

# *“Geriatric Pearls 2016”*

Bernardo Reyes, MD

Assistant Professor

**Charles E. Schmidt College of Medicine**

**Florida Atlantic University**

**Charlotte R Bloomberg Fellow in Geriatric Medicine**

**Harvard Medical School**

# Objective

To become familiar with recent changes in practice recommendations for geriatric patients presenting with specific concerns to the general practitioner's office.

# Outline

What's new in 2016

HTN

*Goals*

DM

*Goals*  
*"Newer"*  
*meds*

Screening  
USPTF  
Choosing  
Wisely  
Campaign

Knee  
Replacement

Dementia

*Diagnosis*  
*Exercise/Prevention*  
*Treatment*

Carotid  
Procedures

# Case 1

86 y/o male comes to your clinic for regular follow up  
He is very active, plays golf three times per week  
Still drives and is independent for ADL's and IDL's

PMH:

- HTN-Lisinopril
- CAD-Metoprolol
- HLP-Atorvastatin
- Knee OA-Ibuprofen

His blood pressure today in the office is 149/78

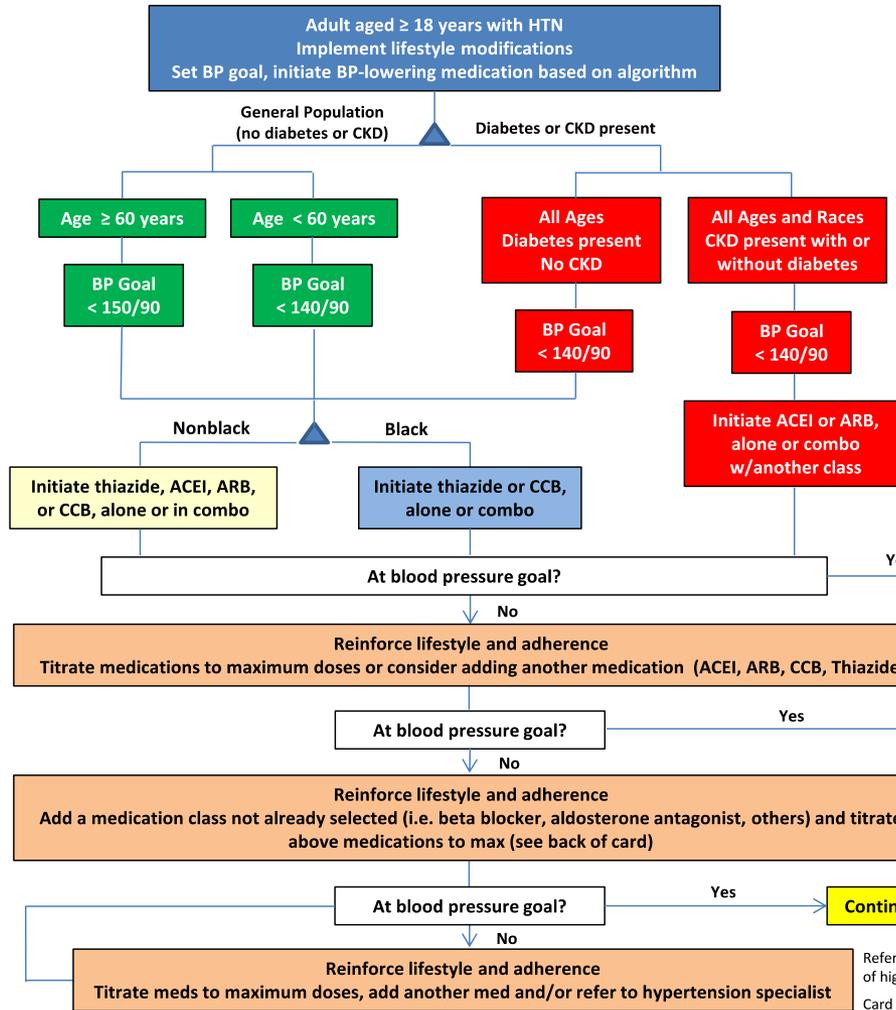
He is asymptomatic but reports to you that sometimes he feels lightheaded when he plays golf and "is too hot"

He has heard in the press lately that "a lower blood pressure is better for you"

What you should do about his blood pressure?

# Hypertension

## JNC 8 Hypertension Guideline Algorithm



### Initial Drugs of Choice for Hypertension

- ACE inhibitor (ACEI)
- Angiotensin receptor blocker (ARB)
- Thiazide diuretic
- Calcium channel blocker (CCB)

Strategy	Description
A	Start one drug, titrate to maximum dose, and then add a second drug.
B	Start one drug, then add a second drug before achieving max dose of first
C	Begin 2 drugs at same time, as separate pills or combination pill. <b>Initial combination therapy is recommended if BP is greater than 20/10mm Hg above goal</b>

### Lifestyle changes:

- Smoking Cessation
- Control blood glucose and lipids
- Diet
  - ✓ Eat healthy (i.e., DASH diet)
  - ✓ Moderate alcohol consumption
  - ✓ Reduce sodium intake to no more than 2,400 mg/day
- Physical activity
  - ✓ Moderate-to-vigorous activity 3-4 days a week averaging 40 min per session.

Reference: James PA, Ortiz E, et al. 2014 evidence-based guideline for the management of high blood pressure in adults: (JNC8). JAMA. 2014 Feb 5;311(5):507-20

Card developed by Cole Glenn, Pharm.D. & James L Taylor, Pharm.D.

# Hypertension

## HYVET STUDY 2007 NEJM

### Design:

- Sitting systolic blood pressure 160-199 mm Hg
- Standing systolic blood pressure >140 mm Hg
- Sitting diastolic blood pressure =109 mm Hg
- Age 80 years or above at the time of randomization

Patients are randomized to two arms: an active indapamide 1.5 mg SR-based therapy group and a placebo group. Treatment could be increased in two steps with perindopril 2 mg and 4 mg to achieve the blood pressure goal of 150/80 mm Hg.<sup>1</sup>

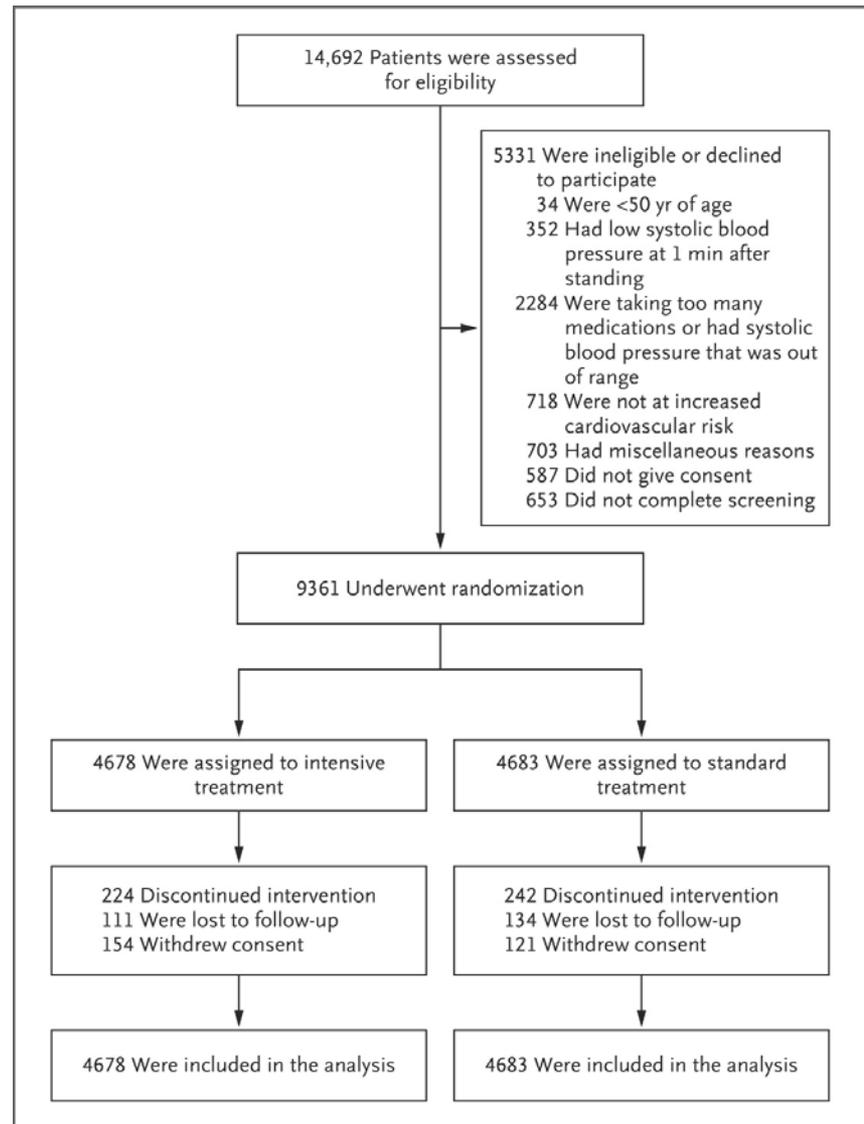
Patients treated for a target SBP of 150 or less had a significant reduction of cardiovascular mortality

Not able to prove benefit from a more aggressive target

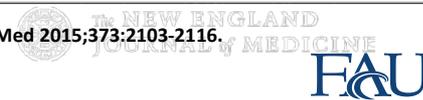
# Hypertension Sprint Trial (Design)

- SPRINT was a randomized, controlled, open-label trial that was conducted at 102 clinical sites (organized into 5 clinical center networks) in the United States
- Inclusion Criteria: Age of at least 50 years, a systolic blood pressure of 130 to 180 mm Hg, and an increased risk of cardiovascular events.

# Hypertension Sprint Trial (Population)



The SPRINT Research Group. N Engl J Med 2015;373:2103-2116.



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# Hypertension

## Sprint Trial(Adverse effects)

**Table 3. Serious Adverse Events, Conditions of Interest, and Monitored Clinical Events.**

Variable	Intensive Treatment (N = 4678) <i>no. of patients (%)</i>	Standard Treatment (N = 4683) <i>no. of patients (%)</i>	Hazard Ratio	P Value
Serious adverse event*	1793 (38.3)	1736 (37.1)	1.04	0.25
<b>Conditions of interest</b>				
Serious adverse event only				
Hypotension	110 (2.4)	66 (1.4)	1.67	0.001
Syncope	107 (2.3)	80 (1.7)	1.33	0.05
Bradycardia	87 (1.9)	73 (1.6)	1.19	0.28
Electrolyte abnormality	144 (3.1)	107 (2.3)	1.35	0.02
Injurious fall†	105 (2.2)	110 (2.3)	0.95	0.71
Acute kidney injury or acute renal failure‡	193 (4.1)	117 (2.5)	1.66	<0.001
Emergency department visit or serious adverse event				
Hypotension	158 (3.4)	93 (2.0)	1.70	<0.001
Syncope	163 (3.5)	113 (2.4)	1.44	0.003
Bradycardia	104 (2.2)	83 (1.8)	1.25	0.13
Electrolyte abnormality	177 (3.8)	129 (2.8)	1.38	0.006
Injurious fall†	334 (7.1)	332 (7.1)	1.00	0.97
Acute kidney injury or acute renal failure‡	204 (4.4)	120 (2.6)	1.71	<0.001
<b>Monitored clinical events</b>				
Adverse laboratory measure§				
Serum sodium <130 mmol/liter	180 (3.8)	100 (2.1)	1.76	<0.001
Serum sodium >150 mmol/liter	6 (0.1)	0		0.02
Serum potassium <3.0 mmol/liter	114 (2.4)	74 (1.6)	1.50	0.006
Serum potassium >5.5 mmol/liter	176 (3.8)	171 (3.7)	1.00	0.97
Orthostatic hypotension¶				
Alone	777 (16.6)	857 (18.3)	0.88	0.01
With dizziness	62 (1.3)	71 (1.5)	0.85	0.35

# Hypertension

## Targets for the year

- Targets remain the same
- Judgment call
- Potential for side effects more than indexes of frailty

## Case 2

83 y/o female comes to your clinic for regular follow up

She lives with her DTR

Still does not drive and is independent for some ADL's but uses a walker to ambulate (with limitations), and requires assistance for most IDL's

PMH:

- HTN-Lisinopril
- Mod Cognitive Impairment-Namenda
- HLP-Atorvastatin
- DM-Metformin

Her blood pressure today in the office is 128/78

She is asymptomatic

Her last A1C was 7.9%

What are the changes needed on the management of her diabetes?

# Diabetes

## Goals(ADA/AGS 2016)

- Consider the assessment of medical, functional, mental, and social geriatric domains
- Should be considered a high- priority population for depression screening
- Intensive glucose control is not recommended for the improvement of poor cognitive function
- CV benefits of statin therapy outweigh the risk of cognitive dysfunction
- Given the long timeframe to achieve theorized microvascular benefits of tight control, glycemic targets should reflect patient goals, health status, and life expectancy.

American Diabetes Association. *Diabetes Care*. 2016;39(suppl 1):S1-S106.

### Less stringent (<8%)

- Severe hypoglycemia history
- Limited life expectancy
- Advanced microvascular or macrovascular complications
- Extensive comorbidities
- Long-term diabetes in whom general A1C target difficult to attain

# Diabetes

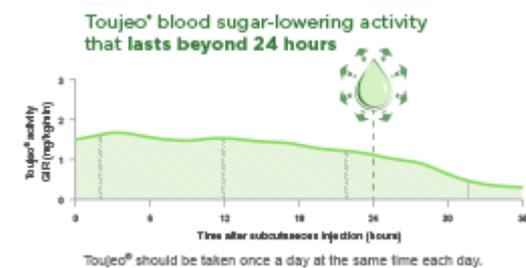
## Monitoring and Treatment

### Monitoring :

- Insufficient evidence regarding how often testing is needed for patients who do not use an intensive insulin regimen
- Monitor changes in weight, glycemic control, cholesterol levels (reassess treatment regimen if significant changes)

### Treatment :

- Avoid using medications other than metformin to achieve hemoglobin A1c < 7.5% in most older adults;
- New Meds:
  - Insulin glargine U-300 (Toujeo®)
  - Insulin degludec (Tresiba®)



THE NEW ENGLAND  
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FAU

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# Diabetes

Overall for the year

- Practice guideline reassurance that “flexible” goals are acceptable.
- Metformin is an acceptable monotherapy
- Still caution on patients with renal issues.
- Intensive glucose control is not recommended for the improvement of poor cognitive function
- The goal of DM treatment in the frail elderly is avoiding acute complications of hyperglycemia.



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# Case 3

- 68 y/o Lawyer comes to your office with concerns about his memory
- He practices law and is very active in his community
- He plays tennis and golf 4 times per week
- He drinks one glass of scotch a day after dinner (does not drink socially)

*You perform a MOCA and he scores 20 (abnormal)  
MRI of the brain is WNL*

- He is really concerned and would like to know what treatment options he has.

# Dementia

## Current Treatments

Currently the medications in the market provided limited benefits on memory and executive function deficits in ~50% of the patients. Currently there no medications aimed treating the underlying causes of Alzheimer's.

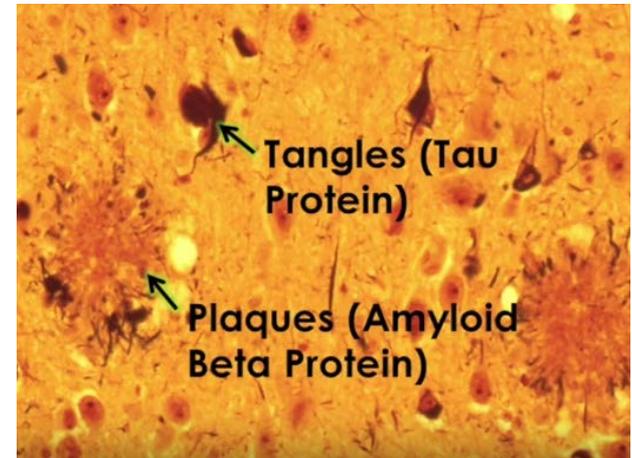
### Amyloid Precursor Proteins

Beta-Secretase **MK-8931** (drug significantly lowered beta-amyloid levels in people with mild-to-moderate Alzheimer's. MK-8931 is being tested in two phase 3 clinical trials)

### Beta-Amyloid Deposits Solanezumab (A4) Trial

**Tau protein: AADvac1** is a vaccine that stimulates the body's immune system to attack an abnormal form of tau protein that destabilizes the structure of neurons. Just Finished phase 1 trials.

Three major studies published confirming the importance to primary prevention through exercise and CVD prevention.



# Case 4

- 82 y/o male with hx of vascular dementia comes with his wife to your office
- His wife is concerned about worsening behavior, he is more combative, is refusing to eat and is losing weight.
- She is noticing that he “cough a lot” when he eats
- He was recently discharged from the hospital for PNA
- PMH:
  - HTN: HCTZ
  - HLP: simvastatin
  - Dementia: Aricept (started 3 months ago)
  - BPH: tamsulosin
- The patient’s wife would like to know what are her options for controlling his behavior and his weight loss.

# Dementia

## Choosing Wisely

- **Careful hand-feeding for patients with severe dementia is at least as good as tube-feeding** for the outcomes of death, aspiration pneumonia, functional status and patient comfort. Food is the preferred nutrient. Tube-feeding is associated with agitation, increased use of physical and chemical restraints and worsening pressure ulcers.
- **Avoid using scheduled antipsychotics.** They provide limited and inconsistent benefits, while posing risks, including over sedation, cognitive worsening and increased likelihood of falls, strokes and mortality
- **Don't prescribe cholinesterase inhibitors for dementia without periodic assessment** for perceived cognitive benefits and adverse gastrointestinal effects. If the desired effects (including stabilization of cognition) are not perceived within 12 weeks or so, the inhibitors should be discontinued

# Case 5

- 81 y/o male comes to your office for the first time
- He immigrated from Cuba
- He has not have a colonoscopy or any other form of health screening.
- Does not take medications. He looks healthy
- Blood pressure and lab work WNL
- His DTR translates for him and she is concerned about the risk of colon and prostate cancer.
- She is demanding a colonoscopy and a PSA?

# Screening Guidelines

Choosing Wisely and USPTF

***Don't recommend screening for breast, colorectal, prostate or lung cancer without considering life expectancy and the risks of testing, overdiagnosis and overtreatment***

**Prostate Cancer** : 1055 older men would need to be screened and 37 would need to be treated to avoid 1 death in 11 years.

**Breast Cancer**: "...current evidence is insufficient to assess the balance of benefits and harms of screening mammography in women aged 75 years or older. 1000 older adults would need to be screened to prevent 1 death in 10 years..."

**Colorectal Cancer**: The USPSTF recommends screening for colorectal cancer starting at age 50 years and continuing until age 75 years. After 75, only if might be beneficial (those never screened **AND** are healthy to undergo the procedure and do not have a condition that will limit live expectancy

**(AAA)**: ultrasonography in men ages 65 to 75 years who have ever smoked.

**Diabetes**: no recommendation for screening after age 70 (even on obese individuals)

# Case 6

- 65 y/o male comes to your office with hx of knee pain
- He works in construction and having difficulty "moving around because it to painful to walk"
- PMH:
  - TIA
  - HTN
  - HLP
  - DM
  - Afib
- PE: BMI 29
- He is considering TKR, and he is asking for your advice?

# Joint

## Replacements

- Total knee replacements performed in 2012 in the United States ~670,000 with a cost of \$36 Billions
- No high-quality randomized, controlled trials that have investigated the effectiveness of total knee replacement until 2015



ORIGINAL ARTICLE

## A Randomized, Controlled Trial of Total Knee Replacement

Søren T. Skou, P.T., Ph.D., Ewa M. Roos, P.T., Ph.D., Mogens B. Laursen, M.D., Ph.D., Michael S. Rathleff, P.T., Ph.D., Lars Arendt-Nielsen, Ph.D., D.M.Sc., Ole Simonsen, M.D., D.M.Sc., and Sten Rasmussen, M.D., Ph.D.

N Engl J Med 2015; 373:1597-1606

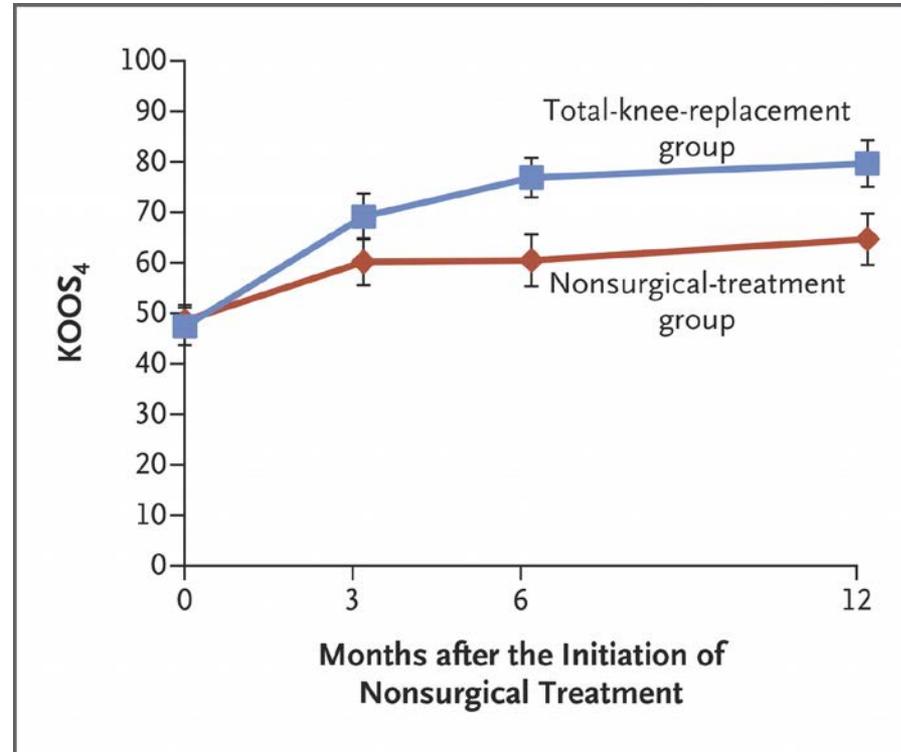
# Knee Replacement Study

- Patients were randomly assigned in a 1:1 ratio to undergo total knee replacement followed by 12 weeks of nonsurgical treatment or to receive only the 12 weeks of nonsurgical treatment
- Patients with radiographically confirmed knee osteoarthritis (i.e., a score of  $\geq 2$  on the Kellgren–Lawrence scale)
- Eligibility for total knee replacement was determined by one of nine experienced orthopedic surgeons
- The 12-week nonsurgical-treatment program consisted of five interventions: exercise, education, dietary advice, use of insoles, and pain medication.
- Follow-up assessments were performed at 3, 6, and 12 months



# Knee Replacement Study

Outcome Score subscales, covering pain, symptoms, activities of daily living, and quality of life (KOOS)



Skou ST et al. N Engl J Med 2015;373:1597-1606

# Knee Replacement Study

**Table 3. Serious Adverse Events.\***

Events	Nonsurgical-Treatment Group	Total-Knee-Replacement Group	P Value
	<i>no. of events</i>		
<b>Overall</b>	6	24	0.005
<b>Involving sites other than the index knee</b>	5	16	0.04
Musculoskeletal	0	4	
Skin	1	0	
Gastrointestinal	0	3	
Other	4	9	
<b>Involving the index knee</b>	1	8	0.05
Occurred during total knee replacement	0	0	
Occurred after total knee replacement			
Stiffness requiring brisement forcé†	1	3	
Deep infection	0	1	
Deep venous thrombosis requiring anticoagulation	0	3	
Supracondylar femur fracture	0	1	

# Knee Replacement

## Overall

- treatment with total knee replacement followed by nonsurgical treatment resulted in greater pain relief and functional improvement after 12 months than did nonsurgical treatment alone.
- total knee replacement was associated with a higher number of serious adverse events than was nonsurgical treatment

# Endovascular Procedures

## *The new England journal of medicine*

### Original Article

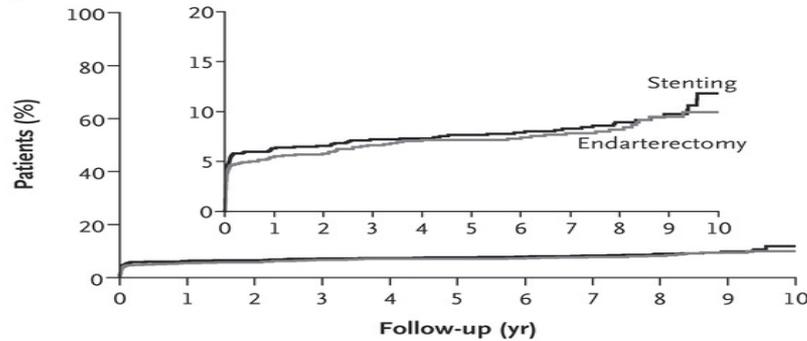
Long-Term Results of Stenting versus Endarterectomy for Carotid-Artery Stenosis (CREST Study)

March 2016

- 2502 patients randomly assigned to stenting or endarterectomy, we evaluated outcomes every 6 months for up to 10 years at 117 centers.
- Eligible patients could have symptomatic or asymptomatic carotid stenosis.
- For asymptomatic patients, eligibility criteria included stenosis
  - 60% or more on angiography, or
  - 70% or more on ultrasonography, or
  - 80% or more on computed tomographic angiography or
  - magnetic resonance angiography if the stenosis on ultrasonography was 50 to 69%

# Endovascular Procedures (Crest Results)

## A Primary Composite End Point

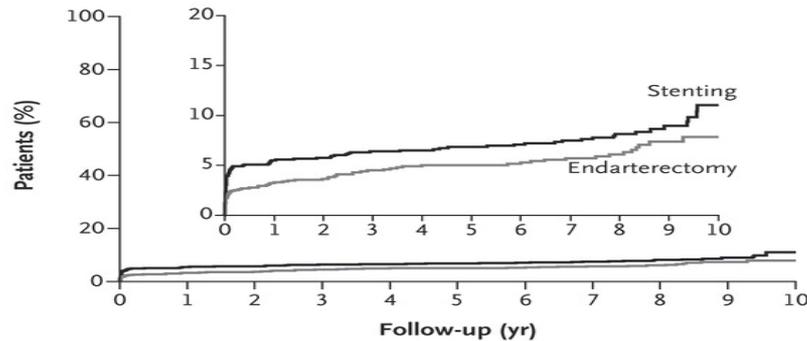


### No. at Risk

Endarterectomy	1240	1104	1036	949	833	736	695	620	438	243	66
Stenting	1262	1103	1041	972	884	774	738	676	477	264	68

Event rates for composite of stroke, myocardial infarction, or death from any cause during the periprocedural period or ipsilateral stroke within 10 years after randomization

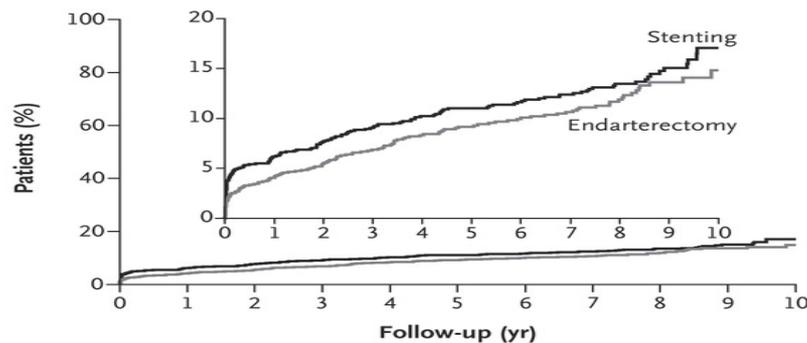
## B Stroke or Death



### No. at Risk

Endarterectomy	1240	1127	1056	967	848	744	703	624	442	245	67
Stenting	1262	1111	1049	979	889	777	741	679	479	265	68

## C Any Stroke

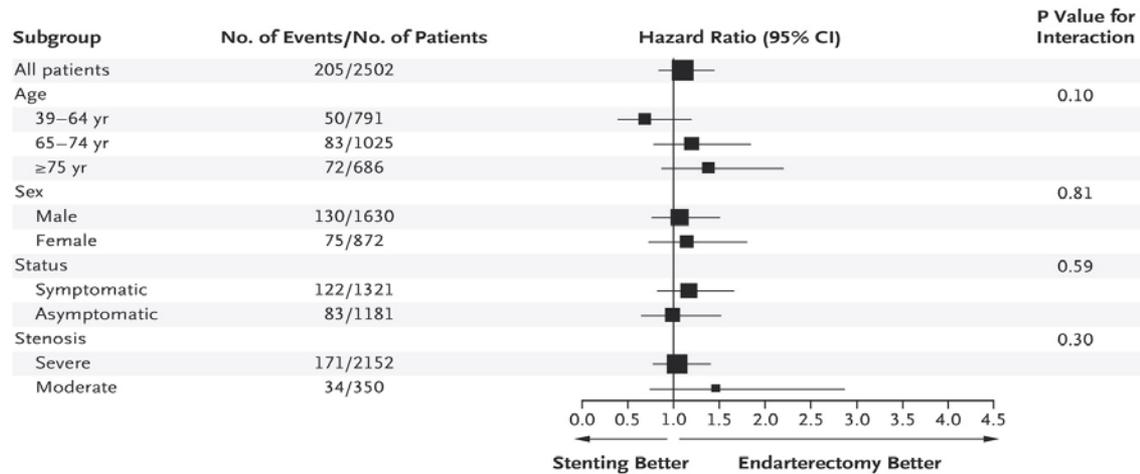


### No. at Risk

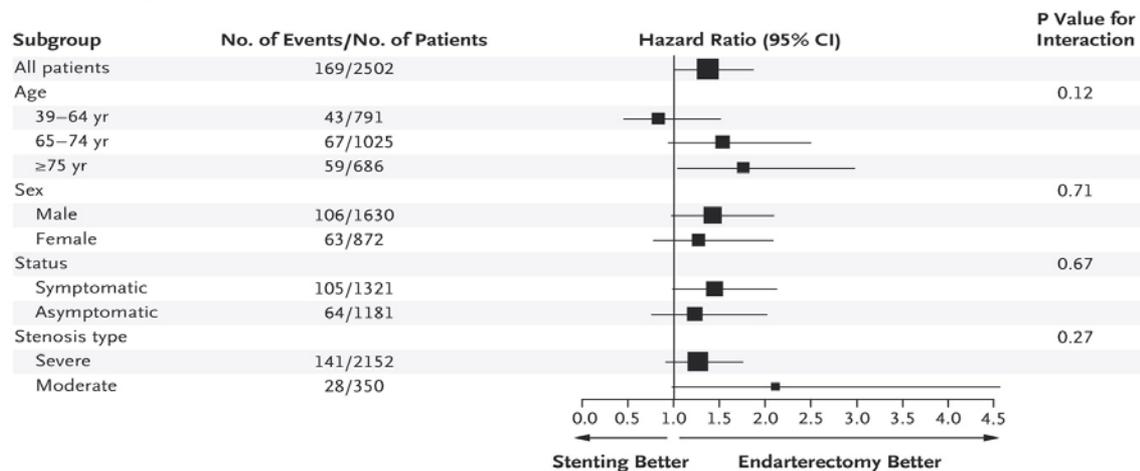
Endarterectomy	1240	1118	1037	945	825	721	676	603	420	234	63
Stenting	1262	1103	1030	957	861	750	714	654	461	257	65

# Endovascular Procedures (Crest Results)

## A Primary Composite End Point



## B Stroke or Death



# Carotid Stenosis

## Intervention vs. Medical Management

Carotid revascularization for primary prevention of stroke (CREST-2) is two independent multicenter, randomized controlled trials of carotid revascularization and intensive medical management versus medical management alone in patients with asymptomatic high-grade carotid stenosis.

# This Year In Geriatrics

- Use your judgment to determine BP targets (when possible go low)
- No need to have low A1C targets in the elderly
- TKR is effective in controlling pain on selective populations but discussions should take place regarding the risks associated with the procedure
- There are several drugs in the pipe line for the treatment of AZ dementia but prevention is still the best treatment.
- CAE and CEA are equivalent but CEA appears to have a slight advantage in patients >75 y/o

# Geriatric Pearls 2016

Questions?