

# **Only in America No One Dies**

**Road map to dealing with a serious usually fatal disease**

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**US Oncology Research Network**

**Chair, Cancer Committee, Inova Fairfax Hospital**

**Virginia Cancer Specialists**

**Fairfax, Virginia**

# **Amazing time in medicine**

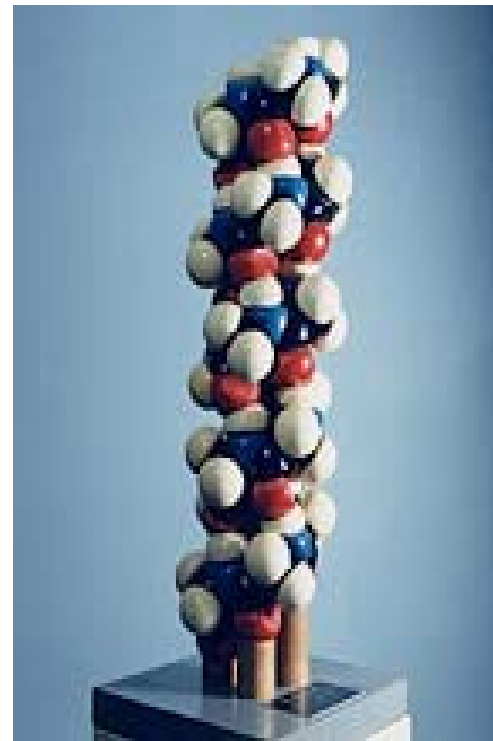
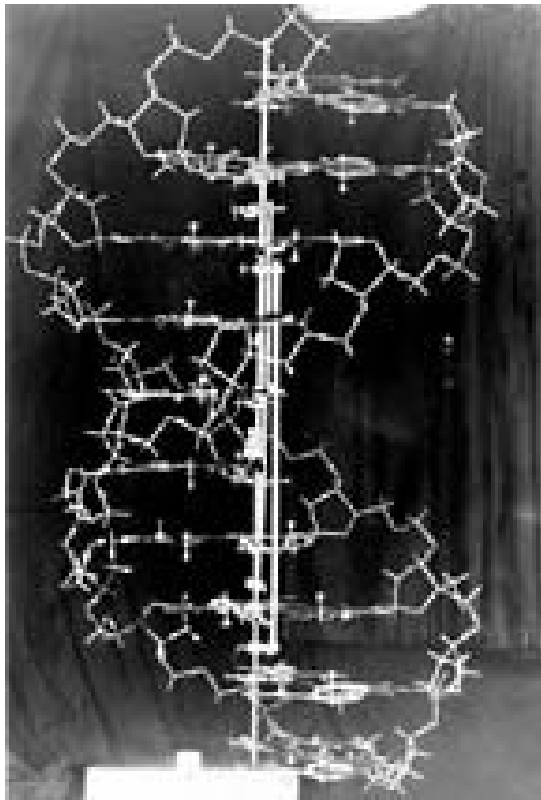
- **Better understanding of the biology**
- **Better management for a range of diseases**

# **BIOLOGY**

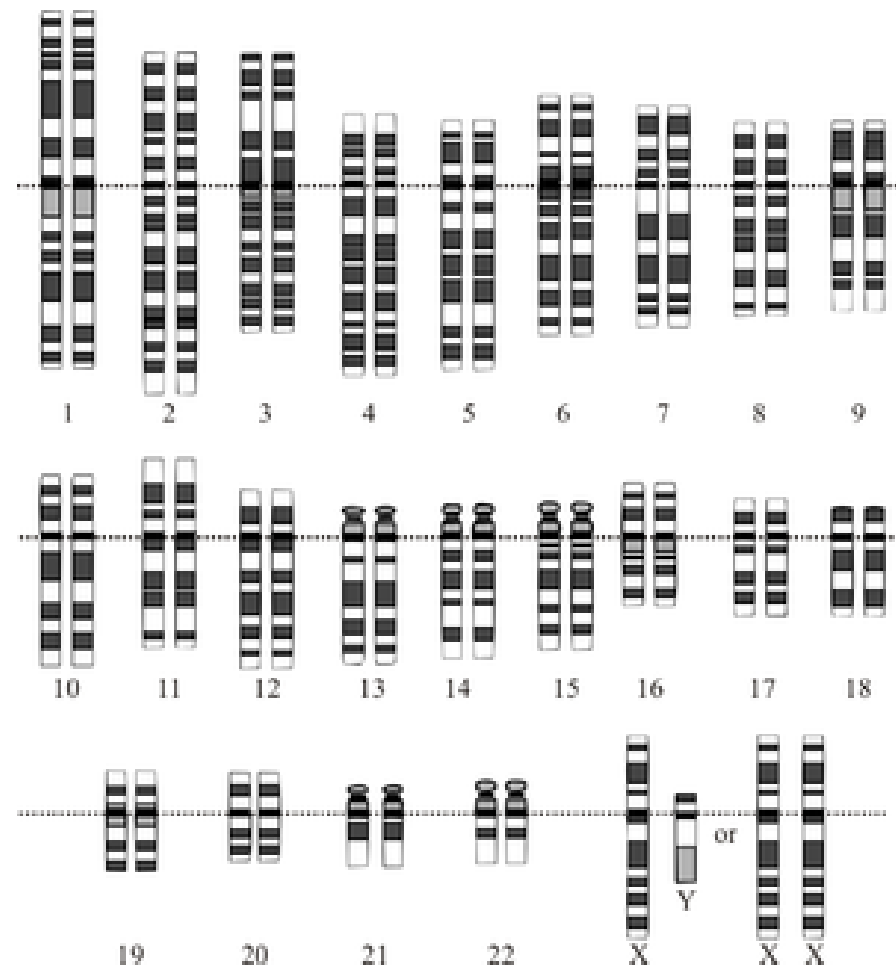
# **Crick and Watson discover the “secret of life” in 1953**



# DNA and double helix

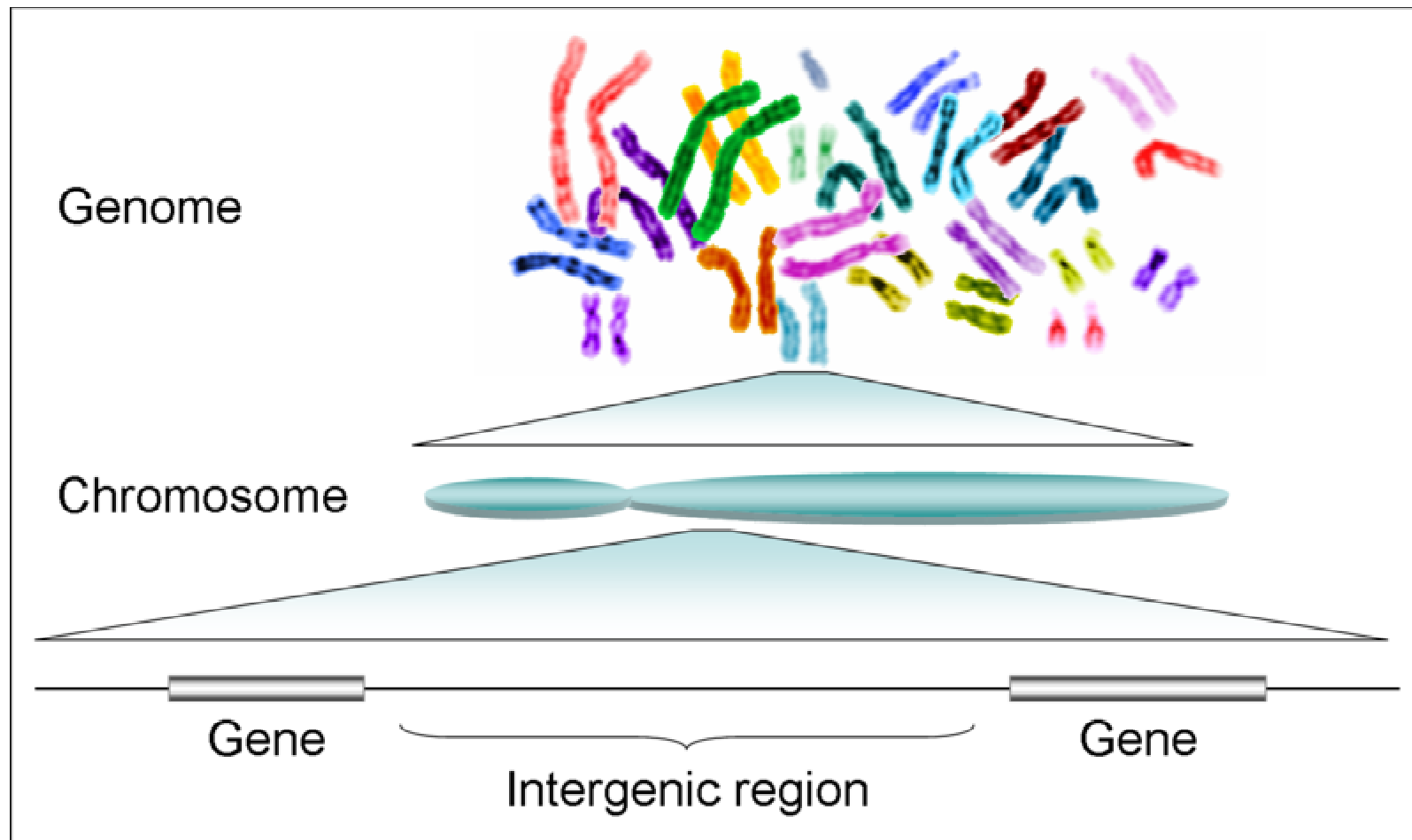


# DNA is the structure of chromosomes

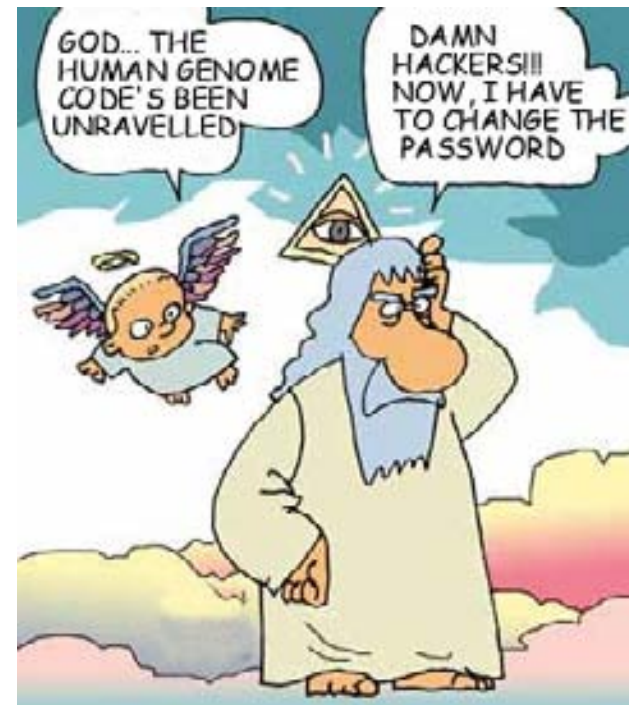




# Human genome is mapped in 2003



# Human Genome: Many reactions



# **THERAPEUTICS**

# Development of antibiotics as an example

- **Sir Alexander Fleming discovers penicillin in 1928, now over 160 antibiotics**



# Now many therapeutics

- Estimate over 6,000 different drugs
- Extensive range
  - Cardiac
  - Pulmonary
  - Gastrointestinal
  - Diabetes
  - Oncology

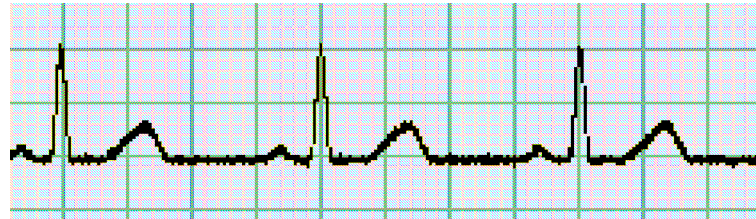


**DEVICES**

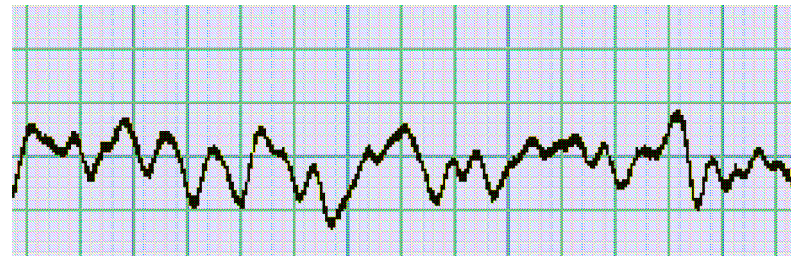
**MANY EXAMPLES**

# A complication of heart attacks: ventricular fibrillation

**Normal  
sinus  
rhythm**



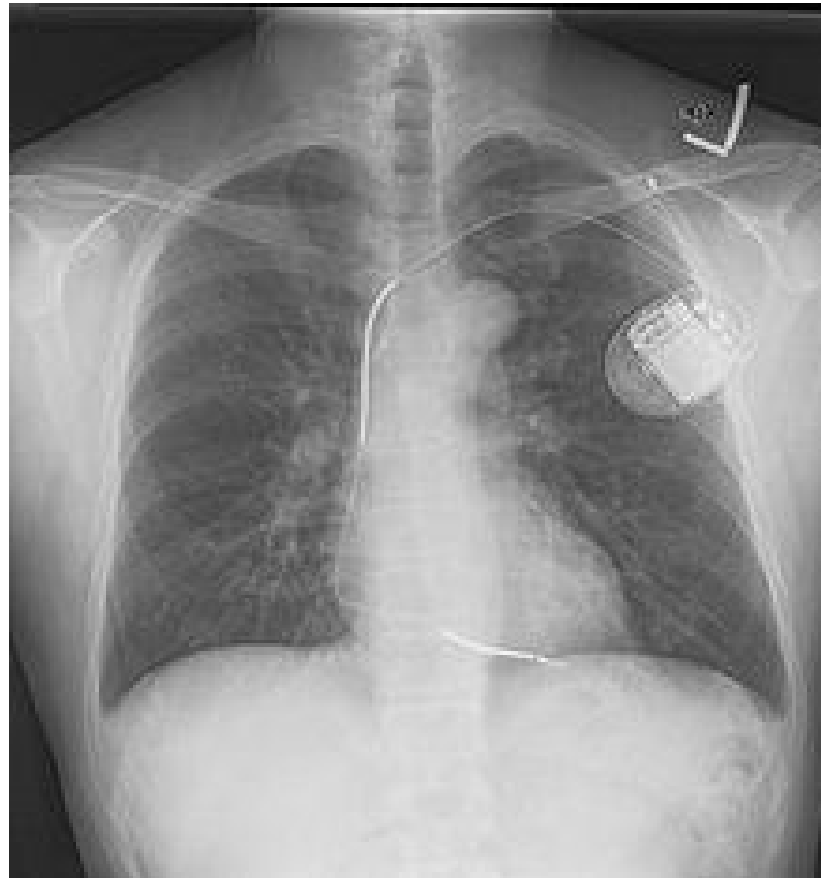
**Ventricular  
fibrillation**



# Implantable defibrillator

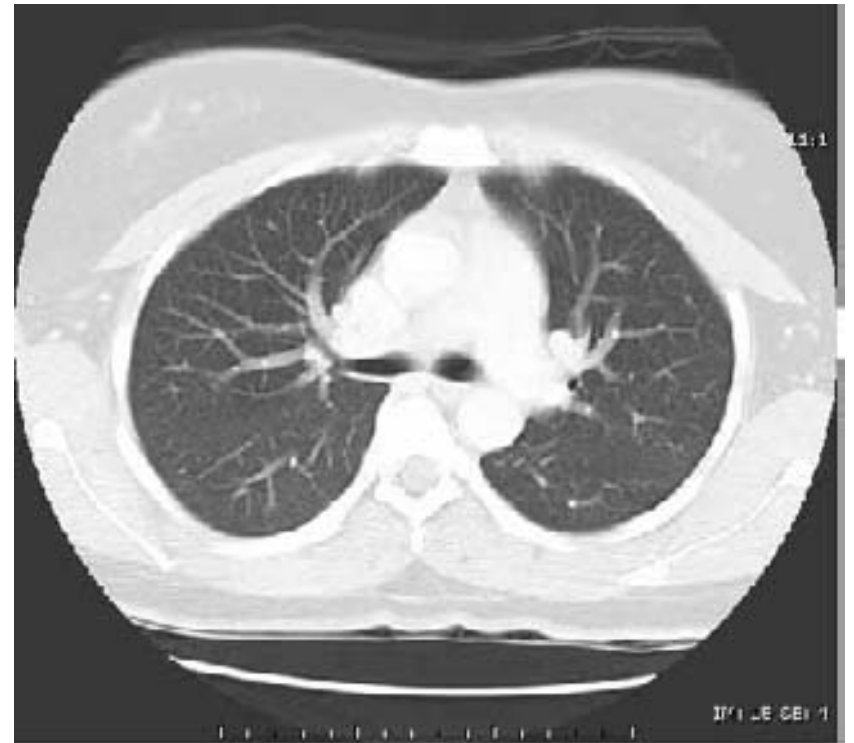


# Patient with an implantable defibrillator

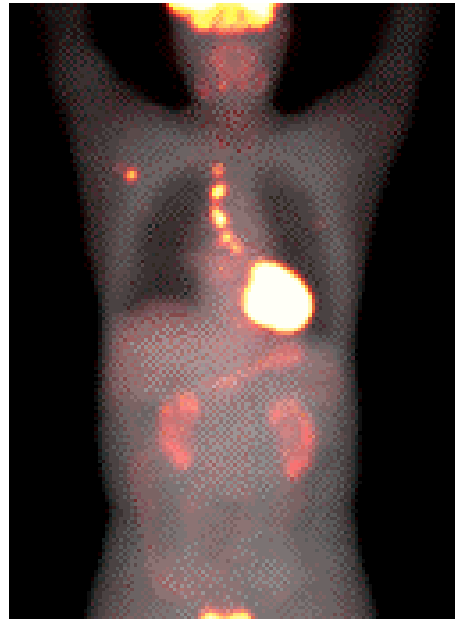


**BETTER DIAGNOSTICS**

# Beatles and CAT scan technology



# PET Scan: Evaluation of physiology

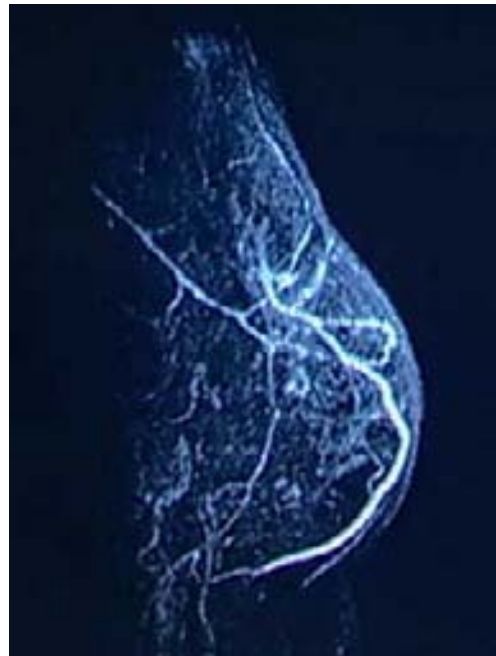


# Magnetic Resonance Imaging (MRI)

- Use radio frequency
- Does not use radiation
- Enclosed and noisy



# **MRI of the breast: an improvement over mammography for select circumstances**



# **CANCER MEDICINE**

- **Earlier diagnosis**
- **Better therapeutics**

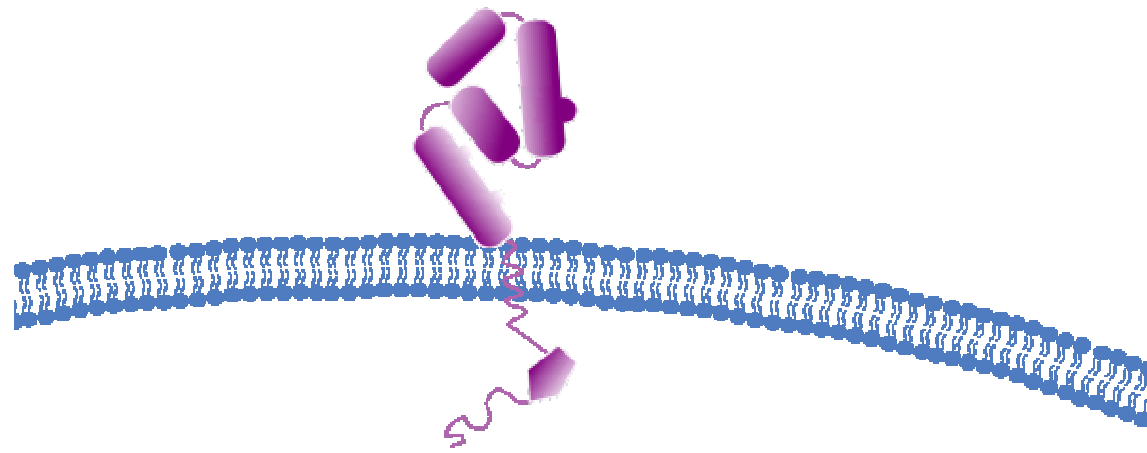
# Breast Cancer

- **Better Outcomes**
- **Early diagnosis**
  - **Mammograms**
  - **Breast MRI**
- **Better therapeutics**
  - **Local management**
  - **Systemic management**

# **Discovery of HER2 biology and breast cancer management**

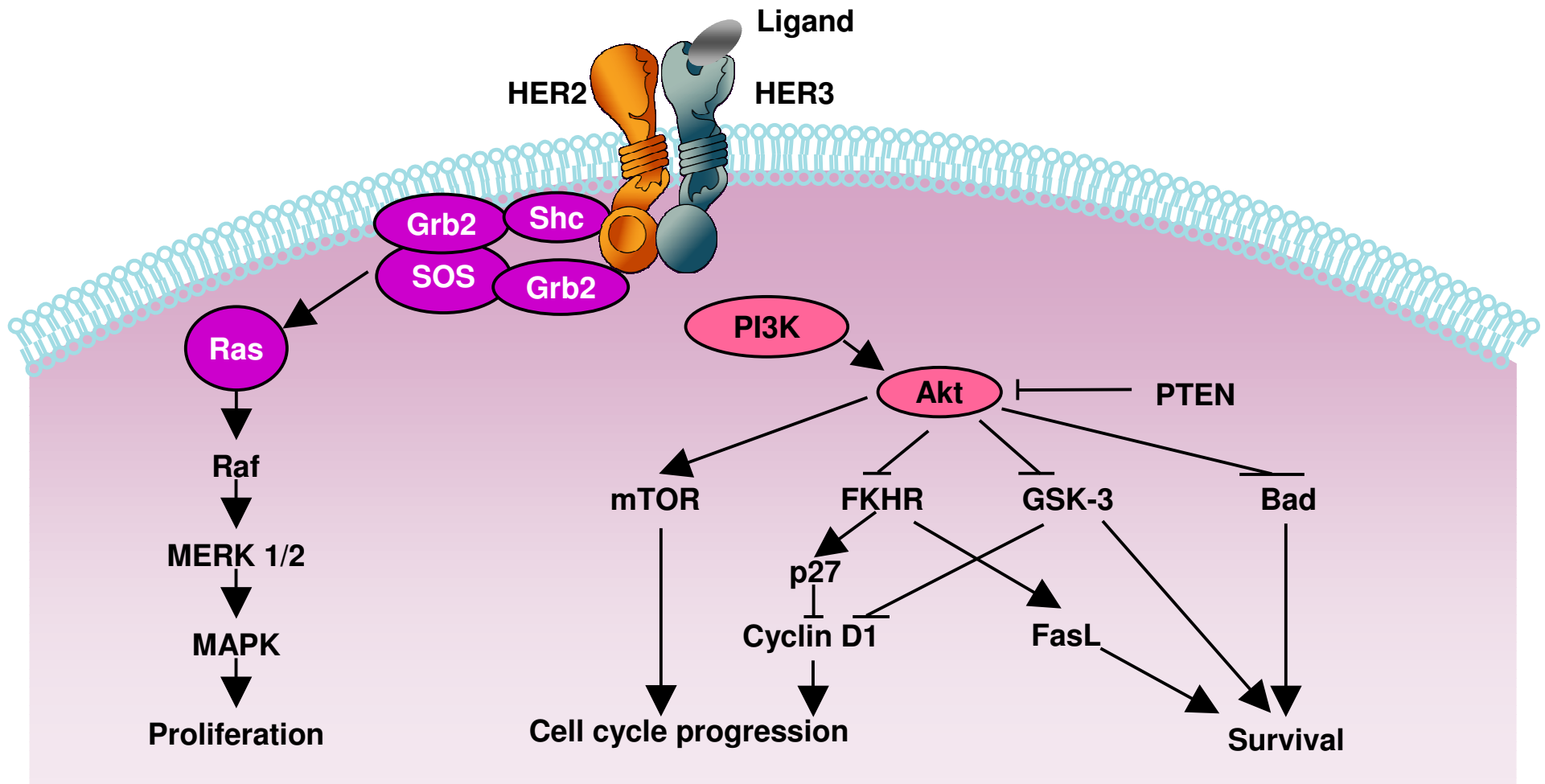
- **Taking a poor prognosis breast cancer situation to now potentially curable situation**

# Human Epidermal Receptor 2 (HER2)

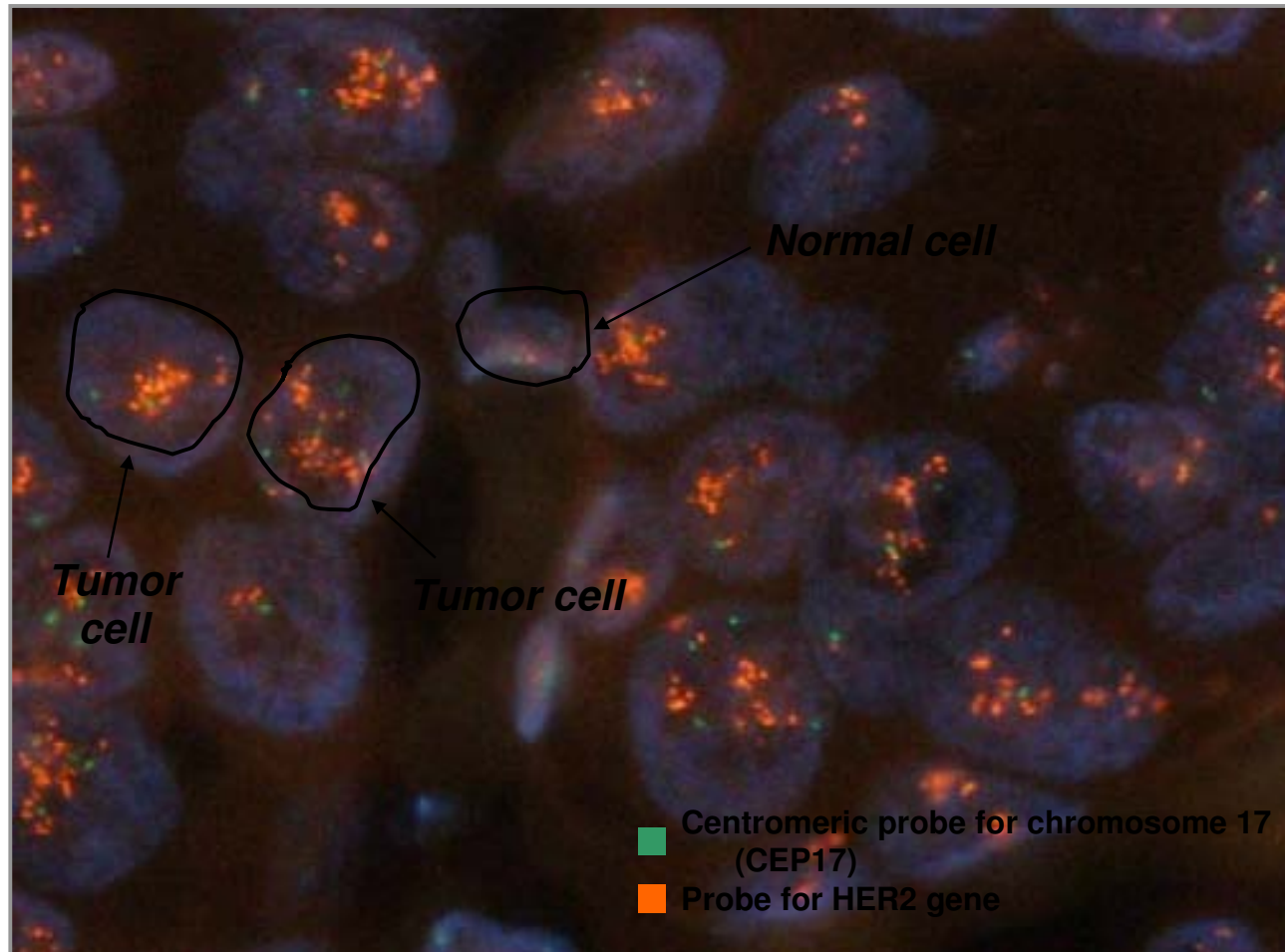


Inside of the cell

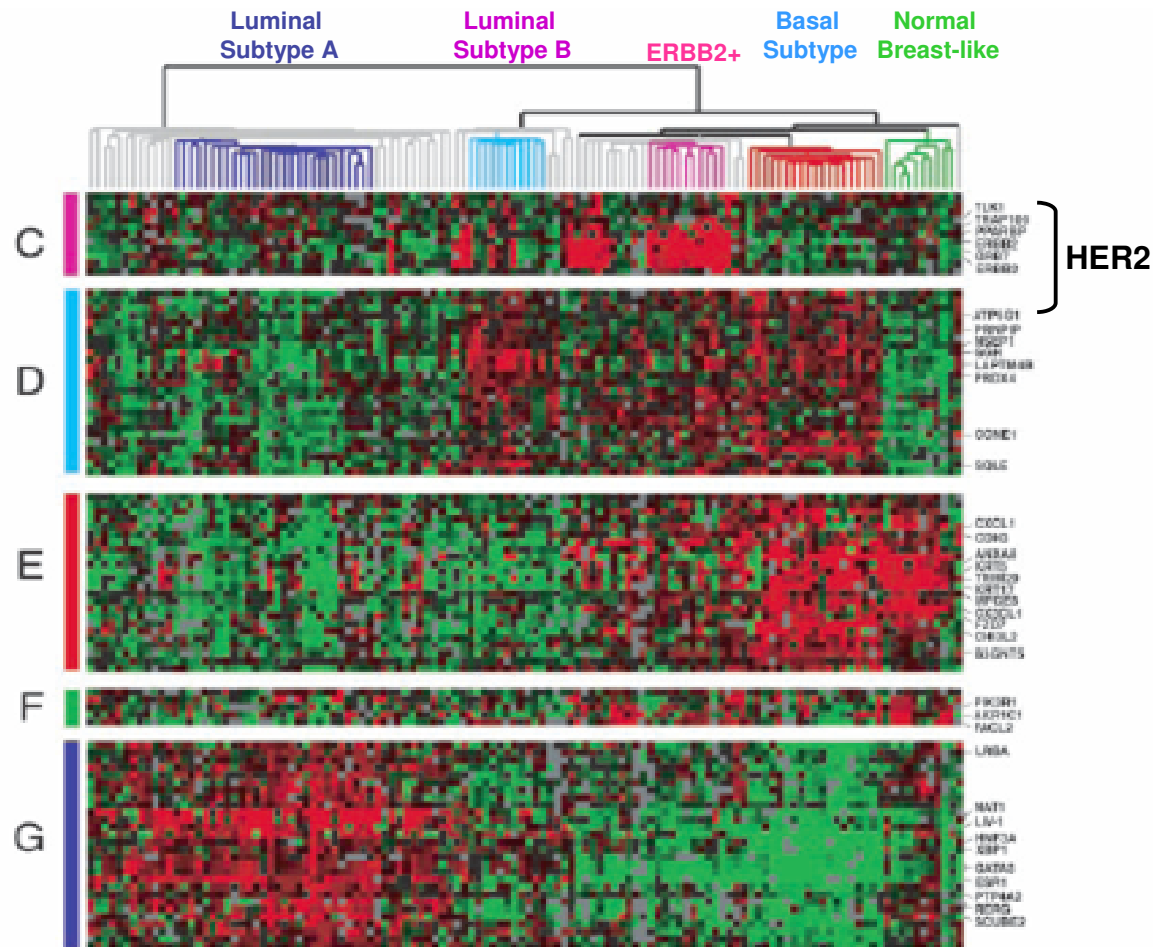
# HER Family Proliferation and Survival Signaling Pathways



# HER2 Gene Amplification



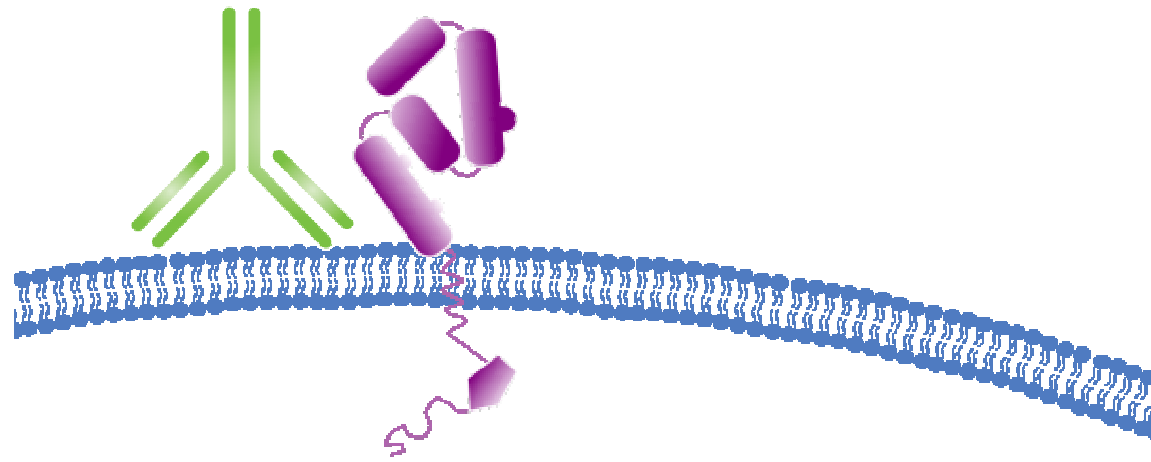
# Breast Cancer Subsets



Ménard et al. *Clin Cancer Res.* 2002;8:520.

Sørli et al. *Proc Natl Acad Sci U S A.* 2003;100:8418.

# Trastuzumab binds to HER2



- Continually suppresses HER2 activity

**So when we are diagnosed with a serious potentially fatal disease, so why should we not be able to beat it and do well?**

- **We have all these medical advances in diagnosis and therapies**
- **We are a “can do” nation**
- **And yes we are stubborn**

# Cultural ethos in the United States

**“That it’s hard to believe that a disease can get the better of us with such great technologies available”**

**Lowell E. Schnipper, MD  
Harvard Medical School**



# Lance Armstrong Phenomena: who did it, so why can't I?



**“Do not go gentle into that good night  
Rage, rage against the dying in the light”**

**Dylan Thomas**

# **Cancer Statistics in US 2009**

- **1,479,350 new cancer cases**
- **Age of patients**
  - **Median age 67**
  - **25% ages 65-74**
  - **22% ages 75-84**
  - **7.5 % 85 and older**
- **562,340 cancer deaths**
- **Gender**
  - **One of two men will die from cancer**
  - **One of three women will die from cancer**

# **Road Map**

**How to deal with the diagnosis of a FATAL disease**

# **Initial phase**

- **Diagnosis**
  - **What is it?**
  - **Confirm and verify**
  - **Start a personal medical folder/note book**
- **Prognosis**
  - **Is it fatal?**
  - **What is the expected survival: weeks, months, years?**

# **Your role**

- **Identify your medical team**
- **Identify your support team**
- **Develop ownership of the treatment plan**
- **Expect a “roller coaster” ride of emotions ranging from disbelief to anger to fight to acceptance**

# Putting your teams together

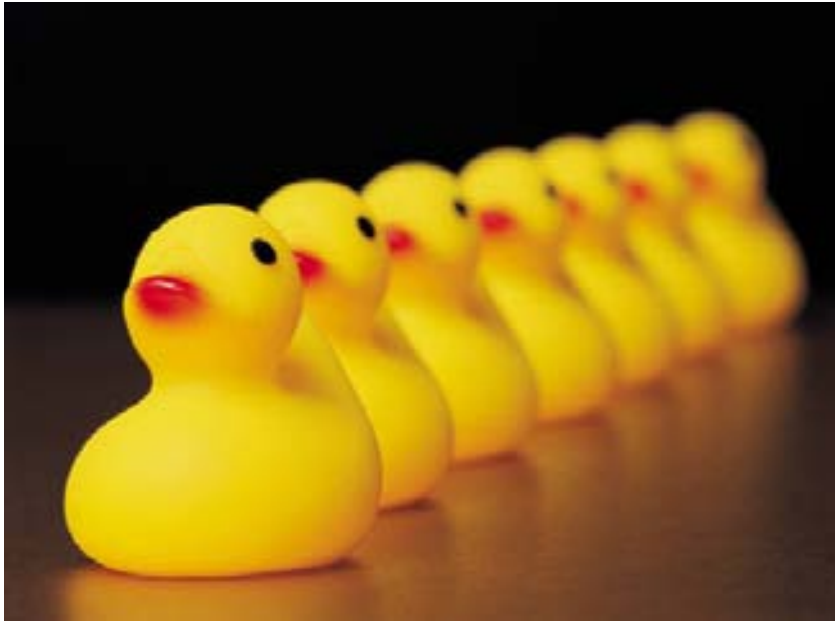
- **Multidisciplinary medical team**
- **Supportive team**

# **Criteria for your medical team**

- **Knowledge**
- **Skills**
- **Communication**
- **Collaboration**
- **Compassion**

# Multidisciplinary medical team

- Get your docs in order



- Make sure they work well together
- Identify a team captain (may have co-captains)

# Patient Doctor Relationships

- Paternalistic
- Autonomous
- Shared Decision Making

# **Identify your support team**

- **You need a chief advocate usually your spouse/  
significant other/family member/close friend**
- **Family**
- **Friends**
- **Other support groups**
  - **Support groups (e.g. Life with Cancer program)**
  - **Faith related support**

# **Treatment options**

- **Benefits**
  - **Response rate**
  - **Progression free survival**
  - **Over all survival**
- **Side Effects**
  - **Short term**
  - **Long term**
- **Goal: quality of life and prolongation of life**

# **Clinical Trials**

- **Is there something better than standard therapy**
- **Hopeful**
- **Benefits/side effects are not well defined**
- **Types**
  - **Phase I: identifying side effects of new therapy**
  - **Phase II: evaluating benefit of new therapy**
  - **Phase III: comparing new therapy with standard therapy**

# **Second Opinion**

- **Good idea for rare or complicated diagnosis**
- **Treatment options vary**
- **Just not sure about your team**

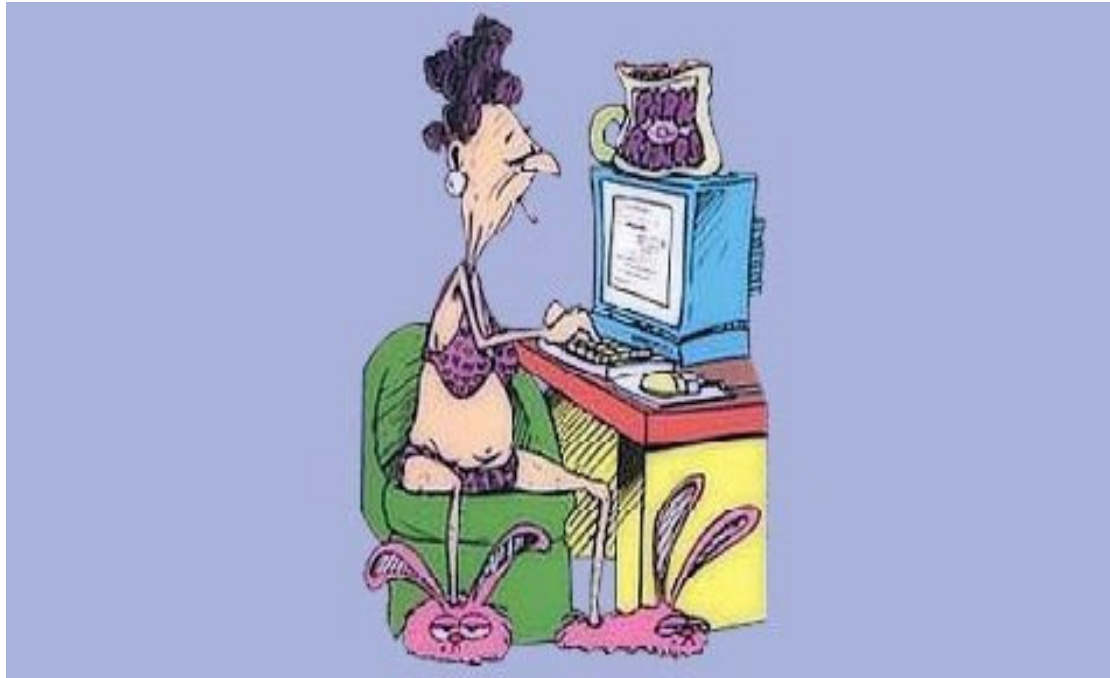
# **Doctor appointments**

- **Plan for these meetings**
- **Develop a list**
- **Most initial appointments are one hour**
- **Most f/u appointments are 15 minutes**
- **If you need more time, ask for it but ahead of time**

# Check list

- Treatment details
- Tests for monitoring
- Medical costs
- Nutrition
- Sex
- Travel
- Is this genetic?
- Complimentary care
- Advanced directives

# A Living Will



*Last night, my husband and I were sitting in the living room and I said to him, "I never want to live in a vegetative state, dependent on some machine and fluids from a bottle. If that ever happens, just pull the plug."*

*He got up, unplugged the Computer, and threw out my wine.*

# **Treatment phases**

- **Initial phase**
  - **Benefits/risks**
- **Second line phase**
  - **Benefits/risks**
- **Beyond second line**
  - **Benefits/risks**
- **Each major treatment decision is a “fork in the road” with a change in the benefits/risk ratio and needs a re-evaluation**

# White knight syndrome

**Make things better  
Solve the problem  
Be the “good guy”**



# **HOPE versus TRUTH**

- **Not mutually exclusive**
- **Patients do better with the truth**
- **Avoid false hope**

# **Terminal phase**

- **Am I there yet?**
- **Palliative care**
- **Hospice**
- **Exercise control over this process**

# CONCLUSION

**It ain't over till it's over.**

**Yogi Berra**





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