

OASIS Book Reviews Inspiration on Demand

Session 39 - Oct 30th, 2019

Sree Veerapaneni

President, OASIS Southeast

Disclaimer

- Please note that the points in this presentation are based on the book and are summarized for you. Please use your own judgment if you want to use the information provided.
- **This presentation has been organized by OASIS purely as an educational session and not as specific (financial, insurance, investment or retirement or health related, philosophical or political) advice.**
- **No products or services or materials are being recommended, suggested, endorsed or solicited by OASIS or AT&T and they are not liable for any of the content of the sessions.**



The Emperor of All Maladies

A Biography of Cancer

By Siddhartha Mukherjee



Copyright to the book mentioned belongs to its author and publishers as applicable

This presentation is based on a summary from [blinkist.com](https://www.blinkist.com)

This presentation is free for your personal, non-commercial use and distribution

About the Author

Dr. Siddhartha Mukherjee is an Indian cancer Physician and researcher. He is a Rhodes scholar, graduated from the University of Oxford, Stanford University and Harvard Medical School. He has published lots of scientific papers, awarded the NIH Challenge Grant for his work on stem cells. He was also awarded the Padma Sree award, one of the highest civilian awards from the Indian Govt.

About the Book

This book explains what Cancer is, what causes it, how it works and how humans have been fighting this disease for a long time and what we do today.

This book won the Pulitzer for non fiction and several other major awards.

What to expect in this session

- **Brief History of Cancer & Treatment methods**
- **Some milestones in Cancer treatment**
- **Looking ahead to new treatments**

Layout

Cancer in the ancient times

How it develops

Some Chemicals cause plus prevent fighting Cancer

Infections are Risky

What will increase Cancer Risk

Surgery vs Cancer – an age old losing battle

Chemotherapy – one way to fight Cancer

Radiation is Plan B

The New Hope

Cancer in History

Cancer in History

Hippocrates – Blood, Phlegm, and Yellow & Black Bile

Trapped Black Bile causes cancer – believed since 160 CE

In 16th Century – autopsies proved this to be untrue

Till 1850s they believed vapors ‘miasmas’ caused tumors

In 1926 they awarded the Nobel for the idea roundworms cause stomach cancer. It was believed worms, fungal spores and protozoa caused cancers.

How Cancer Develops

Cancer develops from our own cells

In 1840 Virchow found cancer tissue is from our own cells

Normal cells divide or stop based on signals from the tissue

Normal cells age and self destruct if they become damaged

Cancer cells ignore signals; Do not die + Keep on multiplying

Today, we know cancer is from our own cells but external influences can create cancerous cells in our body

Chemicals & Cancer

Chemicals cause Cancer + Prevent cures

In 18th Century England, Percival Pott first to note this

Today we know that asbestos, benzene & heavy metals cause it

First Type – Alter cell DNA (Mutagens) – creates cancerous cell

Example – Benzene: cigarette smoke, soft drinks, gas, furniture

Second Type – Disrupts Immune system, so can't kill bad cells

Example – Benzene & some heavy metals can cause this effect

These two actions combined can create the perfect conditions

Infections & Cancer

Infections increase risk of mutations

Discovered first in Chickens – found it had to be a virus

Indirectly – Germs can cause creation of cancerous cells

Inflammation – leads to damage and body tries to repair

They divide to repair – can cause accidental cell DNA error

Some viruses like Hepatitis –B can directly Alter DNA of cells

Remember! Not all cancers are from Infections; not all infections cause cancer...

Cancer Risks

Radiation, Hormones, Genes

Radiation from Heavy Metals & X-rays damage DNA

Hormones which encourage growth can also help tumors grow

Genes – can pass along some mutations which causes cancer

3x risk: hereditary, exposed to heavy metals + hormones

Surprisingly, some of these dangerous causes can help fight back

Surgery Vs Cancer

Surgery as the solution

For a long time cutting out the tumors was the only way

Surgeons had to numb patients with opium and alcohol

If they survived the operation, infections killed them

It was in 1846 and 1860 solutions were found respectively

1890's a radical way to treat breast cancer was used – remove the breast, surrounding muscles, and the lymph nodes...

Chemotherapy – First Line of Defense

Chemotherapy – the next level

Several cancers cannot be surgically treated

Chemo damages part of DNA that helps cells to multiply

All cells in the area are effected, cancer cells die, normal live

Mustard Gas (extract) a weapon in WW1 – treats Leukemia

Other Chemo – effects cancer cell Metabolism, halts growth

Pretend to be helpful for growth but will stop DNA replication

Plan B - Radiation

When all else fails...Plan B

Radiation, we learned causes cancer – but can cure it too!

Controlled and intense rays can kills cancer cells in a small area

Usually used after Chemo to get those cells which escaped

Also useful where surgery is not possible

Most cases surgery is supplemented with Radiation

Causes sickness, fatigue and hair loss

The New Hope

After 1940's a new team emerged

Sidney Farber found a new weapon (in Chemo)

Pioneered new approach – total care plus treatment

Founded Children's Cancer Research Foundation

Mary Lasker revived American Cancer Society

Together their work caused the National Cancer Act – 1971 huge funding grants given for Cancer Research

But only in 1990s Gene Therapy has emerged as a new Hope

Summary

- **Cancer has been around for a long time – and we have struggled through history**
- **Took a long time to know what caused it...it was only recently that we found out**
- **Surgery was the only & drastic recourse – but caused more issues till recently**
- **Chemotherapy – alters cancer DNA and stops their ability to replicate**
- **Radiation – helps to focus on smaller areas**

Upcoming Reviews:

Waiting on making a new list!

Contact sv0065@att.com

