

Testing for Prevention to Provide More Informed Care

Dr. Jonathan Goodman

CNPA 2014

Welcome Everyone!

- My goal is to share what I am learning about the increased emphasis on prevention in the Affordable Care Act and how we can use this emphasis to be reimbursed fully for providing top-notch preventive care
- As NDs we are the best at getting detailed mental/emotional/spiritual/physical assessments and providing individualized solutions.

Outline

1. Prevention emphasis in ACA
2. Ways to code preventive encounters with zero cost sharing
3. Treatment of obesity using established behavioral therapy codes
4. Metabolic testing to support weight management services

Outline

5. Boston Heart Diagnostics Testing to Support Comprehensive Cardiovascular Disease Prevention and Management
6. Home Sleep Testing: going with the flow to screen for Sleep Apnea
7. Critical Care Assessment: digging deeper to find the cause

Prevention

- Affordable Care Act has changed the economics of medicine
- Now many preventive services are covered dollar one without “cost sharing” – i.e., deductibles, copays or coinsurance
- Services rated “A” or “B” – by PSTF

Prevention

- Services are many and include screening lab tests, imaging studies, behavioral modification, vaccination, and preventive E and M.
- Modifier -33 when appended to a service that can also be diagnostic removes the cost share. The appropriate ICD-9 then needs to be used.

<http://www.aapc.com/memberarea/forums>

Prevention

- Modifier -33 not needed when doing an inherently preventive service – vaccinations, gyn exam, annual preventive visit. No cost sharing
- Codes for preventive E and M: 99381-99387 for new patients. 99391-99397 for existing. If vaccines indicated need to order. EKG/Echo are extra. Some docs throw ekg in as part of the visit.
- These E and M procedures are comprehensive and include a full hx and PE along with labs and risk factor reduction. Again, no cost sharing

Prevention

- 99401-99404 Preventive medicine to promote health
- Diet and exercise for obesity, hyperlipidemia
- Tobacco cessation, substance abuse
- Can't bill with preventive E and M. "Double Dipping"

Prevention

- 99406-99412 – for Behavior change interventions
- Tobacco use
- Addiction
- Obesity
- To treat conditions exacerbated by behavior
- Or change behavior before illness results
- All these use “V” codes

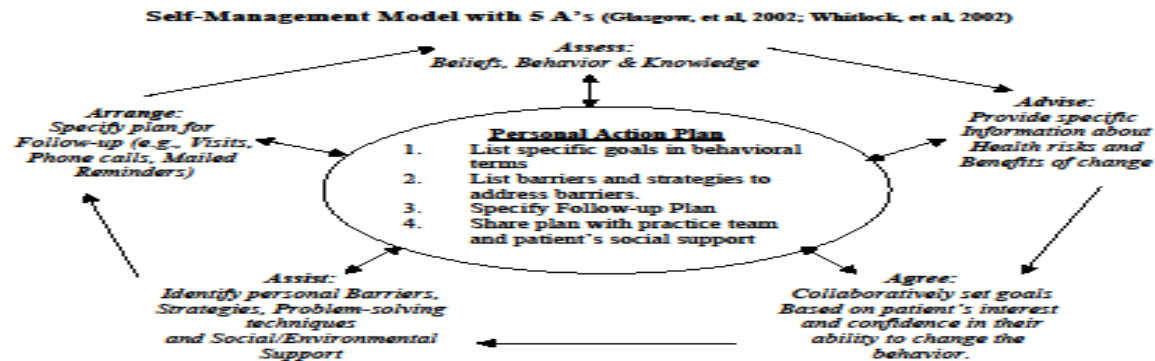
Treating Obesity

- Many insurances (Medicare guidelines) allow up to 22 visits a year.
- BMI > 30
- Patient has to lose 3 kg at six months to continue
- G0447 is listed as 15 minutes at a clip
- Intensive behavioral therapy for obesity

<http://www.cms.gov/outreach-and-education/medicare-learning-network-mln/mlnproducts/downloads/icn907800.pdf>

5 A's Approach

5 A's Behavior Change Model Adapted for Self-Management Support Improvement



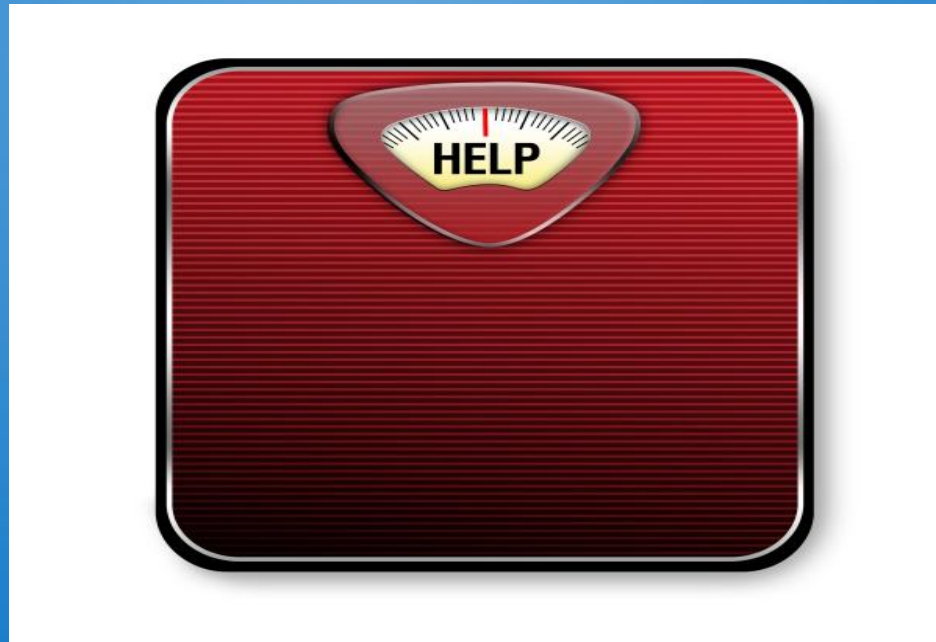
Improvement Goal: All chronic illness patients will have a Self-Management (SM) Action Plan informed by and including all the 5 A's elements (Assess, Advise, Agree, Assist, Arrange). The 5 A's Behavior Change Model is intended for use with the Improving Chronic Illness Care Chronic Care Model (CCM).

Ideas are for teams to test in their own setting. Add to this list as you experiment with PDSA cycles and hear about strategies that have worked well for other teams.

http://www.improvingchroniccare.org/downloads/3.5_5_as_behavior_change_model.pdf

Testing Metabolic Rate

- Why test metabolic rate?
 - Establish a baseline as patient loses weight
 - If reaches plateau and retest, can adjust caloric intake



Testing Metabolic Rate

- What is RMR or REE?
- Resting Metabolic Rate or Resting Energy Expenditure
- Measure calories burned at rest
- Expressed as calories burned per day
- Patient minimum 4 hours fasting, no caffeine or exercise

Testing Metabolic Rate

- Indirect Calorimetry is technique
- 1 calorie burned = 208.06 ml O₂



Testing Metabolic Rate

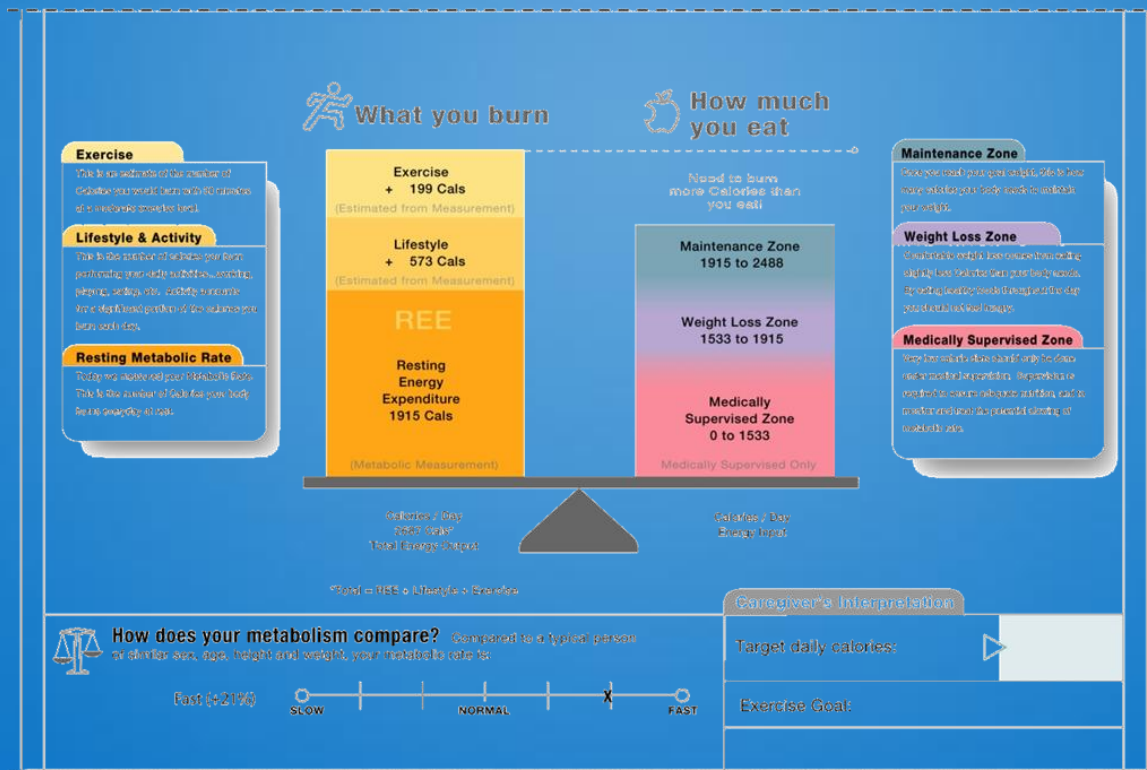
“Oxygen uptake requires a precise measurement of the volume of expired air and of the concentrations of oxygen in the inspired and expired air.

The process requires that all of the air a person breathes out be collected and analyzed while they rest quietly. The KORR™ indirect calorimeters contain a precision air flow sensor that measures the volume of expired air, and an oxygen sensor that measures the concentration of oxygen.”

<http://korr.com/about/rmr-v02max/>

Testing Metabolic Rate

- Test takes 10 minutes
- Report is printed using age, height, weight.



Testing Metabolic Rate

- REE reflects resting energy expenditure or RMR. Added to calories burned from daily activities and estimated calories burned in ½ hour of moderate exercise
- Yields total daily energy expenditure
- REE is compared to “normal” person adjusted for age, weight, gender, height

<http://korr.com/about/rmr-v02max/>

Testing Metabolic Rate

- Idea is to consume 500-1000 fewer calories than this total to lose 1-2 lbs a week
- Patient is given a caloric target in “weight loss zone”
- Prescription is followed up on
- Can be retested 4 times a year

Testing Metabolic Rate

- Advantage for patient is to know how many calories he/she burns
- Takes away “mysticism” of weight loss
- With this information can customize eating plan

Testing Metabolic Rate

- One patient, FN 64 yo female BMI 31 tested baseline REE 1943. Retested 6 months later no weight change no dietary change EXACT same REE.
- If nothing changes, nothing changes

Testing Metabolic Rate

- Is a calorie a calorie?
- Research shows very low carb (10%) and low glycemic (40%) burn more calories than isocaloric low fat diet (60%).
- Differences up to 300 kcal per day total energy expenditure
- No differences among groups in hunger levels
- *JAMA*. 2012;307(24):2627-2634.

Testing Metabolic Rate

- T3 levels highest in low fat diet
 - Thought that leptin sensitivity drives energy efficiency
 - Insulin lowest in lowest carb diets
 - Cortisol and CRP moderately higher in lowest carb group
 - CRP level low in all three groups.
- *JAMA*. 2012;307(24):2627-2634. doi:10.1001/jama.2012.6607

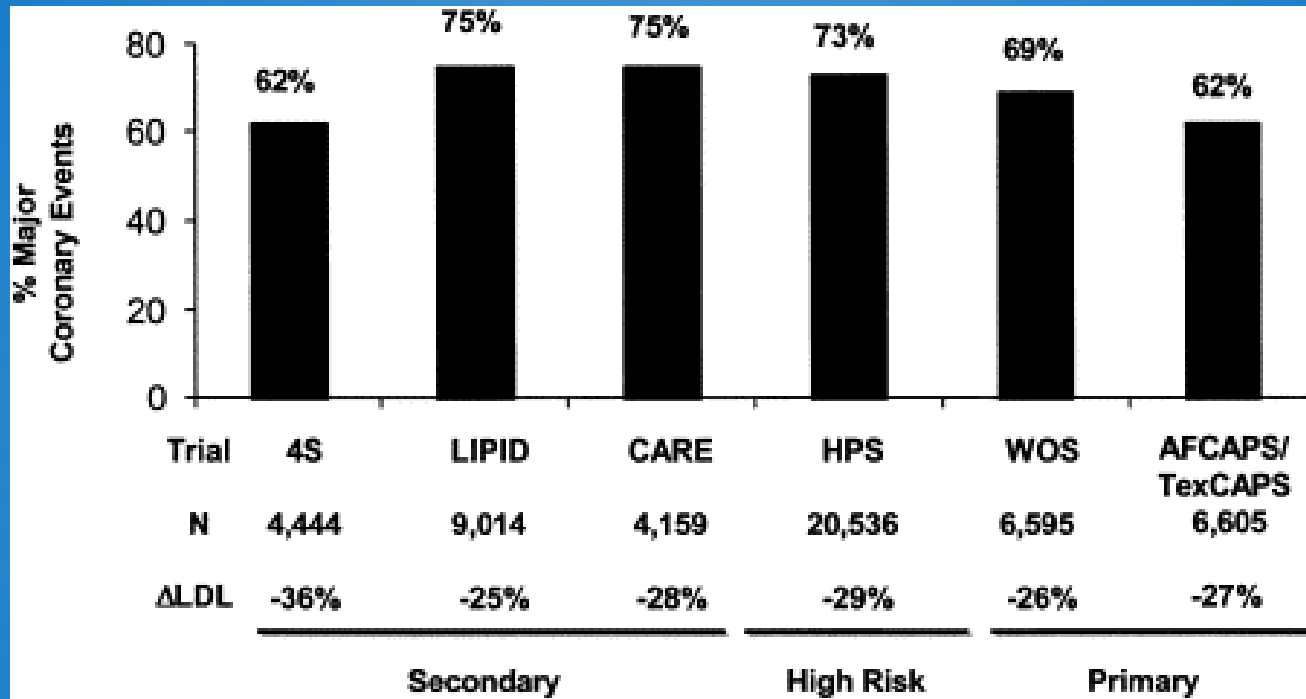
Conclusion

- REE Measurement gives you non-invasive way to develop weight management strategies for patients
- Testing every three months can help to increase effectiveness of long-term weight management
- Can adjust macronutrient ratios to optimize metabolism

Advanced Testing for CVD Risk

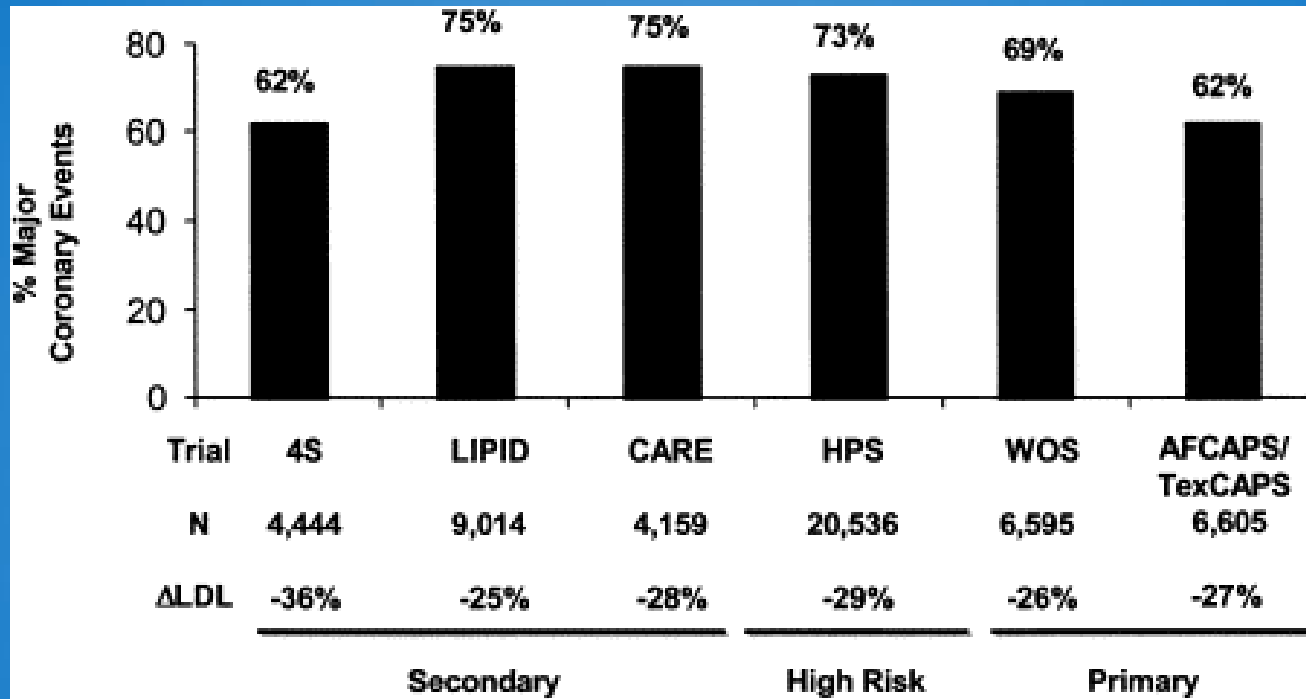
- Why subject patients to more detailed CVD risk testing?
- Studies show in spite of LDL lowering, majority of residual risk for CVD remains.
- So basic lipid panel is only showing part of the story
- Getting LDL and TC to goal is not nearly the whole story

Residual Risk Remains



Percentage of patients experiencing major coronary events, according to several large outcomes studies. AFCAPS/TexCAPS = Air Force Coronary Atherosclerosis Prevention Study/Texas Coronary Atherosclerosis Prevention Study; CARE = Cholesterol And Recurrent Events trial; 4S = Scandinavian Simvastatin Survival Study; HPS = Heart Protection Study; LIPID = Long-term Intervention with Pravastatin in Ischemic Disease study; WOS = West of Scotland Coronary Prevention Study.

Residual Risk Remains



. Adapted from Kato H, et al. Am J Epidemiol 1973;97:372–85; HPS Collaborative Group. Lancet 2002;360:7–22; and LaRosa JC, et al. JAMA 1999;282:2340–6.

- <http://dx.doi.org/10.1016/j.jacc.2005.07.006>

Residual Risk Remains


- We owe it to our patients to give them the whole story
- Our job is to inform, patients can do whatever they want with info
- Gives ND an opportunity to engage patient in improving CVD risk
- Tool I use is Boston Heart Diagnostics
- Using since 2012.

Boston Heart Diagnostics

- Idea of test is to give comprehensive CVD risk analysis in one set of tests
- 5 tubes are drawn
- Clinical Lab Partners (HHC) treats as in their network, will draw, process and send fedex
- Get report in mail in about 2 weeks
- NO medicare
- Connecticare has raised fuss about it

Boston Heart Diagnostics

- Sample report:



Patient Name: [REDACTED]
 Patient ID: 805 [REDACTED]

Accession No: 63768307
 Report Date & Time: 05/12/2014 07:57 AM
FINAL REPORT
 2 for complete interpretations.

Cumulative reports are for comparison purposes only. Refer to Patient Progress Report

	02/01/2013	Follow Up	02/01/2013	Follow Up	Change
○ Boston Heart HDL Map™					
α-1	40.4	32.7	-7.7		
α-2	65.4	77.6	12.2		
α-3	19.7	25.4	5.7		
α-4	12.0	20.9	8.9		
Preβ-1	6.8	8.2	1.4		
○ Boston Heart Cholesterol Balance™					
Lathosterol	190	523	333.0		
Desmosterol		87			
Beta-Sitosterol	131	170	39.0		
Campesterol	117	149	32.0		
Lipid, Lipoprotein and Apolipoprotein Tests					
Total Cholesterol	203	220	17.0		
Direct LDL-C	134	150	16.0		
HDL-C	61	63	2.0		
Triglycerides	66	93	27.0		
Non-HDL-C	142	157	15.0		
ApoB	133	115	4.0		
LDL-P ²		1634			
sdLDL-C ¹	22	30	3.0		
% sdLDL-C	20	20	0.0		
VLDL-C	8	7	-1.0		
Lp(a)	<15	<15			
ApoA-I	158.9	171.8	12.9		
Lipid Ratios					
TC/HDL-C	3.3	3.5	0.2		
VLDL-C/TG	0.12	0.08	0.0		
ApoB/ApoA-I	0.70	0.7	0.0		
HDL-C/TG	0.92	0.68	-0.2		
Diabetes Tests					
HbA1c	5.5	5.3	-0.2		
HOMA-IR		1.8			
Glucose ²	103	97	-6.0		
GSP		243			
Adiponectin		5.0			
Insulin ²	8	8	0.0		
Inflammation Tests					
Fibrinogen	381	332	-49.0		
hs-CRP	0.4	0.4	0.0		
LpPLA ₂	188	179	-9.0		
MPO		147			
Liver, Kidney, Muscle, Thyroid and Other Tests					
AST	36	27	-9.0		
ALT	31	24	-7.0		
Alkaline Phosphatase	55	48	-7.0		
Creatine Kinase (CK)	119	141	22.0		
BUN/Creatinine		14.3			
NT-proBNP	37	33	-4.0		
Uric Acid	5.7	6.5	0.8		
Homocysteine	8.6	9.6	1.0		
eGFR / Non-African American		85			
eGFR / African American		99			
BUN	14.5	13.6	-0.9		
TSH	2.36	1.78	-0.6		
Creatinine	0.9	0.95	0.1		
Albumin		4.6			
Vitamin D, 25-OH	64	70	6.0		
Clinician Notes					
Specimen: Acceptable					

Notes

¹ This test was developed and its performance characteristics determined by Boston Heart Diagnostics. It has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance is not necessary. This test is used for clinical purposes. It should not be regarded as investigational or for research.

² A fasting glucose level of >125 mg/dL indicates the presence of diabetes mellitus, and a fasting glucose level of <70 mg/dL indicates hypoglycemia.

³ An insulin test result <5 µU/mL is normal in a non-diabetic, but low if the patient has diabetes (consistent with Type 1 diabetes).

⁴ Genetic analysis is performed by real time Polymerase Chain Reaction (PCR) using TaqMan[®] probes. Amplified gene nucleotide sites: ApoE - Apolipoprotein E, T471C rs429358, G608T rs7412, F5 - Coagulation Factor V, G1746A rs6025, F2 - Coagulation Factor 2, G20210A rs1799963, CYP2C19 (Etoposide response) - Cytochrome P450 2C19, G681A rs424475, G936A rs4988853, C 803T rs12248560, SLC61B1 (Statin N-ypodily) - Solute Carrier Organic Anion Transporter Family, Member 1B1, T625C rs4149056. Limitations: Other rare mutations not detected by these assays may be present in some individuals.

⁵ High Risk further stratified: 1300-3599 Borderline High / 1600-2000 High / >2000 Very High [pmol/L].

▲ = Critical Value, ▲ = Alert Value, TNP=Test Not Performed

CLIA#: 2201983641 NYSDO#: 8729 175 Crossing Blvd., Suite 100
 BHD-REP-MALE-063.04 Framingham, MA 01702, 508.877.9711

Ernst J. Scheifer, M.D.
 Laboratory Director

Ernst J. Scheifer
















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Boston Heart Diagnostics

- HDL Map
- Shows particle type
- Alpha-1 is most protective HDL particle type
- 1 mg/dl increase leads to 26% reduction in CVD risk
- Pre beta 1 is “bad” HDL, blocks efflux of cholesterol from tissue, associated with increased CVD risk

- Asztalos et al. *Arterioscler Thromb Vasc Biol.* 2004;24(11):2181-2187
- [Curr Opin Lipidol.](#) 2012 Aug;23(4):367-71.

Abnormal HDL Map with Very Low α -1 HDL Particles

Boston Heart HDL Map™ Tests ¹						
ApoA-I (mg/dL) levels in HDL particles	Optimal	Borderline	High Risk	HDL Particles	Optimal Male HDL Map	Patient's HDL Map
α-1			9.1			
Range	>20	14-20	<14 mg/dL			
α-2		45.3				
Range	>55	45-55	<45 mg/dL			
α-3			31.7			
Range	<25	25-30	>30 mg/dL			
α-4		16.2				
Range	<15	15-18	>18 mg/dL			
Preβ-1		14.6				
Range	<10	10-15	>15 mg/dL			

Interpretation: This HDL map is **ABNORMAL** and is associated with increased CVD risk. ApoA-I levels are reduced in the very large α -1 particle and increased in the very small pre β -1 particle.

Consideration: Optimize LDL-C and triglycerides with statin therapy; keep HbA1c to < 7%; exercise regularly; restrict sugar; if indicated, lose weight and stop smoking, and consider niacin therapy.

Impact of Treatments on Formation of HDL Subpopulations and Metabolism

HDL Parameter	Niacin	Statins	Fibrates
HDL-C	↑ 20%-40%	↑ 2%-10%	↑ 4%-10%
apoA-I concentration	↑	—	—
α-1 particles	↑ up to 115%	↑ 12%-36%	Slight ↓
Preβ-1 particles	↓ up to 30%	↓ up to 40%	—

1. Lamon-Fava et al. *J Lipid Res.* 2007;48(8):1746-1753.
2. Asztalos et al. *Atheroscler.* 2002;164(2):361-369.
3. Asztalos et al. *Am J Cardiol.* 2007;99(5):681-685.
4. Watts et al. *Diabetes.* 2003;52(3):803-811.
5. Asztalos et al. *Metabolism.* 2008;57(1):77-83.

Boston Heart Diagnostics

- Niacin the best med for raising HDL
- Use 1000-2000 mg/day
- Even with slow release can get flushing
- Use divided doses on full stomach
- Bedtime best time to take
- Aspirin taken with can help reduce flushing
- Avoid spicy foods and ETOH

Boston Heart Diagnostics

- AIM-HIGH, HPS2-THRIVE large studies using niacin with statins.
- Niacin associated with higher ischemic stroke risk in AIM-HIGH cohort so trial discontinued
- In HPS-THRIVE Tredaptive used
- Niacin plus antiflushing agent
- Again used Niacin in addition to statins, not as monotherapy
- N Engl J Med 2011; 365:2255–2267.
- Armitage J, et al "HPS2-THRIVE: Randomized placebo-controlled trial of ER Niacin and laropriprant in 25,673 patients with pre-existing cardiovascular disease" ACC2013.

Boston Heart Diagnostics

- Weight loss
 - Lower carb diets
 - Exercise
 - Smoking cessation
 - All raise HDL
-
- Raising HDL in Clinical Practice: Clinical Strategies to Elevate HDL Daniel J. Rader, MD
 - Medscape Cardiology 2004

Boston Heart Diagnostics

- Beyond LDL
- ApoB: part of LDL that deposits cholesterol in tissues.
- Better marker of CVD risk

Boston Heart Diagnostics

- sdLDL: small dense particles associated with atherogenic plaque
- Test shows sdldl total, % of particles, and total LDL particles
- Sdldl % is most clinically significant
- Along with apoB shows how much high risk LDL
- Insulin resistance associated with more sdldl

Boston Heart Diagnostics

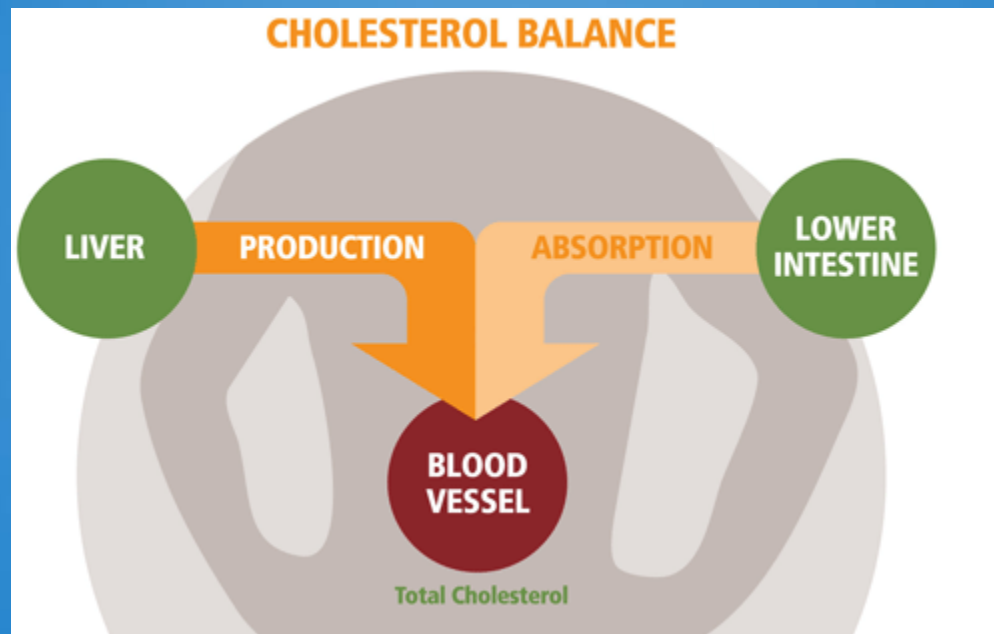
- Lp (a): independent risk factor
- Made in liver
- Over 30 higher risk
- No definitive way to lower
- Niacin, nattokinase, fish oil have all been used

Plasma Cholesterol Level Reflects Production, Absorption and Clearance¹

Cholesterol is the Most Abundant Sterol in Plasma

Body Cells and Liver Produce **75%** of Cholesterol in Blood

Production Markers:
Lathosterol
Desmosterol



Dietary Intake Contributes **25%** of Cholesterol in Blood

Absorption Markers:
Campesterol
Beta-sitosterol
Cholestanol

1. van Himbergen T, Otokoza S, Matthan NR, Schaefer EJ, Buchsbaum A, Ai M, van Tits LJH, de Graaf J, Stalenhoef A. Familial combined hyperlipidemia is associated with alterations in the cholesterol synthesis pathway. *Arterioscler Thromb Vasc Biol.* 2010; 30:1113-20.
2. van Himbergen TM, Matthan NR, Resteghini NA, Otokoza S, Ai M, Stein EA, Jones PH, Schaefer EJ. Comparison of the effects of maximal dose atorvastatin and rosuvastatin therapy on cholesterol synthesis and absorption markers. *J Lipid Res.* 2009; 50:730-739.
3. Schaefer EJ. Introduction to high-density lipoprotein, dyslipidemia, and coronary heart disease. In: Schaefer EJ, ed. *High Density Lipoproteins, Dyslipidemia, and Coronary Heart Disease.* New York, NY: Springer; 2010:1-14.

Boston Heart Diagnostics

- It's a balancing act
- High producers may respond to statin therapy but absorption can increase to compensate
- Some are hyper- or hyporesponders
- High absorbers may benefit from lower cholesterol diet
- Increased soluble fiber can benefit

Boston Heart Diagnostics

- Genetic Tests
- SLCO1B1: test for statin myopathy
 - Hetero or homozygous increases risk of myopathy
- CYP2C19
 - Poor activity means don't convert plavix to active form
 - Other antiplatelet agents recommended
- APOE
 - Codes for LDL production
 - ApoE4 most associated with atherosclerosis

Boston Heart Diagnostics

- Glycemic Balance Testing
 - FBG
 - A1C
 - IR
 - Higher number associated with insulin resistance
 - Lower with lower carb diet, exercise, bitter melon, berberine
 - GSP
 - Two week picture into control of glucose

Boston Heart Diagnostics

- Adiponectin
 - Hormone produced by fat cells
 - Inversely correlated with adiposity
 - Along with leptin restores insulin sensitivity
- Fasting Insulin
 - Marker for insulin resistance
 - Levels over 17 suggestive of insulin resistance
 - Lower carbs, bitter melon, berberine, exercise

Case Study

bostonheart Diagnostics		Accession No: A2845598 Chart No: 7/21/48		2013 12:40 PM		Page 3 of 4	
Cumulative reports are for comparison purposes only. Refer to report dated 08/12/2013.				21962			
Patient/Process Report				08/12/2013 Follow-Up Change			
Boston Heart HDL Map™							
α-1	28.4	29.0	0.6				
α-2	64.1	61.4	-2.7				
α-3	29.8	28.0	-1.8				
α-4	21.6	21.5	-0.1				
Preβ-1	11.0	13.2	2.2				
Boston Heart Cholesterol Balance™							
Lathosterol	80	84	4.0				
Desmosterol	90	79	-11.0				
Beta-Sitosterol	88	106	18.0				
Campesterol	140	166	26.0				
Lipid, Lipoprotein and Apolipoprotein Tests							
Total Cholesterol	213	203	-10.0				
Direct LDL-C	142	121	-21.0				
HDL-C	53	57	4.0				
Triglycerides	167	126	-41.0				
Non-HDL-C	160	146	-14.0				
ApoB	124	95	-29.0				
LDL-P ²	1730	1579	-151.0				
sdLDL-C ¹	30	25	-5.0				
% sdLDL-C	23	21	0.0				
VLDL-C	18	25	7.0				
Lp(a)	<15	<15					
ApoA-I	169.2	162.9	-6.3				
Lipid Ratios							
TC/HDL-C	4.0	3.6	-0.4				
VLDL-C/TG	0.33	0.20	0.1				
ApoB/ApoA-I	0.7	0.6	-0.1				
HDL-C/TG	0.32	0.45	0.2				
Diabetes Tests							
HbA1c	7.4	6.2	-1.2				
Insulin Resistance		30.8					
Glucose ²	130	111	-19.0				
Insulin ²	55	39	-16.0				
Inflammation Tests				08/12/2013 Follow-Up Change			
hs-CRP	4.5	5.0	0.5				
Fibrinogen	557	513	-44.0				
LpPLA ₂	171	168	-3.0				
Liver, Kidney, Muscle and Other Tests							
AST	24	20	-4.0				
ALT	32	23	-9.0				
Alkaline Phosphatase	81	90	9.0				
Creatine Kinase (CK)	173	127	-46.0				
BUN/Creatinine	19.5	24.7	5.2				
NT-proBNP	<20	20					
Uric Acid	6.8	7.2	0.4				
Homocysteine	7.9	8.8	0.9				
eGFR / Non-African American	96	94	-2.0				
eGFR / African American	111	109	-2.0				
BUN	11.5	15.8	4.3				
TSH	1.78	1.44	-0.4				
Creatinine	0.59	0.64	0.0				
Albumin	4.4	4.5	0.1				
Vitamin D, 25-OH	30	26	-4.0				
Clinician Notes							
<p><i>Best known 2 1/2 years 500 mg BID</i></p>							

Notes

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 - A fasting glucose level of >125 mg/dL indicates the presence of diabetes mellitus, and a fasting glucose level of <70 mg/dL indicates hypoglycemia.
 - An insulin test result <5 µU/mL is normal in a non-diabetic, but low if the patient has diabetes (consistent with Type 1 diabetes).
 - Genetic analysis is performed by real-time Polymerase Chain Reaction (PCR) using TaqMan™ probes. Amplified gene nucleotide sites: APOE - Apolipoprotein E, T471C rs429358, C509T rs7412; F5 - Coagulation Factor V, G1746A rs5025; F2 - Coagulation Factor 2, G20210A rs1799953; CYP2C19 (Clopidogrel response) - Cytochrome P450 2C19, G681A rs4244275, G635A rs4986893, C-806T rs12248550; SLC01B1 (Statins Myopathy) - Solute Carrier Organic Anion Transporter Family Member 1B1, T625C rs4149056. Limitations: Other rare mutations not detected by these assays may be present in some individuals.
 - High Risk further stratified: 1300-1599 Borderline High / 1500-2000 High / >2000 Very High (nmol/L).
- ▲ = Critical Value, ▲ = Alert Value, TN=Test Not Performed

Case Study

- 65 yo female
- HTN, HLD, DM
- Non-compliant with lifestyle changes
- Carditone 1 BID to manage bp
- Cholest 3/d to manage lipids
- Berberine sulfate added 500 mg bid to sensitize insulin
- Metabolism. 2009 Jan;58(1):109-19

Boston Heart Diagnostics

- Inflammatory Markers
- LpPLA2—formerly “PLAC” test
 - Positively correlated with CAD and stroke
- Fibrinogen
 - Inflammatory marker
 - Nattokinase lowers – dose is 2000 FU bid
- MPO
 - Myeloperoxidase
 - Associated with plaque formation
 - Oxidized LDL proxy

Home Sleep Testing

- Epidemic of sleep disordered breathing
- 10-17% in men
- 3-9% in women
- Untreated can lead to hypertension
- Can be apnea – at least 10 seconds
- Hypopnea—shallow breathing

Home Sleep Testing

- Screening tool:
- Epworth Sleepiness Scale
 - Scored 0-3 no chance to high chance of dozing
 - Activities range from watching tv to driving and
 - Eating with family
 - Score above 12 merits testing

Home Sleep Testing

- Ordering test
 - Can purchase home sleep testing kit
 - Different companies
 - I use Resmed ApneaLink Plus
 - Tests O2 sat, air flow via nasal cannula, respiratory effort via monitoring kit.
 - Generates report summarizing apneas and hypopneas
 - Any suspicious results merit a sleep specialist referral
- Screening tool:

Home Sleep Testing

- Ordering test
 - Need to have sleep specialist available to do interpretation.
 - Bill as G0399. Location of service is 12, patient's home
 - Interpretation of study is a -26 modifier done by sleep specialist
 - Can purchase home sleep testing kit
 - I use Resmed ApneaLink Plus
 - Tests O2 sat, air flow via nasal cannula, respiratory effort via monitoring kit.
 - Generates report summarizing apneas and hypopneas
 - Any suspicious results merit a sleep specialist referral

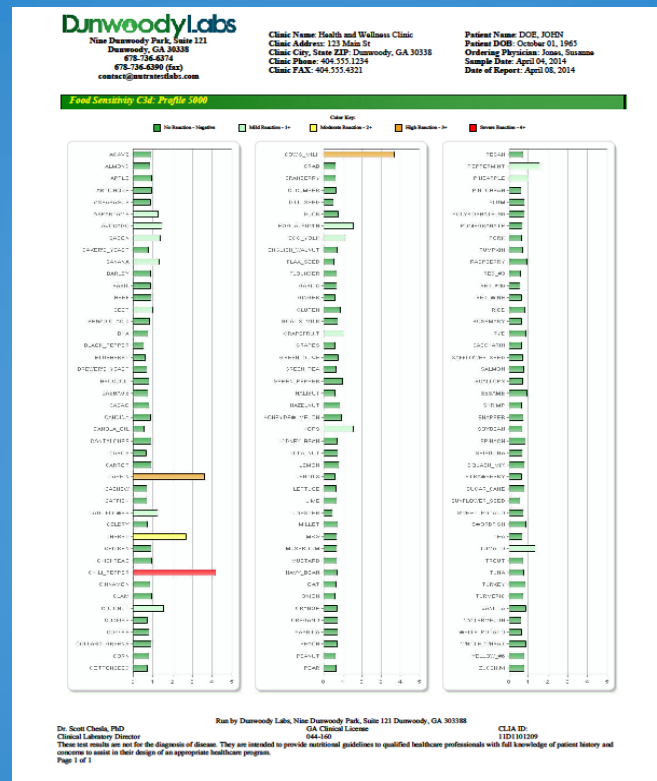
Home Sleep Testing

- Insurance companies are pushing docs to do home testing to save initial cost
- Patients are typically very willing to do this
- Covered by Anthem, Cigna, Aetna.
- Need to preauthorize for some plans
- You will be able to order mask and O2 – Rick?
- Some use this to bill for another office visit

Food Allergy Testing

- FIT test from Brendan Biosciences
- Measures C3 Complement
- Direct inflammatory marker
- Shows actual physiological effect of food reactions
- 132 foods, dyes, preservatives
- Coverage by insurance with out of network benefits

Food Allergy Testing



Thank you!

