Native Cancer 101: Module 9: Chronic Conditions and Cancer
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Module 9 Objectives for Chronic Conditions and Cancer. By the end of this session the participant will be able to:
1. Distinguish between a health condition that is acute versus one that is chronic.
2. Identify at least 3 common chronic conditions in AIAN communities.
3. Describe at least 5 risk factors for chronic conditions.

Module 9 Objectives for Chronic Conditions and Cancer. By the end of this session the participant will be able to:
4. Describe how co-morbidities impact cancer and quality of life.
5. Explain the differences between acute, chronic and late effects of cancer and cancer treatment (optional)
6. Identify at least 5 strategies for addressing chronic side effects of cancer/cancer treatment (optional)

Introduction

Historical Footprint
- Chronic diseases were rare among our ancestors
- Where we are now with chronic diseases evolved from living on Reservations for 7 generations

QUESTION: Why is Understanding Chronic Conditions Important to AIANs?
- Leading causes of death among adult AIANs
- Leading causes of conditions that interfere with our daily quality of life

I want my grandchildren to live long, healthy lives like our ancestors. Today we forget how to act in ways that honor those who came before us. Our ancestors didn’t have these diseases.
Anonymous AI, 2011
Objective 1: Distinguish between a health condition that is acute versus one that is chronic.

Examples of Common Acute Conditions
- Cold or flu
- Infection
- Trauma (car accident, broken leg)
- Allergic reactions

Examples of Common Chronic Conditions
- Heart Disease
- Cancer
- Diabetes
- High blood pressure (hypertension)

Definitions
- Acute (uh-KYOOT) condition:
  - A condition or disease that begins and worsens quickly.
  - Usually lasts less than a year.
  - If managed well will resolve (or improve and become chronic).
  - What would be an example of an acute illness?

- Chronic (KRAH-nik) condition:
  - A condition or disease that persists or progresses over a long period of time.
  - May have previously been acute
  - Can be managed, but usually does not go away completely
  - What would be an example of a chronic condition?

Characteristics of Chronic Conditions
- Lasts one year or longer
- Requires ongoing medical care
- Limits daily activities
- Often interferes with one’s quality of life

Examples of Chronic Conditions
- Cancer
- Diabetes
- High blood pressure (hypertension)

Characteristics of Chronic Conditions
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Common Chronic Conditions
- The most common, costly, and preventable chronic conditions in the U.S. are:
  - Heart disease
  - Cancer
  - Diabetes
  - Arthritis
  - Obesity
- This is true for AIANs too

Examples of Other Chronic Conditions
- Stroke
- Substance abuse and addiction disorders
- Mental illness
- Dementia
- Cognitive impairment disorders
- Developmental disabilities

**NOTE:** Heart disease, cancer and stroke account for 1/3 of all deaths each year.

DEATH RATES, LEADING CAUSES: AGES 45 TO 64 YEARS

Cost of Chronic Conditions or all Americans
- Annual healthcare costs = $2.5 trillion
  - Heart Disease = $108.9 Billion
  - Stroke = $53.9 Billion
  - Hypertensive = $93.5 Billion (CDC 2010)
  - Cancer = $263.8 Billion in medical cost and lost productivity (CDC 2010)
  - Diabetes = $132 Billion (IHS 2002)
  - Obesity: $450 Billion

Heart (Cardiovascular) Disease (CVD)
- AIANs have the highest percentage (36%) of deaths from premature heart disease.
- This is nearly 2½ times that of whites.
- AIANs have more risk factors for CVD than do Non-Hispanic Whites
  - Obese
  - High blood pressure (21% to 41% AIs)
  - Commercial tobacco use (15 to 70% AIs)

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Diabetes

- Type 2 diabetes is caused by the body’s resistance to the action of insulin and by impaired insulin secretion.
- Higher blood levels of HbA1c suggests an increased risk for the development of diabetes.

Diabetes (cont)

- Most AIANs with diabetes have type 2, which usually develops in adults but within AIAN communities it is no longer uncommon for diabetes to develop in children and adolescents.
- A small number (2-4%) of AIANs have type 1 diabetes.

Diabetes (cont)

- The “TRIPLE TRIPLE” of diabetes in Native America
  - ~3x risk of heart disease and stroke
  - 3.5x risk of kidney failure
  - 3x rate of death

Diabetes (cont)

- Diabetes can be PREVENTED
- Disease and early death is not inevitable.
- It is never too late to change and improve health.
- Family & community efforts are the key

Arthritis

- Arthritis is the most common cause of disability.
- 25.2% of Al's have arthritis; ~40% have activity limitations and ~38% have work limitations
- The prevalence high in Alaska (26.1%) and low in the Southwest (16.5%) as compared with the US pop. (21.5%).

Arthritis

- Having arthritis increases risk of dying from cancer, but not being diagnosed with cancer
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**Obesity**
- Over the past 3 decades, being overweight or obese has become a major health concern.
- Obesity is a risk factor for many other chronic conditions.
- The number of adults and children who meet the definition for obesity has more than doubled.

**Cancer**
- Now considered a chronic disease
- Most common types among AIANs are:
  - Lymphoma
  - Lung & Bronchus
  - Colon & Rectum
  - Corpus & Uterus
  - Kidney & Renal
  - Breast
  - Ovarian
  - Pancreas
  - Cervix
  - Thyroid

**Examples of “Risk Factors”**
- Foods and drinks we consume
- Lack of physical activity
- Exposure to environmental contaminants
- Spiritual distress
- Social distress (dysfunctional families, neighbors or work settings)

**Shield of Health**
The shield represents your protection (shield of health) against things that may make you more susceptible to cancer (cancer risks).
- The larger the holes and the more number of holes in the shield, the less likely it is to protect you from cancer or other health problems.

**Cancer risks that “damage” the shield of protection include factors such as:**
1. Age: AIANs over 50 (risk increases as you get older)
2. Family history (“1st degree relative” diagnosed with cancer)
3. Race, such as Alaska Nations, Northern or Southern Plains higher cancer incidence for most cancers than other tribal Nations.
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Cancer risks that “damage” the shield of protection include factors such as:

4. Regular use of manufactured tobacco
5. High fat diet (especially animal fats)
6. Alcohol (>7 [women] to 14 [men] drinks a week)
7. Lack of daily physical activity
8. Previous personal diagnosis of cancer

For example, the “shield” of health against prostate cancer may include daily physical activity, healthy, low-fat diet; limited or no alcohol; and so on.

What does this shield tell you about this man’s cancer risks?

Additional Risk Factors

- Not actually risk factors, but increase the likelihood that a problem or condition is not managed well and may become acute or chronic:
  - Healthcare access and screening services
  - Affordable quality health care (hopefully will be addressed via Affordable Care Act)

What “makes” something a bigger “risk” for chronic conditions?

- Frequency: how often does the “risk” or behavior happen? (e.g., smoke >2 packs of cigarettes a day)
- Duration: how long does the “risk” or behavior last? (e.g., smoked since 14 years old)
- Intensity: how strong is the dosage of the “risk” or behavior? (e.g., smoke Marlboro -- high nicotine cigarettes)

Behavioral Risk Factors

- Alcohol (~ >7 for women or >14 for men drinks a week) is a risk factor for:
  - Diabetes
  - Obesity
  - Liver and kidney disease
  - Cancers, such as Breast, Colon, Lung, Prostate

Habitual tobacco use (or “secondhand smoke”) is a risk factor for:

- Heart
- Diabetes
- Arthritis

Behavioral Risk Factors

- Habitual tobacco use (or “secondhand smoke”) is a risk factor for:
  - Heart
  - Diabetes
  - Arthritis

American Indians Top The Smoking Chain

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<thead>
<tr>
<th>American Indians</th>
<th>2006</th>
<th>2007</th>
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<tbody>
<tr>
<td>American Indians and Alaska Natives</td>
<td>28.7%</td>
<td>29.4%</td>
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<tr>
<td>Asian Americans</td>
<td>6.4%</td>
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<tr>
<td>Blacks</td>
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<td>20.2%</td>
</tr>
<tr>
<td>Whites</td>
<td>22.7%</td>
<td>22.9%</td>
</tr>
</tbody>
</table>

American Indians and Alaska Natives: 28.7% (2006) vs. 29.4% (2007)

*Provision of this information is not intended to be diagnostic or therapeutic.*

Behavioral Risk Factors

- **Habitual tobacco use (continued)**
  - Cancers, such as:
    - Cervix
    - Colorectal
    - Esophageal
    - Lung
    - Stomach
    - Pancreas
    - Prostate

  **Note:** "Ceremonial tobacco use" typically is not a risk because there is short
  - Frequency
  - Duration
  - Intensity (dosage)

- **Obesity is a risk factor for:**
  - Heart disease (and other CVD, like stroke)
  - Diabetes
  - Arthritis
  - Cancers, such as:
    - Breast
    - Colorectal
    - Gallbladder
    - Prostate

  - "Obesity" = "Body Mass Index" (BMI) more than 30
  - Usually at least 25 pounds over recommended weight

- **Unhealthy (high fat, high sugar, white starches, low fiber, low intake of fruits and vegetables) diet is a risk factor for:**
  - Heart disease (and other CVD, like stroke)
  - Diabetes
  - Obesity
  - Cancers, such as:
    - Breast
    - Colorectal
    - Gallbladder
    - Prostate

- **Sedentary (not physically active) behaviors are a risk factor for:**
  - Heart disease (and other CVDs)
  - Diabetes
  - Obesity
  - Arthritis
  - Depression / Suicide
  - Substance abuse
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**Behavioral Risk Factors**
- Sedentary lifestyle (continued)
  - Cancers, such as
  - Breast
  - Colorectal
  - Gallbladder
  - Prostate

**Behavioral Risk Factors**
- More than three sexual partners throughout your lifetime (not all at the same time … ahem!)
  - Increased risk of HPV
  - Increased risk of cervical cancer

**Environmental Risk Factors**
- Exposure to contaminants through home, work, fishing, hunting or hobbies such as:
  - Tobacco
  - Alcohol
  - Ultraviolet radiation (sunlight)
  - Viruses, Bacteria
  - Dioxins
  - Ionizing radiation
  - Pesticides
  - Medical drugs
  - Solvents
  - Fibers, Fine Particles, Dust

**Environmental Risk Factors**
- Exposure to:
  - Polycyclic aromatic hydrocarbons (PAH)
  - Metals (mercury)
  - Diesel exhaust particles
  - Toxins from fungi
  - Vinyl Chloride
  - Benzene
  - PCBs

**Environmental Risk Factors**
- Exposure to environmental contaminants is a risk factor for:
  - Heart
  - Diabetes
  - Arthritis
  - Lung diseases (emphysema; COPD)

**Environmental Risk Factors**
- Exposure to environmental contaminants is a risk factor for:
  - Cancers such as:
    - Lung
    - Cervix
    - Lymphoma
    - Breast
  - Thyroid
  - Head and neck
  - Skin

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Social Risk Factors
- Healthcare access and screening services, such as:
  - Lack of Transportation (distance)
  - Insufficient / Non-existent local screening services
  - Lack of child / elder care
  - Lack of 1st language (Native tongues spoken)
  - Time off work to attend to health needs
- Affordable quality health care, such as:
  - Timely access or CHS referral to care / treatment
  - Average 6 months from biopsy to initiation of breast cancer treatment of AIAN women who must rely on IHS referrals for care
  - Lack of appointments in tribal / urban health clinics for several months
- Affordable quality health care (cont.):
  - 34% of AIANs have private health insurance
  - Surveys erroneously collapse AIAN’s responses of “yes, I have IHS” as health insurance
  - Beginning in 1998, the US Census Bureau ceased counting IHS eligibility as “health insurance coverage.”
- Medicaid, Medicare (CMS) coding errors result in elimination of payment for medical services
- Local IHS / tribal clinics sometimes have medical providers who have lost their medical privileges yet practice in tribal and IHS settings
- Spiritual Distress
  - Inability to practice faith; take part in ceremonies
- Social Distress
  - Dysfunctional families, neighbors work settings
  - Poor social support
  - Depression/Anxiety
  - Difficulty coping

Surveys erroneously collapse AIAN’s responses of “yes, I have IHS” as health insurance.

Beginning in 1998, the US Census Bureau ceased counting IHS eligibility as “health insurance coverage.”

Inability to practice faith; take part in ceremonies.
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**Objective 4:**
*Describe how co-morbidities impact cancer and quality of life.*

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**Chronic Conditions AND Cancer**
- As we grow older, our risks for developing chronic conditions increases.
- Like those with diabetes, persons living with cancer require care and management over their lifespan.
- Whether or not a person has other existing chronic conditions may impact the type and outcome of cancer treatment.

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**Co-Morbidities AND Cancer**
- Many older adults with cancer often have one or more other chronic conditions, such as:
  - Diabetes, heart disease, depression, arthritis, obesity, menopausal symptoms.
- All contribute to quality of life (ability of the individual to do everything they want to do body, mind, emotions and spirits).

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**Co-Morbidities AND Cancer**
- Diabetes and cancer have similar risk factors (unhealthy diet, lack of physical activity, obesity).
- Organs / systems damaged by diabetes include eyes / vision, nerves (peripheral), kidneys, immune system.
- Organs / systems damaged by cancer / cancer treatment include nerves (peripheral), liver, immune system.

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**Concerns for people with chronic conditions AND cancer**
- Lack of information.
- Potential impact on:
  - Quality of life.
  - Ability for self-care.
  - Cancer treatment decisions.
  - Cancer treatment outcomes.

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**QUESTION:** What is the relationship between Diabetes and Cancer among AIANs?

- 30+% of AI/AN over age 55 have diabetes
- 38% of AIANs (n=822) in “Native American Cancer Education for Survivors’ survivorship program have both diabetes and cancer
- Diabetes is associated with a 30% increased risk of colon cancer

**Side Effects – Types**

- **Acute** – occur during or shortly after treatment
  - Usually resolve with time
- **Chronic / long term** – continue months to years after treatment
  - Can be managed but do not completely resolve

**Side Effects – Factors Influencing Development**

- Type of treatment (RT, Chemo, Surgery, etc.)
- Exact tissue and amount of tissue treated/removed
- Dose of chemo /RT given
- Method of delivery
- Individual factors

**Side Effects – Types**

- **Late** – not present or identified during or right after treatment
  - Develop based on effects of treatment on organ systems (heart, bones, etc.)
  - May be a result or of psychological process related to having cancer or being treated for cancer (depression / anxiety)
  - Often confused with chronic (long term) side effects

**General Side Effects**

- **Fatigue**
  - Most common side affect – can be both acute and chronic
  - Extreme tiredness; does not improve with sleep or rest
  - Worsens throughout treatment
### General Side Effects

- **Cognitive dysfunction**
  - Also known as chemo brain or brain fog
- **Memory loss**
- **Trouble paying attention; making decisions**
- **Difficulty with activities of daily living**
- **Make silly mistakes; difficulty writing**
- **Trouble making decisions**

### General Side Effects

- **Pain**
  - Pain can be caused by cancer, cancer treatment or other conditions
  - Pain often not well managed because of poor communication and coping between provider and patient
  - 20% of survivors have cancer-related chronic pain
  - Of these, 43% had pain since diagnosis

### General Side Effects

- **Women had more:**
  - **Pain**
  - **Flare-ups of pain**
  - **Higher disability related to pain**
  - **Depression**


### Site Specific Side Effects – RT/Chemo

- **Brain** – erythema (redness), cerebral edema (brain swelling), sleepiness
- **Head/Neck** – mucositis/xerostomia (mouth sores), dental caries (cavities), esophagitis (sore throat), taste changes, decreased hearing
- **Breast** – skin reactions from RT

- **Lung** – pneumonitis (lung irritation or inflammation); lung damage
- **Heart** – pericarditis (inflammation); decreased function
- **Abdomen/pelvis/renal** – Nausea and vomiting, diarrhea, proctitis, cystitis, kidney damage, vaginal dryness/shortening

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Site Specific Side Effects - RT/Chemo
- Skin – alopecia (hair loss), erythema (redness), rash, itching, poor wound healing
- Reproduction – infertility, early menopause, sterility
- Bone marrow – decreased white cell, red cell and platelet counts
- Nervous system – neuropathy (pain and/or numbness in fingers and toes)

Side Effects - Surgery
- Pain, nausea
- Impaired wound healing
- Changes in bowel/bladder function
- Difficulties with nutrition
- Amputation, ostomy

Optional Objective 6: Identify at least 5 strategies for addressing chronic side effects of cancer/cancer treatment

Managing Chronic Side Effects
- Fatigue
  - Most common side effect
  - Practice energy conservation
    - Conserve energy for important tasks each day
  - Provide/accept support
    - Make lists of what you need; ask
  - Optimize nutritional intake

Cognitive Dysfunction
- Cognitive dysfunction
  - Also known as chemo brain or brain fog
- Signs/symptoms
  - Memory loss
  - Trouble paying attention; making decisions
  - Difficulty with activities of daily living
  - Make silly mistakes; difficulty writing
  - Trouble making decisions

Managing Chronic Side Effects
- Cognitive dysfunction
- Conserve attention
- Supportive environment
- Restore attention
- Keep an active brain (games)
- Medications
  - Manage menopause, depression
  - Stimulants
- Herbs
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Managing Chronic Side Effects

- Cognitive dysfunction
- Exercise
- Write it down
- Remind friends and family
- Get enough sleep
- Manage stress
- Read/Crosswords (Brain work)
- Eat right (good nutrition)
- **AND... Don't be hard on yourself**

Managing Chronic Side Effects

- Pain
  - “Pain is whatever the experiencing person says it is, existing whenever the experiencing person says it does.”
  - Needs to be assessed frequently – use of pain journal, phone app or other monitoring
  - Set goals for pain relief (pain may be noticeable but not bothersome)

Managing Chronic Side Effects

- Pain (continued)
  - Take pain medications as prescribed
    - Around the clock
    - Before pain becomes severe
  - Use other methods to manage pain
    - Music
    - Cold/heat
    - Relaxation, distraction
    - Massage

Managing Chronic Side Effects

- Nutritional alterations
  - Changes in taste, smell; difficulty eating
  - May need to try new foods, different spices; use nutritional “food plate” as guide
  - Best not to cook or limit times with hot foods/cooking smells
  - Use small plates and small amounts of food

Managing Chronic Side Effects

- Skin Reactions
  - May be acute or chronic (hair will grow back after chemo; not after RT)
    - Keep scalp clean; avoid damaging hair (perms, dyes)
    - Provide moisture to skin
    - Avoid irritants, perfumes, coarse clothing, sun exposure

Managing Chronic Side Effects

- Reproduction/sexuality/ intimacy
  - Treatment may affect ability to become pregnant or father a child
  - Having cancer can affect intimacy and sexual function
  - Early menopause is common with chemo, especially as women near their late 30s into 40s

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Managing Chronic Side Effects

Peripheral Neuropathy
- Pain and numbness in fingers and toes
- Pain: sharp, stabbing, burning
- Numbness: tingling, loss of feeling
- Usually damage to nerve endings from chemotherapy

Peripheral neuropathy (continued)
- Increased problems in those with:
  - Diabetes
  - Alcohol
  - Poor nutrition;
  - B₁₂ deficiency
  - Shingles
- Safety is important

Managing Chronic Side Effects

Constipation
- Prevention
  - Dietary fiber
  - Increased fluids
  - Exercise
- Management
  - Bulk or other laxatives
  - Lubricants

Diarrhea
- Management is essential for well-being and quality of life
- Drink fluids – electrolyte rich
- Watch diet – eat bananas, rice, applesauce, toast, other bland foods
- Use anti-diarrheal agents
- Keep perianal area clean and dry

Chronic Side Effects

Peripheral neuropathy (continued)
- Pain relievers (non-aspirin; pain patches; narcotics)
- Drugs for epilepsy
- Drugs for depression
- Massage
- Exercise
- Acupuncture

Coping with pain
- Massage
- Exercise
- Use braces, splints
- Acupuncture
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Managing Chronic Side Effects
- Secondary malignancies
  - Occur as a result of having prior cancer treatment and surviving a long time
  - May be difficult to treat
  - Need to be diligent about follow-up and routine screenings; report concerns to healthcare provider

Different types of cancer affect different types of body tissue
- Carcinoma. Originates from tissues that cover a surface or line a cavity of the body. This is the most common type of cancer.
- Sarcoma. Originates from tissues which connect, support or surround other tissues and organs. Can be either soft tissue or bone sarcomas.
- Myeloma. Originates in the bone marrow in the blood cells that manufacture antibodies.
- Lymphoma. Originates in lymph system—the circulatory network of vessels, spaces, and nodes carrying lymph, the almost colorless fluid that bathes the body’s cells.
- Leukemia. Involves the blood-forming tissues and blood cells.

What is cancer? (continued)
- Cancers are identified by the place they originate within the body. For example:
  - Breast
  - Cervix
  - Colon
  - Prostate
  - Pancreas
  - Stomach
  - Brain
  - Bladder

Normal Cells

Cancer Cells

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**Cancer (CAN-sir)**
- Cancer cells have the ability to spread from one part of the body to another part of the body.
- When cancer cells go to another body part, they can begin to grow without control in the new location.
- But a breast cancer cell in the liver is still "breast cancer" (primary site).

**Metastasis (ma-TAS-ta-sis)**
- This means that cancer cells have spread from one body part to another.
- The cancer cells spread from the "primary site" to other organs by traveling through the blood vessels or lymph vessels.

**Diagnosis (die-egg-NOH-sis)**
- The process and result of determining if the symptoms or evidence of cancer is really cancer.
- **QUESTION:** What type of information does the provider need to make a diagnosis?

**Biopsy (bye-OP-see)**
- The physician takes a piece of tissue (a group of cells) from the growth or cyst.
  - Sometimes these cells are cut, and other times they are "sucked" out with a needle (fine needle aspiration).
  - These cells are examined by a "pathologist".
  - A biopsy is a sure way to make a diagnosis.

**QUESTION:** What is the lymphatic system?
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**Tumor (TOO-mer)**
- This is a growth or mass formed by excess cells.
- A "benign" tumor is *not* cancer and it does not “become” cancer. It just stays "benign".
- 8 out of 10 tumors are *not* cancer (they are "benign").
- A "malignant" tumor *is* cancer and can spread to other parts of the body.

**Two types of tumors:**

**Benign tumors:**
- not cancer
- can often be removed
- in most cases do not come back
- do not spread to other parts of the body
- rarely a threat to life

**Malignant Tumors:**
- are cancer
- cells abnormal
- cells divide without control or order
- enlarge “mass”
- metastasize

**Treatments (like chemo) may be given before surgery to help the tumor shrink**

Locally advanced breast cancer (left) After 3 months of Tamoxifen treatment (right). The tumor is now operable.

**Cancer Develops Over Time**

- It is a result of a complex mix of factors related to:
  - Lifestyle (daily behaviors)
  - Environment
  - Heredity

- These are called risk factors

<table>
<thead>
<tr>
<th>%</th>
<th>Type of pre-cancer or cancer</th>
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<tbody>
<tr>
<td>6.0</td>
<td>Ductal carcinoma, <em>in situ</em></td>
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<tr>
<td>0.2</td>
<td>Lobular carcinoma, <em>in situ</em></td>
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<td><strong>Invasive (cancer)</strong></td>
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</tr>
<tr>
<td>1.0</td>
<td>Other rare types (apocrine, metaplastic, adenocystic cancers)</td>
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</table>

**“Risk Factors”**

- Usually refers to a behavior or exposure to something that increases your chances of getting cancer.
- They may also be something that you have little to no control over:
  - Hereditary genes from your parents
  - Your gender (male or female)
  - Pollution of the water or land where you fish or hunt.