

Unit 12: Auto Immune Disease

**WOMEN'S HEALTH: A PUBLIC HEALTH
PERSPECTIVE**

Unit Objectives

- Define chronic illness
- Define autoimmune disease (AD) and describe its importance as a women's health issue
- Explore the risk factors that affect AD
- Discuss the lived experience of a woman living with AD

What is Chronic Illness

- A **chronic condition** is a human health condition or disease that is persistent or has long-lasting health affects.
- *Chronic* refers to a condition that lasts for more than **3 months**.



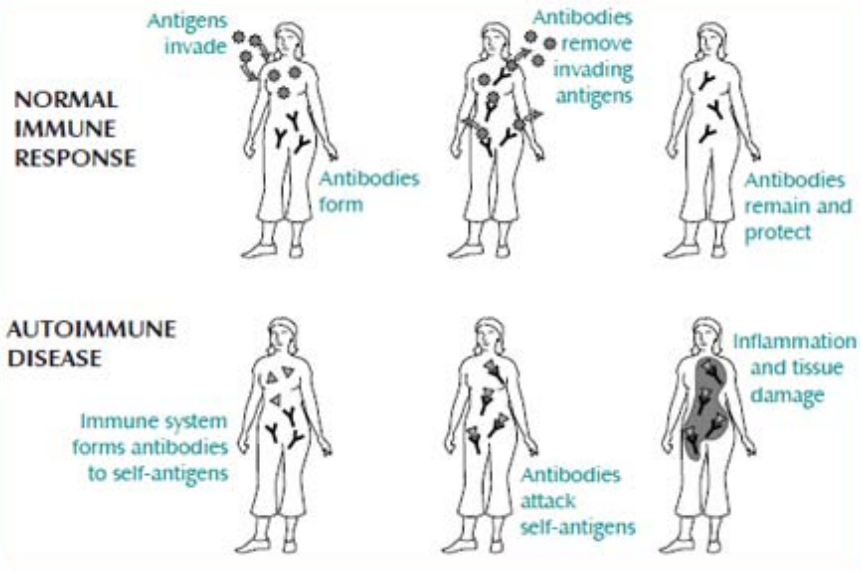
Chronic Disease Morbidity and Mortality

- Non-communicable chronic disease is the leading cause of deaths world-wide.
 - They cause 60% of deaths
- In the US, they cause 70% of deaths
 - Why?



Definition

- **Autoimmune Diseases (AD)**
 - when the immune system mistakenly attacks and destroys healthy body tissue.
- Results in a hypersensitive reaction similar to an allergic reaction



Definition

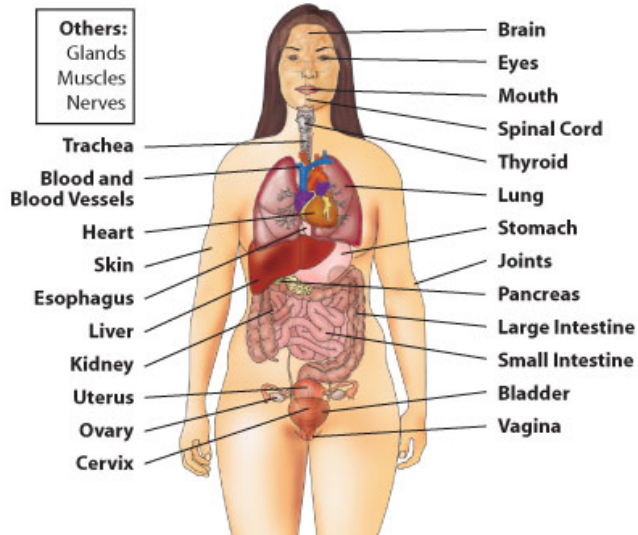
- Autoimmune disorder may result in:
 - Destruction of one or more types of body tissue
 - Abnormal growth of an organ
 - Changes in organ function
- There are more than **80** different types of autoimmune disorders



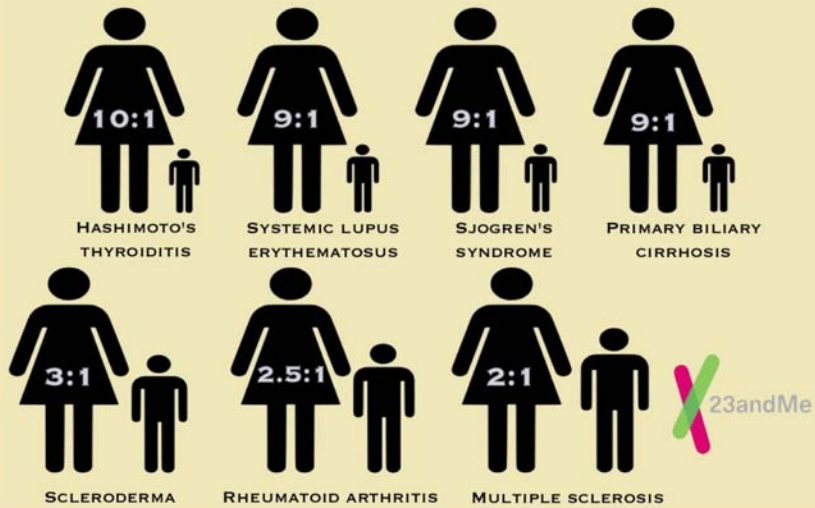
Who Gets Autoimmune Diseases?

- Affects **23.5 million** Americans
- Women often start seeing symptoms in their childbearing years
- Sometimes women may have multiple AD at once
- Women are more affected
 - 3X

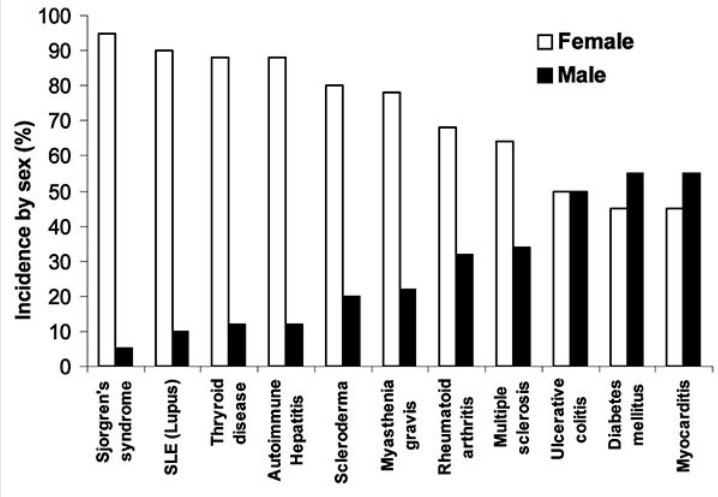
Body Parts That Can Be Affected by Autoimmune Diseases



Autoimmune Diseases Disproportionately Affecting Women



Gender Dimensions of Autoimmune Disease



Type I Diabetes

Type I Diabetes

- Type I and Type II Diabetes have different causes
 - Inherited predisposition
 - May be 'triggered' by the environment
- T1D is not reversible
 - Requires life-long management



Type I Diabetes Statistics

- As many as **three million** Americans may have T1D.
- **80 people per day**—are diagnosed with T1D in the U.S.
 - Half are children
- The prevalence of T1D in Americans under age 20 rose by **23 percent** between 2001 and 2009.
- T1D accounts for **\$14.9 billion** in healthcare costs in the U.S. each year.

Source: JDFR

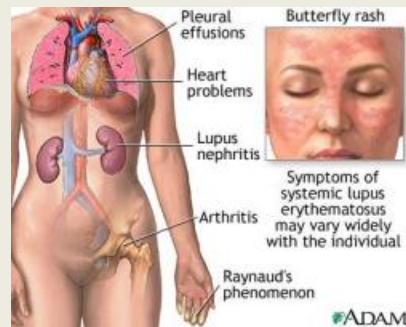
Managing Type I Diabetes

- **Must carefully monitor blood sugar**
- **Balance insulin doses with eating and activity**
- “Unlike other kids, I have to check my blood sugar 8 to 10 times a day; everything I eat is measured and every carbohydrate counted. My kit goes with me everywhere I go...Too much exercise or not eating all my food can be dangerous. *I think I'm too young to have to worry about all this stuff.*” – **Jonathan, age 8**

Lupus

Lupus

- Poorly Understood
- **10x-15x** more common in women
- 3 Types:
 - Discoid Lupus
 - Systemic Lupus Erythematosus (SLE)
 - Drug-induced Lupus



Lupus Symptoms

- “the great imitator”



- Cyclical remission and active periods

Symptom	Percentage of Cases
Achy Joints	95%
Fevers	90%
Arthritis	90%
Extreme Fatigue	81%
Rashes	74%
Anemia	71%
Kidney Issues	50%
Breathing Pain	45%
Butterfly Rash	42%
Sun Sensitivity	30%
Hair Loss	27%

Lupus

Diagnosis

- Medical history review
- Urinalysis and blood workup:
 - Antinuclear antibody (ANA)- used to rule out lupus

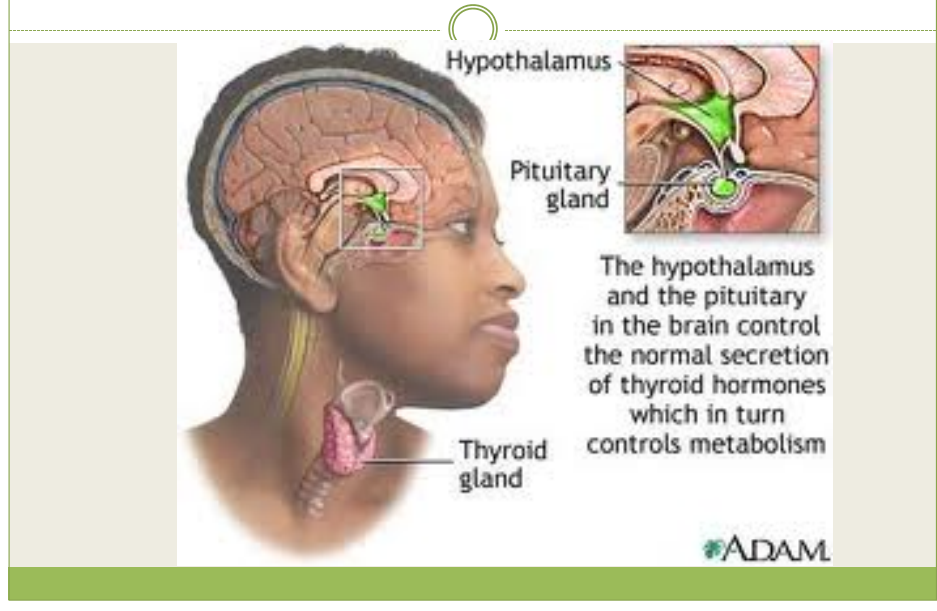
Treatment

- NSAIDs
- Corticosteroids
- Immunosuppressants

Thyroid Disease

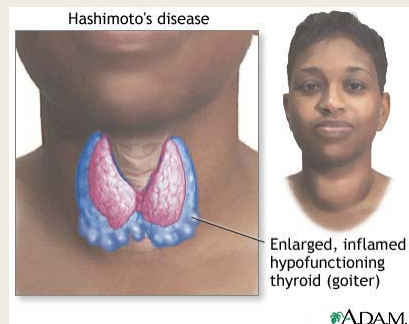
THERE ARE A NUMBER OF AUTOIMMUNE DISORDERS RELATED TO THE THYROID

The Thyroid and Pituitary Glands



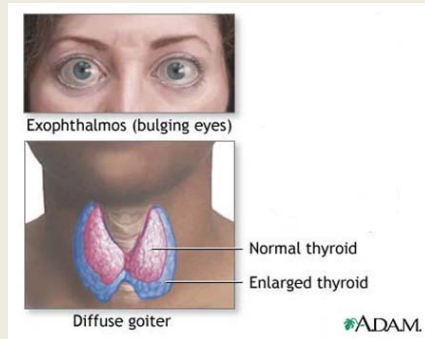
Hypothyroidism

- Underactive thyroid
 - Caused by Hashimoto's disease
- 8 million Americans are affected
- Symptoms of low energy



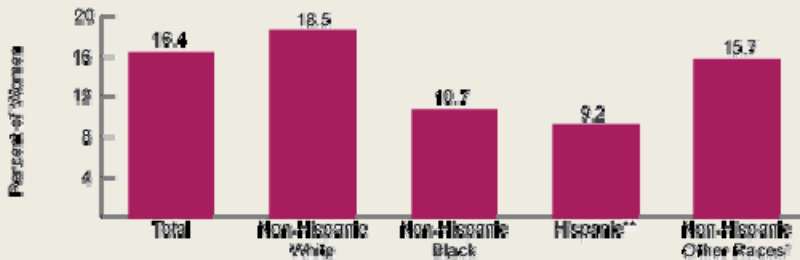
Hyperthyroidism

- Overactive thyroid
 - Caused by Grave's Disease
- Increases metabolism
 - 60% - 100%
- **8 to 10xs** more common in women



Thyroid Problems* Among Women Aged 20 and Older, by Race/Ethnicity, 2005–2006

Source: U.S. Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey



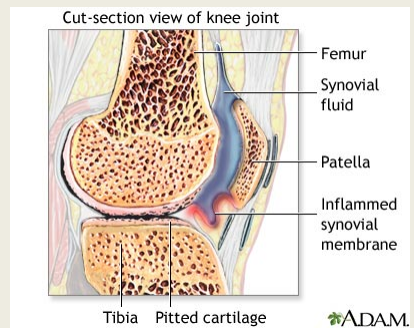
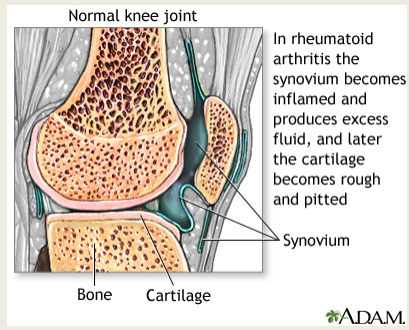
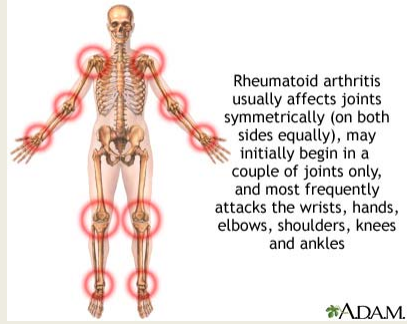
*Reported a health professional has ever told them they have a thyroid problem; includes hyperthyroidism and hypothyroidism. **Estimates for Hispanics should be interpreted with caution; they may not be representative of the entire Hispanic population. †Includes American Indian/Alaska Natives, Asian/Pacific Islanders, persons of more than one race, and persons of all other races.

Hashimoto's and Grave's Disease

- **Risk Factors**
 - Inherited Conditions
 - >20 years of age
- **Screening and Diagnosis**
 - Difficult
 - Medical history and physical examination
 - Laboratory testing of TSH levels
- **Treatment**
 - Medication to regulate thyroxine levels

Rheumatoid Arthritis

- RA is a chronic inflammatory disease
 - 1.5 million people in the U.S.
 - Women affected **2X** as men
- Immune system attacks the cells in the cartilage of joints
 - Eventually destroying them



RA Can Be Crippling



Other ADs that Affect Women

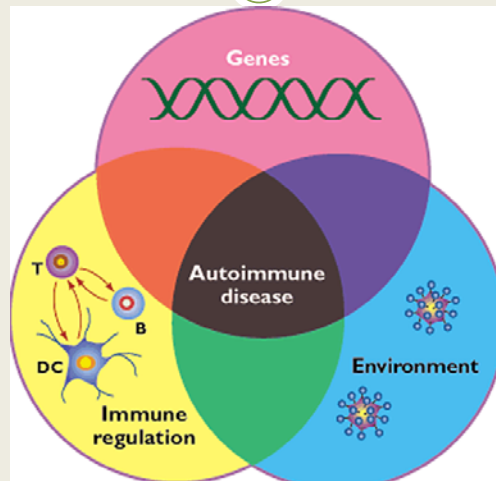
ADs That Affect Women

- **Alopecia Areata**
 - The immune system attacks hair follicles, causing balding.
- **Celiac Disease**
 - Causes intolerance to gluten (found in wheat, rye, barley and some medicines).
- **Psoriasis**
 - Causes new skin cells that grow deep in your skin to rise too fast and pile up on the skin surface
- **Vitiligo**
 - Destroys the cells that give your skin its color.

ADs That Affect Women

- **Guillain-Barre Syndrome**
 - Immune system attacks the nerves that connect your brain and spinal cord with the rest of the body. Muscles have trouble responding to the brain.
- **Inflammatory Bowel Disease**
 - Chronic inflammation of the digestive tract. Includes Crohn's disease and ulcerative colitis.
- **Multiple Sclerosis**
 - Immune system attacks the protective coating around the nerves. Affects the brain and spinal cord.

Risk Factors, Symptoms, Management



Risk Factors

- Genetics
- Environmental Exposures
- People of certain race/ethnic backgrounds:
 - More common or more severe in some populations
 - ✦ T1D is more common in WNH, Lupus is more severe for BNH and Hispanic people.



Symptoms

- Symptoms vary
- General symptoms across disorders:
 - Fatigue
 - Fever
 - General ill-feeling



Treatment

- **Goals of treatment:**
 - Reduce symptoms
 - Control the autoimmune process
 - Maintain the body's ability to fight the disease



Living with ADs

- **Flares** are the sudden and severe onset of symptoms.
 - They can be triggered by certain events like stress or being out in the sun or can happen for no apparent reason.
- **In addition to doctor prescribed medication:**
 - Eating healthy, regular gentle exercise, appropriate amounts of sleep, and reducing stress can help to manage ADs

Lecture Wrap-Up



- **Key Words:**
 - Chronic Illness, Autoimmune Disease, Antibodies
- **Individual Importance:**
 - It is important to understand your family medical history to know your risk for ADs
- **Public Health Importance:**
 - Women are disproportionately affected by ADs
- **Socio/Economic Importance:**
 - Living with ADs is difficult. This is only made worse by the multiple roles that women take on in their lives.