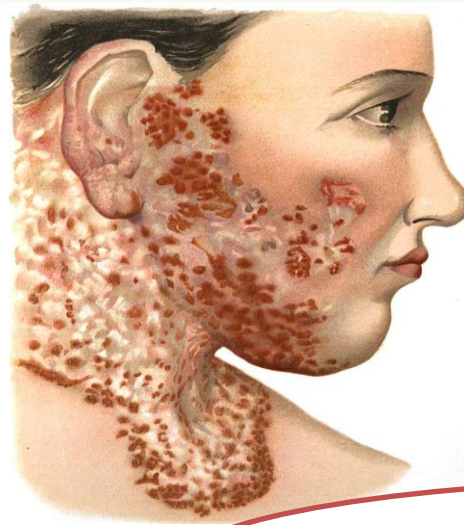




# Epidemiology of

## Common Nervous System disorders



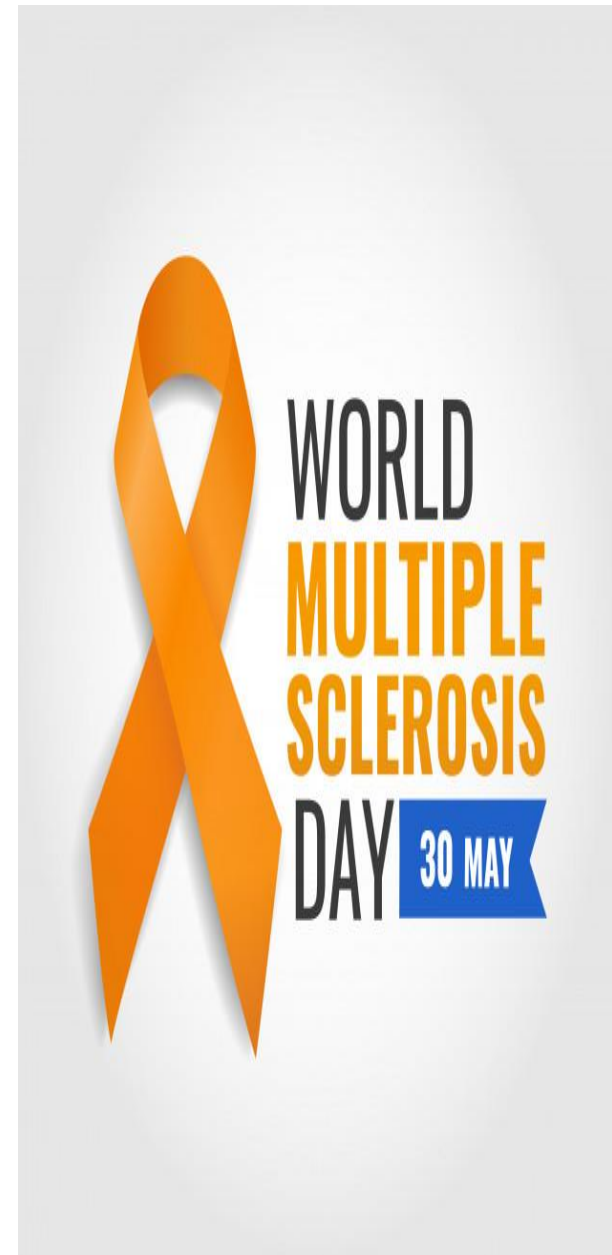
**Dr. Omnia Elmahdy**

• **Multiple sclerosis** is a **chronic demyelinating inflammatory** disease of the **central nervous system**.

• It's a lifelong condition that can sometimes cause serious disability, although it can occasionally be mild.

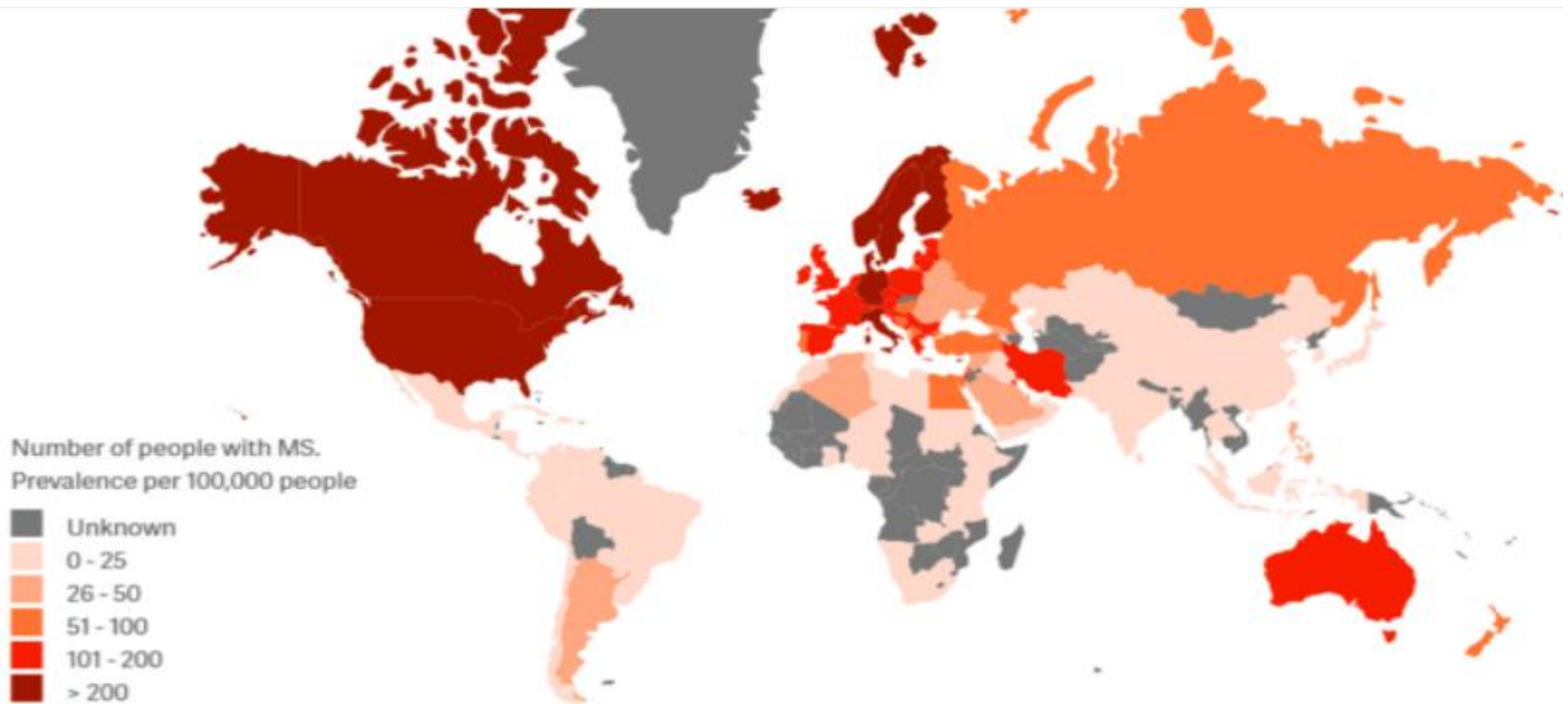
• The **etiology of MS is unknown**, but it is likely the result of a complex interaction between genetic and environmental factors, and the immune system.

• Average **life expectancy is slightly reduced** for people with MS.



# Epidemiology of MS

- The estimated number of people with MS worldwide has increased to **2.9 million**, 30% higher than in 2013. The 2020 global prevalence is 35.9 per 100,000 people.
- (MS) usually presents at a **highly productive stage of life** when people are planning families and building careers and as such MS can have a significant impact on affected individuals, their families and society.
- **Females are about twice** as likely to live with MS as males.



There are 2.9 million people living with MS worldwide.

- MS is more common in **Europe, the United States, Canada, New Zealand**, and some parts of **Australia**.
- The **prevalence** of MS in **Jordan** is **24/100000**. There are a total of **2626** MS patients registered in the Health Insurance Agency Ministry of Health until December 2020.

## Risk factors

- **Age**: MS can occur at any age, but onset usually occurs around **20 and 40 years** of age.
- **Sex**: **Women** are more than **2 to 3 times** as likely as men are to have relapsing-remitting MS.
- **Family history**: If one of parents or siblings has had MS, there is higher risk of developing the disease.
- **Certain infections**: A variety of viruses have been linked to MS, including **Epstein-Barr**

- **Low levels of Vitamin D.**
- **Genes:** A gene on chromosome 6p21 has been found to be associated with multiple sclerosis.
- **Obesity:** This is an association of female childhood and adolescent obesity.
- **Certain autoimmune diseases:** such as **thyroid disease, pernicious anemia, psoriasis, type 1 diabetes or inflammatory bowel disease.**
- **Smoking:** Smokers are more likely than nonsmokers to develop relapsing-remitting MS.

# MULTIPLE SCLEROSIS

## Risk Factors

MS is  
**3x more common**  
in females than males.



First degree relatives of  
someone with MS have a

**2.5-5%**

risk of developing MS.



If **one identical twin**  
has MS, there's a

**25% chance**

that the other twin  
will develop MS.

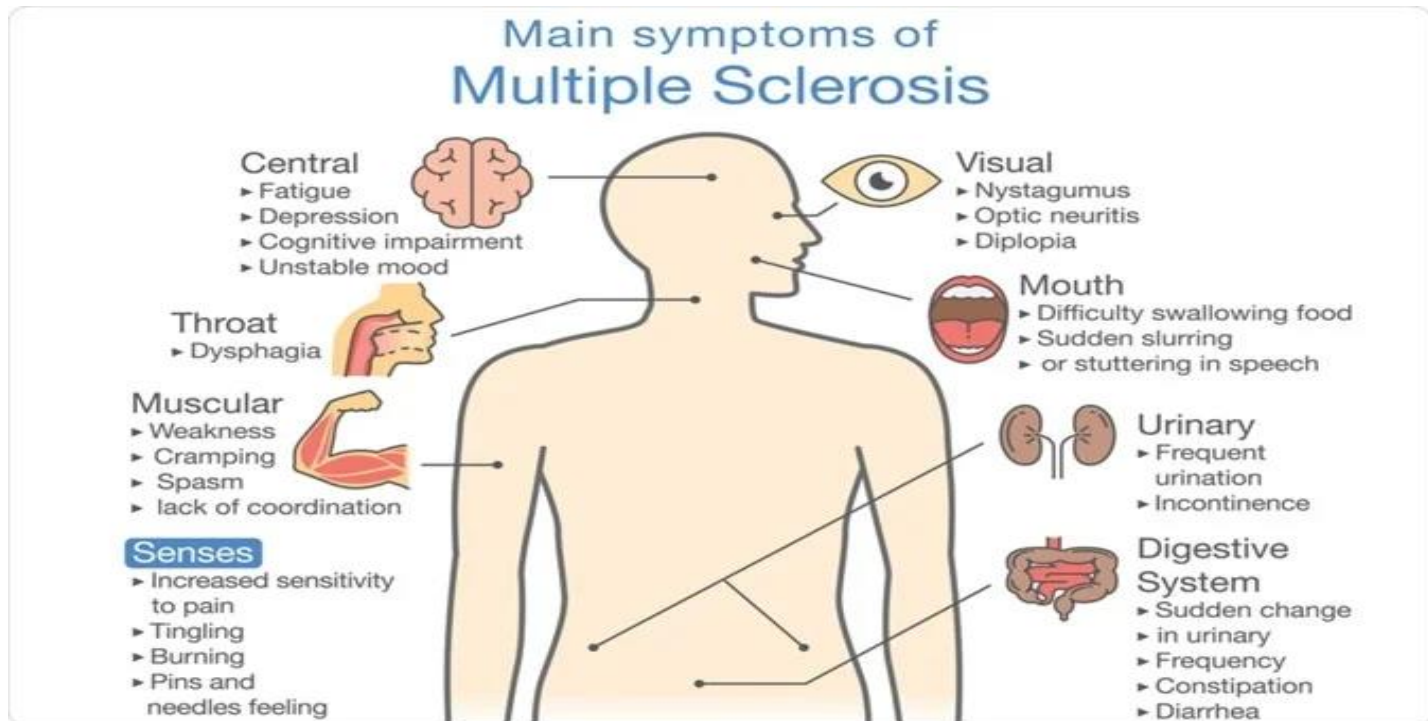
\*Prevalence per 100,000 individuals

Source: National Multiple Sclerosis Society

**healthline**

# Disease course

- Most people with MS have a relapsing-remitting disease course. They experience periods of new symptoms or relapses that develop over days or weeks and usually improve partially or completely. These relapses are followed by quiet periods of disease remission that can last months or even years.

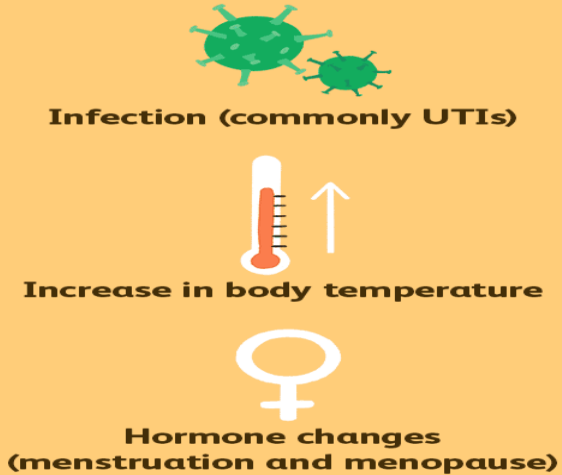




## Avoid triggers in MS

1. **Stress, fatigue.**
2. **Heat.**
3. **Infections, like flu.**
4. Certain **vaccines**: live-attenuated. However, many vaccines are preventive.
5. **Vitamin D deficiency.**
6. **Lack of sleep.**
7. **Smoking.**
8. Certain **medications** used for rheumatoid arthritis or Crohn's disease
9. **Stopping MS medications too soon**

## Common Triggers of MS Pseudo-Exacerbation



Stress



Fatigue



verywell

## Prevention

Though MS cannot be totally prevented, **quitting smoking**, maintaining **moderate body weight**, and getting **enough vitamin D** through diet or sun exposure could help reduce your risk.

**Staying active**, **minimizing stress levels**, and following a **healthy diet** may also be beneficial.

# Lupus disease

- Lupus is an **autoimmune disease**.
- Inflammation caused by lupus can affect many different body systems, including joints, skin, kidneys, blood cells, brain, heart and lungs, and peripheral nerves.
- Some people are **born with a tendency** toward developing lupus, which may be **triggered by infections, certain drugs or even sunlight**.



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## Epidemiology of Lupus disease

- at least five million people worldwide, have a form of lupus. Lupus **strikes mostly women** of childbearing age (90% of lupus cases).

- It is believed that between **10-15%** of people with lupus will **die prematurely** due to complications of lupus.
- People with lupus can develop **other autoimmune diseases**.


**20%** of people with lupus will have a **parent or sibling who already has lupus** or may develop lupus. Although lupus can develop in people with no family history of lupus, there are likely to be **other autoimmune diseases in some family members**.

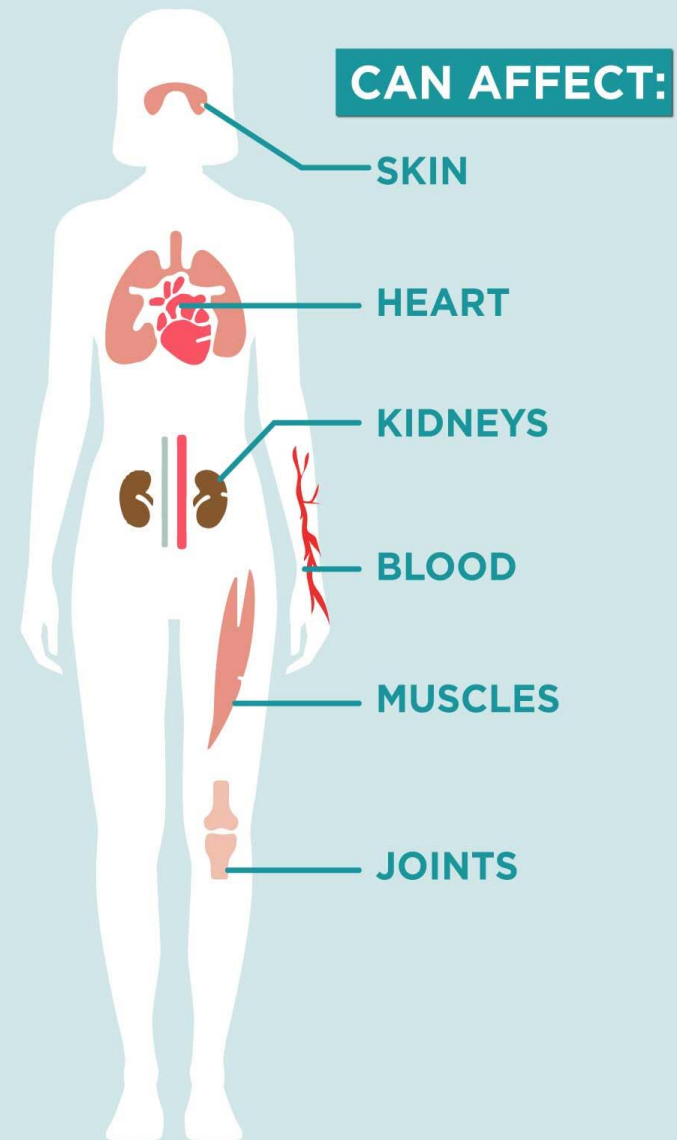
# Risk factors

- **Age:** Although lupus affects people of all ages, it's most often diagnosed between the ages of **15 and 45 years**.
- **Sex:** Lupus is more common in **women**.
- **Race:** Lupus is more common in **African Americans and Asian Americans**.
- **Genetic factor:** There are dozens of known **genetic variants** linked to lupus.

Patients report **pain**, **lifestyle changes**, and **emotional problems** associated with lupus as the most difficult parts of coping with lupus.

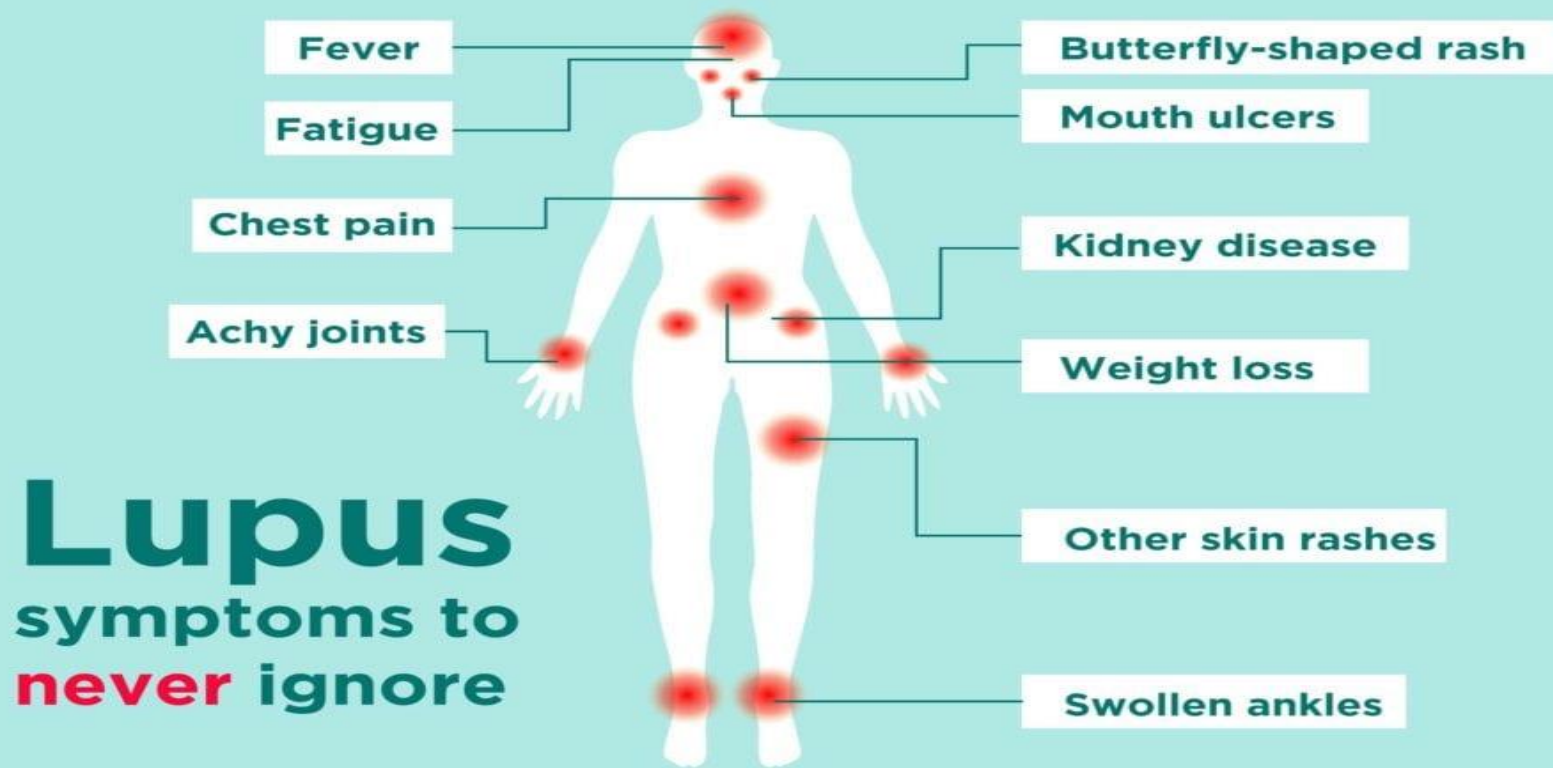
# LUPUS

- Autoimmune disease
- Commonly diagnosed between age 15 and 44
- 90% of patients are women  

- Black people have a higher risk
- Treated by a rheumatologist
- Most people test positive to an ANA blood test
- Hydroxychloroquine is most common medication



## Potential triggers

- **Sunlight:** may bring on lupus skin lesions or trigger an internal response in susceptible people.
- **Infections:** can initiate lupus or cause a relapse in some people.
- **Medications:** Lupus can be triggered by certain types **of blood pressure medications, anti-seizure medications and antibiotics.**  
People who have drug-induced lupus usually get better when they stop taking the medication. Rarely, symptoms may persist even after the drug is stopped.



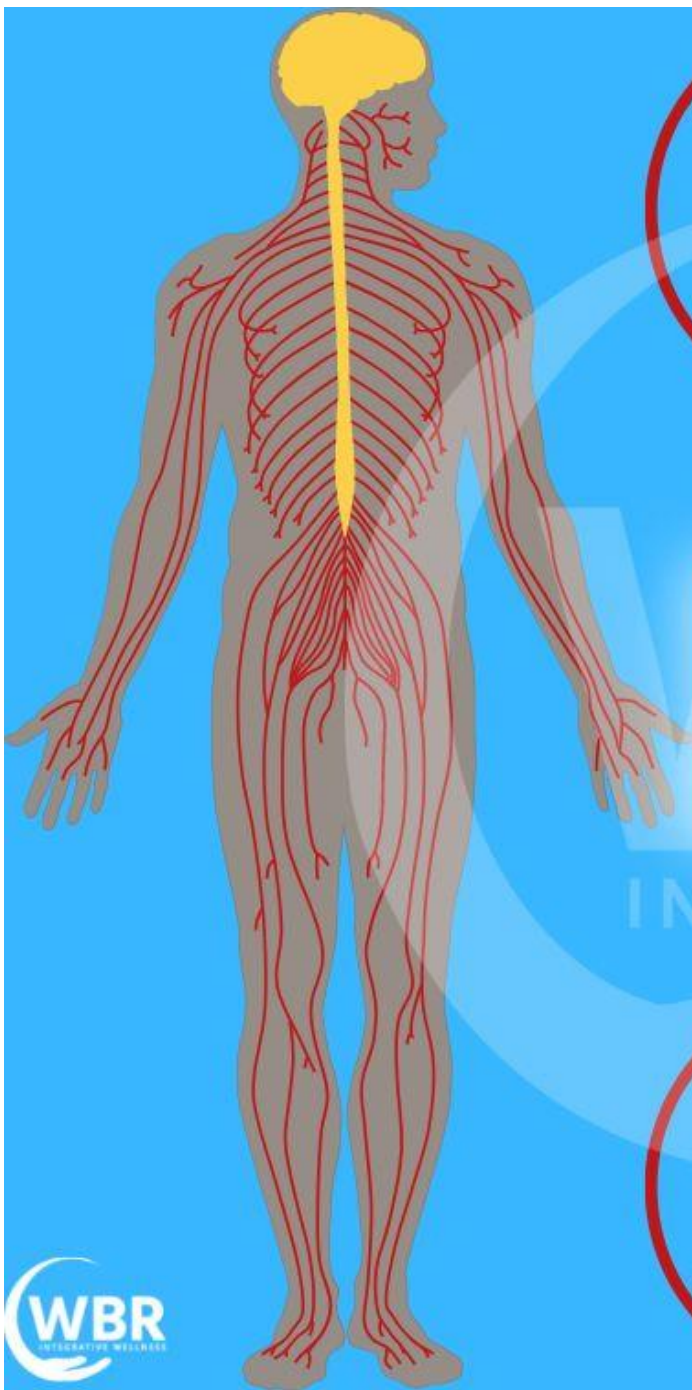
As many as **1 in 5** people with lupus have **peripheral neuropathy**, which is widespread pain caused by nerve damage.



## Managing Lupus

### **You can't prevent lupus.**

- Nonsteroidal anti-inflammatory drugs (NSAIDs).
- Antimalarial drugs.
- Corticosteroids.
- Immunosuppressants.
- Biologics.



# PERIPHERAL NEUROPATHY

INTEGRATIVE WELLNESS



Peripheral neuropathy happens when the nerves that are located outside of the brain and spinal cord (peripheral nerves) are damaged. This condition often causes **weakness, numbness and pain, usually in the hands and feet.**

Peripheral neuropathy may be either **acquired or inherited.**

## Peripheral Neuropathy

### Symptoms



skin, hair, and nail changes



motor nerve damage



painful cramps



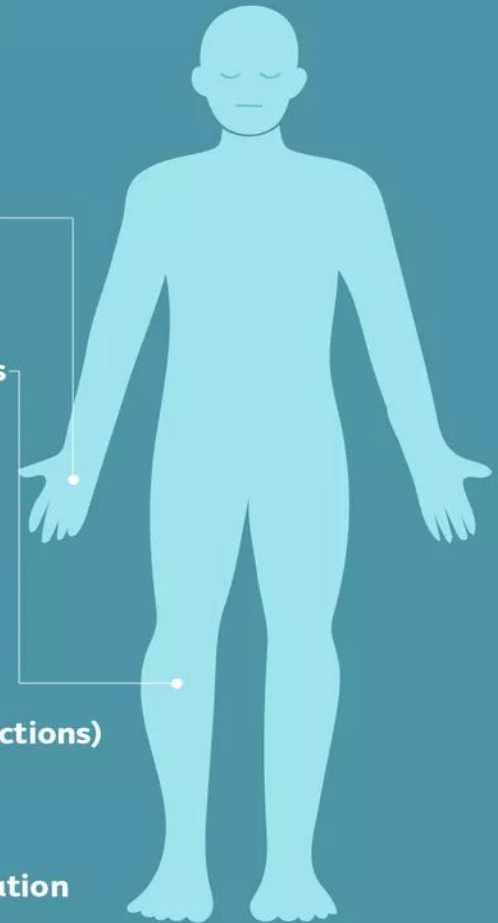
muscle loss



fasciculations (muscle contractions)



bone degeneration



# Epidemiology of peripheral neuropathy

- About 2.4% of world population is affected by peripheral neuropathy. The prevalence increases to 8% in older populations.
- Diabetic neuropathy occurs in approximately half of individuals with chronic type 1 and type 2 diabetes.
- Globally, leprosy remains a common cause of peripheral neuropathy, with the highest prevalence in South East Asia.
- The **most common** genetic sensorimotor polyneuropathy is Charcot-Marie-Tooth disease.
- The **most common** mononeuropathy is carpal tunnel syndrome.

# Causes of acquired peripheral neuropathy

- **Physical injury (trauma) to a nerve**
- **Tumors**
- **Toxins** (heavy metals, cancer treatments, anticonvulsants, antivirals, & antibiotics)
- **Infections and Autoimmune disorders** (Herpes zoster, Epstein-Barr virus, CMV, Herpes simplex, HIV, lupus, rheumatoid arthritis)
- **Nutritional deficiencies** (Vitamins E, B1, B6, B12, and niacin) and **Alcoholism**
- **Inflammatory neuropathies:** (as Guillain-Barré syndrome)
- **Vascular and metabolic disorders** (Diabetes, vasculitis, hypothyroidism)
- **Repetitive Stress**

# Lifestyle management of peripheral neuropathy

- **Exercise:** can reduce cramps, improve muscle strength, and prevent muscle wasting in paralyzed limbs.
- **Adequate diet and nutrition**
- **Stop smoking:** (particularly important) because smoking constricts the blood vessels that supply nutrients to the peripheral nerves and can worsen neuropathic symptoms.
- **Self-care skills:** such as **foot care** and **careful wound treatment** in people with diabetes and others who have an impaired ability to feel pain, can alleviate symptoms and improve quality of life