Global Risk Assessment: The new math 1+1 = 4 !

Abstract

CV risk is multifactorial, therefore the objective of drug treatment is to reduce CV risk and not simply decrease BP or cholesterol levels. For the greatest impact, preventive measures require a shift away from the treatment of risk factors in isolation, to a comprehensive CV risk management approach. Indeed, individual terms may disappear, as the focus moves from treating a theoretically-decided cutoff point toward managing continuous distributions of risk that interact with each other. Newer studies such as HOPE 3 will explore global risk reduction.

While the focus has been traditionally on applying CV prevention in the highest risk individuals, *most CV events occur in those with average levels of risk.* The relationship of most risk factors to outcomes is continuous with risk extending to 'normal' levels of CV risk factors. Affecting multiple risk factors to a large extent will likely lower risk of CVD to a large extent.

The objectives of this session are to review prevention strategies in our patients at risk including: global risk reduction, optimal treatment in the high risk patient, and newer research on risk reduction.

Global CV risk reduction: 1+1 = 4 is this the last HOPE

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Objectives

to review prevention strategies in our patients at risk including:

- Global risk reduction
- Optimal Treatment in the High Risk patient
- Newer Research on Risk Reduction

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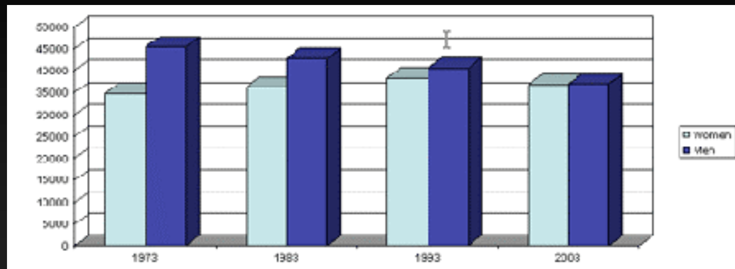
An Equal Opportunity Killer!



Abramson et al HSF 2007 report

HSF: Annual Report on Canadians' Health: *60 is the new 70!*

Lifestyle Risk Factor	A Decade Ago*	vs. Today**	Today's Seniors (65-74)
Sedentary Lifestyle/Physical Inactivity	43%	52%	50%
Obesity (BMI >30 kg/m^2)	19%	30%	24%
Regular or Daily Smoker	29%	21%	11%

*Canadian Heart Health Survey (1986-1992) for adults 35-49
**Canadian Community Health Survey (2003/04) for adults 45-59

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Impact of Lifestyle Therapies on Blood Pressure in Hypertensive Adults

Intervention	Targeted change	SBP/DBP
Sodium reduction	100 mmol/day	-5.8 / -2.5
Weight loss	- 4.5 kg	-7.2 / -5.9
Alcohol reduction	- 2.7 drinks/day	-4.6 / -2.3
Exercise	3 times/week	-10.3 / -7.5
Dietary patterns	DASH diet	-11.4 / -5.5

Result of aggregate and metaanalyses of short term trials. Miller ER et al. J Clin Hyper 1999: Nov/Dec:191-8.

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NRT & Smoking Cessation

- Safe in patients with stable CAD!
- article on smoking cessation

www.cardiologyrounds.ca

Abramson, Rebellato 2006

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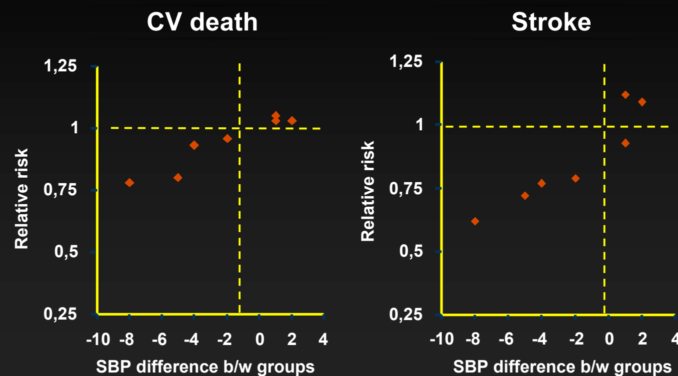
The Importance of Controlling BP: Lower SBP Associated with Lower Risk of Events



BP Trialists. *Lancet* 2003;362:1527-1535.

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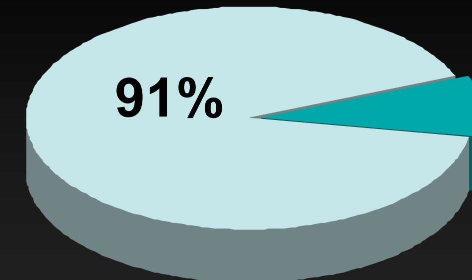
91% of Hypertensive Patients Have at Least 1 Additional Risk Factor



⇑ Risk factors = ⇑ Global CV risk

Rantala et al. *J Intern Med* 1999; Wannamethee et al. *J Hum Hypertens* 1998.

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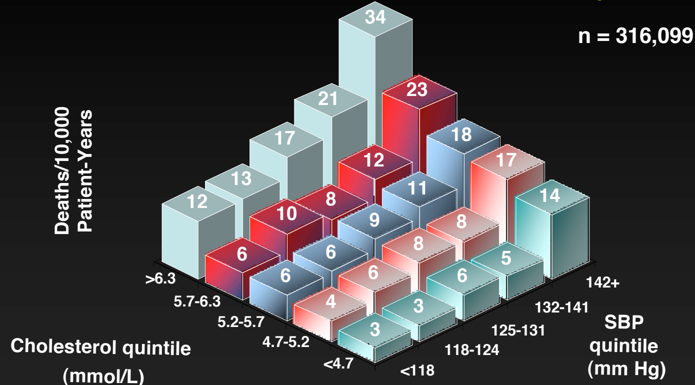
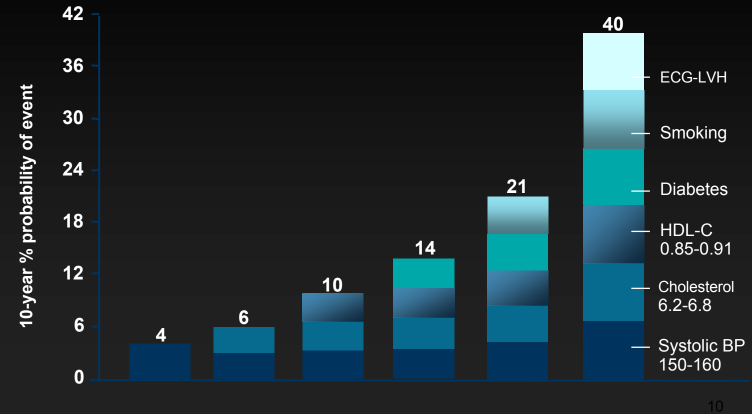
Combined Effects of SBP and Lipids on CHD Mortality



Neaton JD, et al, for the Multiple Risk Factor Intervention Trial Research Group. *Arch Intern Med.* 1992;152:56-64.

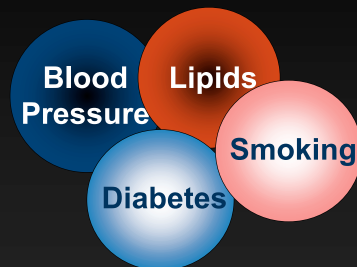
Probability of CHD Events in Men with Mild Hypertension Increases with Additional Risk Factors



Adapted from Kannel, *Am J Hypertens* 2000.

The New Treatment Paradigm: Simultaneous Management of Risk Factors

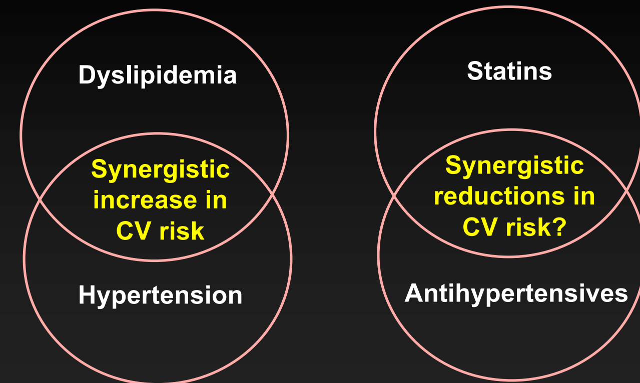
Comprehensive assessment and treatment of risk factors



Together, at the same time

Kannel WB. In: Genest J et al, eds. *Hypertension: Physiopathology and Treatment.* New York, NY: McGraw-Hill, Inc; 1977:888-910.

Implications for Treatment



Sposito A. C. *European Heart Journal Supplements.* 2004;6:G8-G12.

2006 Canadian Lipid Guidelines Risk Categories and Target Lipid Levels

Risk Category	LDL-C Level (mmol/L)	Total-C / HDL-C Ratio
High Risk (10 yr risk of coronary artery disease ≥ 20%, or history of diabetes mellitus, chronic kidney disease, dialysis or any atherosclerosis disease)	< 2.5 → < 2.0	< 4.0
Moderate Risk (10 yr risk 11% - 19%)	< 3.5	< 5.0
Low Risk (10 yr risk ≤ 10%)	< 5.0	< 6.0

Genest J et al. *CMAJ* 2003; 168(9): 921.

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HOPE-3 Rationale

- While the focus has been traditionally on applying CV prevention in the highest risk individuals, ***most CV events occur in those with average levels of risk***
- The relationship of most risk factors to outcomes is continuous with risk extending to 'normal' levels of CV risk factors
- Affecting multiple risk factors to a large extent will likely lower risk of CVD to a large extent

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The Importance of Global Risk Factor Management

- CVD is the leading cause of mortality among men and women in developed countries
- 91% of hypertensives have additional risk factors
- Additional risk factors have a multiplicative effect on CV risk
- The population of multiple risk factor patients is growing
- Despite the known contribution of additional risk factors to CVD, goal attainment rates remain low
- ? Lifestye Vs. Medications as we age….

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