



# Hypertension

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# Disclosures

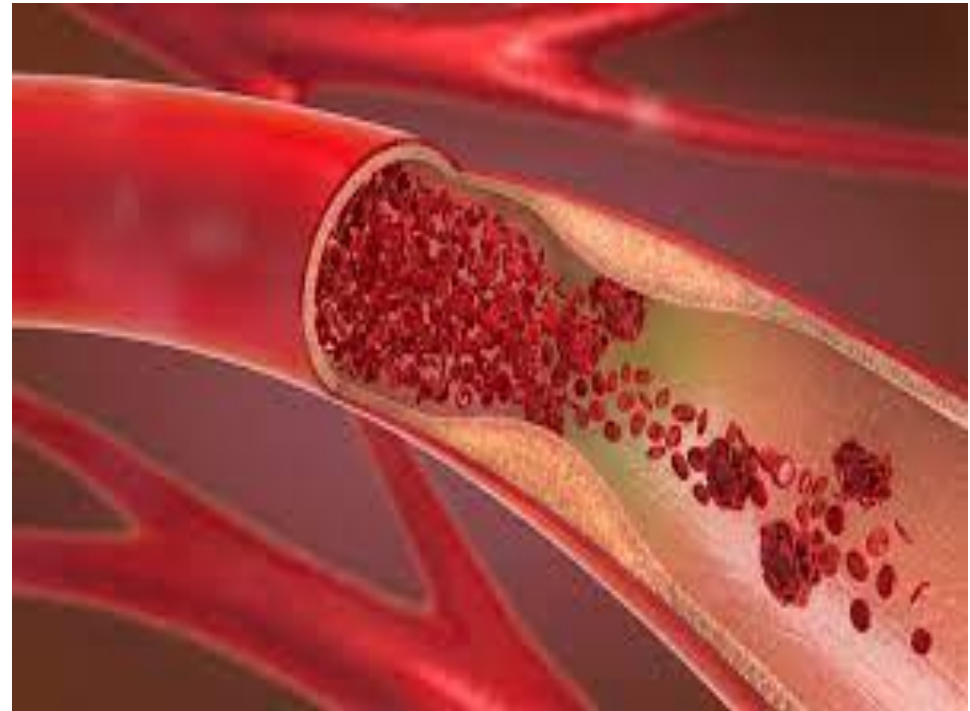
None

# Points to be covered

- Define hypertension (HTN)
- Complications of HTN
- Risk factors
- Symptoms of HTN
- Prevention, treatment/management

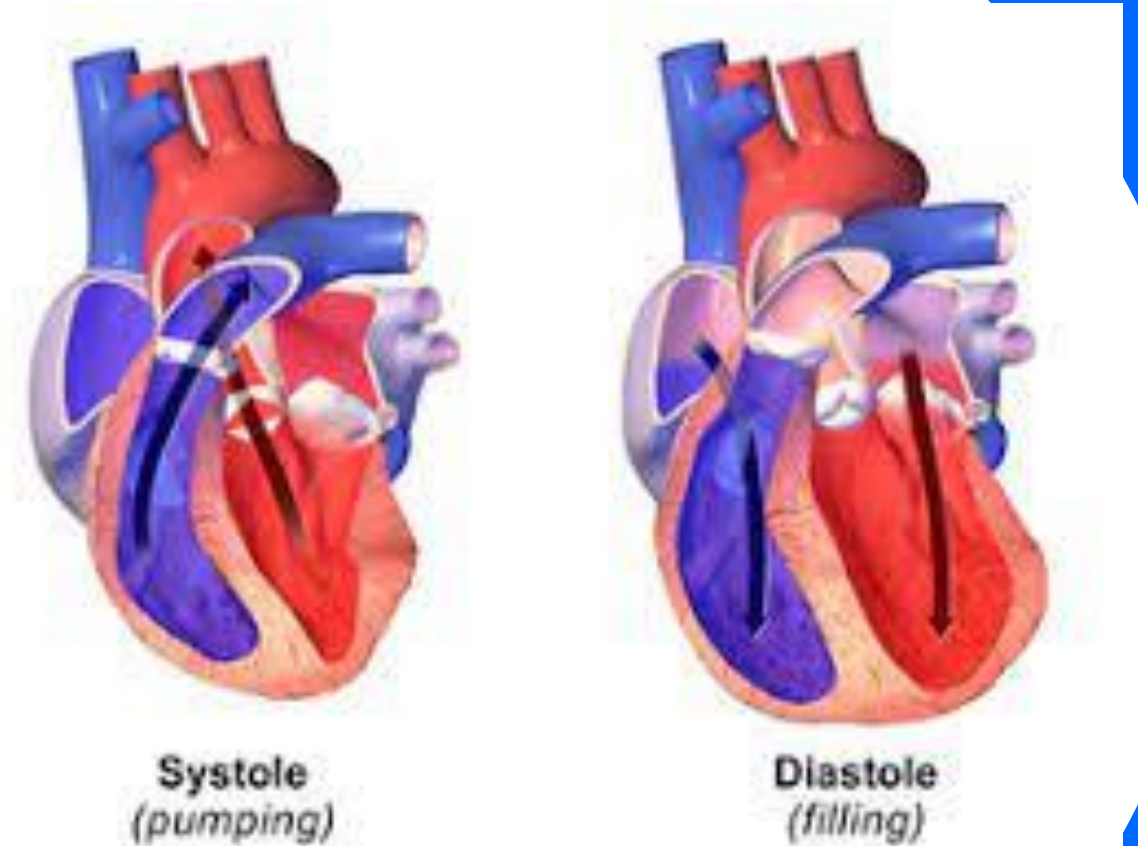
# What is blood pressure?

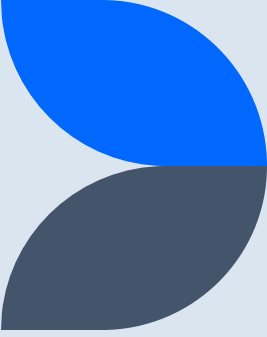
- The measurement of the force of blood as it flows through a vessel in the body.



# Blood pressure

- Systolic pressure: top number represents contraction
- Diastolic pressure: bottom number represents relaxation
- 120/80





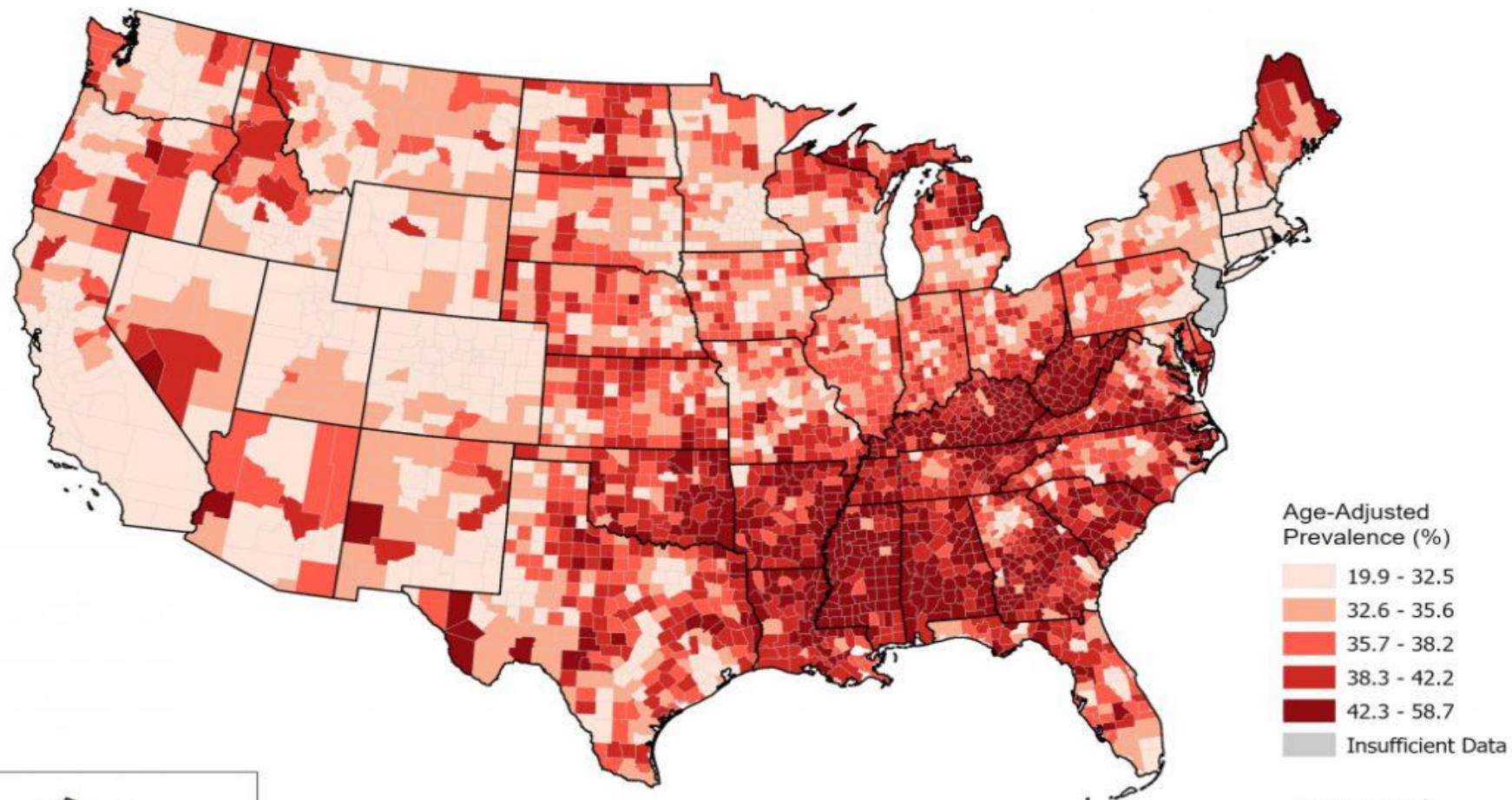
# Hypertension (2017, ACC/AHA)

Blood pressure category	SBP (mmHg)		DBP (mmHg)
Normal	<120	and	<80
Elevated	120-129	and	<80
<b>Hypertension</b>			
Stage 1	130-139	or	80-89
Stage 2	$\geq 140$	or	$\geq 90$

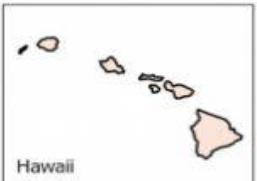
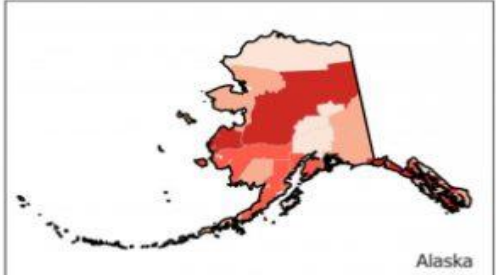
# Epidemiology in U.S.

- Men (50%), women (44%); 47% adults
- 1 in 25 children (age 12-19), 1 in 10 children (prehypertension)
- AA (56%) > NHW (48%) > Asian (46%) > Hispanic (39%)
- 2020: >670,000 related to uncontrolled HTN

# Hypertension Prevalence, 2018 - 2020 Adults, Ages 18+, by County



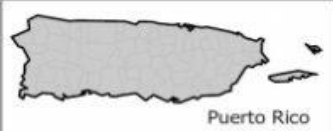
Data source and methodology found at:  
[www.cdc.gov/dhdsp/maps/atlas/statistical-methods](http://www.cdc.gov/dhdsp/maps/atlas/statistical-methods)



Guam

Northern Mariana Islands

American Samoa



US Virgin Islands





# Complications of uncontrolled HTN

- Stroke, myocardial infarction, death
- Organ failure (kidneys, heart, liver)
- Vascular dementia
- Eye damage, possible blindness
- Vascular disease
- Pregnancy complications

# Risk Factors



# Symptoms

- Headache
- Chest pain
- Blurry vision
- Shortness of breath
- Fatigue
- Dizziness
- Nothing at all (Silent killer)

# Diagnosis

- Two or more elevated readings during two consecutive visits



# Treatment (lifestyle changes)

- Weight loss (20# loss-> 5-20 SBP point reduction)
- CDC: 150 min/week of moderate exercise
- Tobacco cessation
- Adequate sleep
- Stress management
- Limit alcohol intake
  - CDC: 1 oz liquor or 5 oz wine or 12 oz beer = 1 drink
  - Men: 2 drinks/day
  - Women: 1 drink/day
- Decrease sodium intake
  - DASH (dietary approaches to stop hypertension) diet





## DASH diet

- Fruits, vegetables, whole grains, lean meats
- 1500 mg/day of sodium
- Use non-salt seasonings
- <https://www.cardiosmart.org/topics/healthy-living/eat-better/heart-healthy-diets>

# Treatment (medication)

- ACE inhibitors (lisinopril)
- ARBs (losartan)
- Calcium channel blockers (amlodipine)
- Diuretics (hydrochlorothiazide)



# White Coat Hypertension

- Elevated blood pressure readings in office setting
- Normal blood pressure readings at home





# Blood pressure monitoring



# Home BP monitoring

- Resting x 5 minutes
- Arm at heart level
- Empty stomach (1 hr before eating or 2 hr after eating)
- No caffeine
- Empty bladder
- Appropriate size cuff
  - Length: 80% arm circumference
  - Width: 40% arm circumference





# Thank you

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# Resource

- American Family Physician: 2018; 97(6): 413-415. Armstrong, Carrie
- [www.CDC.gov/bloodpressure](http://www.CDC.gov/bloodpressure)
- <https://my.clevelandclinic.org/health/diseases/4314-hypertension-high-blood-pressure>