

Riesgo cardiovascular: ¿tratamos pacientes o números?

Dra. Karin Kopitowski

karin.kopitowski@hospitalitaliano.org.ar

@karinkopitow



HOSPITAL ITALIANO
de Buenos Aires



Servicio de Medicina
Familiar y Comunitaria



Los pros y contras de los scores



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Step 1

Age	LDL Pts	Chol Pts
Years		
30-34	-9	[-9]
35-39	-4	[-4]
40-44	0	[0]
45-49	3	[3]
50-54	6	[6]
55-59	7	[7]
60-64	8	[8]
65-69	8	[8]
70-74	8	[8]

Step 2

LDL - C		
(mg/dl)	(mmol/L)	LDL Pts
<100	<2.59	-2
100-129	2.60-3.36	0
130-159	3.37-4.14	0
160-190	4.15-4.92	2
≥150	≥4.92	2

Cholesterol		
(mg/dl)	(mmol/L)	Chol Pts
<160	<4.14	[-2]
160-199	4.15-5.17	[0]
200-239	5.18-6.21	[1]
240-279	6.22-7.24	[1]
≥280	≥7.25	[3]

Step 3

HDL - C		
(mg/dl)	(mmol/L)	LDL Pts
<35	<0.90	5
35-44	0.91-1.16	2
45-49	1.17-1.29	1
50-59	1.30-1.55	0
≥60	≥1.56	-2

Step 4

Blood Pressure		
Systolic (mm Hg)	Diastolic (mm Hg)	pts
<120	<80	-3 [-3] pts
120-129	80-84	0 [0] pts
130-139	85-89	0 [0] pts
140-159	90-99	2 [2] pts
≥160	≥100	3 [3] pts

* Note: When systolic and diastolic pressures provide different estimates for point scores, use the higher number

Step 5

Diabetes		
No	LDL Pts	Chol Pts
Yes	4	[4]

Step 6

Smoker		
No	LDL Pts	Chol Pts
Yes	2	[2]

Step 7

Adding up the points	
Age	_____
LDL-C or Chol	_____
HDL - C	_____
Blood Pressure	_____
Diabetes	_____
Smoker	_____
Point total	_____

Step 8

CHD Risk			
LDL Pts	10 Yr	Chol Pts	10 Yr
Total	CHD Risk	Total	CHD Risk
≤-2	1%	≤-2	1%
-1	2%	[-1]	[2%]
0	2%	[0]	[2%]
1	2%	[1]	[2%]
2	3%	[2]	[3%]
3	3%	[3]	[3%]
4	4%	[4]	[4%]
5	5%	[5]	[4%]
6	6%	[6]	[5%]
7	7%	[7]	[6%]
8	8%	[8]	[7%]
9	9%	[9]	[8%]
10	11%	[10]	[10%]
11	13%	[11]	[11%]
12	15%	[12]	[13%]
13	17%	[13]	[15%]
14	20%	[14]	[18%]
15	24%	[15]	[20%]
16	27%	[16]	[24%]
≥17	≥32%	≥17	≥27%

(compare to average person your age)

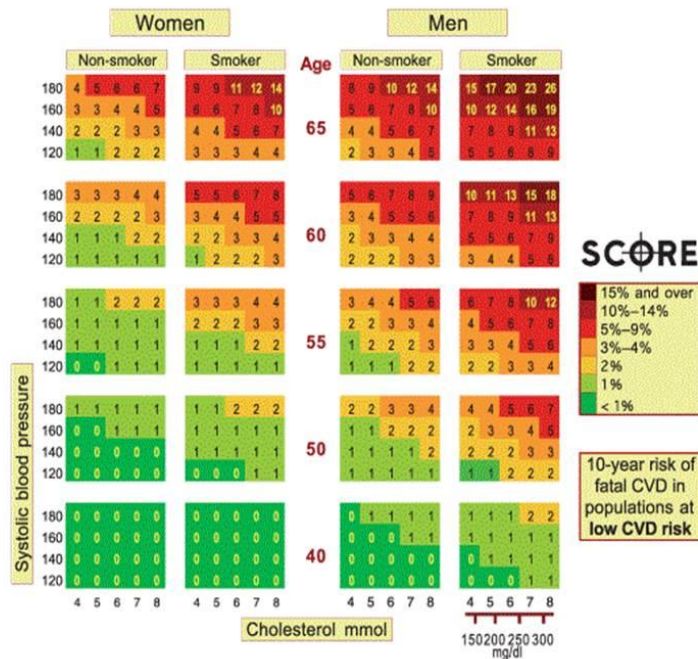
Step 9

Comparative Risk			
Age (years)	Average 10 Yr CHD Risk	Average 10 Yr Hard* CHD Risk	Low**
30-34	<1%	<1%	<1%
35-39	<1%	<1%	1%
40-44	2%	1%	2%
45-49	5%	2%	3%
50-54	8%	3%	5%
55-59	12%	7%	7%
60-64	12%	8%	8%
65-69	13%	8%	8%
70-74	14%	11%	8%

* Hard CHD events exclude angina pectoris

Key

Color	Relative Risk
green	1
white	1
yellow	1
rose	1
red	1



Calculo del riesgo cardiovascular (RCV), proyecto SCORE, versión para países con bajo Colesterol total

PROCAM Score

Alter (Jahre)	LDL-Cholesterin (mg/dl)	Systolischer Blutdruck (mm Hg)
35-39	0	<120
40-44	6	120-129
45-49	11	130-139
50-54	16	140-159
55-59	21	≥160
60-65	26	

Triglyzeride (mg/dl)	HDL-Cholesterin (mg/dl)	Raucher
<100	<35	Nein
100-149	35-44	Ja
150-199	45-54	
>199	>54	

Diabetiker	Positive Familienanamnese
Nein	Nein
Ja	Ja



HOSPITAL ITALIANO
de Buenos Aires



Servicio de Medicina
Familiar y Comunitaria



Razones para evaluar el riesgo global

- La estimación de la probabilidad de que un individuo desarrolle un acontecimiento coronario a partir de sus factores de riesgo es una estrategia valiosa para prevenir eventos vasculares.
- La prevención coronaria basada en una evaluación del riesgo global permite tomar decisiones más eficientes que mediante el abordaje de sus componentes aislados.



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Problemas en las estimaciones de riesgo global

- Hay que tener en cuenta el desenlace clínico que emplea el score
- Variabilidad regional del riesgo: calibración local
- No incluyen BMI, sedentarismo, antecedentes fliares, triglicéridos.
- No dan cuenta del tratamiento corrector.
- Emplean categorías: fuma o no; DBT sí o no. Se pierde el impacto de gran fumador, DBT mal controlada, etc



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



El beneficio de cualquier intervención en prevención cardiovascular es más alto cuanto mayor riesgo basal tenga el paciente.

.



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Como regla general

- Mayor “agresividad” en el tratamiento a mayor riesgo de padecer un evento



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Con algunas cosas nos pasamos de revoluciones

- Diabéticos como equivalentes coronarios
- Aspirina en el agua corriente
- Metas de TA “durísimas”
- Estatinas a demasiada gente....
- Modificar perfil lipídico caiga quien caiga en DBT



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Statins and Primary Prevention

Statins Have No Benefit on All-Cause Mortality in High-Risk Primary Prevention

Ray KK, Seshasai SR, Erqou S, et al. Statins and all-cause mortality in high-risk primary prevention: a meta-analysis of 11 randomized controlled trials involving 65,229 participants. Arch Intern Med. 2010;170:1024-31. [PMID: 20585067]



Data Do Not Support Lower Systolic Blood Pressure Targets for Diabetic Persons

Cushman WC, Evans GW, Byington RP, et al; ACCORD Study Group. Effects of intensive blood-pressure control in type 2 diabetes mellitus. N Engl J Med. 2010;362:1575-85. [PMID: 20228401]



Nilsson PM. ACCORD and risk-factor control in type 2 diabetes. N Engl J Med. 2010;362:1628-30. [PMID: 20228405]



A More Favorable Lipid Profile Is Not Necessarily Associated With Reduced Cardiac Events in Persons With Diabetes

Ginsberg HN, Elam MB, Lovato LC; ACCORD Study Group. Effects of combination lipid therapy in type 2 diabetes mellitus. N Engl J Med. 2010;362:1563-74. [PMID: 20228404]



HOSPITAL ITALIANO
de Buenos Aires



Servicio de Medicina
Familiar y Comunitaria



Hipertensión arterial

- Selección de droga (monoterapia)
 - El mejor predictor de disminución riesgo es la reducción de la TA
 - IECA-ARA II
 - Bloqueantes cálcicos
 - Tiazidas



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



IECA

- No parecen tener un efecto protector más allá del descenso TA en pacientes de alto riesgo vascular
 - Sí: en insuficiencia cardíaca, diabetes proteinúrica, IAM

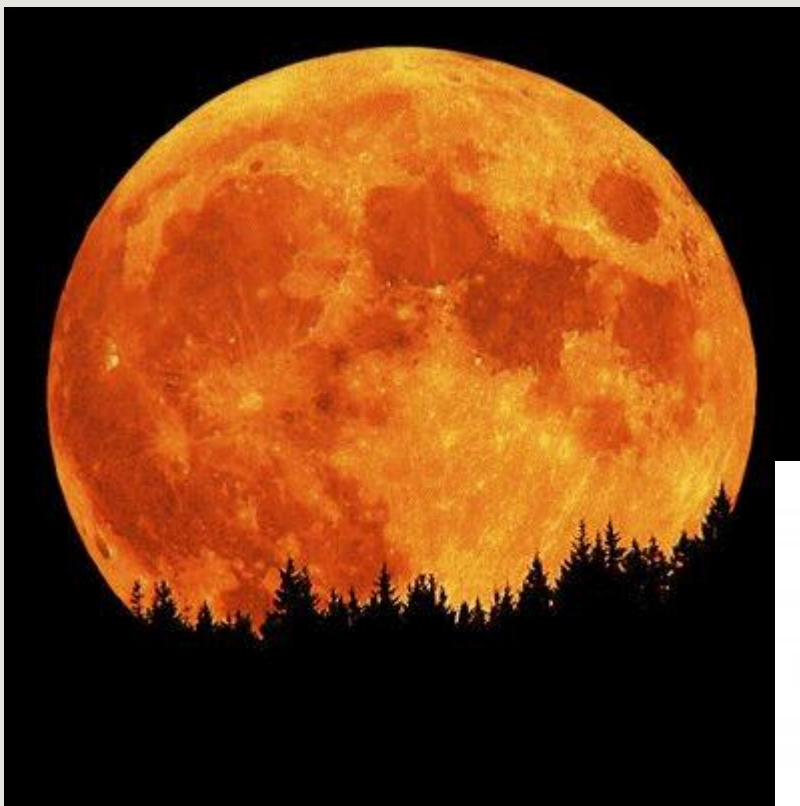


HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*





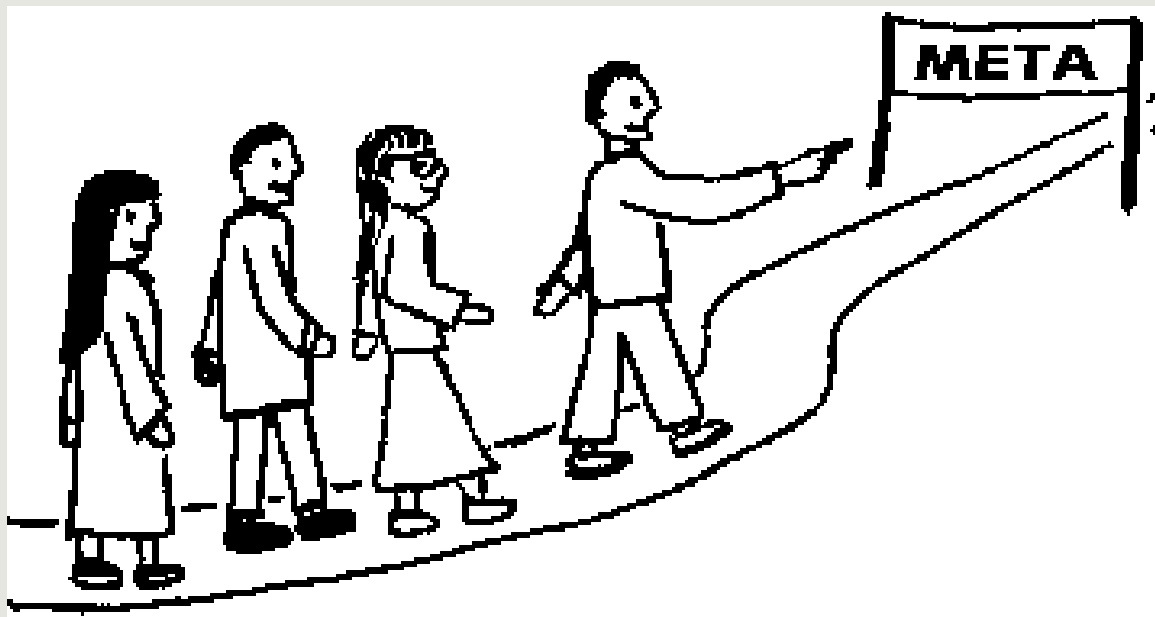
HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



PROFAM



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



PROFAM



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



¿Qué hay del furor bajandis?



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



- Sístólica 130 ??? en diabéticos sin producir efectos adversos
- Menos de esto...tal vez en proteinuria > 500 mg/día



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Systematic Review: Blood Pressure Target in Chronic Kidney Disease and Proteinuria as an Effect Modifier

Ashish Upadhyay, MD; Amy Earley, BS; Shana M. Haynes, DHSc; and Katrin Uhlig, MD, MS

Background: The optimal blood pressure target in patients with chronic kidney disease (CKD) is unclear.

Purpose: To summarize trials comparing lower versus higher blood pressure targets in adult patients with CKD and focus on proteinuria as an effect modifier.

Data Sources: MEDLINE and the Cochrane Central Register of Controlled Trials (July 2001 through January 2011) were searched for reports from randomized, controlled trials with no language restriction.

Study Selection: Authors screened abstracts to identify reports from trials comparing blood pressure targets in adults with CKD that had more than 50 participants per group; at least 1-year follow-up; and outcomes of death, kidney failure, cardiovascular events, change in kidney function, number of antihypertensive agents, and adverse events.

Data Extraction: Reviewers extracted data on study design, methods, sample characteristics, interventions, comparators, outcomes, number of medications, and adverse events and rated study quality and quality of analyses for proteinuria subgroups.

Data Synthesis: Three trials with a total of 2272 participants were included. Overall, trials did not show that a blood pressure target of

less than 125/75 to 130/80 mm Hg is more beneficial than a target of less than 140/90 mm Hg. Lower-quality evidence suggests that a low target may be beneficial in subgroups with proteinuria greater than 300 to 1000 mg/d. Participants in the low target groups needed more antihypertensive medications and had a slightly higher rate of adverse events.

Limitations: No study included patients with diabetes. Trial duration may have been too short to detect differences in clinically important outcomes, such as death and kidney failure. Ascertainment and reporting of adverse events was not uniform.

Conclusion: Available evidence is inconclusive but does not prove that a blood pressure target of less than 130/80 mm Hg improves clinical outcomes more than a target of less than 140/90 mm Hg in adults with CKD. Whether a lower target benefits patients with proteinuria greater than 300 to 1000 mg/d requires further study.

Primary Funding Source: Kidney Disease: Improving Global Outcomes (KDIGO).

PREVENCIÓN Y PROTECCIÓN

Cardio y Cerebrovascular



Página12

Lunes, 17 de mayo de 2010 | Hoy

INGRESAR | REGISTRARSE

EDICIONES ANTERIORES

BUSQUEDA AVANZADA

CORREO

KIOSCO

ULTIMAS NOTICIAS

EDICION IMPRESA

SUPLEMENTOS

TAPAS

ROSARIO/12

FIERRO

FUTBOL EN VIVO

BUSCAR

INDICE

EL PAIS

ECONOMIA

SOCIEDAD

LA VENTANA

EL MUNDO

ESPECTACULOS

DIALOGOS

PSICOLOGIA

UNIVERSIDAD

CONTRATAPA

SOCIEDAD - SEGUN UNA PUBLICACION MEDICA, NO SE DEBEN USAR PARA PREVENIR ATAQUES CARDIACOS

Una advertencia por las aspirinas

El prestigioso British Journal of Medicine, órgano de la Asociación Médica Británica, llamó a desalentar el uso continuado en bajas dosis de este medicamento para prevención primaria. Sostiene que los datos disponibles no lo justifican.

Por Pedro Lipcovich



"No use aspirina para prevenir ataques cardíacos." Así, en imperativo, está escrito el título de un artículo en el British Journal of Medicine, órgano de la Asociación Médica Británica, que procura desalentar en profesionales y pacientes el uso continuado de este medicamento en bajas dosis con aquel propósito: el problema -verificado por distintos trabajos científicos en los últimos meses- es que las propiedades anticoagulantes de la aspirina, que



Las propiedades anticoagulantes de la aspirina al mismo tiempo aumentan el riesgo de hemorragias graves.

Imagen: AFP

SUBNOTAS

» "Ya no se sostiene la recomendación"
Por Pedro Lipcovich

MIS RECORTES: 0 [0%]



SOCIEDAD INDICE

MOVILIZACION EN OLAVARRIA A FAVOR DE UN ACUSADO DE VIOLACION
El ejemplo de General Villegas
Por Mariana Carbajal



HOSPITAL ITALIANO
de Buenos Aires



Servicio de Medicina
Familiar y Comunitaria

Inicio

Don't use aspirin for ...

Microsoft PowerPoint ...

Gm... x

As... x

12 Pá... x

BMJ Do... x

Fa... x

car... x

Go... x

lan... x

Cla... x

Ho... x

BMJ BM... x

+

-

www.bmj.com/content/340/bmj.c1805.extract?sid=030e1f2c-2722-4c0f-acc9-f1690add11c4

Esta página está escrita en

inglés

 ¿Quieres traducirla?

Traducir

No

Opciones

Home > Archive > BMJ 2010;340:c1805 doi:10.1136/bmj.c1805 (Published 21 April 2010)

This Article

Extract

Full text

PDF of print issue

Services

Email to friend

Alert me when this article is cited

Alert me if a correction is posted

Alert me when rapid responses are published

Similar articles in this journal

Similar articles in PubMed

Add article to my folders

Download to citation manager

Request permissions

BMJ 2010;340:c1805 doi:10.1136/bmj.c1805 (Published 21 April 2010)

Cite this as: BMJ 2010;340:c1805

Practice

Change Page

Don't use aspirin for primary prevention of cardiovascular disease

Helen Barnett, associate editor¹, Peter Burrill, specialist pharmaceutical adviser for public health², Ike Iheanacho, editor¹

Author Affiliations

Correspondence to: H Barnett hbnarnett@bmjgroup.com

Accepted 15 March 2010

All patients currently taking aspirin for primary prevention should be reviewed individually to reconsider whether such treatment is justified

The clinical problem

Cardiovascular disease accounted for around two million deaths in the

What's new

Last 7 days

Past weeks

Current print issue

Rapid responses

BMJ iPad app

Article clusters

BMJ Group portals

Cardiology

Diabetes

Oncology

Psychiatry

Junior doctors

Clinical trials

NHS reforms

Blogs

Podcasts

David Kerr: The new prohibition (24 Jun 2011)

Research highlights – 24 June 2011 (24 Jun 2011)

BMJ

Portfolios

FREE

to all healthcare professionals

Your next job at your fingertips

The new BMJ Careers

Familiar y Comunitaria

Aspirina en prevención primaria

- La decisión debe ser individualizada
- Incluye balance entre riesgos y beneficios
 - Bajo riesgo: beneficios no equiparan los riesgos
 - Para moderado y alto riesgo, los datos de los ensayos son escasos.
 - Toma de decisiones compartidas

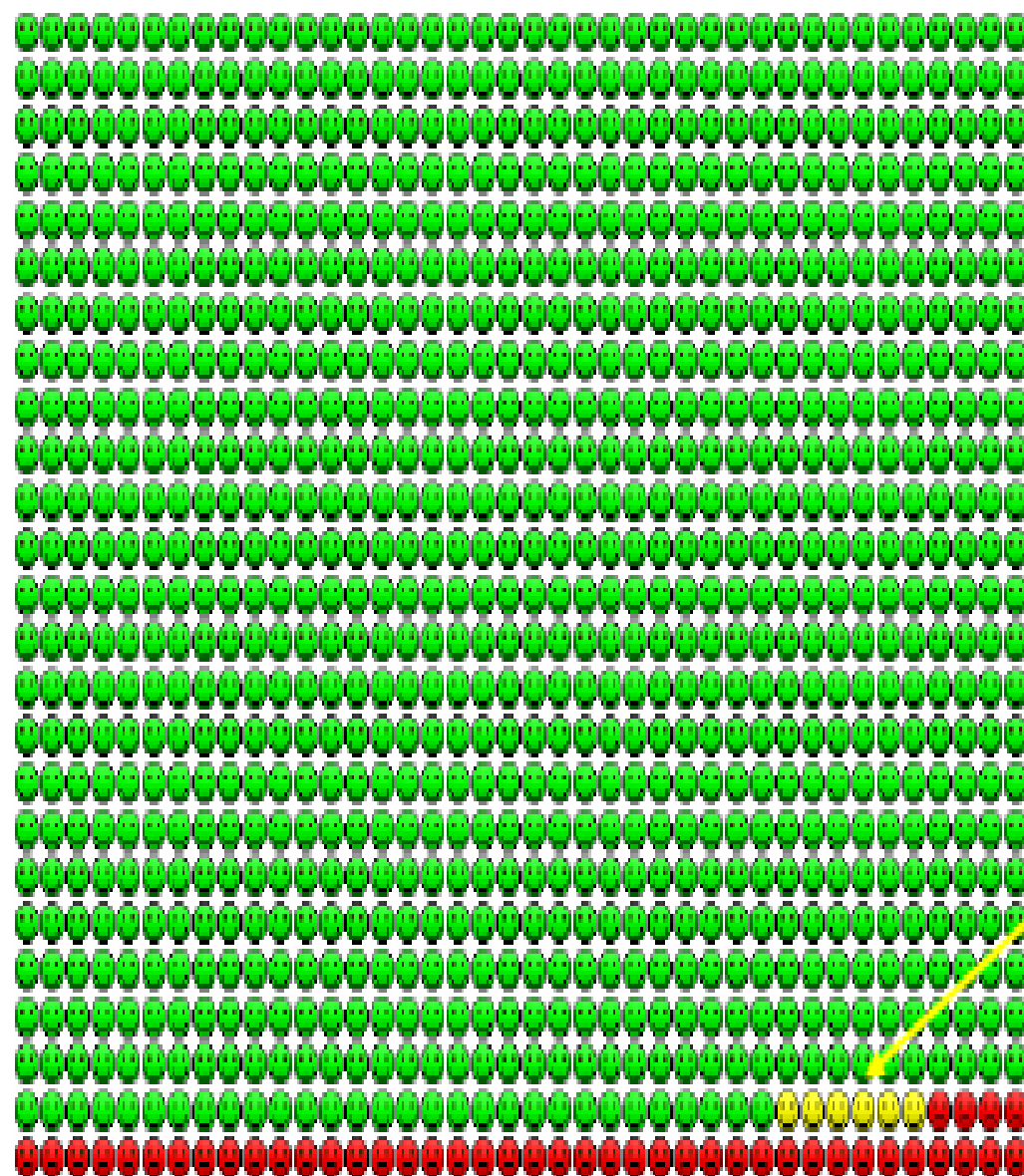


HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*

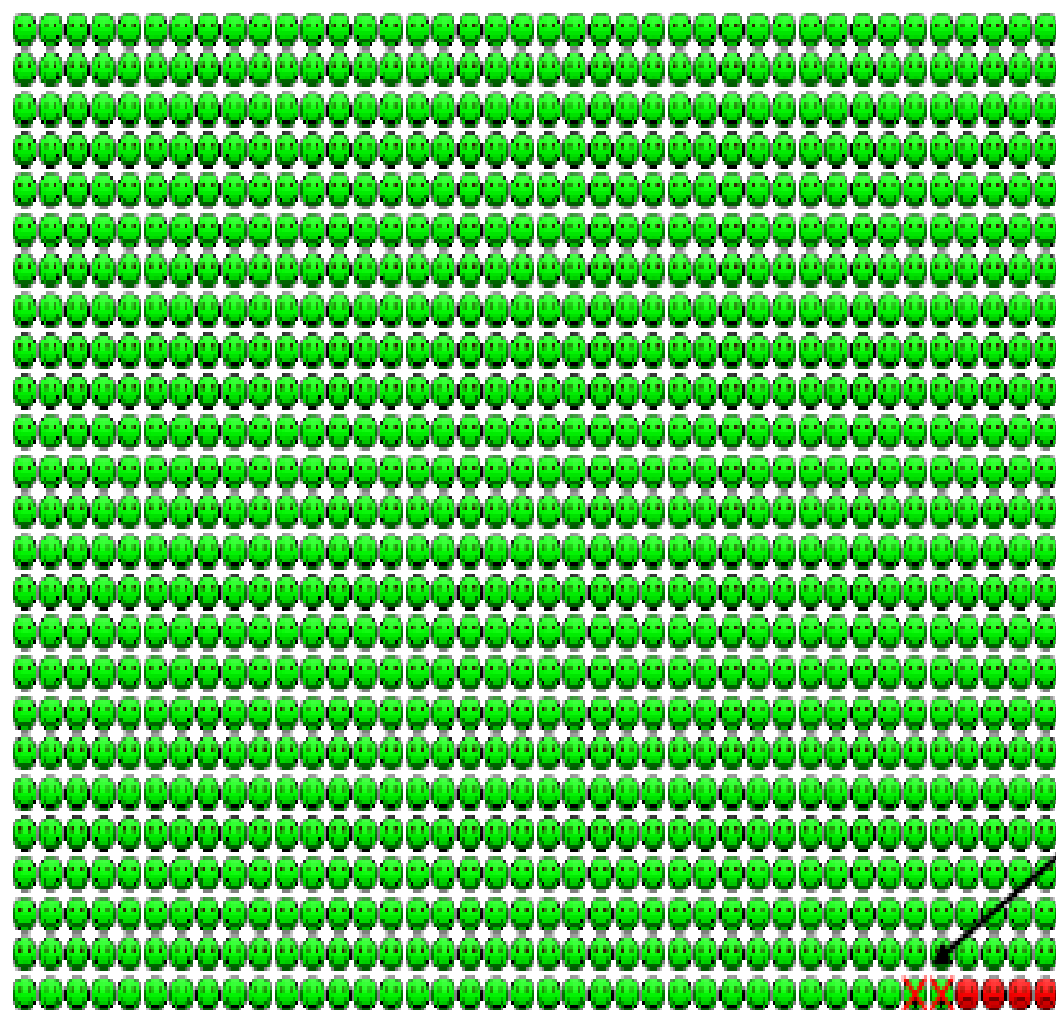




These 950 people will not die, have a non-fatal MI or a stroke whether or not they take aspirin

These 6 people will be saved from dying, having a non-fatal MI or a stroke by taking aspirin

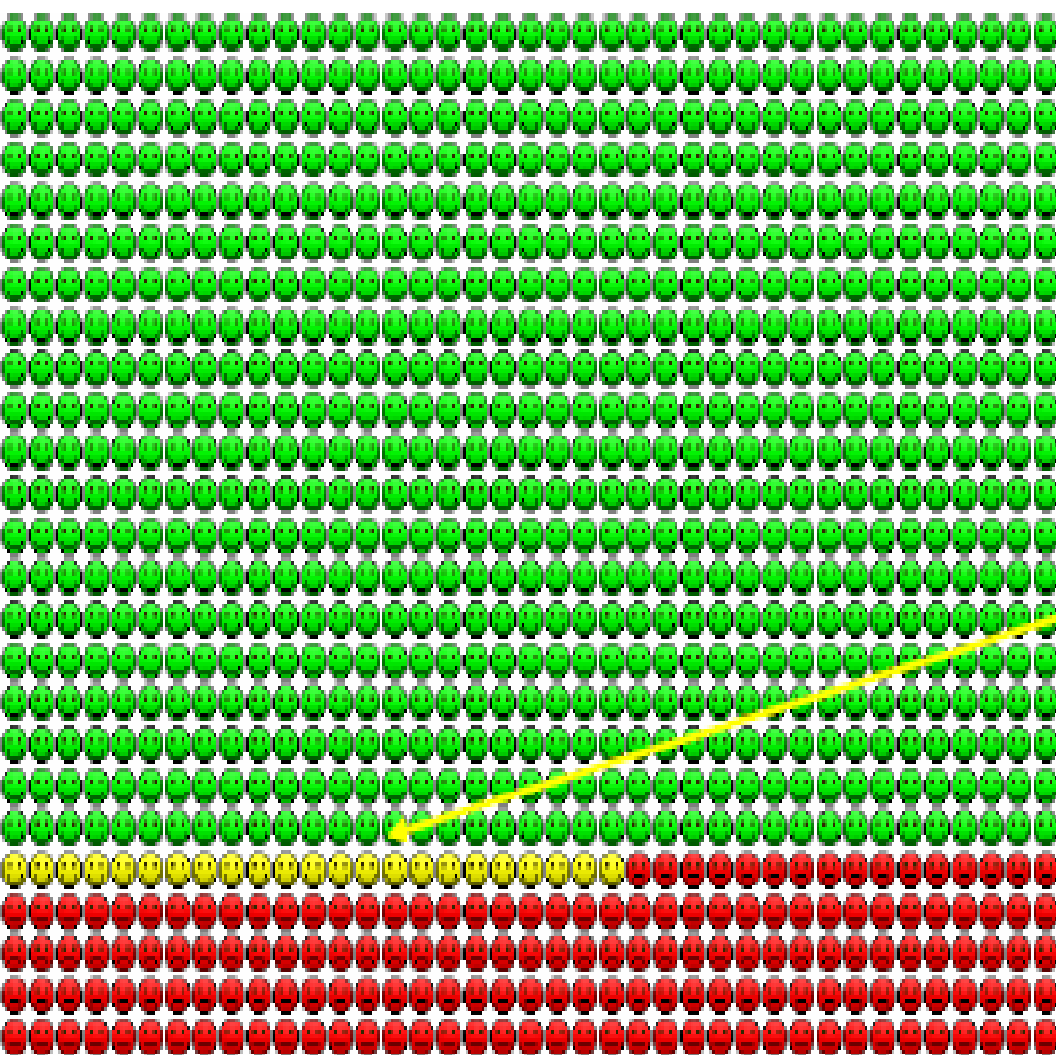
These 44 people will die or have at least one non-fatal MI or stroke, whether or not they take aspirin



These 994 people will not have a major bleed whether or not they take aspirin

These two people will have a major bleed because they take aspirin

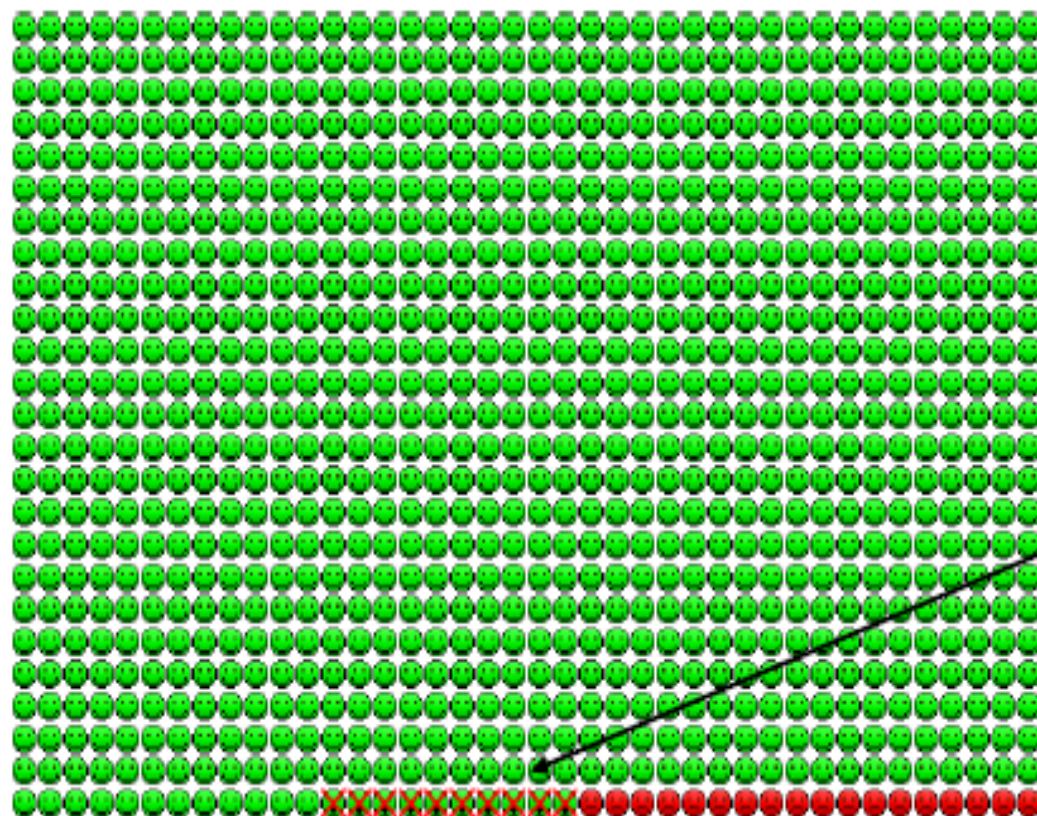
These four people will have a major bleed whether or not they take aspirin



These 800 people will not die, have a non-fatal MI or a stroke whether or not they take aspirin

These 24 people will be saved from dying, having a non-fatal MI or a stroke by taking aspirin

These 176 people will die or have at least one non-fatal MI or stroke, whether or not they take aspirin



These 972 people will not have a major bleed whether or not they take aspirin

These 10 people will have a major bleed because they take aspirin

These 18 people will have a major bleed whether or not they take aspirin



HOSPITAL ITALIANO
de Buenos Aires



Servicio de Medicina
Familiar y Comunitaria



La polypill



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



- Es un desafío de la investigación...



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Colesterol

National Cholesterol Education Program



Adult Treatment Panel III
(ATP III) Guidelines

CATEGORIA DE RIESGO	Meta de C-LDL	Inicio de Tratamiento No Farmacológico	Inicio de Fármacos
EQUIVALENTE CORONARIO	< 100 mg/dl	≥ 100 mg/dl	≥ 130 mg/dl
≥ 2 FACTORES DE RIESGO	< 130 mg/dl	≥ 130 mg/dl	≥ 160 mg/dl
≤ 1 FACTOR DE RIESGO	< 160 mg/dl	≥ 160 mg/dl	≥ 190 mg/dl



HOSPITAL ITALIANO
de Buenos Aires



Servicio de Medicina
Familiar y Comunitaria



Decidiendo a quién tratar...

- Hay que ver a las estatinas como una medida que reducen 20-30% riesgo cardiovascular independientemente LDL basal
- El beneficio en términos absolutos sí depende del riesgo global



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



The effects of lowering LDL cholesterol with statin therapy in people at low risk of vascular disease: meta-analysis of individual data from 27 randomised trials

*Cholesterol Treatment Trialists' (CTT) Collaborators**

Summary

Background Statins reduce LDL cholesterol and prevent vascular events, but their net effects in people at low risk of vascular events remain uncertain.

Methods This meta-analysis included individual participant data from 22 trials of statin versus control ($n=134\,537$; mean LDL cholesterol difference 1.08 mmol/L; median follow-up 4.8 years) and five trials of more versus less statin ($n=39\,612$; difference 0.51 mmol/L; 5.1 years). Major vascular events were major coronary events (ie, non-fatal myocardial infarction or coronary death), strokes, or coronary revascularisations. Participants were separated into five categories of baseline 5-year major vascular event risk on control therapy (no statin or low-intensity statin) ($<5\%$, $\geq 5\%$ to $<10\%$, $\geq 10\%$ to $<20\%$, $\geq 20\%$ to $<30\%$, $\geq 30\%$); in each, the rate ratio (RR) per 1.0 mmol/L LDL cholesterol reduction was estimated.

Interpretation In individuals with 5-year risk of major vascular events lower than 10% , each 1 mmol/L reduction in LDL cholesterol produced an absolute reduction in major vascular events of about 11 per 1000 over 5 years. This benefit greatly exceeds any known hazards of statin therapy. Under present guidelines, such individuals would not typically be regarded as suitable for LDL-lowering statin therapy. The present report suggests, therefore, that these guidelines might need to be reconsidered.

www.thelancet.com Published online May 17, 2012 DOI:10.1016/S0140-6736(12)60367-5



HOSPITAL ITALIANO
de Buenos Aires



Servicio de Medicina
Familiar y Comunitaria



- Y los muy jóvenes???????
- Y los viejos?????



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Decidiendo con qué y como tratar

- Qué se usó en ensayos en prevención primaria (dosis bajas a moderadas) y altas
 - Prava 40, atorvastatina 10
 - Rosu 20

Nunca se testearon diferentes intensidades ni metas en prevención primaria



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Por lo tanto

- Si decidió tratar, el monitoreo de LDL es sólo para adherencia
- No hay indicación, usando la estrategia de dosis moderadas, de llevar a ninguna meta



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Y si no tolera estatinas

NADA!



HOSPITAL ITALIANO
de Buenos Aires

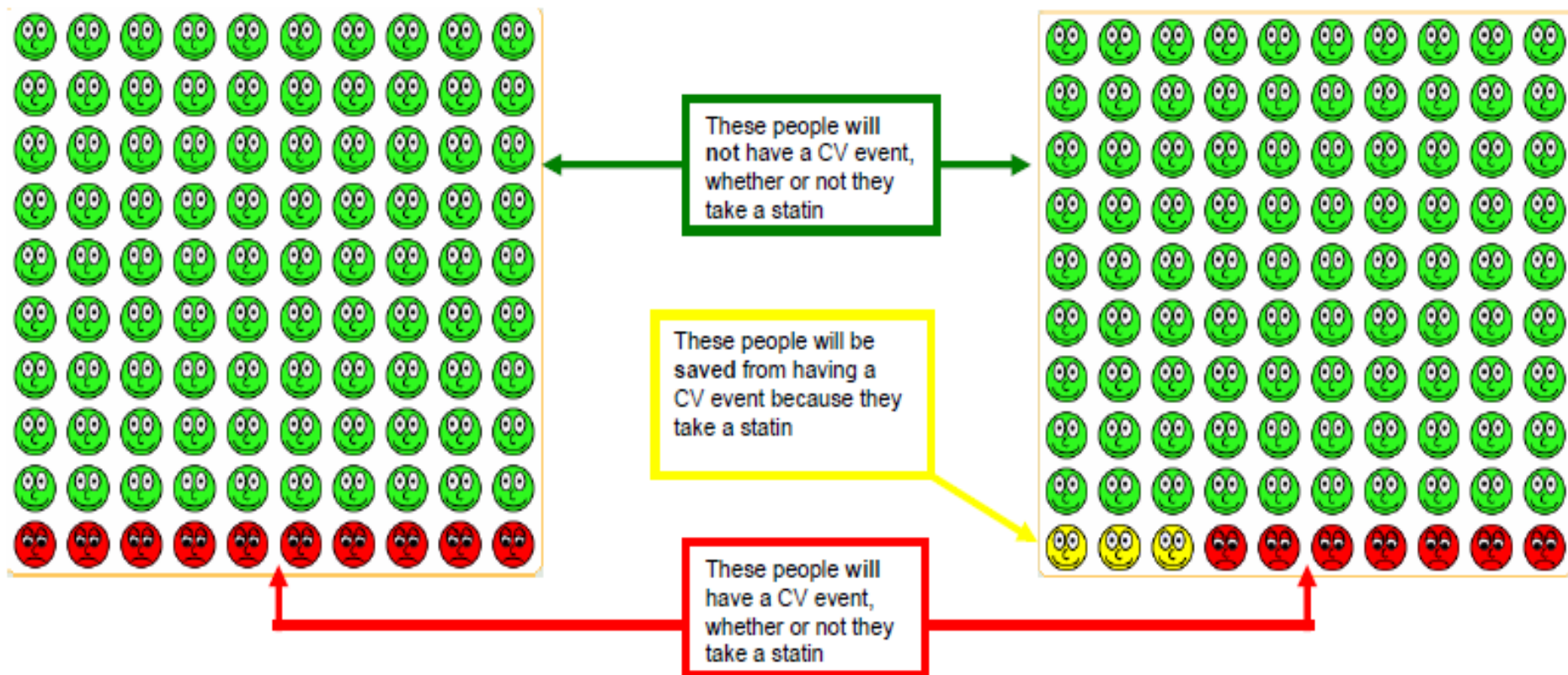


*Servicio de Medicina
Familiar y Comunitaria*



But remember

- It is impossible to know for sure what will happen to each individual person.
- All 100 people will have to take the statin for 10 years.



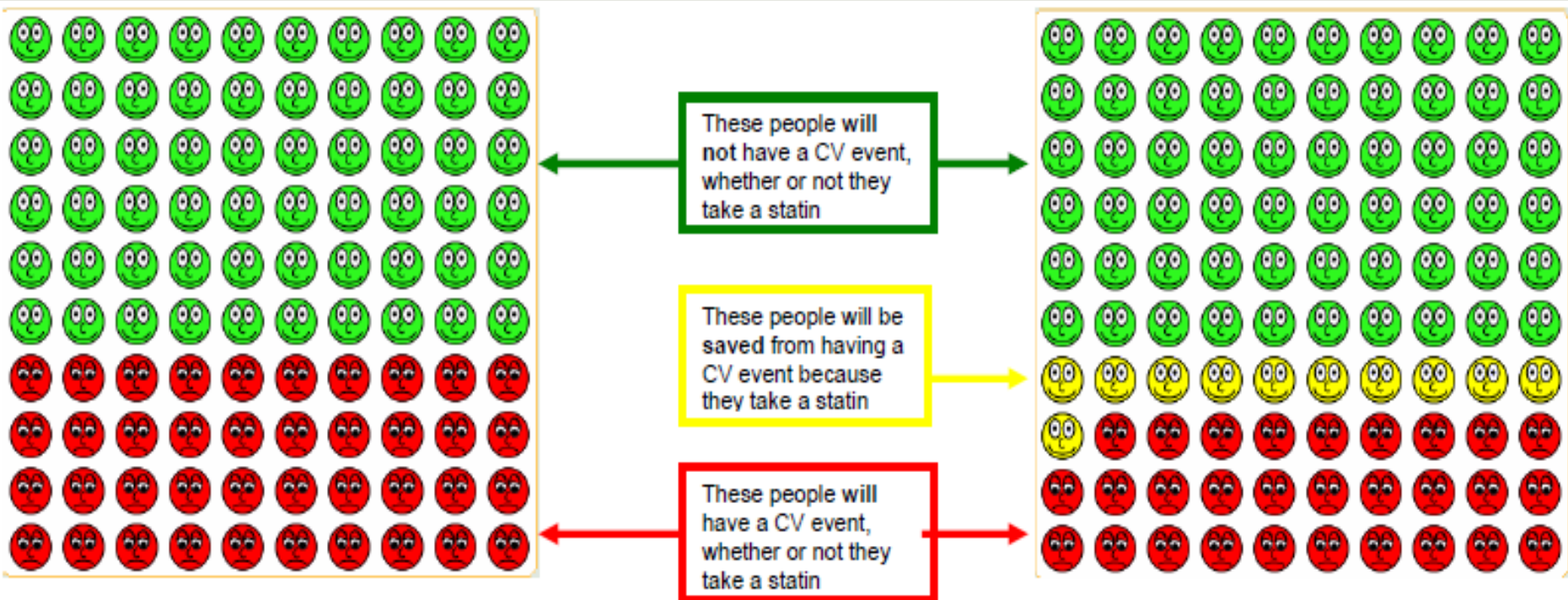
HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



PROFAM



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



PROFAM

¿A quién tratar?

- Riesgo mayor 20% a 10 años (si no puede bajarse por otros medios)
- Niveles colesterol extremos



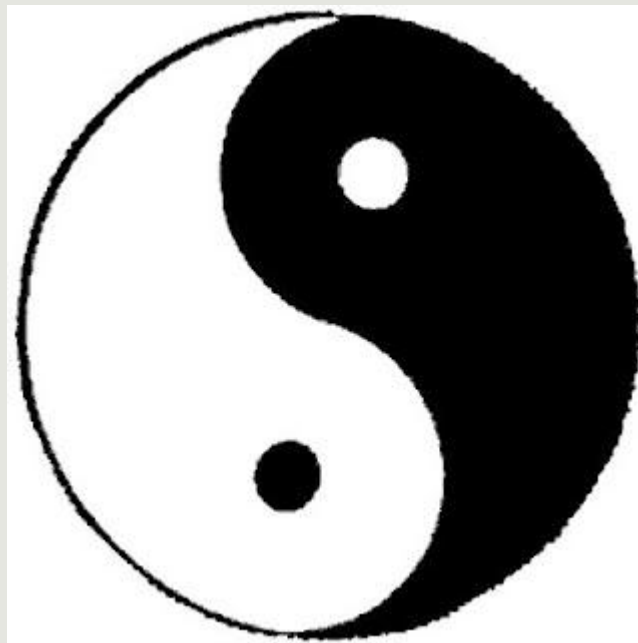
HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



Algunas alertas



HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



LIVING WITH HIGH CHOLESTEROL YOU NEVER KNOW WHAT'S AROUND THE CORNER



Don't delay. Take control of your cholesterol now.

Some risks are unavoidable. One of them is your high cholesterol, which can lead to heart disease both as a heart attack or even a stroke. Heart disease is the leading cause of death in Canada, and about one quarter of heart attack survivors do not survive.

Life is precious, so why not take measures to reduce unnecessary risk? High cholesterol is manageable. A healthy diet and an exercise plan, that sometimes will enough, to help the measures to put some in perspective other measures.

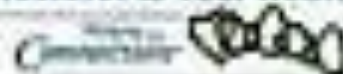
Good high cholesterol is a major risk factor for heart attack and stroke. Why take a chance by doing nothing about it?

You may not feel anything, but you could feel a crunch. Make the Connection, join the ranks of Canadians who are taking action, because you want to know what's around the corner...

Talk to your doctor or, for more information, call
1-877-4-ENH-CDL (1-877-466-6338)
or visit www.maketheconnection.ca

Make the Connection:

Cholesterol & Your Heart



HOSPITAL ITALIANO
de Buenos Aires



Servicio de Medicina
Familiar y Comunitaria



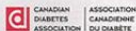
Which would you rather have, a **cholesterol** test or a final exam?

If any of these apply to you, talk to your doctor about having your cholesterol tested:

- Woman 50 years or older
- Man 40 years or older
- Heart disease (angina, heart attack, coronary bypass, stroke, angioplasty)
- Diabetes
- Family history (mother, father, sister, brother or grandparent) of heart disease or high cholesterol
- Two or more of the following:
 - Overweight
 - Physically inactive
 - Smoker
 - High blood pressure

For many, the first sign of heart disease is a heart attack. Did you know that one out of two adult Canadians is at risk of developing heart disease because they have high cholesterol? And that cardiovascular disease IS the leading cause of death in Canada?

High cholesterol is a major risk factor for heart disease but managing your cholesterol can be quite simple.



The Canadian Diabetes Association has reviewed the "Making the Connection" program for its medical and scientific accuracy. The Canadian Diabetes Association does not endorse the products of any pharmaceutical company. Sponsored by one of Canada's research based pharmaceutical companies.

OFFICE OF THE MEDICAL EXAMINER

Case No. 5341-96

Name J. B.

Age 52

Sex F

Overweight No

Cause of Death Heart attack

Call toll-free at 1-877-4-LOW-LDL
(1-877-456-9535) or visit
www.makingtheconnection.ca



and you will receive this
free booklet describing
the connection between
cholesterol and
heart disease.

Making the
Connection[™]
www.makingtheconnection.ca



HOSPITAL ITALIANO
de Buenos Aires



Servicio de Medicina
Familiar y Comunitaria





Scan for Author
Audio Interview

Lipid-Related Markers and Cardiovascular Disease Prediction

The Emerging Risk Factors
Collaboration*

ROUTINELY USED RISK PREDICTION scores for cardiovascular disease (CVD) contain information on total cholesterol and high-density lipoprotein cholesterol (HDL-C) and several other conventional risk factors.^{1,2} There is considerable interest in whether CVD prediction can be improved by assessment of various additional lipid-related markers either to replace, or supplement, traditional cholesterol measurements in these scores.³

Proposals to replace information on total cholesterol and HDL-C with single parameters, such as the total cholesterol:HDL-C ratio or non-HDL-C (ie, total cholesterol - HDL-C)^{4,5} have

Context The value of assessing various emerging lipid-related markers for prediction of first cardiovascular events is debated.

Objective To determine whether adding information on apolipoprotein B and apolipoprotein A-I, lipoprotein(a), or lipoprotein-associated phospholipase A₂ to total cholesterol and high-density lipoprotein cholesterol (HDL-C) improves cardiovascular disease (CVD) risk prediction.

Design, Setting, and Participants Individual records were available for 165 544 participants without baseline CVD in 37 prospective cohorts (calendar years of recruitment: 1968-2007) with up to 15 126 incident fatal or nonfatal CVD outcomes (10 132 CHD and 4994 stroke outcomes) during a median follow-up of 10.4 years (interquartile range, 7.6-14 years).

Main Outcome Measures Discrimination of CVD outcomes and reclassification of participants across predicted 10-year risk categories of low (<10%), intermediate (10%-<20%), and high (≥20%) risk.

Results The addition of information on various lipid-related markers to total cholesterol, HDL-C, and other conventional risk factors yielded improvement in the model's discrimination: C-index change, 0.0006 (95% CI, 0.0002-0.0009) for the combination of apolipoprotein B and A-I; 0.0016 (95% CI, 0.0009-0.0023) for lipoprotein(a); and 0.0018 (95% CI, 0.0010-0.0026) for lipoprotein-associated phospholipase A₂ mass. Net reclassification improvements were less than 1% with the addition of each of these markers to traditional risk factors.





HOSPITAL ITALIANO
de Buenos Aires



*Servicio de Medicina
Familiar y Comunitaria*



PROFAM



**THE
END**

