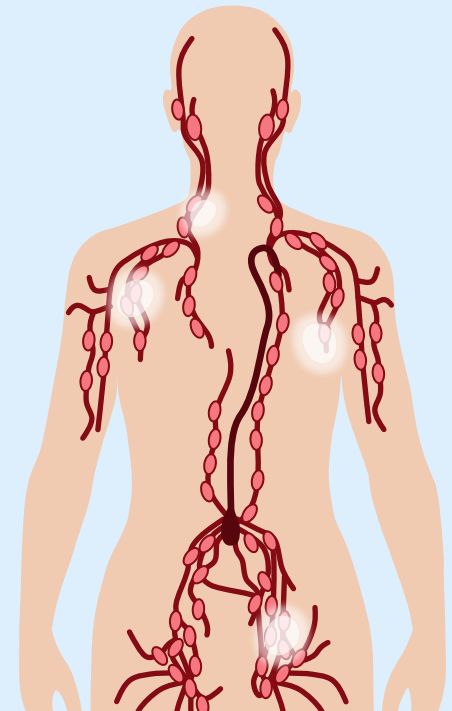
Induce local inflammation



Trained immune cells migrate...



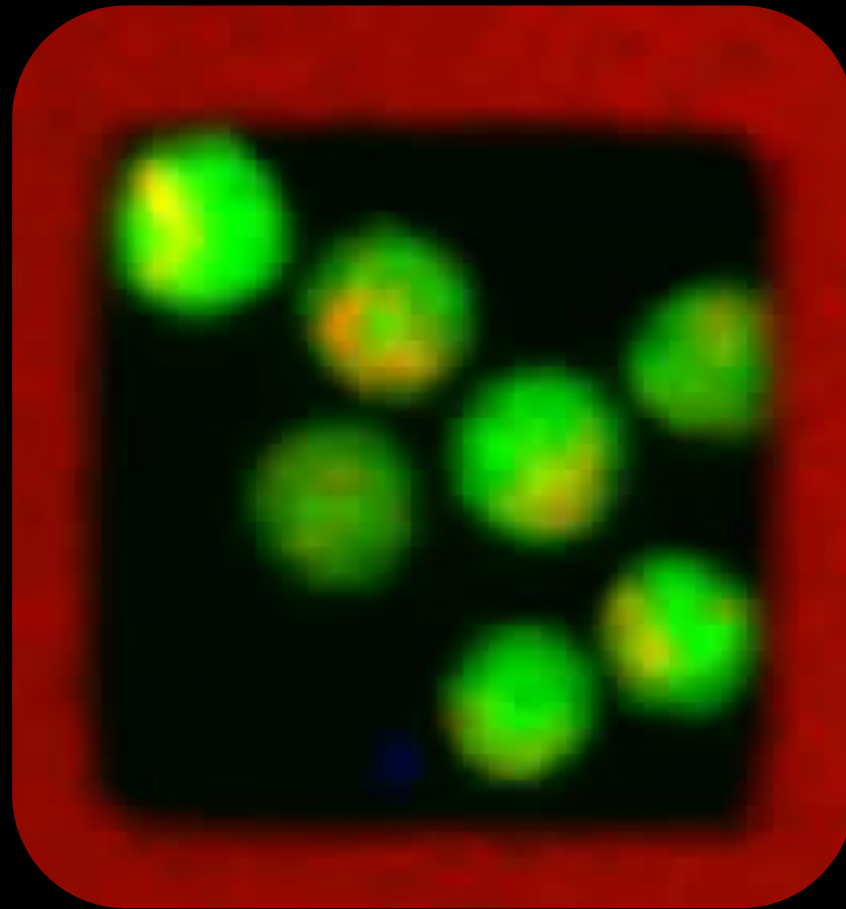
...and kill cancer cells at multiple sites



Can we support the immune system of a patient with the immune system of a donor?

Immune cells called natural killer cells were transferred from family members to leukemia patients with promising results

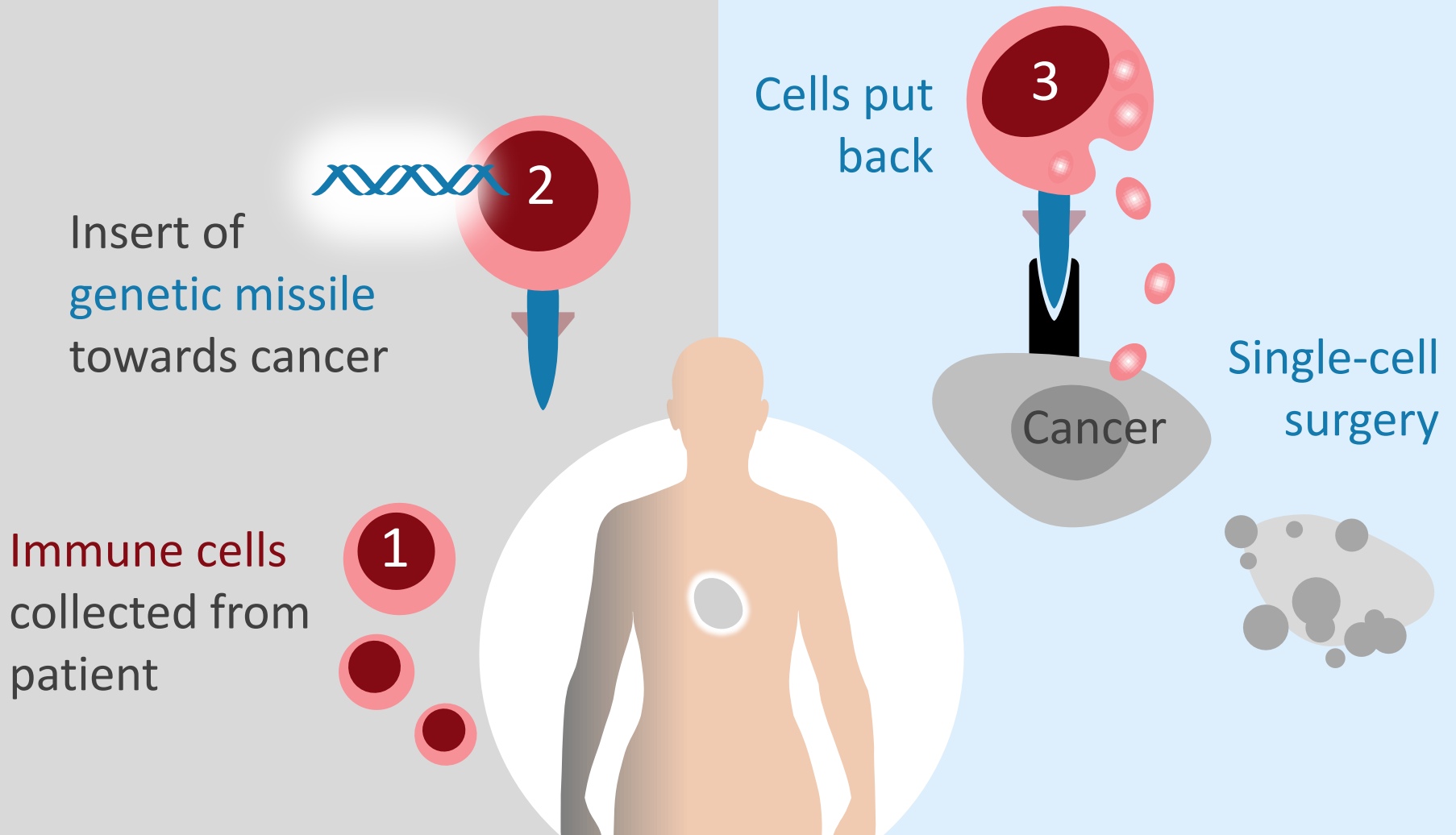
# Natural killer cells can kill tumor cells



*Courtesy of Prof. Björn Önfelt, Karolinska Institute*

Arming patient immune cells  
with genetic "missiles"

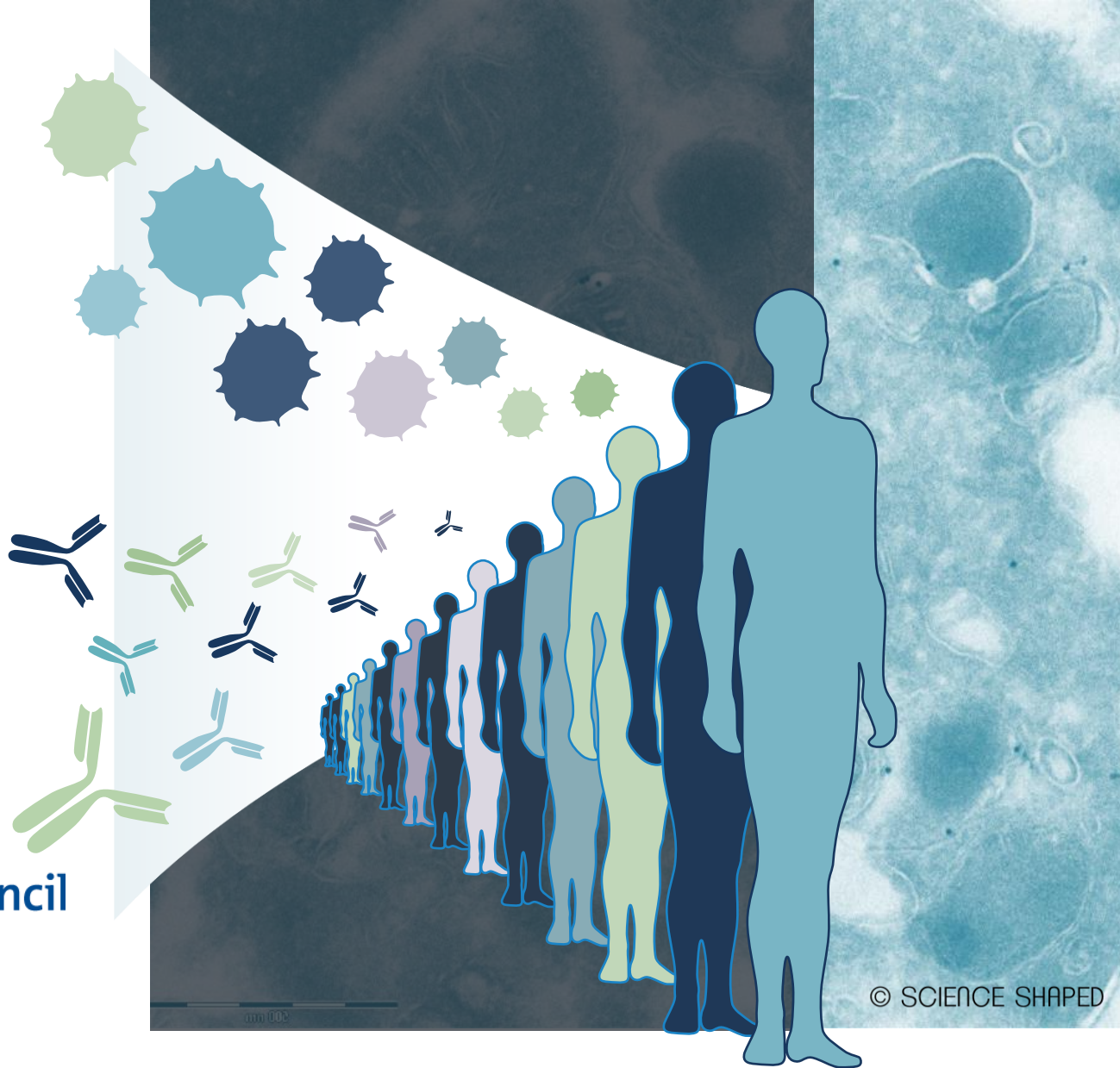
# Gene-modified **immune cells** to cure cancer



New research

New strategies

New hope



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The Research Council  
of Norway



KREFTFORENINGEN



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 Oslo  
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