# Mentoring

A new ally against Cancer

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November 03, 2011

## Cancer

# Three main therapies

- Surgery
- Chemotherapy
- Radiation

## Cancer

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- Surgery
- Chemotherapy
- Radiation

# More clearly

- Slash
- Poison
- Burn

## How to attack the cancer?

# ldea

 Prod body's own immune system to do a better job of fighting malignancies.

#### How to attack the cancer?

## Idea

 Prod body's own immune system to do a better job of fighting malignancies.

## How?

Vaccines: FDA approved the first vaccine to treat cancer

## The vaccine

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- Prevents infections.
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#### **Cancer vaccine**

- Train the body to recognize and destroy cancer cells that already exists;
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#### **Common vaccine**

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#### Cancer vaccine

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# Why different?

- Antibodies response are not strong to kill cancer cells.
- Immune system needs T cells.

#### The T cells

# Two types of T cells

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#### What we need to know

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- So, we need to treat early as possible.
- Vaccines with only CD8 cells had shown no benefit.

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## A new vaccine

- A mix of CD4 and CD8.
- Took T cells from a patient and train them to target and attack the tumor;

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#### How?

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#### Who and When?

- Which cancer patients to treat;
- When during the course of their disease to administer the vaccine.

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- Difficult : genetic alterations of cancer cells;
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- Problem : T cells and dendritic must be genetically identical;
- We need to harvest them from each individual patient (\$\$)

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#### When?

 It may take a year after the treatment for immune system start making substantial progress

#### Conclusion

## When

- Earlier stages : vaccines.
- Advanced stages : vaccines+conventional treatment.

#### The future?

- We can not make too many promises;
- Vaccine will have a prominent role over the next decade.