

**GP-Oncology Attachment**

**Introduction to Oncology**  
**Dr Carlo Palmieri**

**Division of Cancer**  
**Imperial College/Imperial College**  
**Healthcare NHS Trust**

*What is Cancer?*

## **Tumour:**

Galen used the Greek word for swelling (onkos)

Can be Benign or malignant

**Neoplasm:** "new growth"

Can be Benign or malignant

## **Hippocrates**

**crab leg like extensions emanating from tumors**

*'Karkinos'*      **Cancer**

**Malignancy:** medical meaning of cancer

***MITOTIC LESION***

**Carcinomatosis:** disseminated cancer

**Tumour**

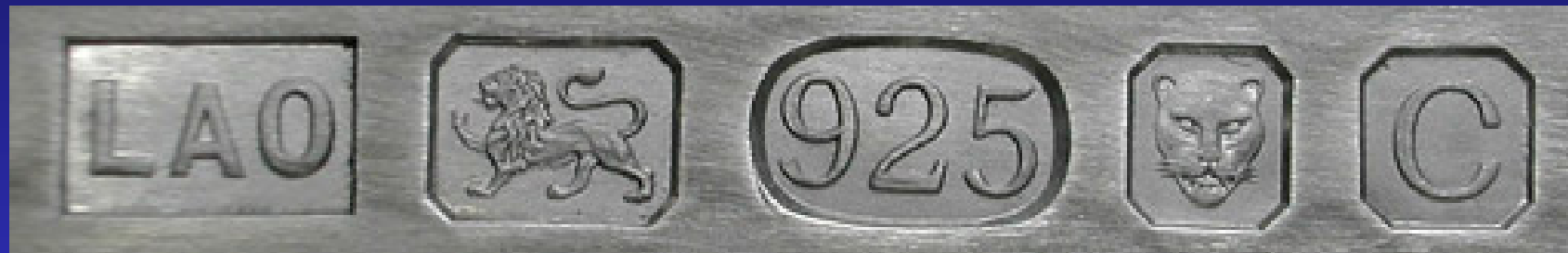
```
graph TD; A[Tumour] --> B[Benign]; A --> C[Malignant]; C --> D[Primary]; C --> E[Secondary];
```

**Benign**

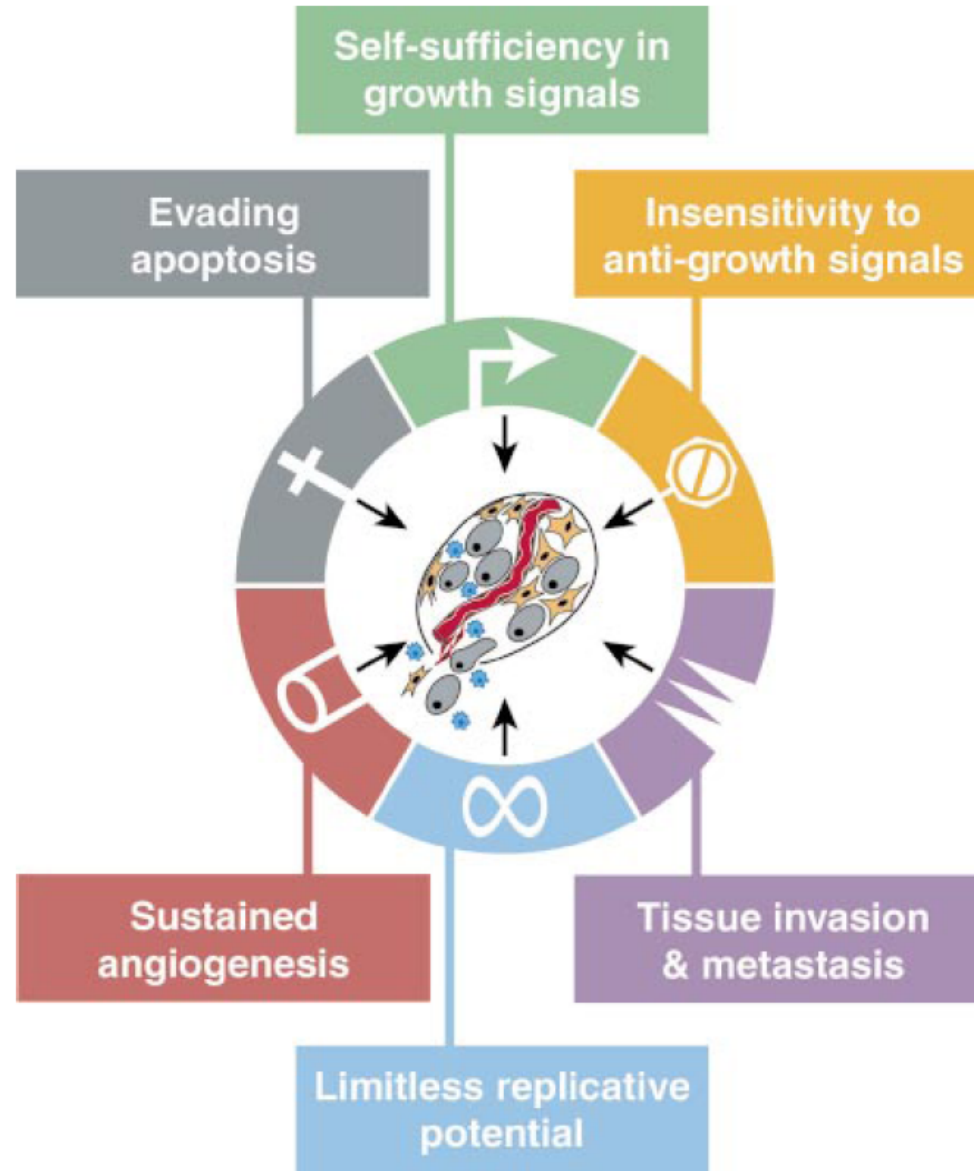
**Malignant**

**Primary**

**Secondary**



## Six Hallmarks of Cancer



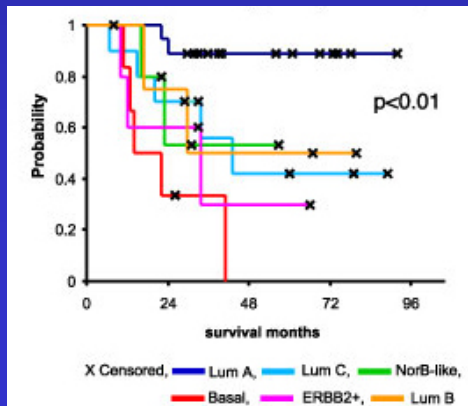
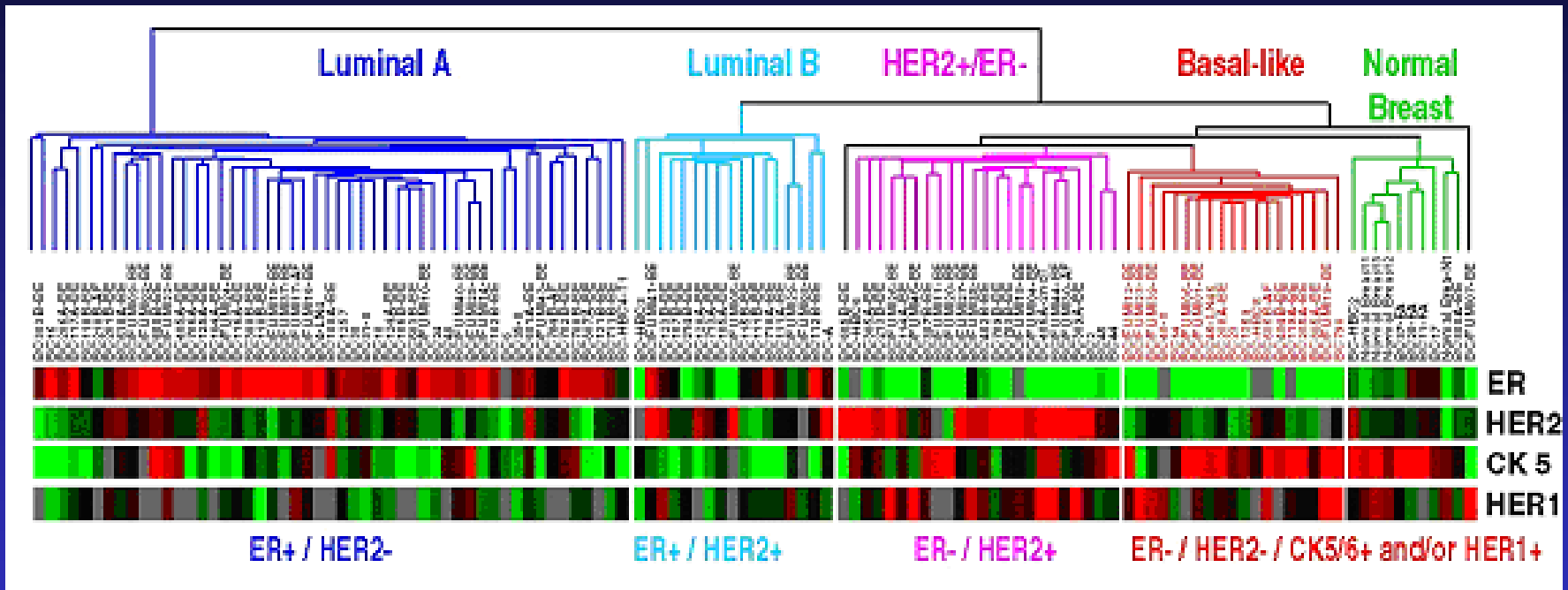
Hanahan & Weinberg, 2000

Many types of cancer  
defined by organ involved

BUT

Not all cancers defined by organ are the  
same

# Subtypes of Breast Cancer & Outcomes



Perou et al. *Nature* 2000;406:747-52

Sorlie et al 2001 *Proc. Natl. Acad. Sci.* 98:10869-74



*What is Oncology &  
What is about ?*

# *Malignant Diseases*

- Prevention
- Diagnosis
- Management & Treatment
- Research
  - Pre-clinical
  - Clinical

# ***Main Oncology Specialities***

## ***Medical Oncology:***

Delivering cytotoxic and biological agents in the management of solid disease

## ***Clinical Oncology:***

Therapeutic administration of ionising radiation (radiotherapy) and cytotoxic chemotherapy

## ***Haematology (clinical haematological oncology)***

Liquid malignancy

lymphomas, leukaemias/myelomas

*Why learn about oncology?*

*Cancer is Common*

# United Kingdom

2008 Incidence: 309,500

<1% children (0-14 years)

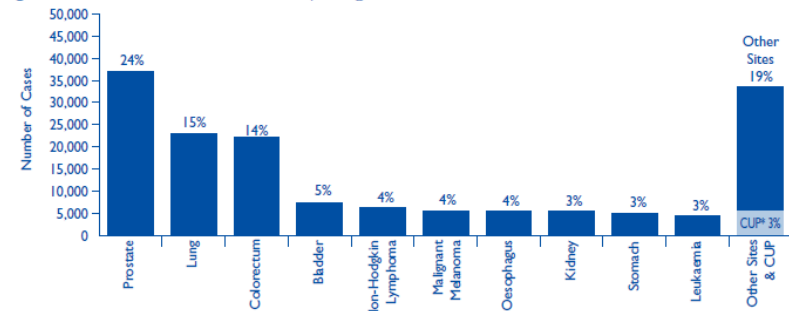
10% cases 25-49 years

74% cases  $\geq$  60 years

CANCER RESEARCH UK

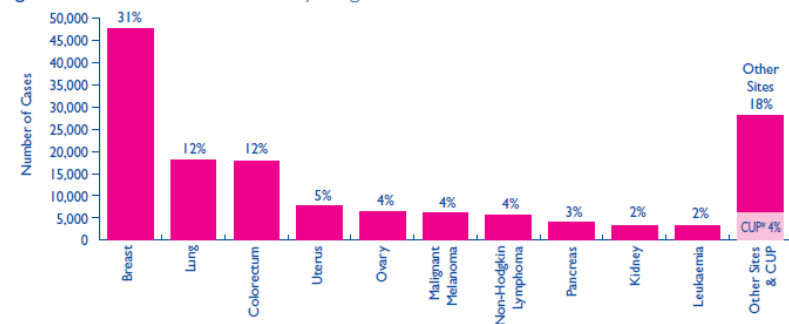


Figure One: The 10 Most Commonly Diagnosed Cancers in Males, UK, 2008



\* 3% of all male cases are registered without specification of the primary site

Figure Two: The 10 Most Commonly Diagnosed Cancers in Females, UK, 2008

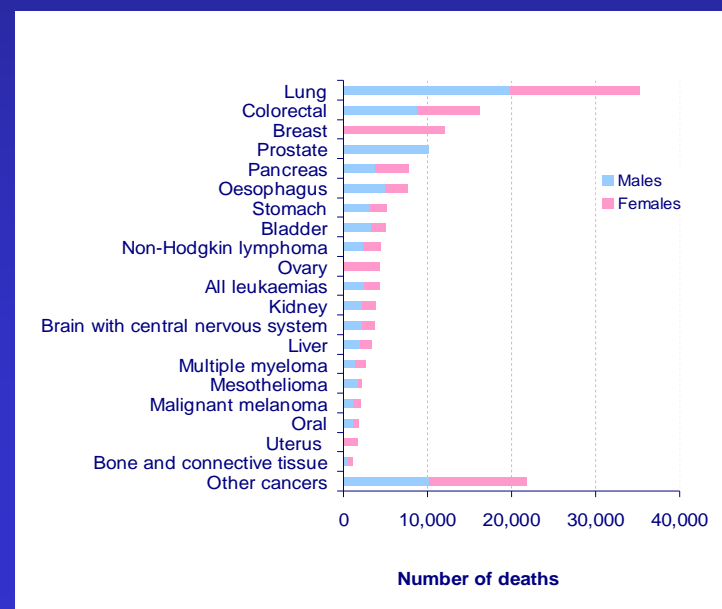


\* 4% of all female cases are registered without specification of the primary site

# *Mortality*

- 2008: 156,723 deaths from cancer
- 76% cancer deaths  $\geq$  60 years
- 25% of all deaths  $\geq$  60 years cancer related

CANCER RESEARCH UK



# **Cancer Stories Common in Newspapers**





*All Specialities Involved*

- *Managing Disease*
  - *Primary Disease*
  - *Secondary Disease*
- *Dealing Side effects (Short and long term)*
- *Support*

***BASIC PRINCIPLES***  
***&***  
***BEST PRACTICE***

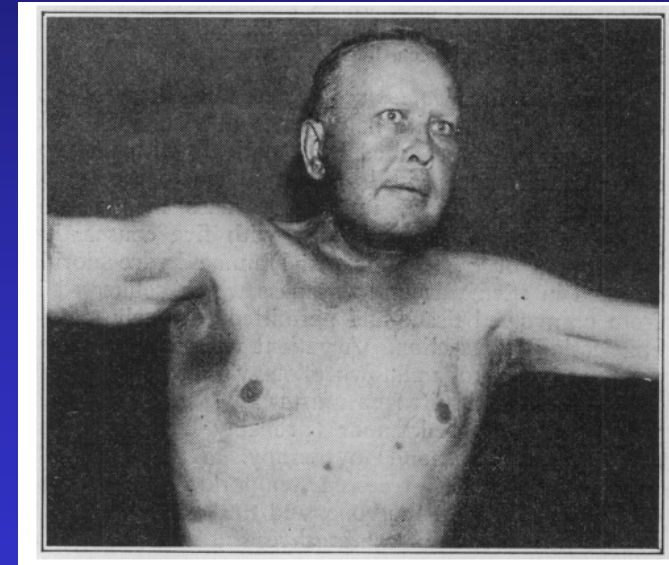
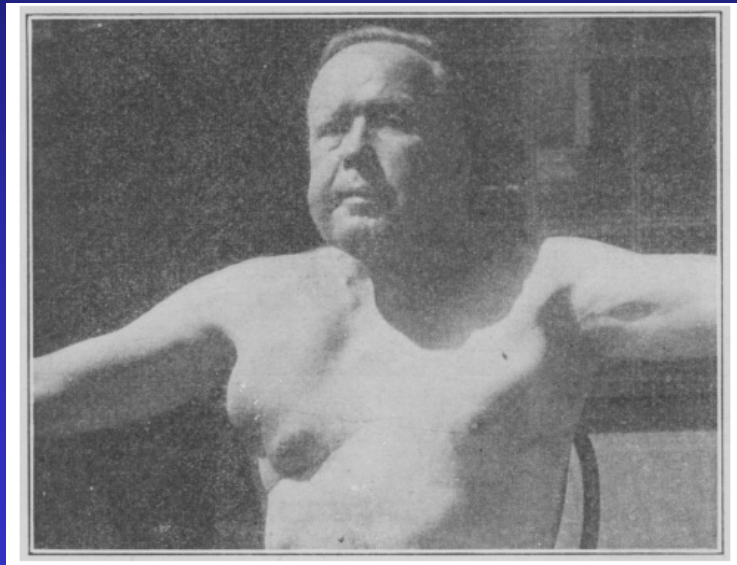
**First patient treated  
with systemic chemotherapy**

**Use of Methyl-Bis(Beta-Chloroethyl)amine Hydrochloride and  
Tris(Beta-Chloroethyl)amine Hydrochloride for Hodgkin's  
Disease, Lymphosarcoma, Leukemia and Certain Allied  
and Miscellaneous Disorders**

LOUIS S. GOODMAN, M.D., Salt Lake City  
MAXWELL M. WINTROBE, M.D., Salt Lake City  
WILLIAM DAMESHEK, M.D., Boston  
MORTON J. GOODMAN, M.D., Portland, Ore.  
MAJOR ALFRED GILMAN  
Medical Corps, Army of the United States  
and  
MARGARET T. McLENNAN, M.D., Salt Lake City

*synthetic  
lymphocidal chemical*

**New Haven Hospital**



**August 27<sup>th</sup> 1942  
10 daily injections**

# Principles Established

1. ***Multidisciplinary team:*** Tumor Conference on August 25, 1942

2. ***Patient Altruism***

3. ***Proof of concept that intravenous chemotherapy would result in tumor regression***

4. ***Chemoresistance could develop after multiple doses***

5. ***Bloods prior to further treatment***

‘The blood picture must be carefully followed at frequent intervals to guide subsequent dosages’

6. ***Benefit vs Side Effects***

‘The margin of safety in the use of these chemicals is narrow’

‘Death was hastened by the untoward effects of the drug on the bone marrow’

## *Basic Principles*

Multidisciplinary  
Approach

Journey

Holistic

Not purely medical

Listen

## *Best Practice*

Multidisciplinary team

Evidence based practice  
(clinical trials)

Clear information

Appropriate support

*How do we treat cancer?*



# Treatment Modalities

```
graph TD; A[Treatment Modalities] --> B[Surgical]; A --> C[Medical]
```

**Surgical**

**Medical**

# *Role of Surgeon in Oncology*

- Prophylactic Procedures (Genetic Predisposition)
- Family History Clinics
- Diagnosis
- Resection: Primary/Secondary Disease
- Insertion of shunts/lines
- Reconstruction
- Palliative Procedures
  - Eg Prevent/deal with fractures due to bone met

# *Medical*

- **Chemotherapy**
- **High dose chemotherapy and transplantation**
- **Radiotherapy**
- **Endocrine/Hormonal Therapy**
- **Immunotherapy**
- **Monoclonal antibodies**
- **Tyrosine Kinase Inhibitors**

*Aims/Intent of treatment*

**Prophylactic**

**Neo-Adjuvant**

**Adjuvant**

**Palliative**

**Curative Intent**

# *Performance Status*

# ***ECOG Performance Status***

0: Fully active, able to carry on all pre-disease performance

1: Restricted in physically strenuous activity  
but ambulatory & able to carry out light work

2: Ambulatory & capable of all selfcare  
but unable to carry out any work activities  
Up and about more than 50% of waking hours

3: Capable of only limited selfcare,  
confined to bed or chair more than 50% of waking hours

4: Completely disabled. Cannot carry on any selfcare,  
Totally confined to bed or chair

# *Cancer Staging*



# *Why Stage Cancer*

*Aid Planning of treatment*

*Indication of prognosis*

*Assist in evaluation of the results of treatment*

*Facilitate the exchange of information*

# ***TNM Classification***

TNM Classification:

Size of primary Tmour

Presence of lymph Node metastases

Presence of distant Metastases

(Serum tumour markers ie AFP/hCG-testicular tumours)

# *Cancer Journey*



# *Cancer Journey*

- Diagnostic Pathway
- Early versus Advanced
- Length of journey is variable
- Needs may change ‘Transition Points’
  - Early to advance Disease
  - Surviving to living
  - Treatment phase to follow up phase
  - Early Treatment issues to Late treatment issues (Survivorship issues)
  - Active treatment to Best supportive care
  - Non-cancer problems and issues
- ‘The Team’ should facilitate and help patient in their journey

# *Key to a Good Cancer Journey*

- *Communication*

To Patient & Family/Loved ones

- *Communication*

Between Team Members (in/outside hosp)

- *Communication*

- *Co-ordination*

*Concept of Holistic Care*

*or*

*Total Cancer Care*

# Patient Centred & Multi-Disciplinary Approach

GP  
Surgeons  
Oncologist  
Radiologist  
Oncologist  
Palliative Care  
Geneticist



Specialist Nurse  
Physiotherapist  
Pharmacists  
Social Workers  
Psychologist

Family  
Churches/Synagogues/Mosques/Temples  
Charitable Bodies



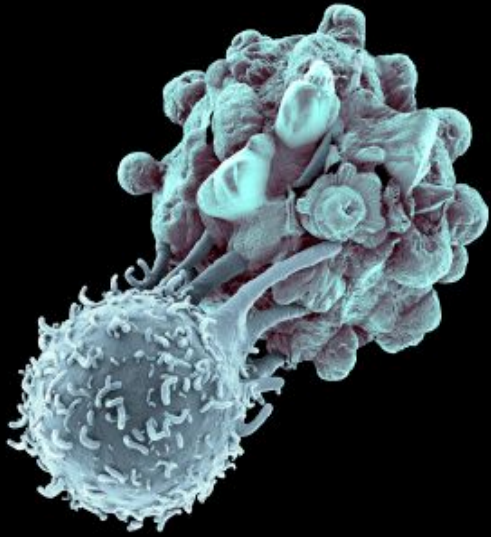
**Location:** Community, Hospital, Hospice, Home

# *'The Team'*

- Key Core Members
- Other members may join and leave once specific issue has been addressed
- Emphasis of team may change
- Aims & Goals will evolve



*Things to think about when you see a patient*



*The Disease*



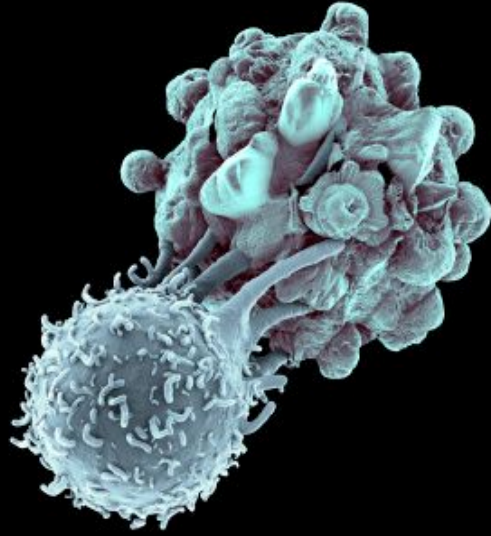
*The Team*



*The Person*



*The Treatment*



## *The Disease*

How did disease present?

How was it diagnosed?

Current symptoms (if any)?



*The Treatment*

Was it surgically resected? if so how?

Is further surgery planned  
eg reconstruction

Radiotherapy & Systemic Therapy:

What kind

How long

Adverse Effects

Early Vs Late

What is the current aim of treatment

Did they go into a clinical trial



Who is involved?

What is their role?

Where are they based?

How do they communicate?



## *The Person*

Did their personal circumstances delay or aid their diagnosis?

Impact of Disease/Treatment/Follow up

Physical

Family Life

Emotional

Social

Financial

Spiritual

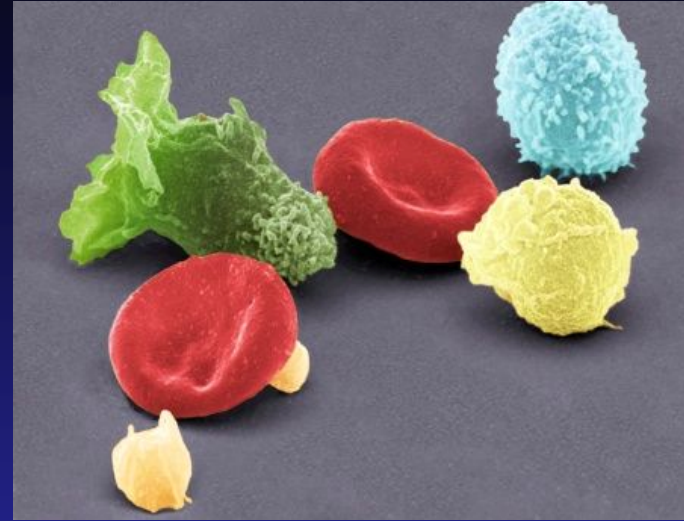
Prognosis

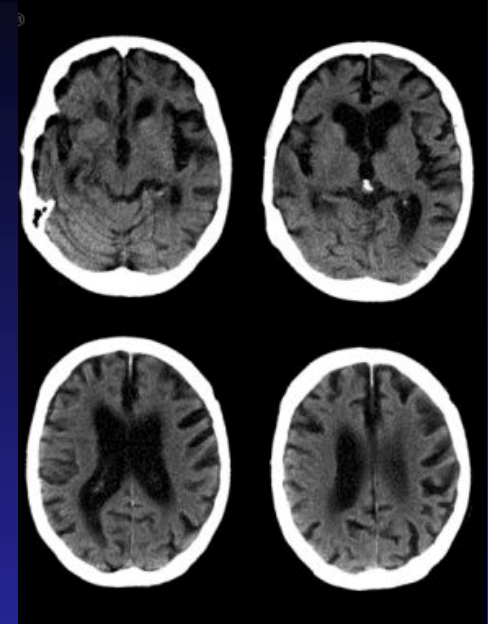
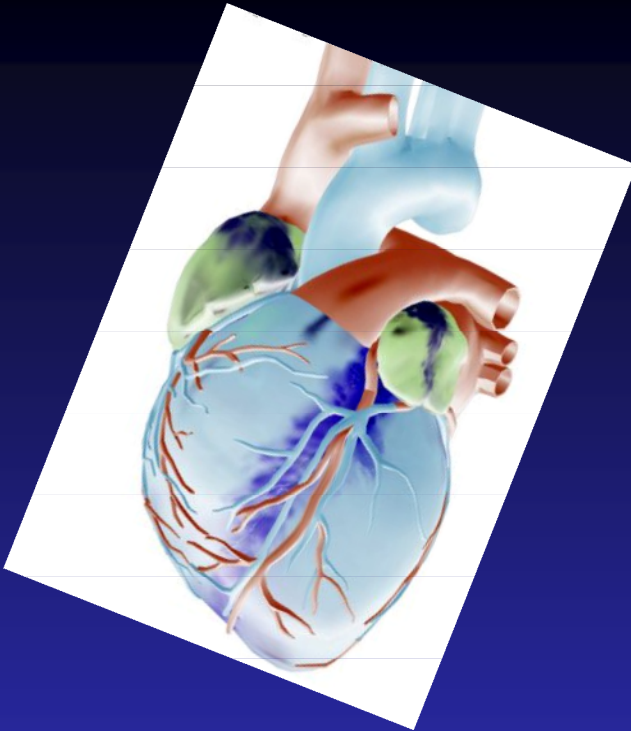
# *Side Effects of Treatment*



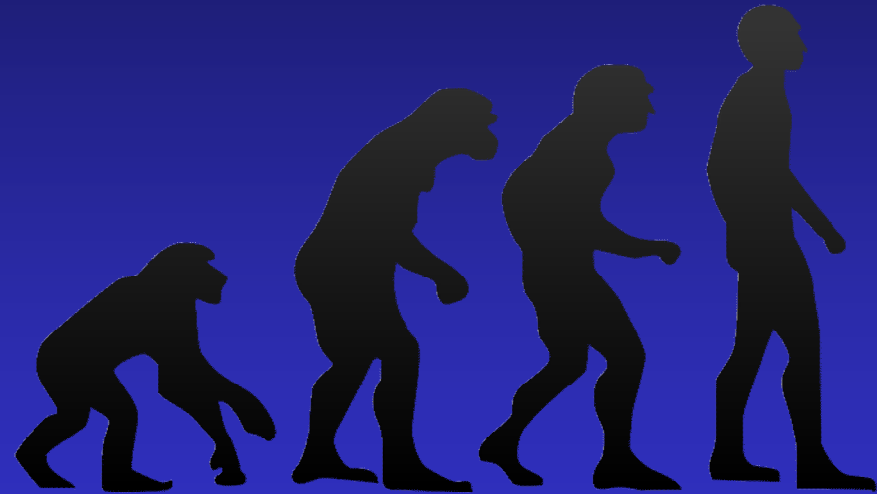
# *Early Versus Delayed*







# *Revolution & Evolution*



- Phase I

- Phase II

- Phase III

- Phase IV

# *In Summary*

- Think Basics
- Think Principles
- Think Holistic