

# Breast Cancer Panel

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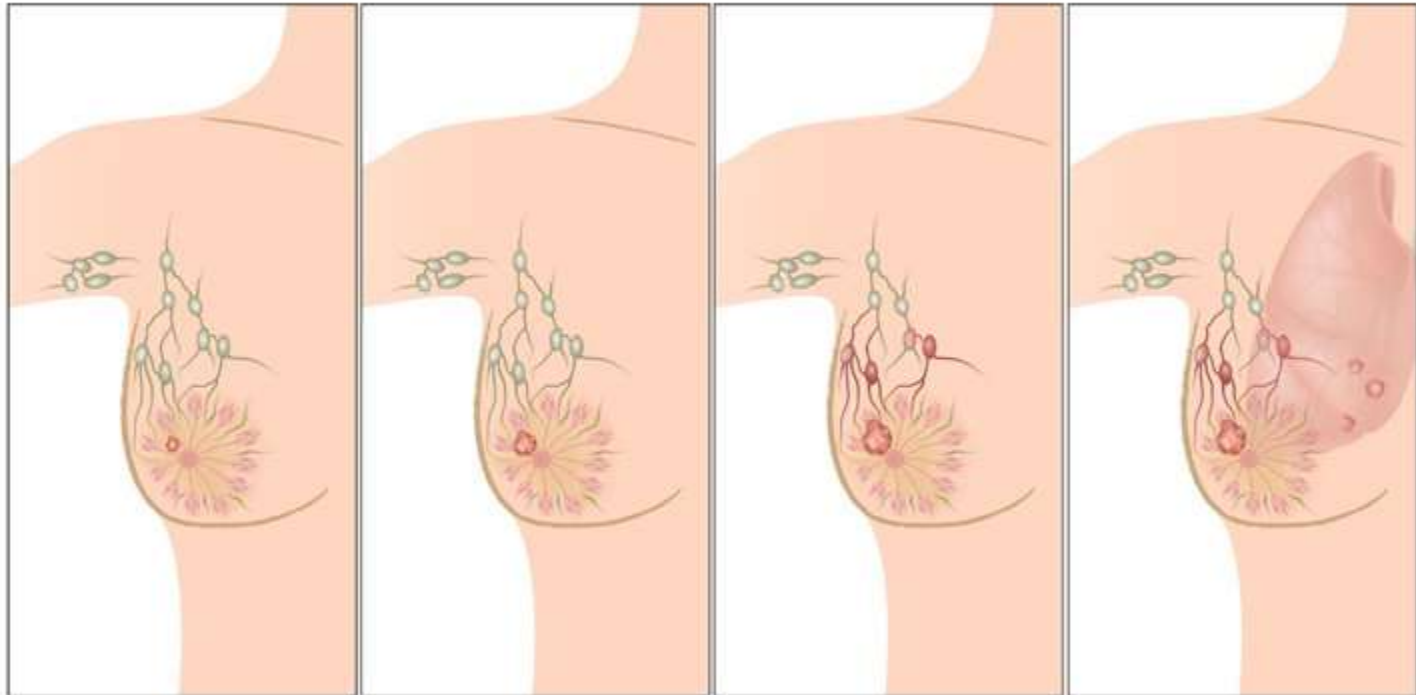
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CANCER SURVIVOR DAY

# Stages of Breast Cancer

- **Stage 0** = Carcinoma In Situ (Ductal = DCIS) non-invasive
- **Stage I** = Size  $\leq$  2 cm, no lymph nodes (LN) involved
- **Stage II A** = Size  $\leq$  2 cm, 1-3 lymph nodes involved  
Or size  $>$  2 cm, no lymph nodes involved
- **Stage II B** = Size  $>$  2 cm, 1-3 lymph nodes involved  
Or size  $>$  5 cm, no lymph nodes involved
- **Stage III A** = Any size tumor, up to 9 lymph nodes involved
- **Stage III B** = Tumor grown into chest wall or skin, up to 9 LN involved
- **Stage III C** = Any size tumor, 10 + lymph nodes involved  
or if LN by collar bone or LN in between the breasts involved
- **Stage IV** = Distant spread to other organs (bone, liver, lung, etc.)

# Breast Cancer Stages



Stage I

Stage II

Stage III

Stage IV

# Treatment Modalities for Breast Cancer

- **Surgery**
  - Used for stage 0 (DCIS) to stage IIIC
    - not usually done for stage IV (since not a curative situation)
- **Radiation**
  - After Lumpectomy
    - in **most** cases
  - After Mastectomy
    - if large tumor
    - or spread of cancer to lymph nodes
- **Systemic therapy**
  - Chemotherapy (intravenous or pills)
  - Hormonal blocking therapy (pills or injections)

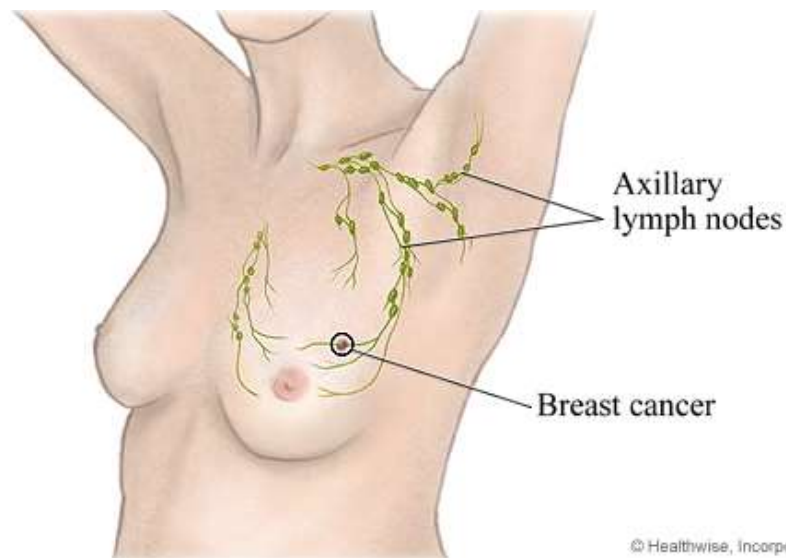


Systemic therapy goes everywhere in the body

Radiation and surgery are localized to the breast and lymph nodes

# Surgery For Breast Cancer

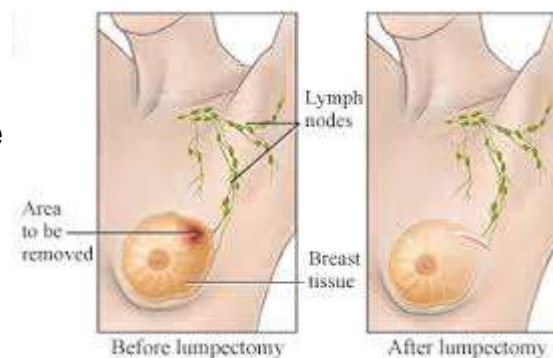
- Goal of surgery is to remove tumor and test lymph nodes for spread of cancer
- Approach for surgery is multifactorial
  - Breast Size
  - Tumor Size
- Survival/Recurrence is similar between lumpectomy and mastectomy with appropriate post-op therapies (radiation/chemotherapy/hormonal therapy)



# Modality of Surgery

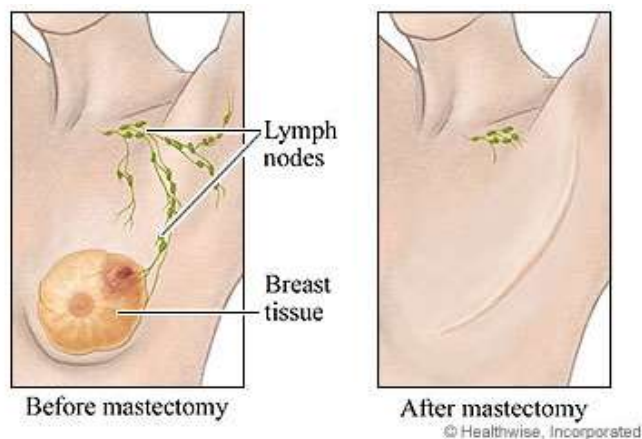
- Lumpectomy

- Removing the tumor with a rim of normal breast tissue
- Requires Radiation post-operatively



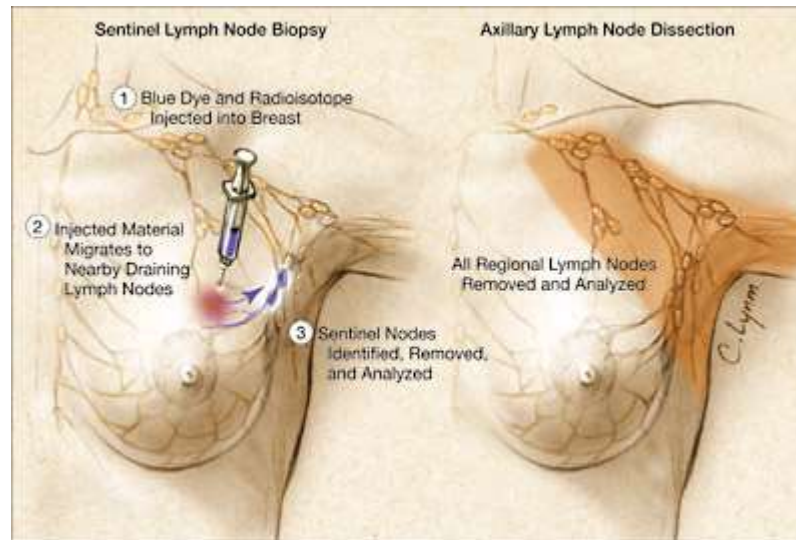
- Mastectomy

- Removing all of the breast tissue leaving with a flat chest
- Options for plastic surgery reconstruction versus prosthesis
- Nipple Sparing/Skin Sparing Techniques if undergoing reconstruction
- Radiation if large tumor or lymph nodes involved



# Lymph Node Dissection

- Axillary Sentinel Lymph Node Biopsy
  - Identify the lymph node that cancer will want to go to first
- Axillary Lymph Node Dissection
  - Removing bulk of lymph nodes under armpit if there is spread of cancer to these lymph nodes



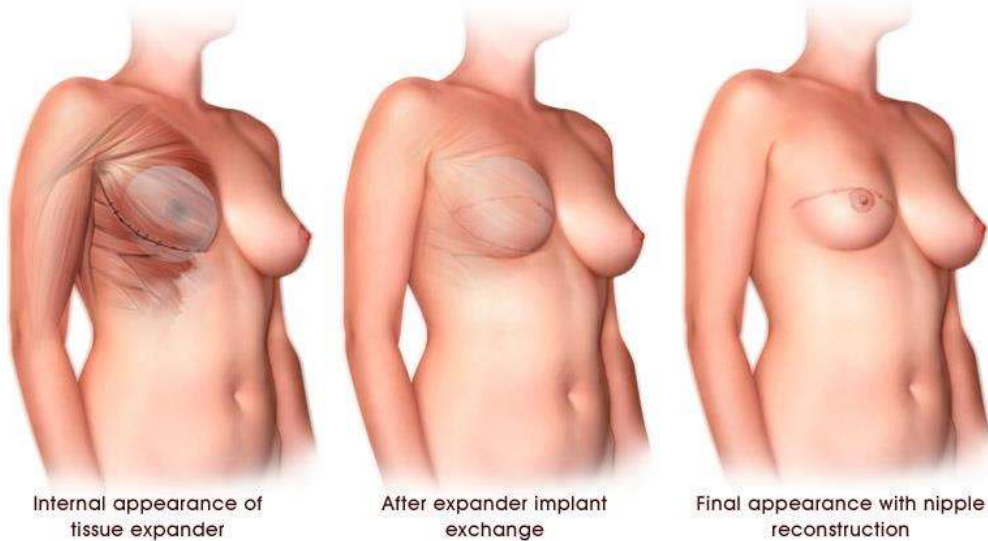
# BREAST RECONSTRUCTION OPTIONS

- No reconstruction or “delayed” reconstruction
  - No additional surgery at the time of mastectomy
  - Option of external prosthesis for use with bra and clothing
  - Can re-visit options of surgical reconstruction at a later date
- Implant-based reconstruction
- Autologous reconstruction (your own tissue)
- Implant + autologous reconstruction



# TWO-STAGE BREAST RECONSTRUCTION WITH EXPANDER-IMPLANT

Tissue Expander and Implant Reconstruction

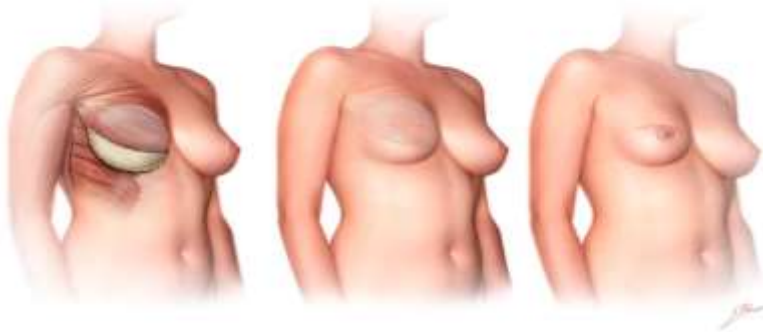


Filling of tissue expander in office



- 2-stage operation: At the time of mastectomy, a temporary implant (tissue expander) is placed underneath the pectoralis major muscle
- The expander is filled with saline in the office every 1-2 weeks until your desired size is reached
- After tissue expansion is complete, a second surgery is performed where the tissue expander is removed and replaced with a permanent implant
- If you require chemotherapy, the expander will be filled on the weeks that you are not receiving any chemotherapy
- If you require radiation treatment, the expander must be completely filled BEFORE radiation begins
- If you require chemotherapy or radiation therapy, the second surgery takes place after those treatments are completed

# ONE-STAGE IMPLANT RECONSTRUCTION



**An option for patients who desire to have a similar but slightly smaller breast size**

**Works best in patients who have nipple-sparing mastectomy**

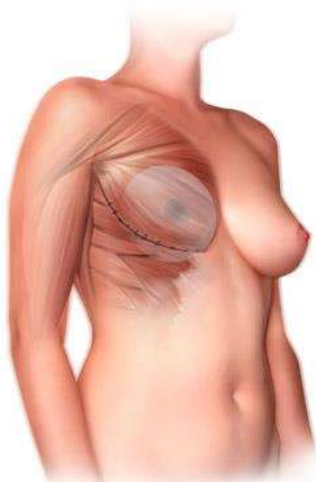
**Not an option for patients who smoke, or have previous radiation, previous scars or infections of the breast, or any other compromise of the health of the breast skin**

**Not an option for patients with excessively large or ptotic (drooping) breasts**

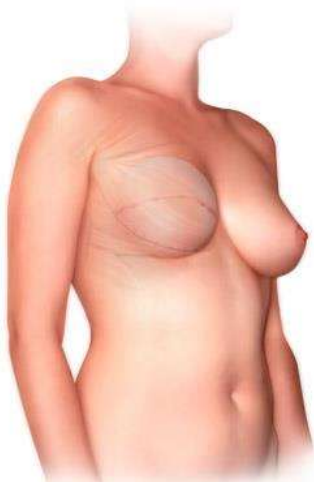
**Success depends on the quality of the skin after mastectomy is performed (tissue expander is placed if the mastectomy skin is not healthy enough to support a large implant)**

# BREAST RECONSTRUCTION WITH IMPLANT: LIMITATIONS OF RECONSTRUCTION

Tissue Expander and Implant Reconstruction



Internal appearance of  
tissue expander



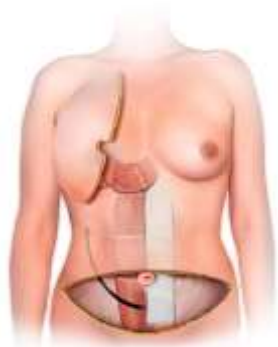
After expander implant  
exchange



Final appearance with nipple  
reconstruction

- Asymmetry: in unilateral reconstruction, there will be asymmetry (different appearance) between the normal breast and the reconstructed breast, even if the normal breast is adjusted to match the implant better
- Size: the largest size implants may not be large enough for some women who have a high BMI
- Risk of infection: if either the expander or the final implant becomes infected, usually it needs to be removed, and reconstruction delayed until the infection has healed for 4-6 months
- Requires long-term surveillance of implants, and possible surgery for events like rupture or capsular contracture

# TOTAL AUTOLOGOUS RECONSTRUCTION: BREAST RECONSTRUCTION WITH YOUR TISSUE ONLY



Pedicled TRAM



DIEP



Muscle-sparing  
Free TRAM



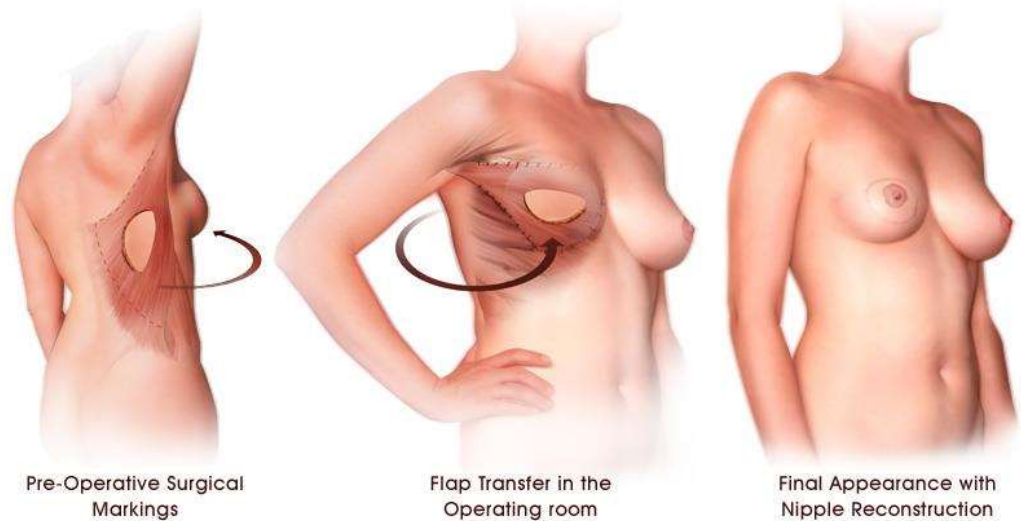
Final Appearance with  
Nipple Reconstruction

- Uses excess abdominal skin and fat for breast reconstruction
- Can serve as a source of healthy, non-radiated tissue for breast reconstruction after a patient has had radiation
- Can be performed at the time of mastectomy or in delayed fashion
- Types: pedicled TRAM, muscle-sparing TRAM, DIEP

# Latissimus dorsi reconstruction

Your tissue + implant

Latissimus Dorsi Flap Reconstruction



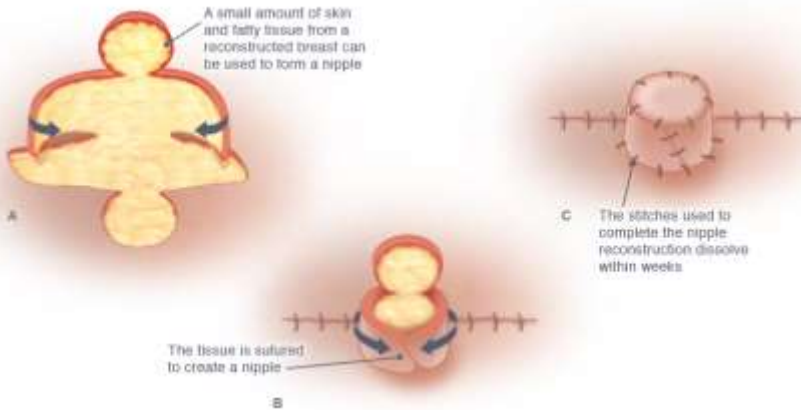
- Uses muscle, fat, and skin to provide additional coverage/volume to an implant reconstruction
- Can serve as a source of healthy, non-radiated tissue for reconstruction after a patient has had radiation
- Typically placed over a tissue expander
- Can be performed at the time of mastectomy or in delayed fashion
- Back scar can be hidden within your bra strap line

# RECONSTRUCTION OPTIONS AFTER LUMPECTOMY

- Bilateral breast reduction at the time of lumpectomy
  - For patients with very large breasts and small cancer (low risk of positive margin)
  - If positive margin occurs, usually a mastectomy is required
- Breast reduction or breast lift of the normal, non-cancer breast after radiation, to match the treated side
- Latissimus flap procedure to correct severe lumpectomy deformities



# NIPPLE RECONSTRUCTION



- Usually the last stage of breast reconstruction
- If you have an implant reconstruction and the skin overlying the implant is excessively thin or tight, you may not be able to have a 3D nipple reconstruction.
- New areolar tattooing techniques can give the illusion of a 3D nipple

## Reasons for treatment of Breast cancer

- **Adjuvant**

- Preventative treatment
- Curable
- Goal is to decrease risk of recurrence of breast cancer later
- Treatment is short term

- **Palliative**

- Stage IV treatment
- Incurable
- Goal is to preserve a good quality of life
- Treatment is indefinite



# Systemic Therapy

- **Hormone Blocking Therapy**

- ER (estrogen receptor) or PR (progesterone receptor) mutation positive
  - Cannot be used if ER and PR are negative (not responsive to hormones)



- **Chemotherapy**

- Her2 positive
  - Starts with traditional cytotoxic chemotherapy plus a Her2 blocking therapy
  - Continues for 1 year of chemotherapy with maintenance Her2 blocker/s for adjuvant (preventative) or Her2 blocking drugs indefinitely for palliative (stage IV)
- Her2 negative
  - Adjuvant (preventative): Cytotoxic chemotherapy for 3-4 months, depending on stage and other medical problems
  - Palliative (stage IV): Indefinite chemotherapy with IV drugs or pills



# **THE ALLIANCE A011104 STUDY**

**This study wants to answer the question:**

“Does a pre-surgery review of HRneg breast cancer by MRI scan give a better breast cancer surgery result?”

**Must Have Either: ER NEGATIVE & PR NEGATIVE STAGE I-II TYPE BREAST CANCER to screen for eligibility in this study**

**Who is a part of this study:**

330 Patients will volunteer to take part in this nation-wide study

**ER/PR Positive BREAST CANCER PATIENTS AFTER LUMPECTOMY & RADIATION HAVE A 1-2% local RECURRENCE RATE OF BREAST CANCER.**

**ER/PR Negative BREAST CANCER PATIENTS AFTER LUMPECTOMY & RADIATION HAVE A 10-17% local RECURRENCE RATE OF BREAST CANCER.**

# **NRG BR003**

## **Enrolling High-Risk Triple-Negative Breast Cancer Patients**

**This study wants to answer the question:**

**“Does adding carboplatin to regular adjuvant chemo help triple negative breast cancer patients survive longer?”**

**Who is a part of this study:**

900 breast cancer patients will take part in this nationwide clinical trial.

The study treatment is given for 6 months.

Patients will be followed annually for 10 years.

# **The Southwest Oncology Group** **(SWOG) S-1207 Study**

**This study wants to answer the question:**

**“In high-risk ER/PR positive Breast Cancer Patients, Does 1 year of Adjuvant (oral) everolimus treatment prevent the tumor from growing back”?**

**Who is apart of this study:**

**1,900 HIGH-RISK BREAST CANCER PATIENTS WILL JOIN THIS NATIONWIDE  
CLINICAL TRIAL**

**EVEROLIMUS IS AN ORAL “NEW TARGETED THERAPY”;  
FOR ADVANCED ER-Positive  
BREAST CANCER.**

# Alliance A011401 (BWEL) Study

## **The study wants to answer this question:**

“Does a Weight Loss & Health Education Program for overweight & obese patients with INVASIVE BREAST CANCER benefit their breast cancer survival ?

## **About the Study:**

The study is 10 years long and requires 2 years of Education, Follow-Ups every 6 months for 3 years; then Annual Follow-Ups for 7 years.

## **Who is apart of the Study:**

3,136 breast cancer patients will join the study within 1 (one) year of their breast cancer diagnosis.

# THE ABC Study A011502

## **The study wants to answer the question:**

Does a daily dose of 300 mg of aspirin for 5 years improve disease survival in node-positive HER2 negative breast cancer patients?

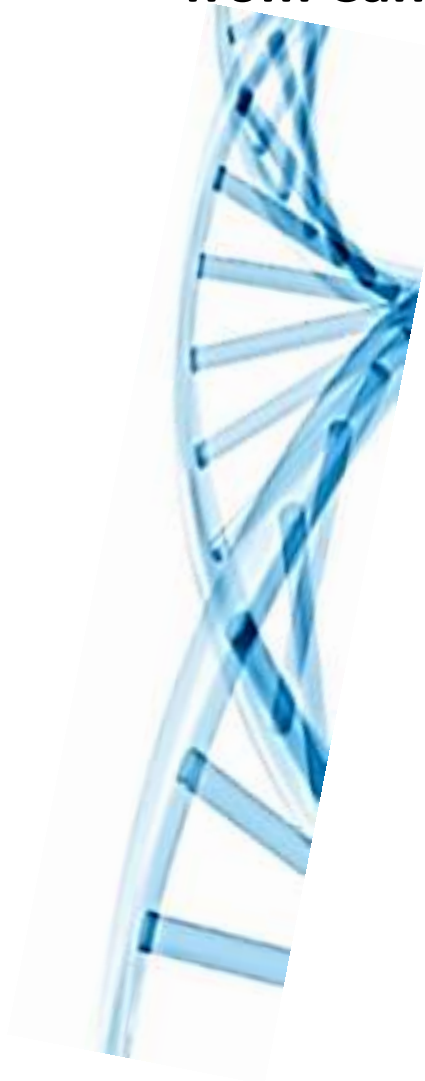
## **Who is a part of the study?**

A total sample size of 2936 patients.

## **About the study:**

Study is double blinded placebo controlled. Patients complete a daily medication log during treatment. After 5 years of treatment, patients are followed annually for 10 years

# Strata Oncology-An Observational Study Profiling Biospecimens from Cancer Patients to Screen for Molecular Alterations



The Strata Trial provides tumor sequencing and access to clinical trials and targeted therapies to **advanced** cancer patients nationwide.

The goal is to increase access to tumor sequencing for patients and proactively match patients to precision medicine clinical trials. This observational study also aims to study how genomic sequencing impacts clinical trial enrollment.

# Discussion