PCNA
PREVENTIVE CARDIOVASCULAR NURSES ASSOCIATION

Lipid Management in 2019: Putting Evidence-Base Guidelines into Practice

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Objectives

At the end of this session, the participant will:

- Review the top ten take-home messages from the cholesterol guideline.
- Discuss recommendations for implementation of the cholesterol guideline.
- Share PCNA resources for clinicians and patients on cholesterol management

2018
AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA

Guideline on the Management of Blood Cholesterol

Grundy SM, Stone NJ, et al. 2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA Guideline on the Management of Blood Cholesterol, *Journal of the American College of Cardiology* (2018), doi: https://doi.org/10.1016/j.jacc.2018.11.003.

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American Heart Association.

2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA

Guideline on the Management of Blood Cholesterol

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Top Ten Take Home Messages

1. **In all individuals, emphasize a heart-healthy lifestyle across the life course.**
   - **Healthy lifestyle reduces ASCVD risk at all ages.**
   - **Foundation of ASCVD risk reduction**
   - **Re-emphasis on the 2013 Lifestyle Guideline**
   - **Recently released Primary Prevention Guideline**

Eckel RH et al. *Circulation* 2013;129:S76–S99
Arnett DK, Blumenthal RS et al., *Circulation* 2019; DOI: 10.1161/CIR.0000000000000678

2019 Prevention Guideline: Nutrition and Diet

- **A diet emphasizing intake of vegetables, fruits, legumes, nuts, whole grains, and fish is recommended to decrease ASCVD risk factors (I, B-R)**
- **Replacement of saturated fat with dietary monounsaturated and polyunsaturated fats can be beneficial to reduce ASCVD risk (IIa, B-NR)**
- **A diet containing reduced amounts of cholesterol and sodium can be beneficial to decrease ASCVD risk (IIa, B-NR)**

2019 Prevention Guideline: Nutrition and Diet

- As a part of a healthy diet, it is reasonable to minimize the intake of processed meats, refined carbohydrates, and sweetened beverages to reduce ASCVD risk (II, B-NR)
- As a part of a healthy diet, the intake of *trans* fats should be avoided to reduce ASCVD risk (III – Harm B-NR)

2019 Prevention Guideline: Exercise and Physical Activity

- For adults unable to meet the minimum physical activity recommendations, engaging in some moderate- or vigorous-intensity physical activity, even if less than this recommended amount, can be beneficial to reduce ASCVD risk (IIa, B-NR)
- Decreasing sedentary behavior in adults may be reasonable to reduce ASCVD (IIb, C-LD)

2019 Prevention Guideline: Exercise and Physical Activity

- Adults should be routinely counseled in healthcare visits to optimize a physically active lifestyle (I, B-R)
- Adults should engage in at least 150 minutes per week of accumulated moderate-intensity or 75 minutes per week of vigorous-intensity aerobic physical activity (or an equivalent combination of moderate and vigorous activity) to reduce ASCVD risk I, B-NR)

Top Ten Take Home Messages

2. In patients with clinical ASCVD, reduce low-density lipoprotein cholesterol (LDL-C) with high-intensity statin therapy or maximally tolerated statin therapy (I, A).
   - The more LDL-C is reduced on statin therapy, the greater will be subsequent risk reduction.
   - Use a maximally tolerated statin to lower LDL-C levels by ≥50%.

Definition of Clinical ASCVD

- Acute coronary syndrome including those with history of myocardial infarction or unstable angina
- Stable angina
- Coronary or other arterial revascularization
- Stroke or transient ischemic attack
- Peripheral artery disease including aortic aneurysm of atherosclerotic origin.

Table 3. High-, Moderate-, and Low-Intensity Statin Therapy*

	High Intensity	Moderate Intensity	Low Intensity
LDL-C lowering†	≥50%	30%–49%	<30%
Statins	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) Lovastatin 40 mg (80 mg) Fluvastatin XL 80 mg Fluvastatin 40 mg BID Pitavastatin 1–4 mg	Pravastatin 10–20 mg Lovastatin 20 mg Fluvastatin 20–40 mg

*Percent reductions are estimates from data across large populations. Individual responses to statin therapy varied in the RCTs and should be expected to vary in clinical practice (S3.2.1-2).

Top Ten Take Home Messages

3. **In very high-risk ASCVD, use a LDL-C threshold of 70 mg/dL to consider addition of nonstatins to statin therapy.**
   - **Very high-risk includes a history of multiple major ASCVD events or 1 major ASCVD event and multiple high-risk conditions.**
   - **If LDL-C level remains ≥70 mg/dL on maximally tolerated statin, reasonable to add ezetimibe (I, B-NR).**
   - **If LDL-C level remains ≥70 mg/dL on maximally tolerated statin + ezetimibe, reasonable to add PCSK9 inhibitor (IIa, A).**

High-Risk Conditions

High-Risk Conditions
Age ≥65 y
Heterozygous familial hypercholesterolemia
History of prior coronary artery bypass surgery or percutaneous coronary intervention outside of the major ASCVD event(s)
Diabetes mellitus
Hypertension
CKD (eGFR 15-59 mL/min/1.73 m^2)
Current smoking
Persistently elevated LDL-C (LDL-C ≥100 mg/dL despite maximally tolerated statin therapy and ezetimibe
History of congestive HF

Top Ten Take Home Messages

4. **In patients with severe primary hypercholesterolemia (LDL-C ≥ 190 mg/dL), begin high-intensity statin therapy (I, B-R).**
   - **No need to calculate 10-year ASCVD risk**
   - **If the LDL-C level remains ≥100 mg/dL, adding ezetimibe is reasonable (IIa, B-R).**
   - **If the LDL-C level remains ≥100 mg/dL & the patient has multiple risk factors, a PCSK9 inhibitor may be considered (IIb, B-R).**

Case Presentation

48-year-old African American woman presents to clinic for follow-up after a recent myocardial infarction

ASCVD history:
MI status/post single-vessel PCI 5 years previously
Hospitalization 3 months ago for type I non-ST-segment elevation MI with multivessel disease s/p CABG

Risk factor profile: hyperlipidemia*, diabetes mellitus, hypertension, rheumatoid arthritis
*Untreated lipid panel: TC 368 mg/dL, TG 90 mg/dL, HDL-C 43 mg/dL mg/dL, LDL-C 307 mg/dL

Case continued

The patient has been taking atorvastatin 80 mg/day, ezetimibe 10 mg/day, and participating in cardiac rehabilitation the past 3 months after her recurrent MI and bypass surgery.

Now her lipid panel shows:

TC 188 mg/dL	TG 79 mg/dL
HDL-C 43 mg/dL	LDL-C 127 mg/dL

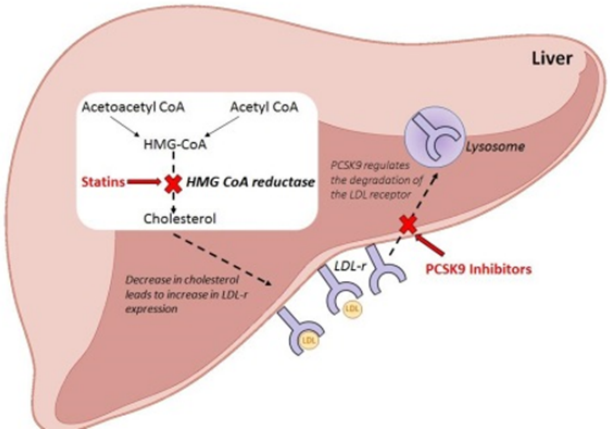
Case continued

Family history
Father had MI at age 57 and hyperlipidemia
Brother died from an MI at age 50; had hyperlipidemia
Paternal uncle died of an MI in his 40s and had hyperlipidemia

Physical Exam
Notable for bilateral corneal arcus and thickened Achilles tendons

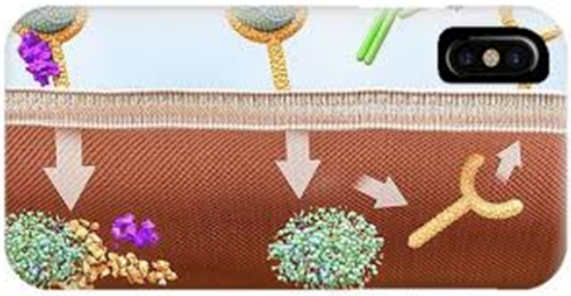
Drugs that ↓Cholesterol and ↓ ASCVD Risk in Secondary Prevention

- Statins (high intensity): inhibit HMG CoA reductase in liver and upregulate LDL receptors on hepatocyte surface



Drugs that ↓Cholesterol and ↓ ASCVD Risk in Secondary Prevention

- Ezetimibe: inhibits cholesterol absorption in the brush border of the small intestine; target is the Niemann-Pick sterol transporter
- PCSK9 inhibitors (alirocumab, evolocumab): inhibit LDL receptor destruction by PCSK9



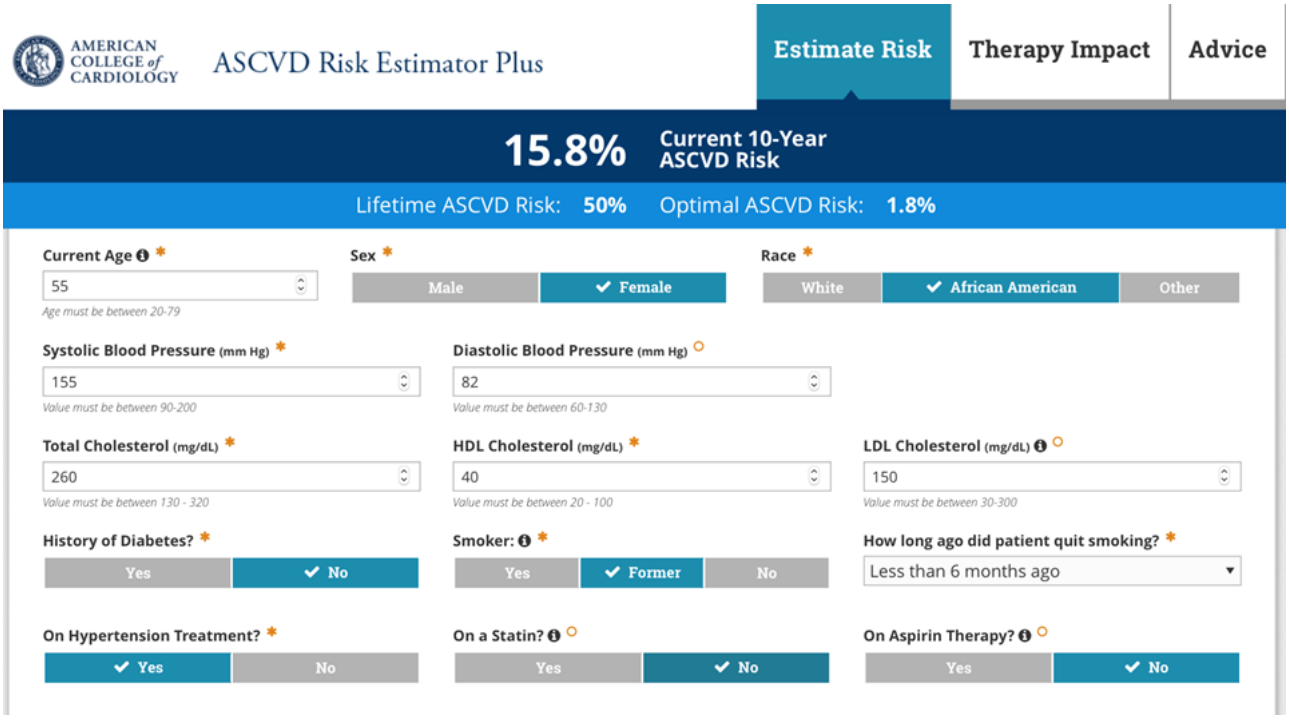
Top Ten Take Home Messages

5. In patients 40 to 75 years of age with diabetes and LDL-C ≥70 mg/dL, start moderate-intensity statin therapy without calculating 10-year ASCVD risk (I, A).

Top Ten Take Home Messages

6. In adults 40 to 75 years of age evaluated for primary ASCVD prevention, have a clinician–patient risk discussion before starting statin therapy (I, B-NR).

   Risk discussion should include:
   - Presence of major risk factors
   - 10-year ASCVD risk estimation
   - Presence of risk enhancing factors
   - Potential benefits of lifestyle and statin therapies
   - Potential for adverse effects and drug–drug interactions; consideration of costs of statin therapy
   - Patient preferences & values in shared decision-making



Top Ten Take Home Messages

7. In adults 40 to 75 years of age without diabetes and with LDL-C levels ≥70 mg/dL, at 10-year ASCVD risk of ≥7.5%, start a moderate-intensity statin if a discussion of treatment options favors statin therapy (I, A).

Top Ten Take Home Messages

8. In adults 40 to 75 years of age without diabetes and 10-year risk of 7.5% to 19.9% (intermediate risk), risk-enhancing factors favor initiation of statin therapy (IIa, B-R).

Risk Enhancing Factors

- Family history of premature ASCVD
- Persistently elevated LDL-C levels ≥160 mg/dL
- Metabolic syndrome
- Chronic kidney disease
- History of preeclampsia or premature menopause (age <40 yrs)
- Chronic inflammatory disorders (e.g., rheumatoid arthritis, psoriasis, or chronic HIV)
- High-risk ethnic groups (e.g., South Asian)
- Persistent elevations of triglycerides ≥ 175 mg/dL

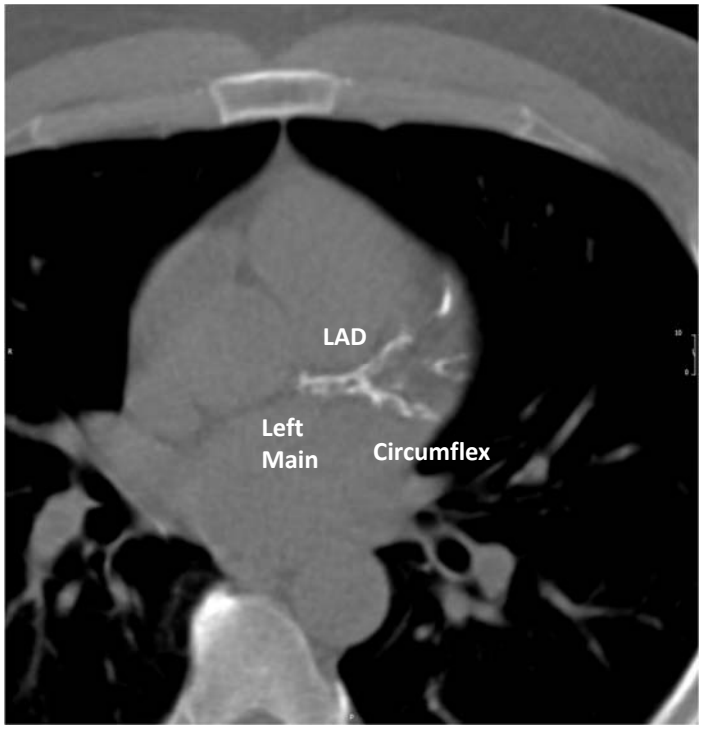
Risk Enhancing Factors

<u>If measured in selected individuals:</u>

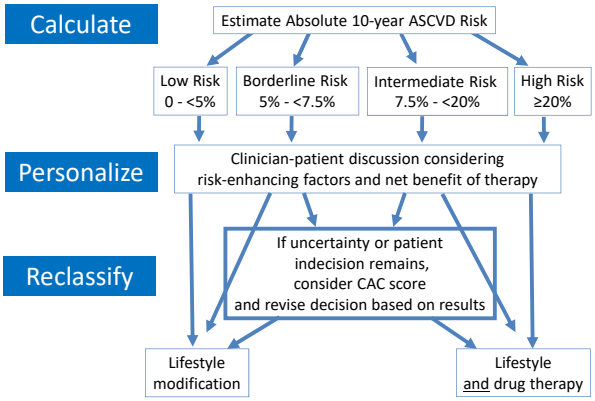
- Apolipoprotein B ≥130 mg/dL
- High-sensitivity C-reactive protein ≥2.0 mg/L
- Ankle-brachial index <0.9
- Lipoprotein (a) ≥50 mg/dL or 125 nmol/L, especially at higher values of lipoprotein (a)

Top Ten Take Home Messages

9. In adults 40 to 75 years of age without diabetes and with LDL-C levels ≥70 mg/dL-189 mg/dL, at a 10-year ASCVD risk of ≥7.5% to 19.9%, if a decision about statin therapy is uncertain, consider measuring coronary artery calcium (CAC) (IIa, B-NR).
   - If CAC is zero, treatment with statin therapy may be withheld or delayed, except in cigarette smokers, those with diabetes mellitus, and those with a strong family history of premature ASCVD.
   - A CAC score above 0 favors statin therapy.



Approach to Risk Assessment in 1º Prevention: CPR



Credit: DLJ

Top Ten Take Home Messages

10. **Assess adherence and percentage response to LDL-C–lowering medications and lifestyle changes with repeat lipid measurement 4 to 12 weeks after statin initiation or dose adjustment, repeated every 3 to 12 months as needed.**
    - **Responses to lifestyle and statin therapy are defined by percentage reductions in LDL-C levels compared with baseline.**

Case Example

Your patient is a 50-year old woman with newly diagnosed type 2 diabetes and HTN. She agrees to start atorvastatin 20 mg daily and to start a lifestyle program. You counsel her on a program adapted from the DPP.

- Baseline LDL-C: 144 mg/dL
- 2 mo. repeat LDL-C: 86 mg/dL (40% LDL-C reduction); patient hasn't started lifestyle program yet but intends to.
- LDL-C 4 mo. later after rigorous diet and exercise program: 72 mg/dL (additional 16% LDL-C reduction or 50% from baseline)

Additional Guideline Content

- Children and adolescents
- Other populations at risk
  - Ethnicity/race: Asian Americans, Hispanic/Latino Americans, Blacks
  - Adults with CKD
  - Adults with chronic inflammatory disorders and HIV
- Women
- Hypertriglyceridemia
- CKD
- Statin-safety and statin-associated side effects
- Implementation
- Cost and value considerations

Guideline Implementation

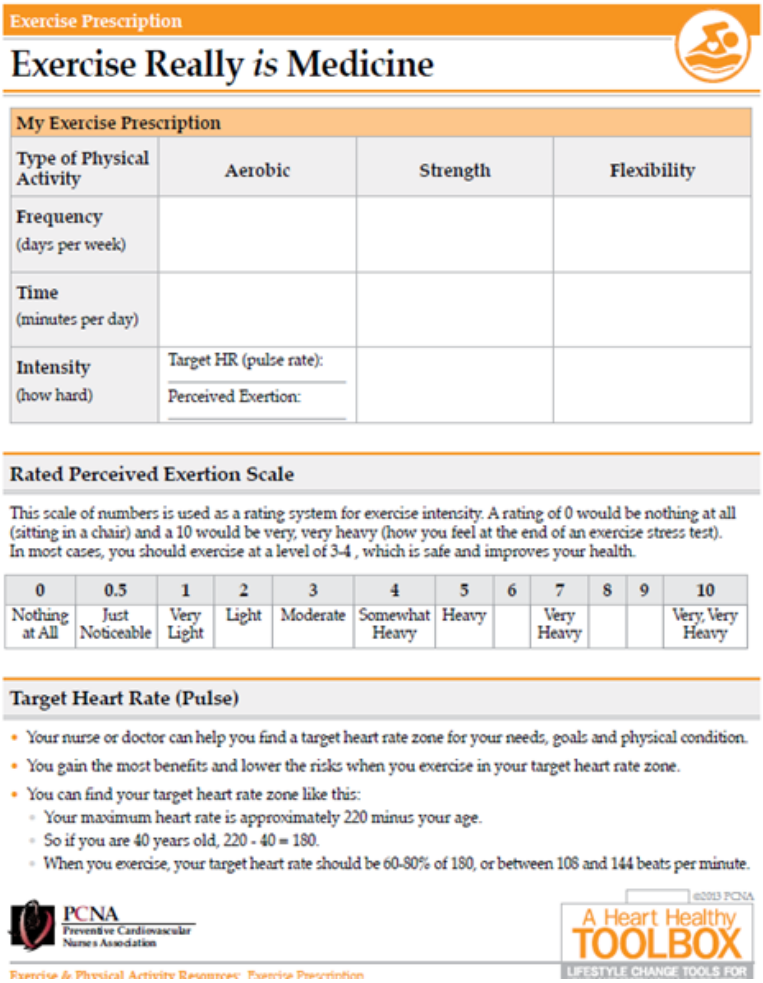
- Need for multifaceted strategies: patient, clinician, health system, health plan
- Clinician-patient discussion and shared decision-making
  - Effective communication is crucial
  - Encourage pt to state what was heard, ask questions, express values/preferences, state ability to adhere to lifestyle changes and medications
  - Discuss potential for ASCVD risk reduction benefit, adverse effects, drug-drug interactions, patient preferences
- Interventions to foster adherence:
  - Telephone reminders, calendar reminders, multidisciplinary educational activities, simplification of drug regimen, team-based care
- Identification of patients not receiving guideline-directed medical therapy; plan for addressing this problem

Guideline Supplement, Table S7

Conclusions/Implications for Clinicians

- 2018 Cholesterol Guideline is comprehensive, yet "user-friendly", and allows for a more tailored approach to primary prevention of ASCVD.
- Clinicians should become familiar with the 10 take-home messages and where to locate other key information in the guideline.
- All clinicians play an important role in the clinician-patient discussion:
  - respond to questions after a prescription is given, clarify information, address adverse effects, communicate with pharmacist, etc.
  - key clinicians in lifestyle counseling and providing patient with PCNA resources
- All clinicians are well-positioned to conduct educational and QI projects that facilitate guideline implementation.

PCNA Lifestyle Counseling Tools



Exercise Prescription

Exercise Really *is* Medicine

My Exercise Prescription			
Type of Physical Activity	Aerobic	Strength	Flexibility
Frequency (days per week)			
Time (minutes per day)			
Intensity (how hard)	Target HR (pulse rate): ___ Perceived Exertion: ___		

Rated Perceived Exertion Scale

This scale of numbers is used as a rating system for exercise intensity. A rating of 0 would be nothing at all (sitting in a chair) and a 10 would be very, very heavy (how you feel at the end of an exercise stress test). In most cases, you should exercise at a level of 3-4 , which is safe and improves your health.

0	0.5	1	2	3	4	5	6	7	8	9	10
Nothing at All	Just Noticeable	Very Light	Light	Moderate	Somewhat Heavy	Heavy		Very Heavy			Very, Very Heavy

Target Heart Rate (Pulse)

- Your nurse or doctor can help you find a target heart rate zone for your needs, goals and physical condition.
- You gain the most benefits and lower the risks when you exercise in your target heart rate zone.
- You can find your target heart rate zone like this:
  - Your maximum heart rate is approximately 220 minus your age.
  - So if you are 40 years old, 220 - 40 = 180.
  - When you exercise, your target heart rate should be 60-80% of 180, or between 108 and 144 beats per minute.

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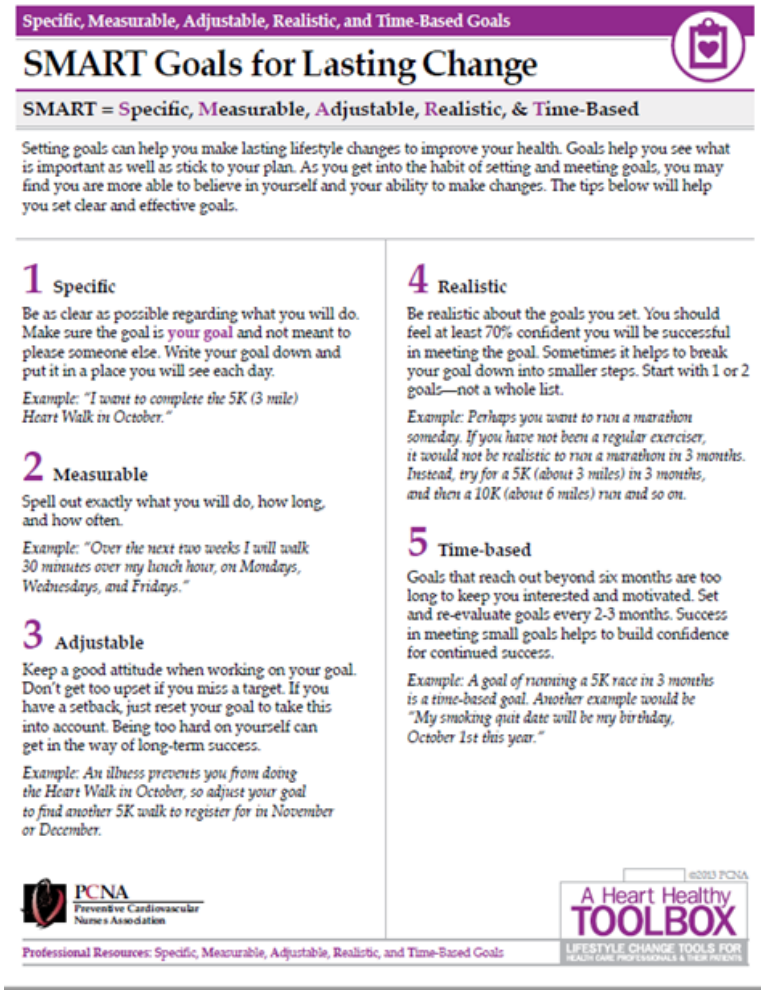
Exercise & Physical Activity Resources: Exercise Prescription



Specific, Measurable, Adjustable, Realistic, and Time-Based Goals

SMART Goals for Lasting Change

SMART = Specific, Measurable, Adjustable, Realistic, & Time-Based

Setting goals can help you make lasting lifestyle changes to improve your health. Goals help you see what is important as well as stick to your plan. As you get into the habit of setting and meeting goals, you may find you are more able to believe in yourself and your ability to make changes. The tips below will help you set clear and effective goals.

1 Specific

Be as clear as possible regarding what you will do. Make sure the goal is your goal and not meant to please someone else. Write your goal down and put it in a place you will see each day.

Example: "I want to complete the 5K (3 mile) Heart Walk in October."

2 Measurable

Spell out exactly what you will do, how long, and how often.

Example: "Over the next two weeks I will walk 30 minutes over my lunch hour, on Mondays, Wednesdays, and Fridays."

3 Adjustable

Keep a good attitude when working on your goal. Don't get too upset if you miss a target. If you have a setback, just reset your goal to take this into account. Being too hard on yourself can get in the way of long-term success.

Example: An illness prevents you from doing the Heart Walk in October, so adjust your goal to find another 5K walk to register for in November or December.

4 Realistic

Be realistic about the goals you set. You should feel at least 70% confident you will be successful in meeting the goal. Sometimes it helps to break your goal down into smaller steps. Start with 1 or 2 goals—not a whole list.

Example: Perhaps you want to run a marathon someday. If you have not been a regular exerciser, it would not be realistic to run a marathon in 3 months. Instead, try for a 5K (about 3 miles) in 3 months, and then a 10K (about 6 miles) run and so on.

5 Time-based

Goals that reach out beyond six months are too long to keep you interested and motivated. Set and re-evaluate goals every 2-3 months. Success in meeting small goals helps to build confidence for continued success.

Example: A goal of running a 5K race in 3 months is a time-based goal. Another example would be "My smoking quit date will be my birthday, October 1st this year."

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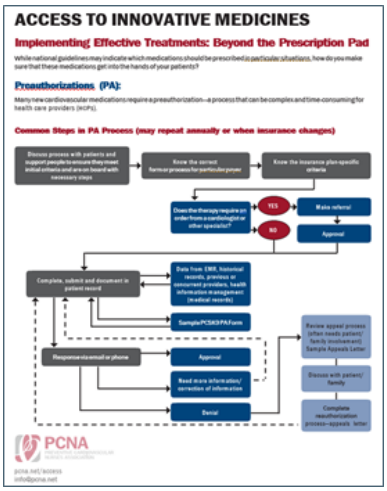
Professional Resources: Specific, Measurable, Adjustable, Realistic, and Time-Based Goals

Clinical Tools

For you and your patients!



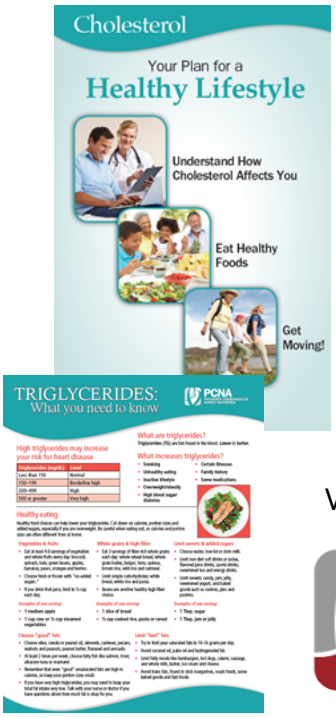
ACCESS TO INNOVATIVE MEDICINES

Implementing Effective Treatments: Beyond the Prescription Pad

Preauthorizations (PA):

Common Steps in PA Process (may repeat annually or when insurance changes)

PCNA



Cholesterol

Your Plan for a Healthy Lifestyle

Understand How Cholesterol Affects You

Eat Healthy Foods

Get Moving!

TRIGLYCERIDES: What you need to know

PCNA

Thank You!

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