CARDIOVASCULAR HEALTH FOR INDIVIDUALS WITH SERIOUS MENTAL ILLNESS

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OBJECTIVES

- By the end of this talk, participants will be able to:

1. Name factors that contribute to increased rates of cardiovascular disease (CVD) in persons with SMI.
2. Apply principles of motivational interviewing to promote behaviors that impact cardiovascular health.
3. Diagnose hypertension, diabetes and dyslipidemia.
4. Prescribe initial medication for cardiovascular risk-associated conditions.

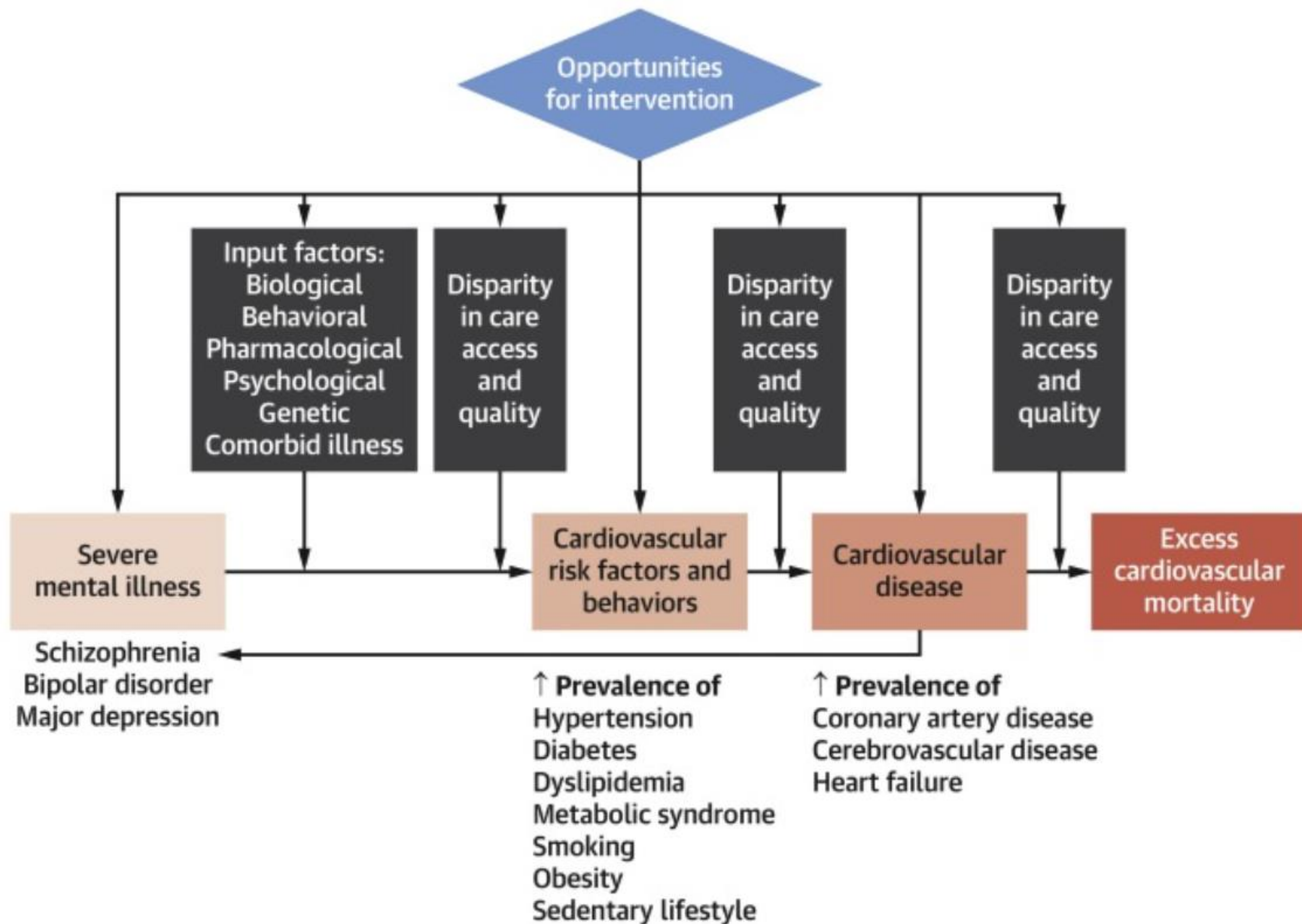
CV DISEASE AND SMI

World Psychiatry, 16 (2017), pp. 163-180

DEATH IN SMI

Mortality Gap of 15 to 25 years

BMC Psychiatry, 10 (2010), p. 77



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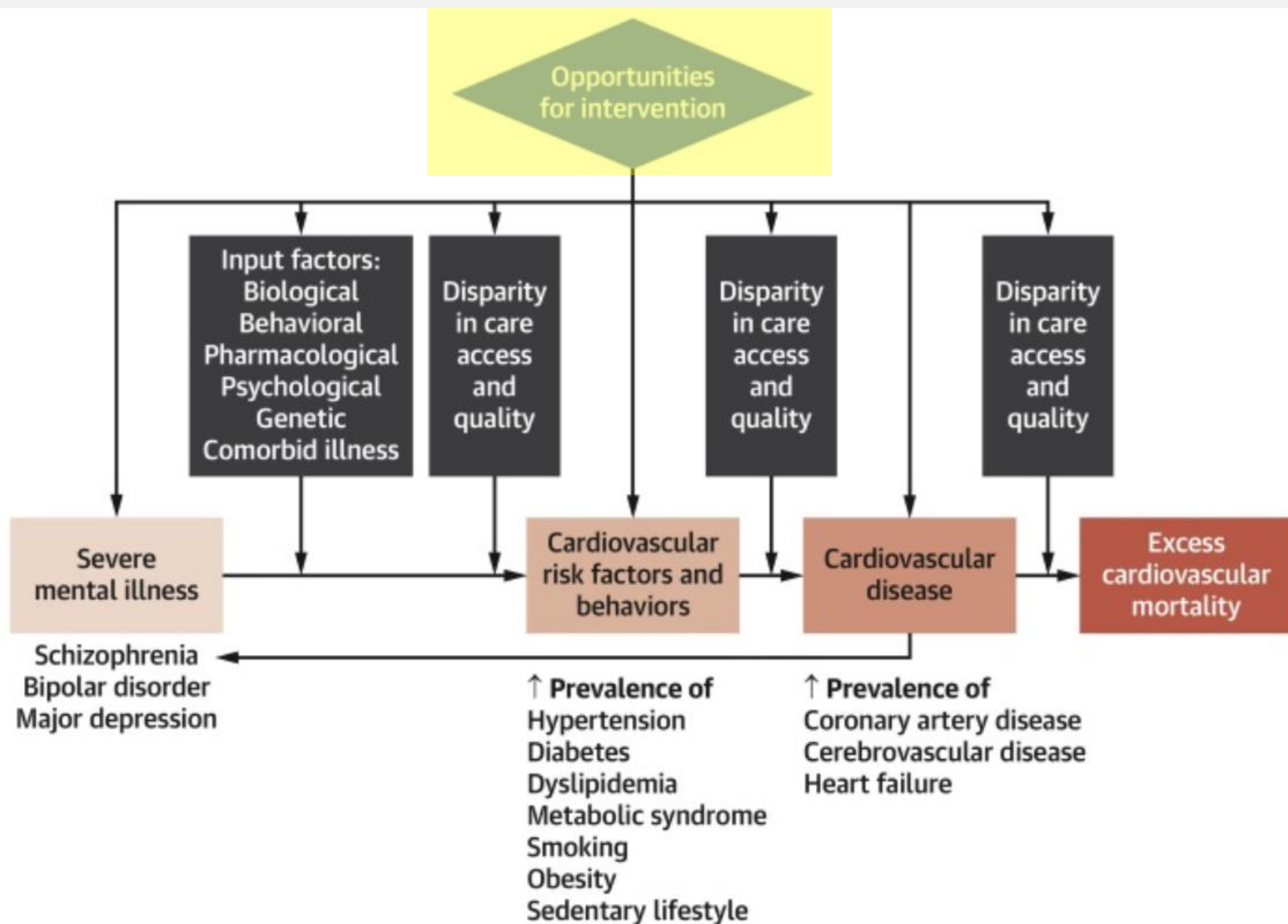

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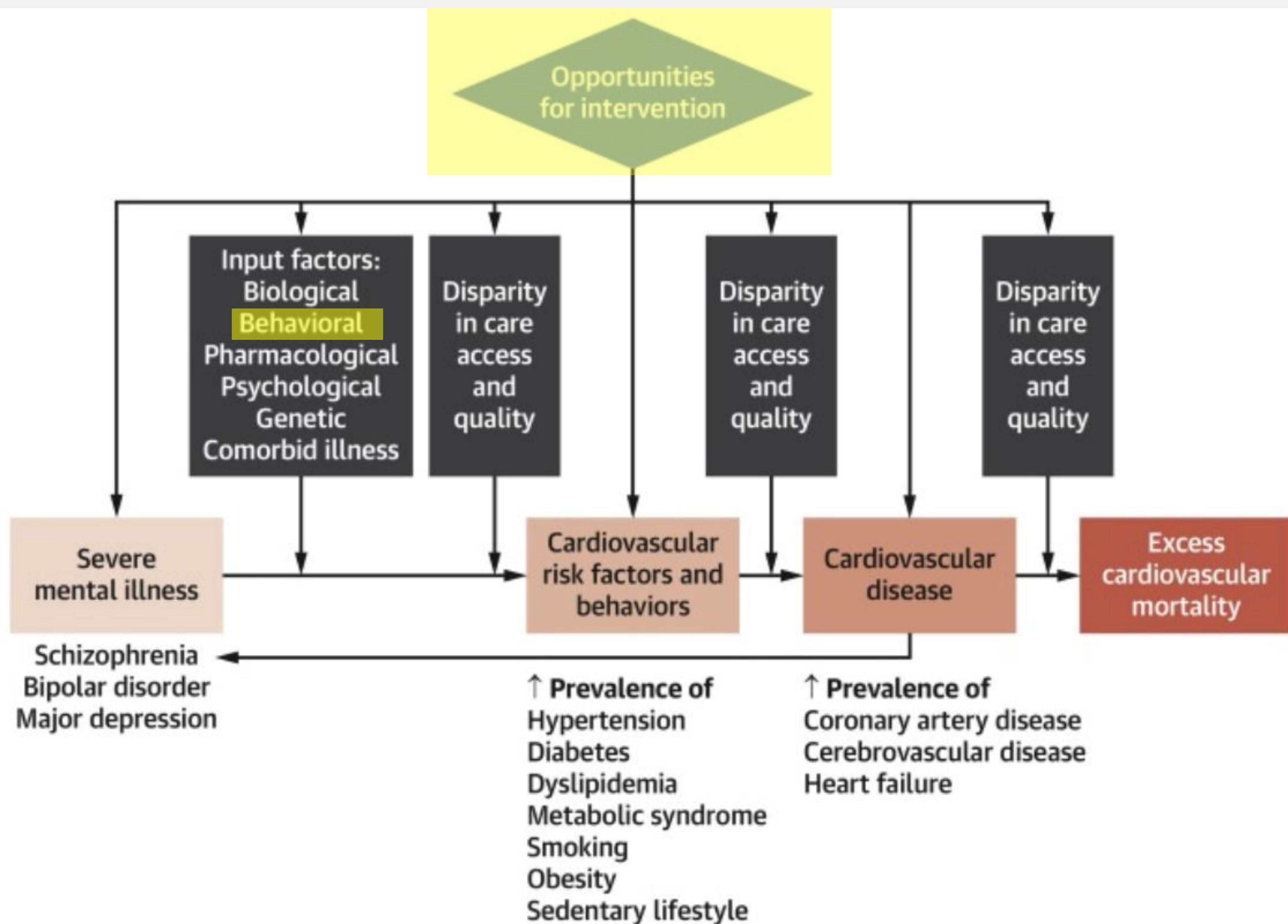

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OPPORTUNITIES: BEHAVIOR CHANGE

WHAT IS MOTIVATIONAL INTERVIEWING?

Person-centered, evidence-based directive method for enhancing *intrinsic* motivation to change by exploring and resolving ambivalence with the individual.

A WAY OF BEING

The Process

Planning

Evoking

Focusing

Engaging

Miller & Rollnick, 2013

THE PROCESS

Ask Permission: Would it be ok if we discussed…?

Engaging

Miller & Rollnick, 2013

THE PROCESS

What?

Focusing

Engaging

Miller & Rollnick, 2013

THE PROCESS

Why?

Evoking

Focusing

Engaging

Miller & Rollnick, 2013

ACKNOWLEDGE & EVOKE

SUSTAIN TALK

CHANGE TALK

AMBIVALENCE

TYPES OF CHANGE TALK:

- **Desire:** **I want to…. I'd really like to… I wish…**
- **Ability:** **I would… I can….I am able to...**
- **Reason:** **There are good reasons to…**
  This is important….
- **Need:** *I really need to…*
- **Commitment:** *I intend to… I will… I plan to…*
- **Activation:** I'm doing this today…
- **Taking Steps:** I went to my first group…

THE PROCESS

“How?”

Planning

Evoking

Focusing

Engaging

Miller & Rollnick, 2013

GOAL SETTING

CHANGING DIET

WEEKLY FOOD DIARY

GOALS:

	SUN	MON	TUE	WED	THU	FRI	SAT
Date							
Breakfast							
Lunch							
Dinner							
Snacks							
Water	○○○○ ○○○○	○○○○ ○○○○	○○○○ ○○○○	○○○○ ○○○○	○○○○ ○○○○	○○○○ ○○○○	○○○○ ○○○○
Notes							

https://www.vertex42.com/ExcelTemplates/food-diary-template.html

Weekly Food Diary © 2019 Vertex42 LLC

CHANGING DIET

Where do you get meals?

CHANGING DIET

Where do you get groceries?

CHANGING DIET

What is your food budget?

https://doh.wa.gov/you-and-your-family/nutrition-and-physical-activity/healthy-eating/snap-match-programs/snap-market-match

https://www.buysalvagefood.com/salvage-grocers-washington.html

CHANGING DIET

HIGHEST PROTEIN SUBWAY

cheatdaydesign.com

BEST SOURCES OF PROTEIN UNDER 700 CALORIES

(LISTED BY PROTEIN CONTENT)

Steak & Cheese Wrap
570 Calories
20g Fat
55g Carbs
43g Protein

Steak & Cheese Bowl
380 Calories
19g Fat
12g Carbs
42g Protein

Buffalo Chicken Wrap
560 Calories
19g Fat
56g Carbs
42g Protein

Grilled Chicken Wrap
470 Calories
11g Fat
54g Carbs
42g Protein

Roast Beef Wrap
500 Calories
14g Fat
58g Carbs
38g Protein

Rotisserie Chicken Wrap
500 Calories
15g Fat
54g Carbs
38g Protein

cheatdaydesign.com

The Monster 6”
580 Calories
30g Fat
42g Carbs
36g Protein

Buffalo Chicken Bowl
380 Calories
21g Fat
13g Carbs
36g Protein

Grilled Chicken Bowl
200 Calories
4g Fat
9g Carbs
35g Protein

Chicken Teriyaki Bowl
350 Calories
5g Fat
46g Carbs
34g Protein

The Great Garlic 6”
570 Calories
29g Fat
43g Carbs
34g Protein

Chicken & Bacon Ranch 6”
570 Calories
29g Fat
43g Carbs
34g Protein

Turkey Cali Club 6”
580 Calories
32g Fat
43g Carbs
33g Protein

Subway Club 6”
500 Calories
24g Fat
43g Carbs
32g Protein

Rotisserie Chicken Bowl
220 Calories
8g Fat
8g Carbs
31g Protein

CHANGING DIET

CHANGING DIET

Portion Control:

CHANGING DIET

Mindful Eating

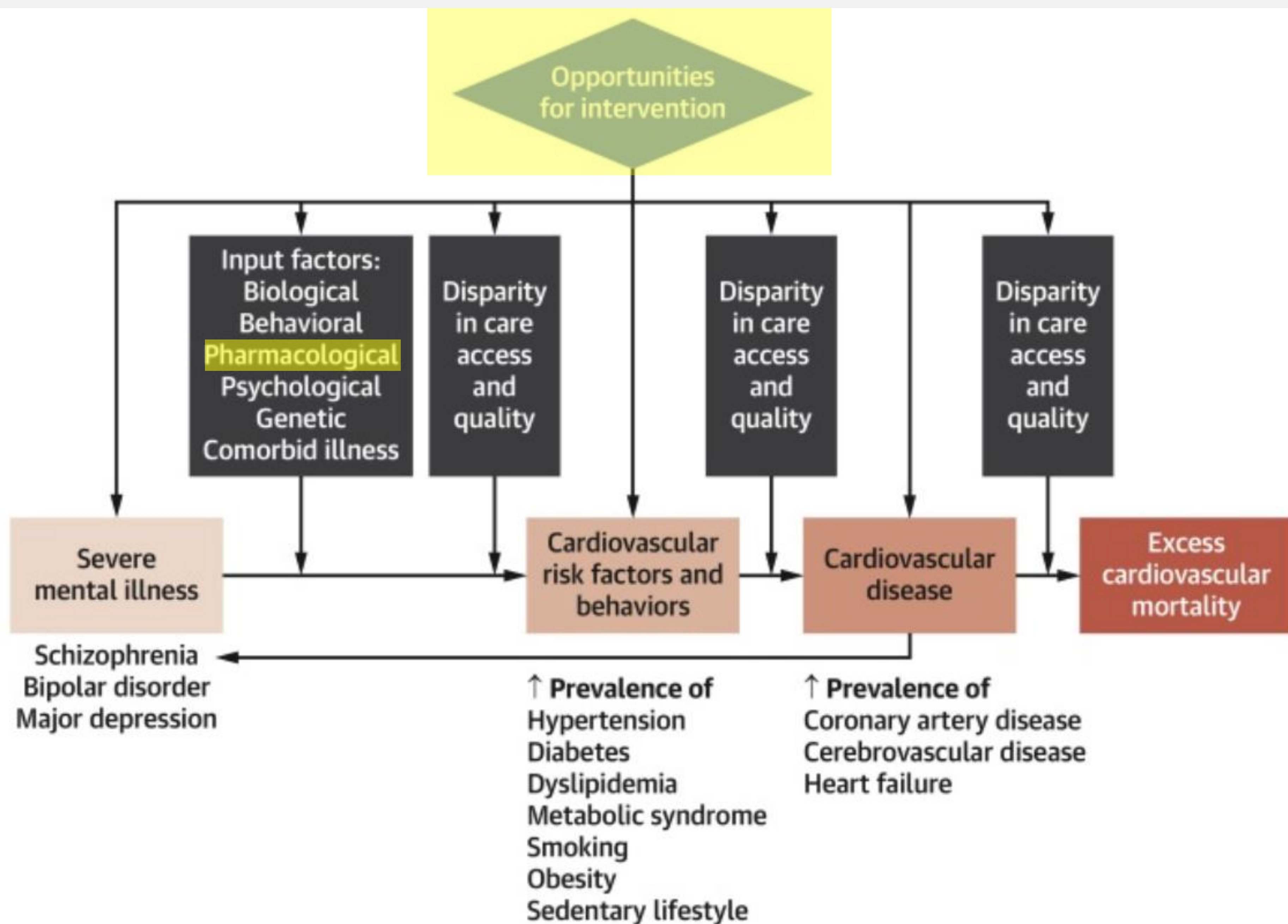
INCREASING PHYSICAL ACTIVITY

SMOKING

- Counseling + Meds > Either one alone
  - NRT
  - Wellbutrin
  - Varenicline/Cytisinicline

JAMA. 2022;327(6):566-577. doi:10.1001/jama.2022.0395
JAMA. 2023;330(2):152-160. doi:10.1001/jama.2023.10042

PATIENT ROLE PLAY



Goldfarb M, et al. J Am Coll Cardiol. 2022;80(9):918-933.

Relative MetS Risk of Commonly Used Antipsychotics

Drug		Receptor Antagonism (Based on Receptor Occupancy)			MetS Risk – Lipids	MetS Risk – Glucose	MetS Risk – Body Weight
		$5\text{-}HT_{2C}$	H1	M3			
FGAs	Haloperidol	–	–	–	Low	Medium	Low
	Sulpiride	–	–	Low	Low	Low	Low
	Chlorpromazine	High	High	Low	High	High	High
SGAs	Clozapine	High	High	High	High	High	High
	Olanzapine	High	High	Low	High	High	High
	Risperidone	Medium	Medium	–	Medium	Medium	Medium
	Paliperidone	Medium	Low	–	Medium	Medium	Medium
	Quetiapine	Low	High	Low	Medium	Medium	Medium
	Ziprasidone	Medium	Low	–	Low	Low	Low
	Aripiprazole	Low	Low	–	Low	Low	Low
	Amisulpride	–	–	–	Low	Low	Low
	Asenapine	High	High	–	Medium	Medium	Medium
	Lurasidone	Medium	Low	–	Low	Low	Low
	Serindole	High	–	–	Low	Low	Medium
	Cariprazine	Low	Low	–	Low	Medium	Low
	Brexpiprazole	Low	Low	–	Low	Low	Low

Neuropsychiatr Dis Treat. 2021; 17: 453–469. Published online 2021 Feb 11. doi: 10.2147/NDT.S294521

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ADDING MEDS TO ATYPICALS

- Aripiprazole 5-15mg daily
- Metformin 500-2000mg daily

Neuropsychiatr Dis Treat. 2021; 17: 453–469. Published online 2021 Feb 11. doi: 10.2147/NDT.S294521
Schizophr Bull. 2014;**40**(6):1385–1403. doi: 10.1093/schbul/sbu030

SWITCHING ANTIPSYCHOTICS

- Improvement in metabolic parameters:
  - Amisulpride (2 studies)
  - Aripiprazole (6 studies)
  - Lurasidone (2 studies)
  - Ziprasidone (5 studies)
- No deterioration in psychotic symptoms
- High discontinuation rates

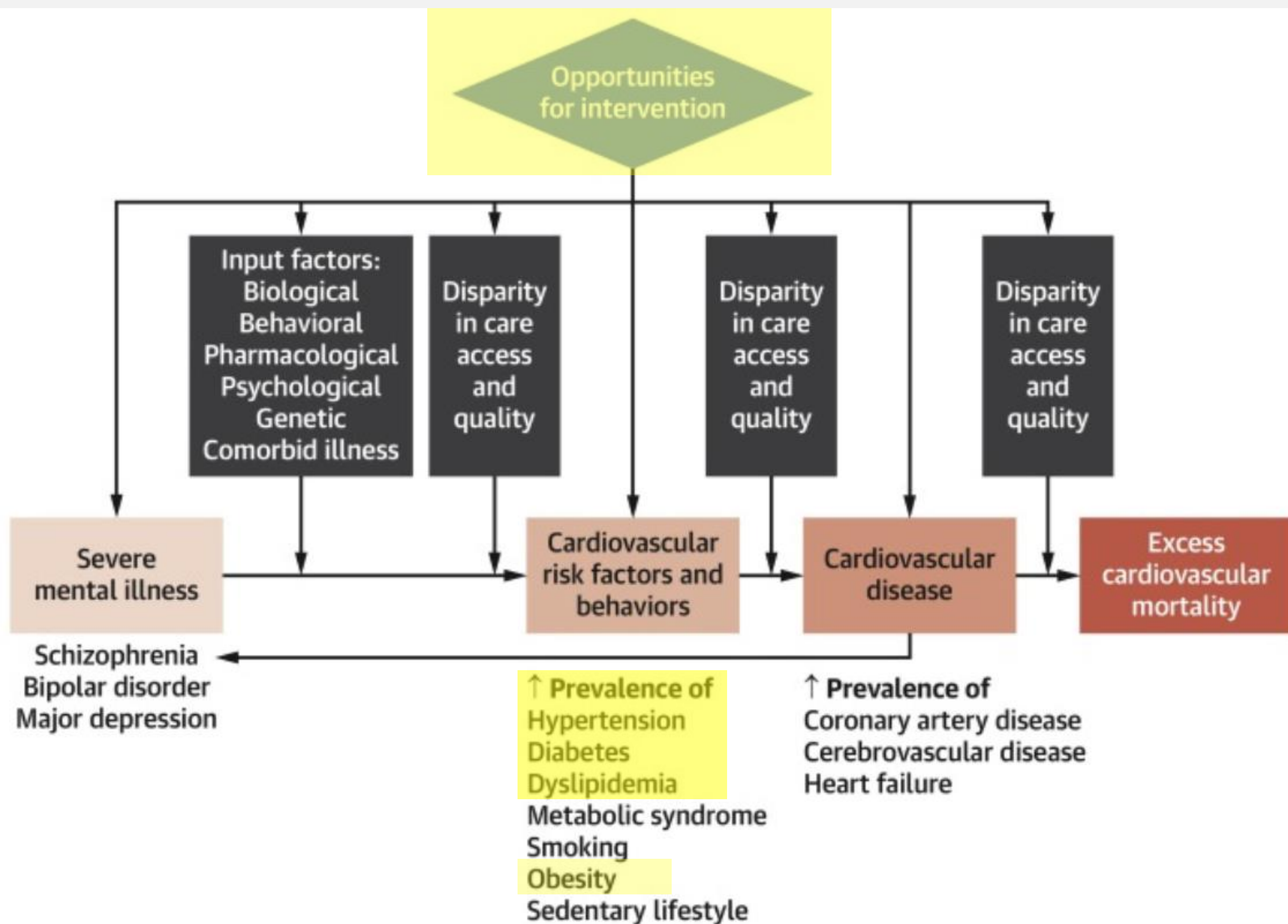
Neuropsychiatr Dis Treat. 2021; 17: 453–469. Published online 2021 Feb 11. doi: 10.2147/NDT.S294521

OTHER PSYCHOTROPICS AND METABOLIC CHANGES

- Antidepressants: TCAs
- Mood stabilizers: Valproic Acid

Eur J Investig Health Psychol Educ. 2023 Aug; 13(8): 1505–1520. Published online 2023 Aug 12. doi: 10.3390/ejihpe13080110

OTHER PSYCHOTROPICS AND METABOLIC CHANGES



Goldfarb M, et al. J Am Coll Cardiol. 2022;80(9):918-933.

SCREENING: ATYPICALS

	Baseline	4 weeks	8 weeks	12 weeks	Quarterly	Annually	Every 5 years
Personal/family history	X					X	
Weight (BMI)	X	X	X	X	X		
Waist circumference	X					X	
Blood pressure	X			X		X	
Fasting plasma glucose	X			X		X	
Fasting lipid profile	X			X			X

Diabetes Care. 2004;27(2):596–601

LIPID SCREENING

- **Once at age 20, then:**
  - **Higher Risk**: men 25-30, women 30-35

HTN	DM2
Fam hx CVD	Tob Use

  - **Lower Risk:** men 35, women 45
  - **If no evidence of ASCVD:** every 4-6 years

HTN SCREENING

- Age 40, every 3-5 years
- If increased risk, at age 18, annually
  - Black, overweight or obese

DIABETES SCREENING

  - Age 45 OR
  - Age 18 if overweight/obese
- Every 3 years is normal; q6-12 months if abnormal

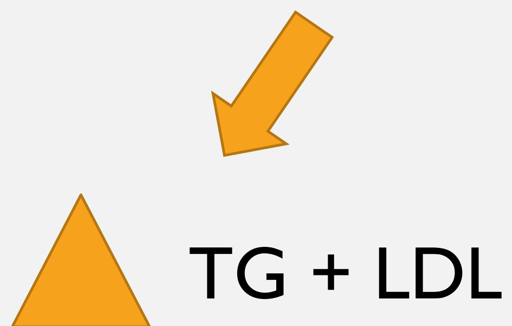
Diabetes Care 2015;38(suppl):S8-S16.

SUMMARY OF WHEN TO SCREEN

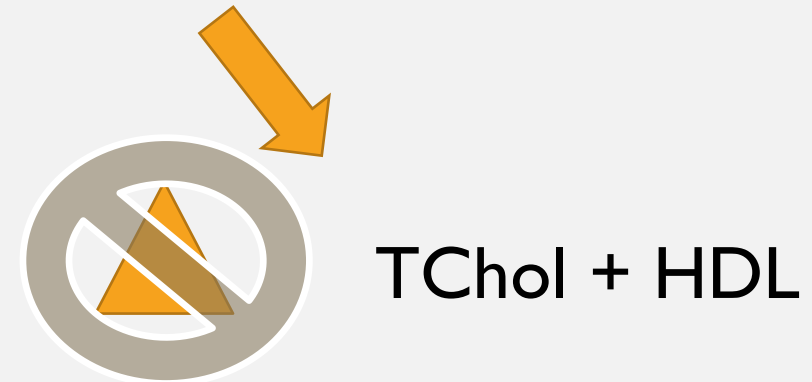
- Lipids: Age 20, then every 5 years if normal
- BP: Age 18, then annually if normal
- Blood glucose/A1c: Age 18, every 3-5 years if normal

A WORD ON TREATMENT

DYSLIPIDEMIA: FASTING V NON-FASTING LABS



TG + LDL



TChol + HDL

NON-HDL CHOLESTEROL

Non-HDL Cholesterol = T Chol – HDL

LDL ≈ Non HDL Cholesterol – 30

TREATMENT: PRIMARY PREVENTION OF CVD

STATINS

TREATMENT: LDL AND PRIMARY PREVENTION OF CVD

- (fasting) LDL ≥ 190 → STATIN (high intensity)
- (fasting) LDL ≥ 70 and < 190:
  - DM2 and age 40-75 → STATIN (high intensity)
  - No DM2 and age 40-75 → RISK STRATIFICATION

J Am Coll Cardiol. 2019;73(24):e285. Epub 2018 Nov 10.

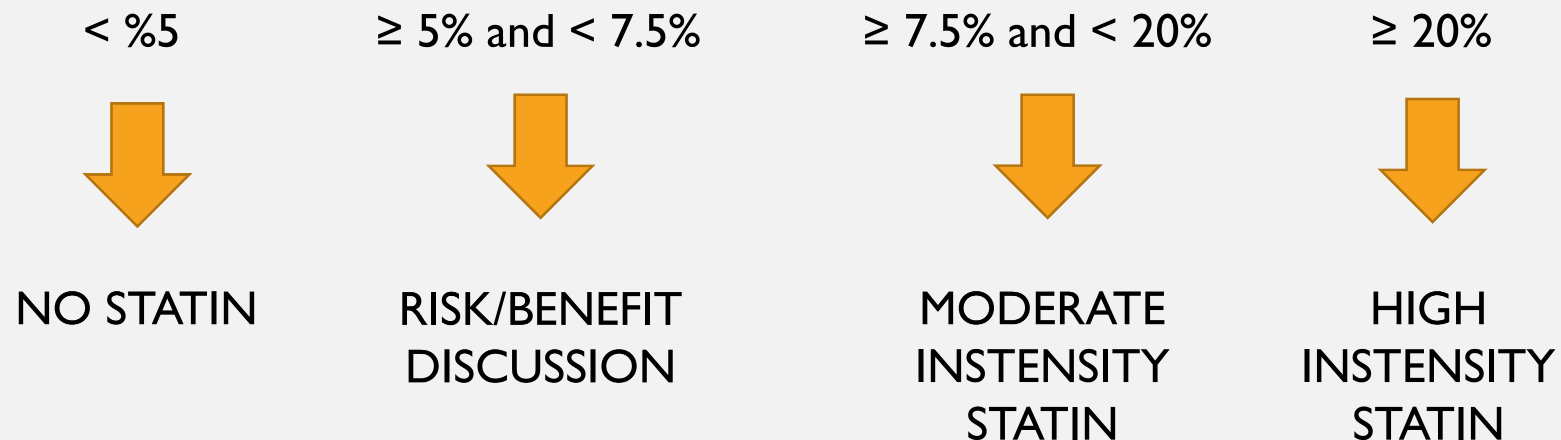
ASCVD RISK STRATIFICATION

https://www.cvriskcalculator.com/

Age (years)	40-79
Gender	◉ Male ○ Female
Race	○ African American ◉ Other
Total cholesterol (mg/dL)	130-320
HDL cholesterol (mg/dL)	20-100
Systolic blood pressure (mmHg)	90-200
Diastolic blood pressure (mmHg)	30-140
Treated for high blood pressure	◉ No ○ Yes
Diabetes	◉ No ○ Yes
Smoker	◉ No ○ Yes

ASCVD RISK STRATIFICATION: NO DM2

10-year ASCVD Risk:



J Am Coll Cardiol. 2019;73(24):e285. Epub 2018 Nov 10.

ASCVD RISK STRATIFICATION: DM2

10-year ASCVD Risk:

< 7.5%

MODERATE INSTENSITY STATIN

≥ 7.5%

HIGH INSTENSITY STATIN

J Am Coll Cardiol. 2019;73(24):e285. Epub 2018 Nov 10.

STATIN DOSING

	High Intensity	Moderate Intensity	Low Intensity
LDL reduction	≥50%	30%–49%	<30%
	Atorvastatin (40 mg‡) 80 mg **Rosuvastatin 20 mg (40 mg)**	**Atorvastatin 10 mg** (20 mg) **Rosuvastatin** (5 mg) **10 mg** **Simvastatin 20–40 mg§**	Simvastatin 10 mg
	…	**Pravastatin 40 mg** (80 mg)	**Pravastatin 10–20 mg**

MONITORING ON STATIN

- Check fasting LDL 6-8 weeks after initiating therapy to assess for efficacy and adherence
    - High intensity → 50%
    - Moderate intensity → 30%
- Monitor thereafter annually to assess adherence

STATIN SIDE EFFECTS

- 5-20%: Myalgias
  - Check CK if severe pain or weakness
  - Discontinue statin until pain resolves, then reintroduce

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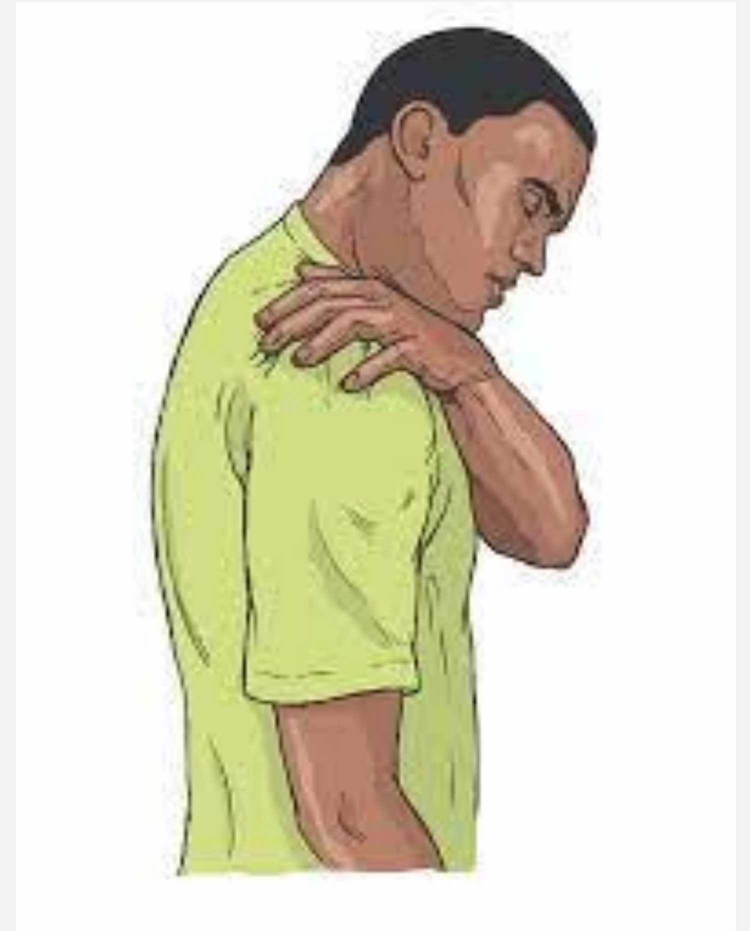


DIABETES: DIAGNOSIS

	Normal	Prediabetes	Diabetes
Hemoglobin A1c	< 5.7%	5.7% - 6.4%	≥ 6.5%
Fasting Plasma Glucose	< 100 mg/dL	100 - 125 mg/dL	≥ 126 mg/dL
Oral Glucose Tolerance	< 140 mg/dL	140 - 199 mg/dL	≥ 200 mg/dL

Diabetes Care 2015;38(suppl):S8-S16.

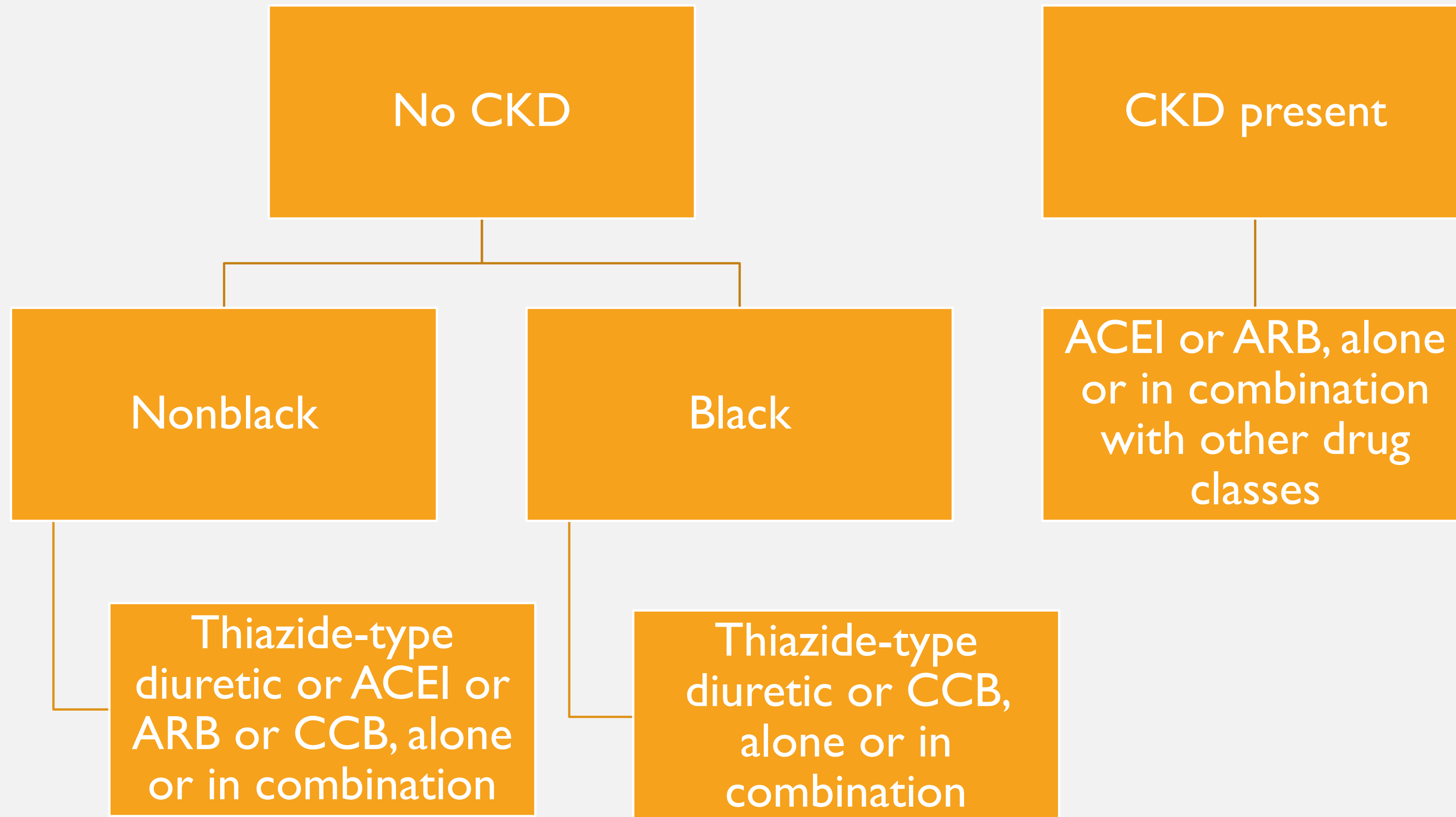
DIABETES TREATMENT

- Metformin is first line
- Start 500mg qday to bid
- Expect GI side effects
- Don’t use if GFR less than 45

HTN DX

BP 130/80 or higher on 3 or more readings

TREATMENT OF HTN



JAMA 2022, Vol.328(18), p.1849-1861

Antihypertensive class	Common side effects	Monitoring
Thiazide diuretic	Electrolyte disturbances, sexual dysfunction (men), orthostatic hypotension	Na, K, Cr every 3 months
ACE Inhibitors	Cough, hyperkalemia	NA, K, Cr every 3 months
Calcium Channel Blockers	Edema, headache, constipation	none

JAMA 2022, Vol.328(18), p.1849-1861

TREATMENT OF HTN

- If patient does not have CKD,

Amlodipine 5mg daily (can increase to 10mg daily)

SUMMARY

- CVD and SMI go together like peanut butter and jelly
- People with SMI die from CVD too often and too early
- Let’s change this!
  - Use motivational interviewing to encourage behavior change
  - If metabolic problems when prescribing psychotropics: consider subtracting/adding/switching
  - Screen Lipids, BP, BG in adults with SMI starting around age 18
  - Make friends with a primary care provider
  - Statins, metformin, and amlodipine are fairly easy to prescribe