



Dr Fraser Hamilton

Heart Foundation



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Clinical Cardiologist and
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NZ Heart Foundation
Hamilton

Saturday, June 10, 2017

(Room 2)

16:30 - 17:25 WS #161: Cardiology Case Discussions

17:35 - 18:30 WS #173: Cardiology Case Discussions (Repeated)

CARDIOLOGY UPDATE

Case Studies

Heart Foundation Perspective

Assoc Prof Gerry Devlin
Medical Director

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GP Liaison

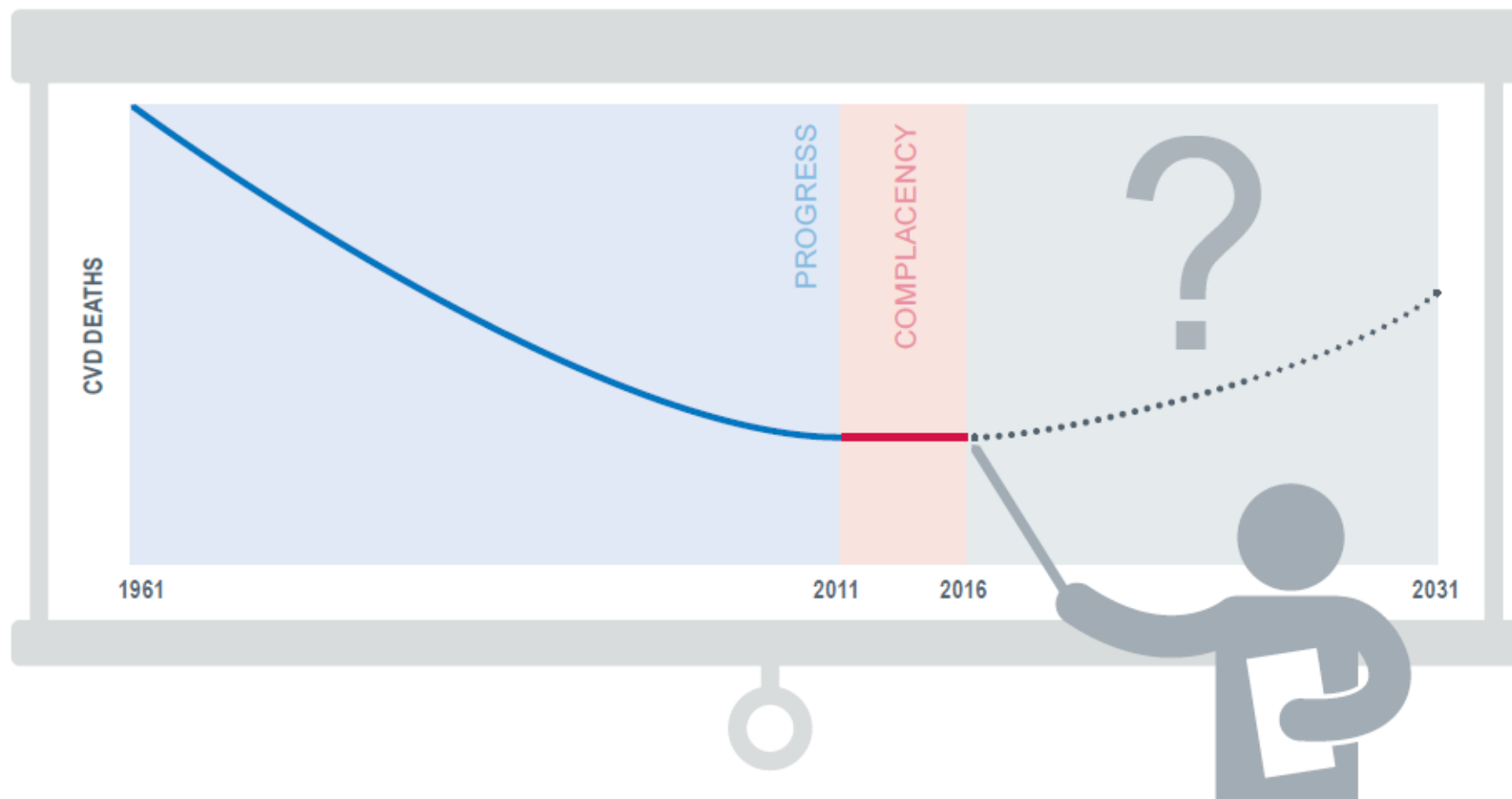
CARDIOLOGY UPDATE

- Still relevant
- Primary prevention
 - Who, when, what
 - Discussing risk
- MI but normal coronaries
- How long to stay on BB
- SE Ticagrelor
- Stable angina investigation according to NICE
- Statin SE new trial
- NSAID safety
- AF
- Treatment targets

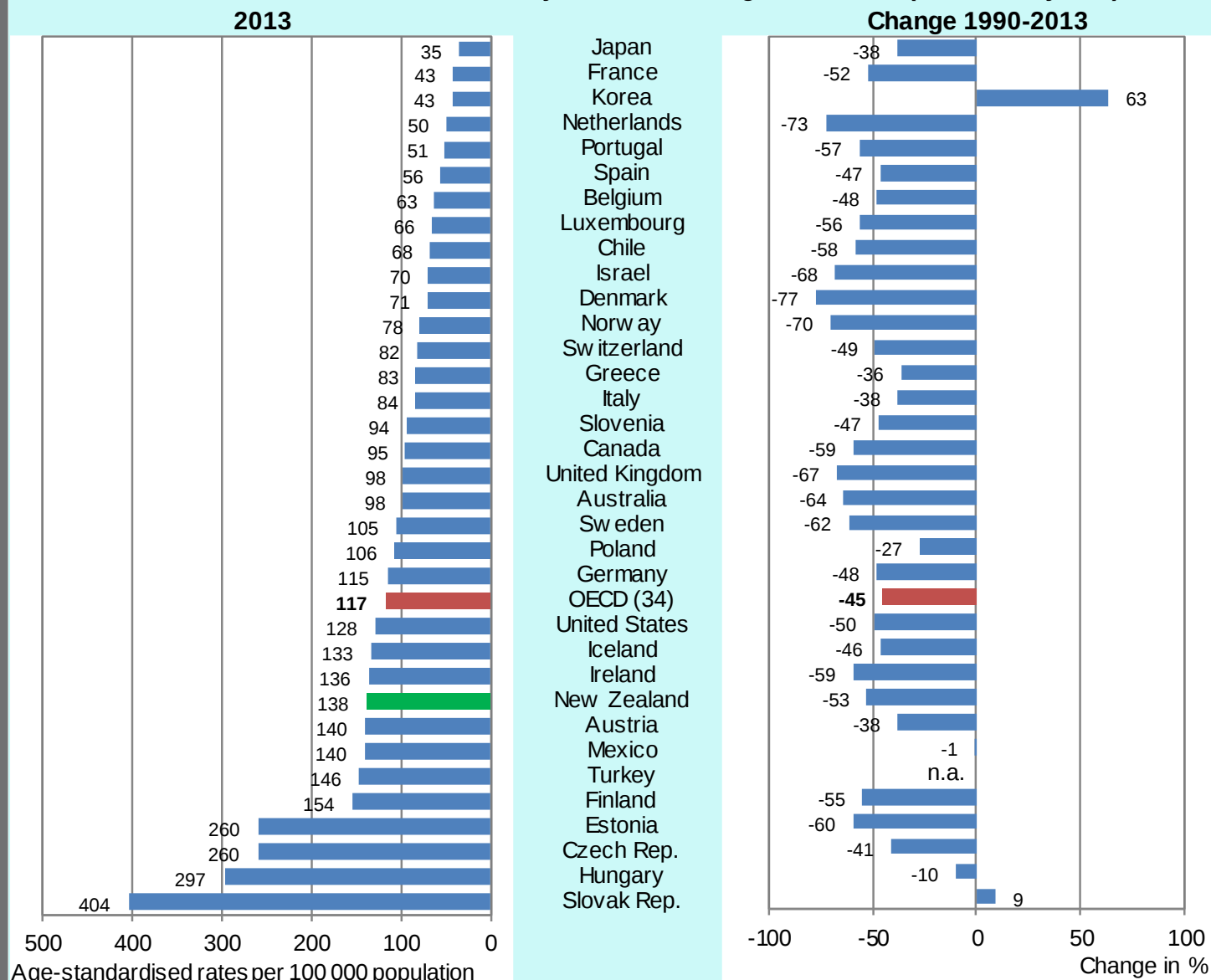


ACHIEVEMENTS IN PREVENTING LOSS OF LIFE FROM CARDIOVASCULAR DISEASE OVER THE LAST 50 YEARS ARE AT RISK OF BEING LOST

HUGE GAINS MADE IN CARDIOVASCULAR HEALTH ARE NOW IN JEOPARDY AS THE DECLINE IN THE DEATH RATE FROM CVD HAS FLATTENED OVER THE LAST 5 YEARS IN THE USA



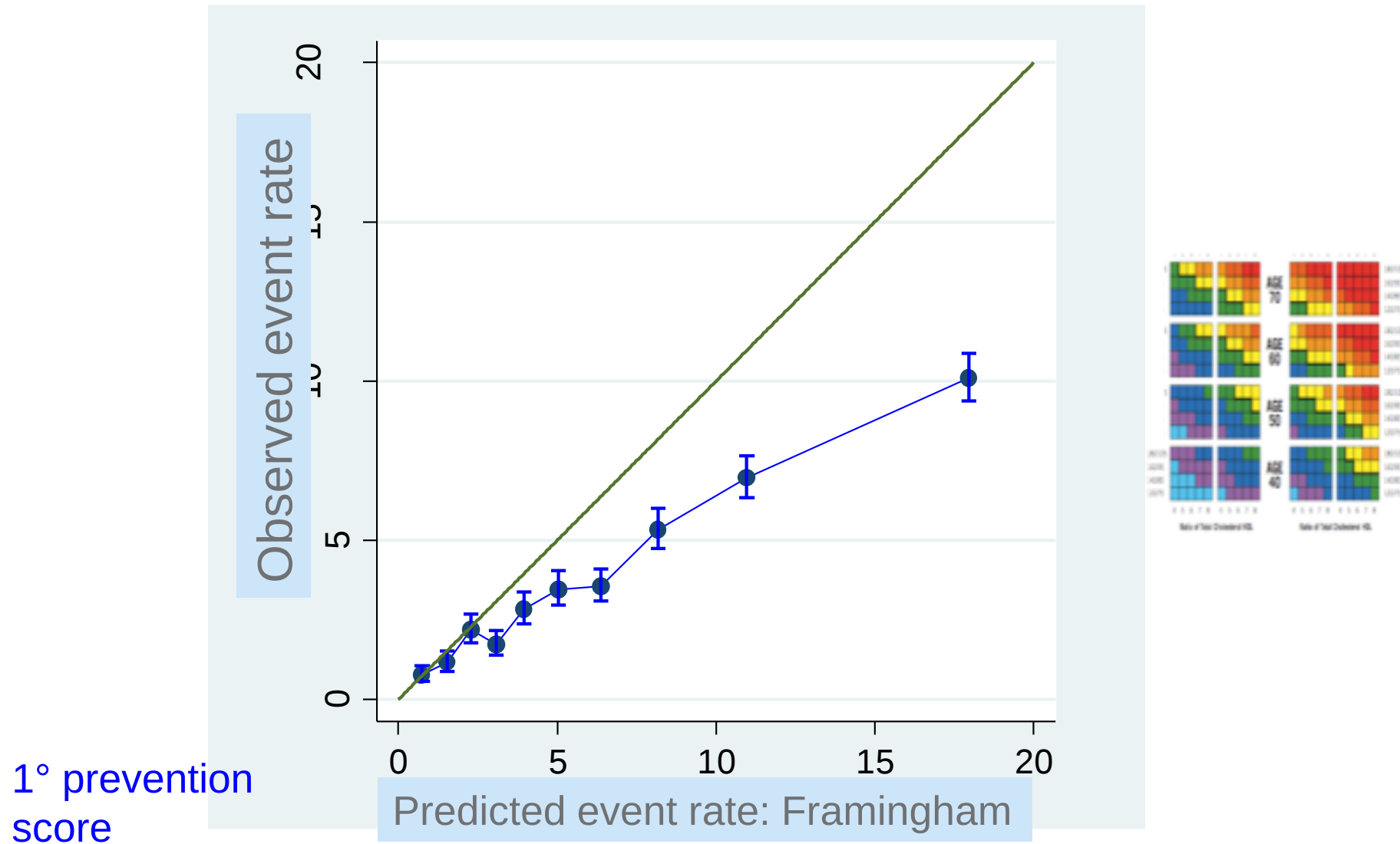
3.6. Ischemic heart disease mortality, 2013 and change 1990-2013 (or nearest years)



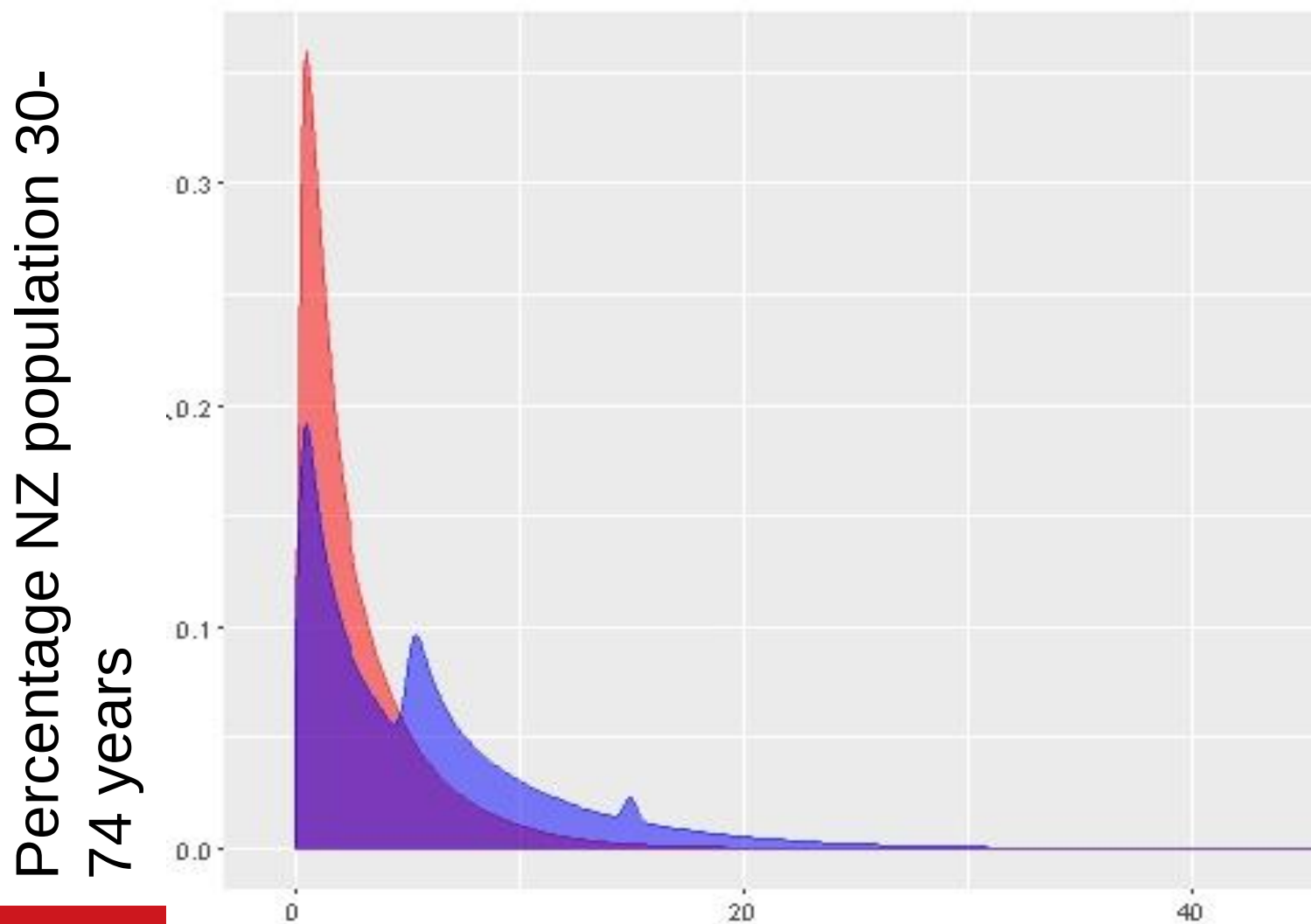
Source: OECD Health Statistics 2015, <http://dx.doi.org/10.1787/health-data-en> (extracted from WHO).



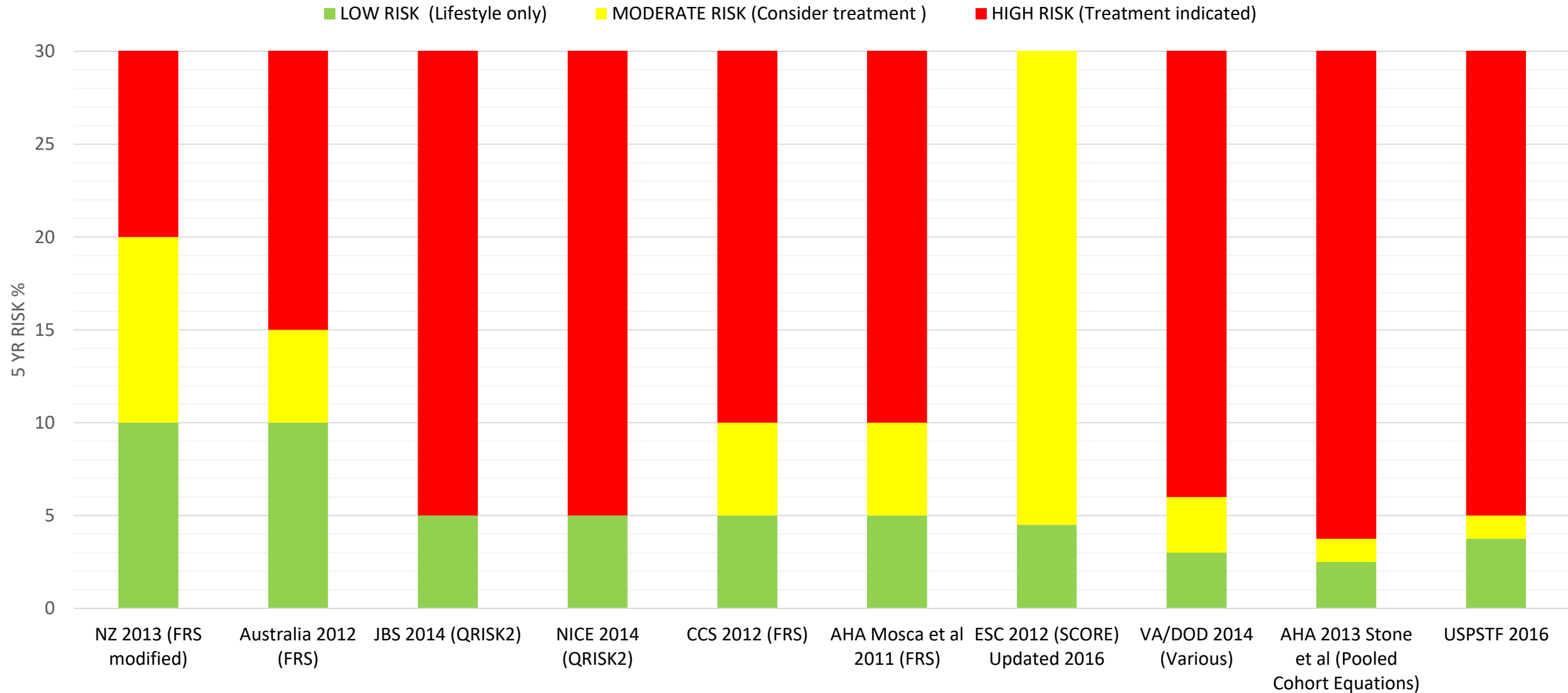
Observed vs Predicted risk: Framingham score



Density plot of 5-yr CVD risk: PREDICT vs. Framingham



Comparison of worldwide guideline thresholds. Risk estimations converted to 5 yr risk interval.



Risk Communication

- visual aids (icon arrays and bar graphs) improved patients' understanding and satisfaction.
- absolute risk reductions were better than relative risk reductions for maximizing accuracy and seemed less likely to influence decisions to accept therapy.
- The presentation of numbers needed to treat reduced understanding.



Preferences*		Ethnicity n (%)				
		NZ European/Other (n=187) [†]	Māori (n=55)	Pacific (n=95)	Indian (n=39) [†]	Total (n=376)
Most encouraging	RR	126 (69)	36 (65)	41 (43)	23 (59)	226 (61)
	AR	27 (15)	3 (5)	9 (9)	9 (23)	48 (13)
	NNT	10 (5)	2 (4)	3 (3)	0 (0)	15 (4)
	OR	9 (5)	4 (7)	6 (6)	1 (3)	20 (5)
	NF	10 (5)	10 (18)	36 (38)	5 (15)	61 (17)
Least encouraging	RR	3 (2)	5 (9)	4 (4)	1 (3)	13 (4)
	AR	13 (7)	6 (11)	13 (14)	1 (3)	33 (9)
	NNT	41 (23)	17 (31)	34 (36)	22 (56)	114 (31)
	OR	42 (23)	8 (15)	28 (29)	5 (13)	83 (22)
	NF	83 (46)	19 (35)	16 (17)	10 (26)	128 (34)
Most helpful to understand	RR	120 (66)	35 (64)	40 (42)	20 (51)	215 (58)
	AR	29 (16)	6 (11)	19 (20)	9 (23)	63 (17)
	NNT	9 (5)	2 (4)	2 (2)	0 (0)	13 (4)
	OR	16 (9)	4 (7)	4 (4)	4 (10)	28 (8)
	NF	8 (4)	8 (15)	30 (32)	6 (15)	52 (14)
Least helpful to understand	RR	10 (5)	8 (15)	8 (8)	1 (3)	27 (7)
	AR	11 (6)	5 (9)	11 (12)	2 (5)	29 (8)
	NNT	30 (16)	14 (25)	36 (38)	17 (44)	97 (26)
	OR	36 (20)	5 (9)	24 (25)	7 (18)	72 (19)
	NF	95 (52)	23 (42)			

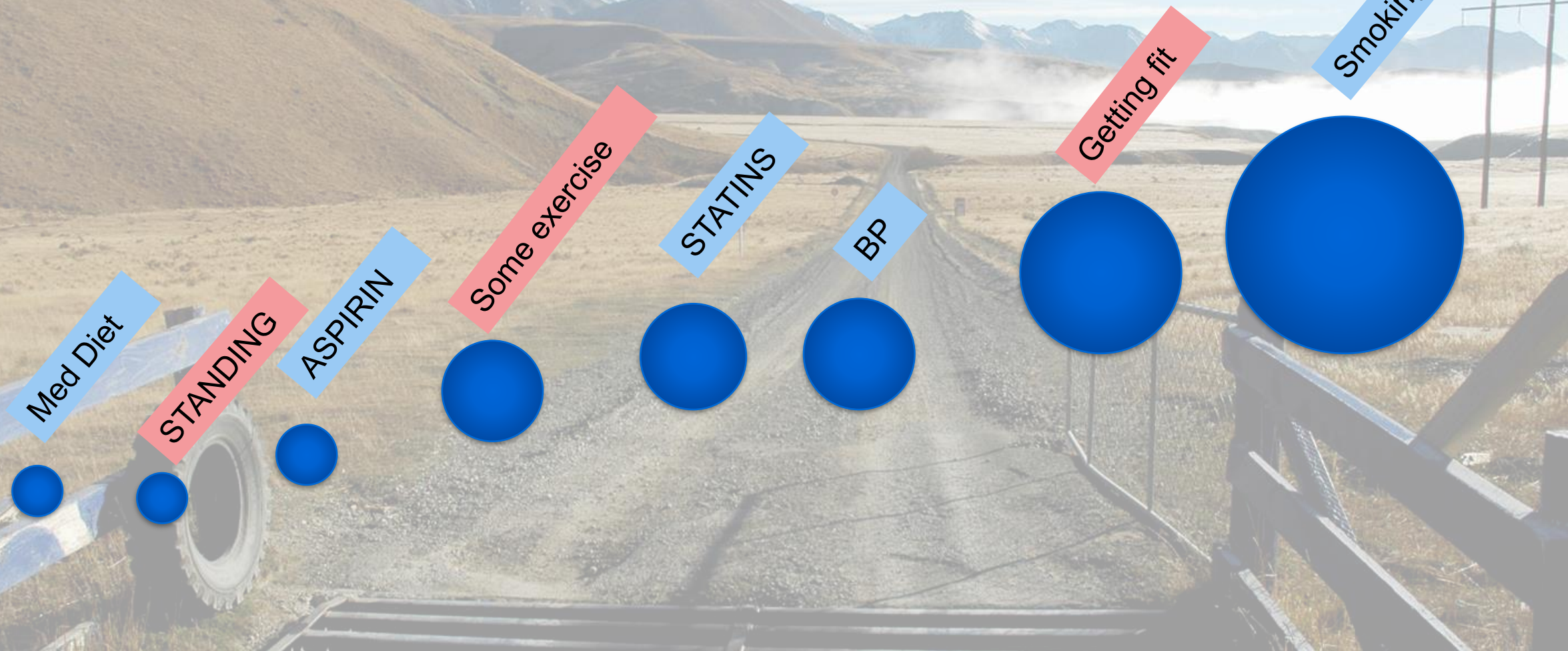
Brian



- 54
- CVRA 10%
- Wishes to try lifestyle change.



How much benefit ?





eat most
vegetables
& fruit

a variety of colours

eat some

bread, cereals, grains,
starchy vegetables

wholegrain & high-fibre

fish, meat, chicken,
legumes, eggs

lean & skinless

milk, yoghurt,
cheese

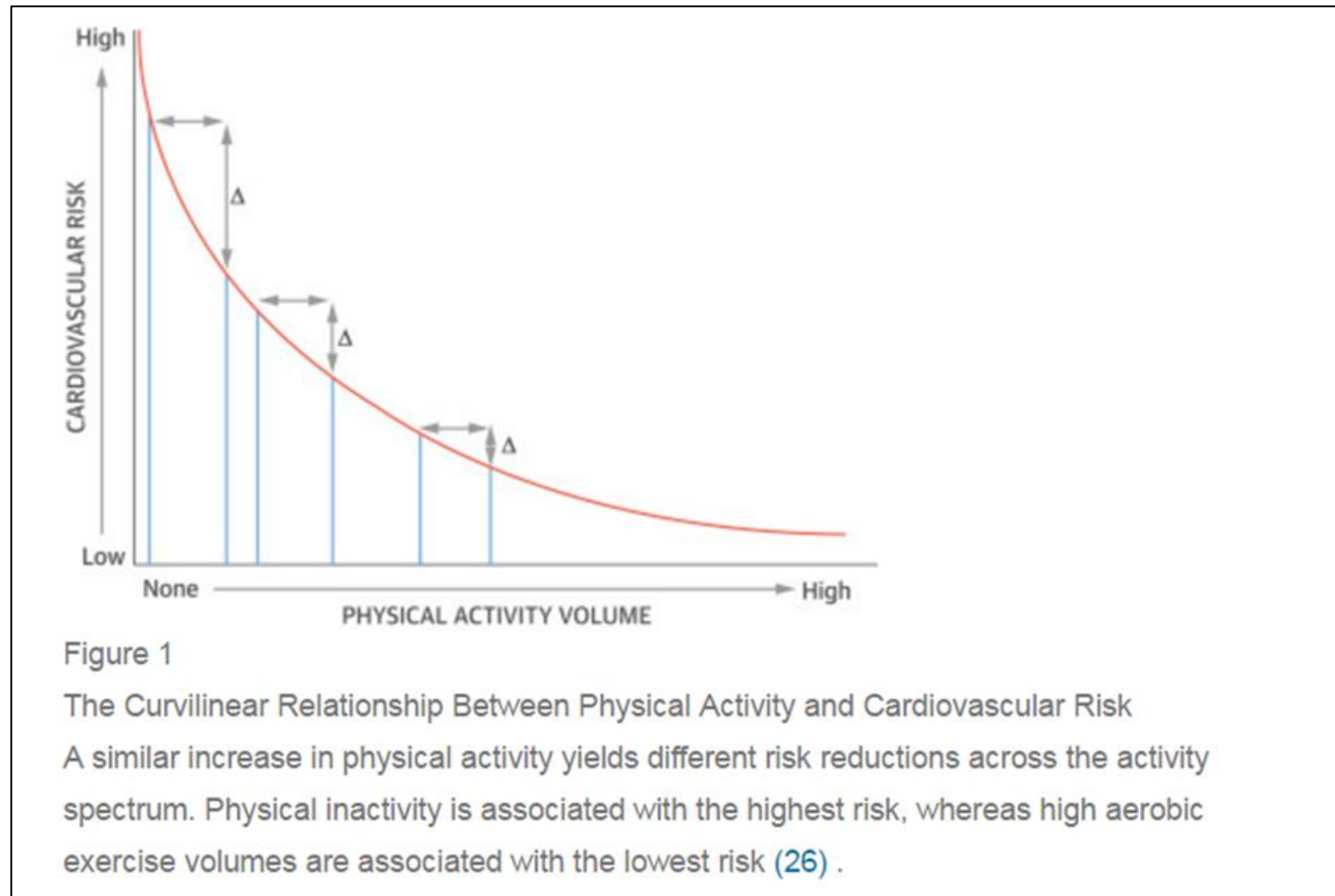
reduced fat

use some oils, nuts

CUT BACK ON junk foods, takeaways & foods or drinks high in sugar, salt or saturated & trans fats



Relationship between amount physical activity and CV risk





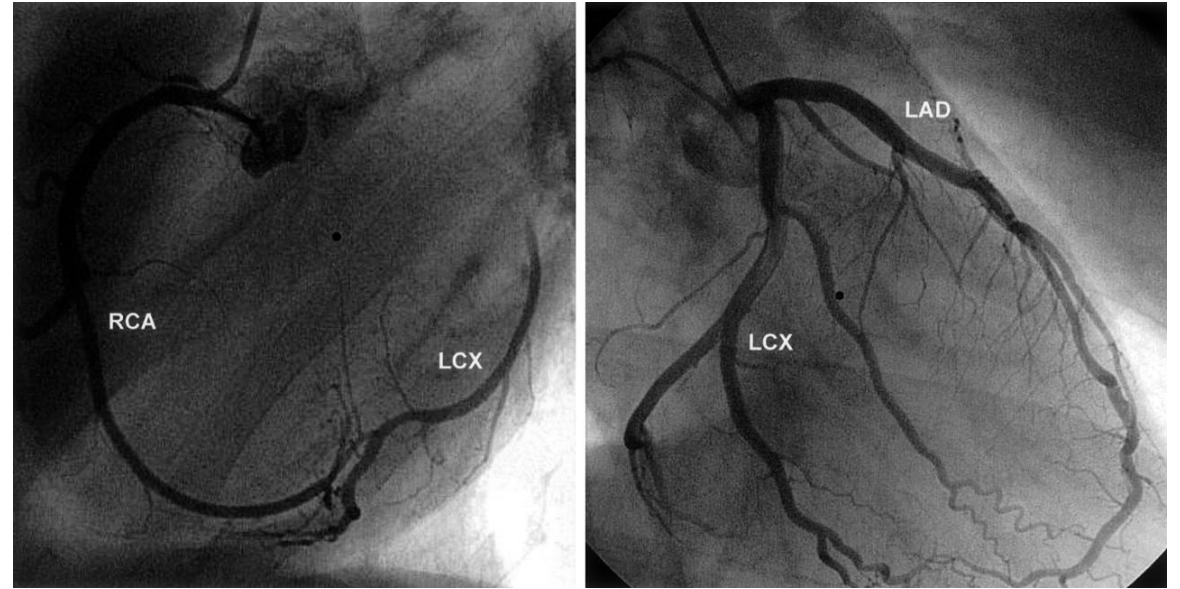
Mary



- 62
- Non smoker, No DM
- BP 154/86
- TC/HDL ratio 4.8
- No FMH
- NSTEMI
- Angiogram “normal”



Mary



- What is the cause?
- What should my approach be?



Bert



- MI 6 years ago
- No further chest pain and well since
- LDL 1.9
- BP 130/80

Wants to stop medication...



Bert



- Aspirin
 - Atorvastatin
 - Cilazapril
 - Metoprolol
-
- Uncertain when it is safe to stop beta blockers



Harold



- 60
- STEMI –Angiography - Stent
- Discharged on standard therapy.
- Comes to see you with SOB.



Harold

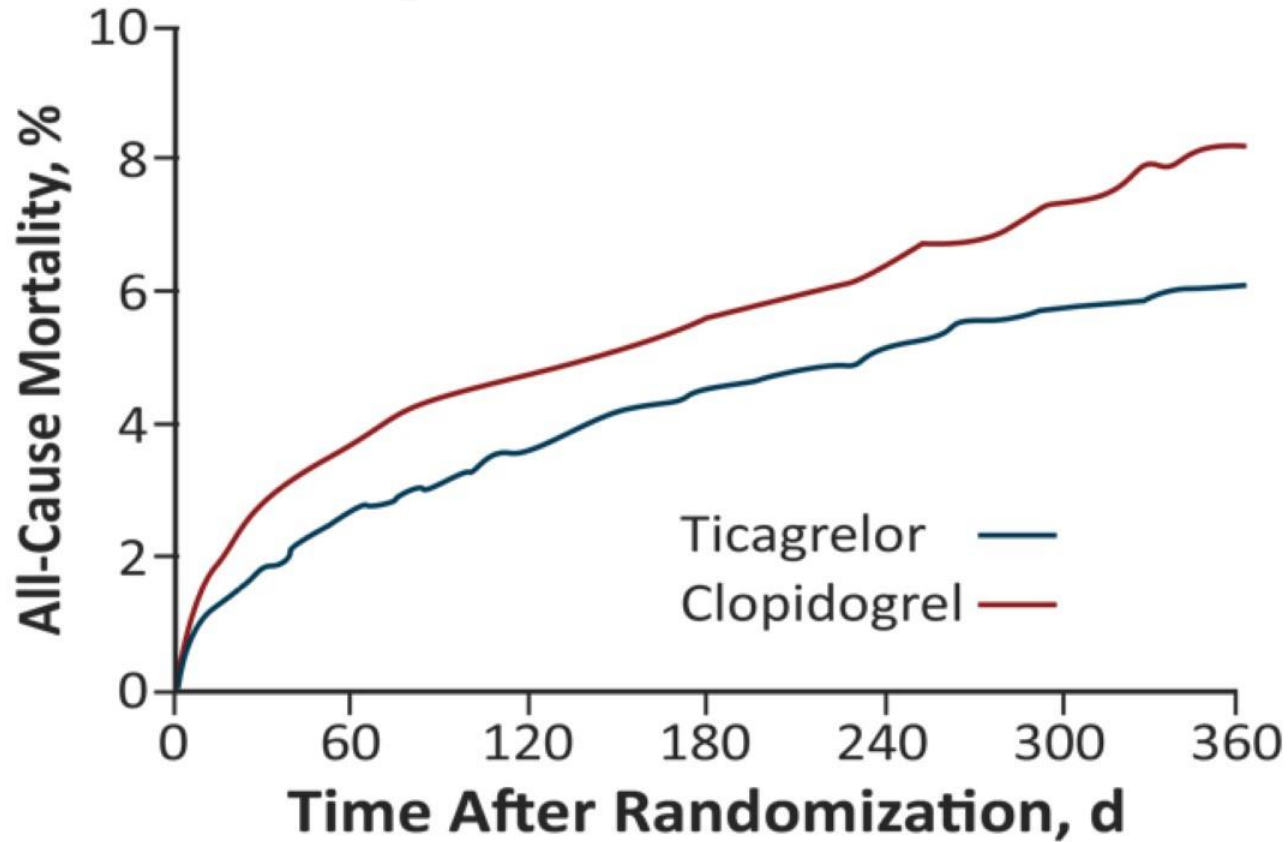


- Ticagrelor blamed
- SOB tends to be transient , early and in trials only led to discontinuation in 1%
- Important people don't stop it themselves
- There are other causes
- Switching to Clopidogrel is not benign



PLATO

Cumulative Incidence of Primary Composite of CV Death, MI, and Stroke in Patients Intended for Noninvasive Management



No. At Risk							
Ticagrelor	2601	2485	2447	2385	1978	1531	1186
Clopidogrel	2615	2488	2448	2380	1965	1524	1200

Nicely Diagnosing Chest Pain



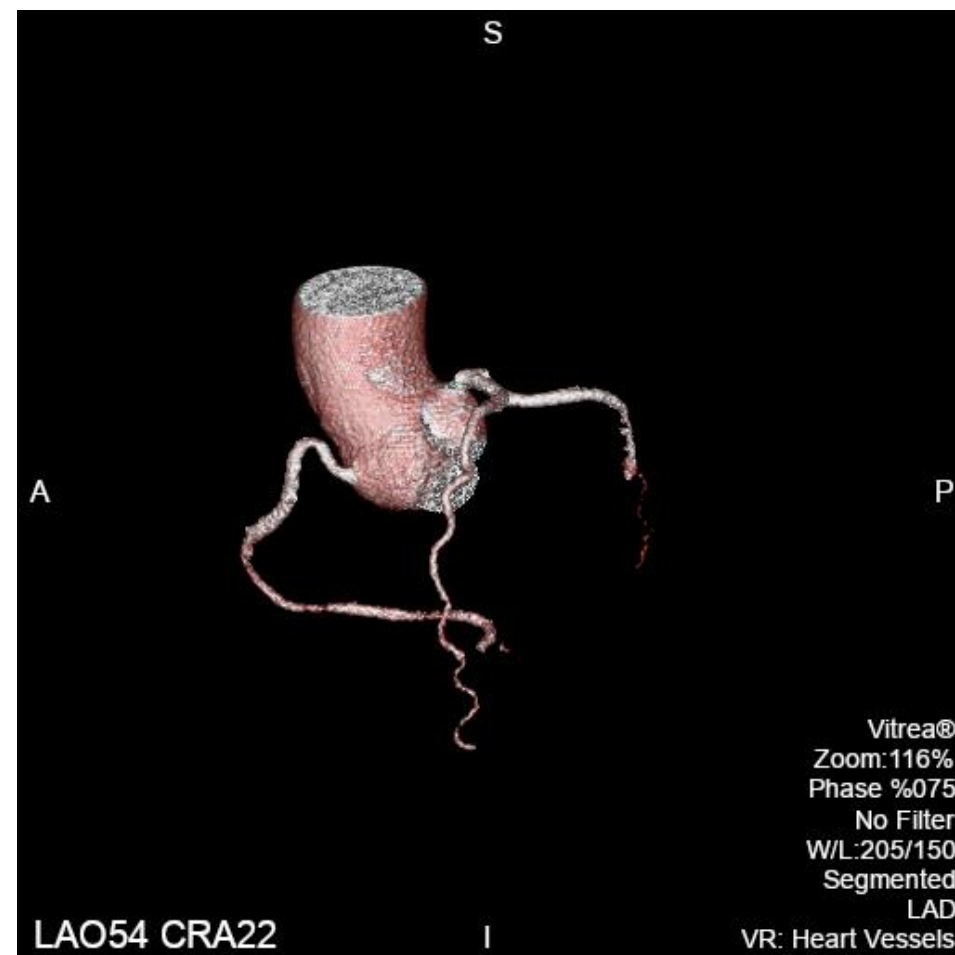
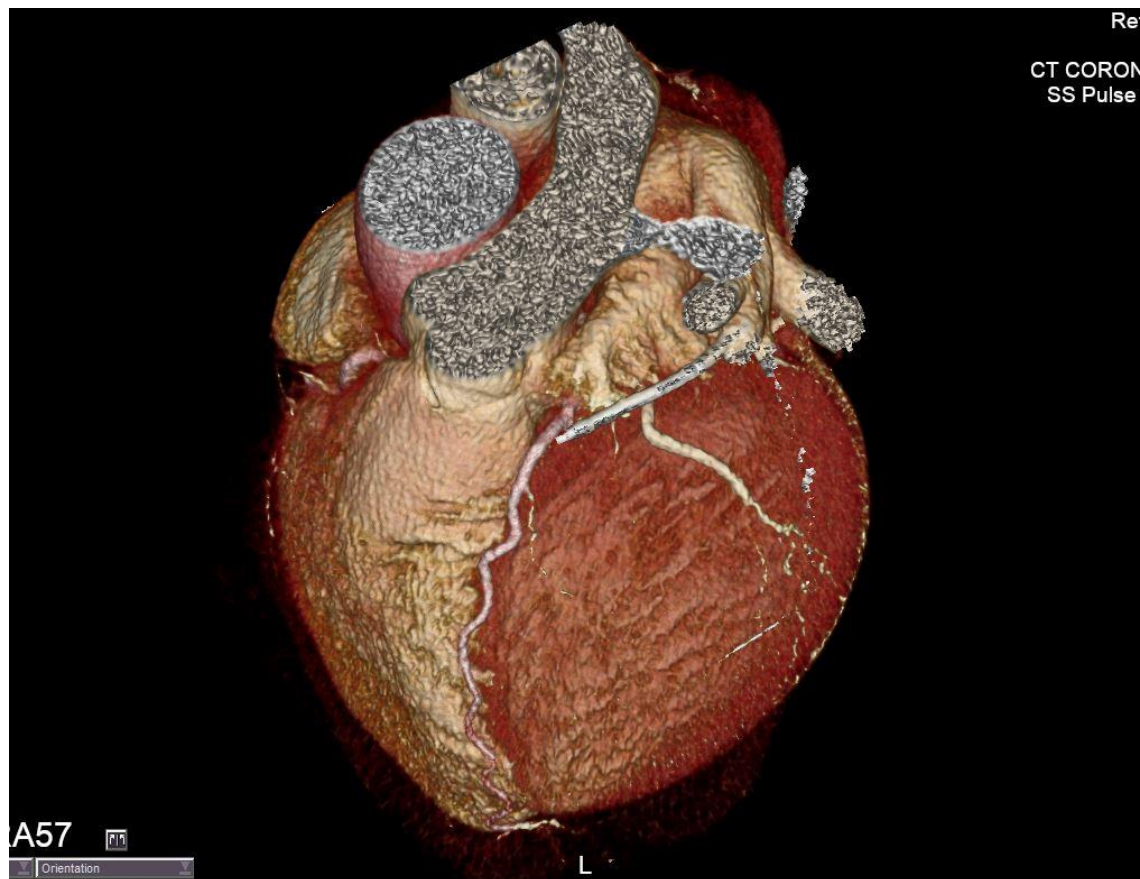
- Exertional chest discomfort
- Resolves quickly.
- Never lasted more than 30 mins
- No associated symptoms

NICE

- FIRST LINE
 - **CT coronary angiography** if:
- clinical assessment indicates typical or atypical angina **or**
- clinical assessment indicates non-anginal chest pain but 12-lead resting ECG has been done and indicates ST-T changes or Q waves. **[new 2016]**



CTCA



Roderick



- 30
- Mum says he should get checked out.
- Father had first heart attack aged 42
- Non smoker
- Little overweight
- Exercises but limited by back
- BP 138/70
- TC 6, Trig 4, HDL 1.05, LDL 3.1, ratio 5.7



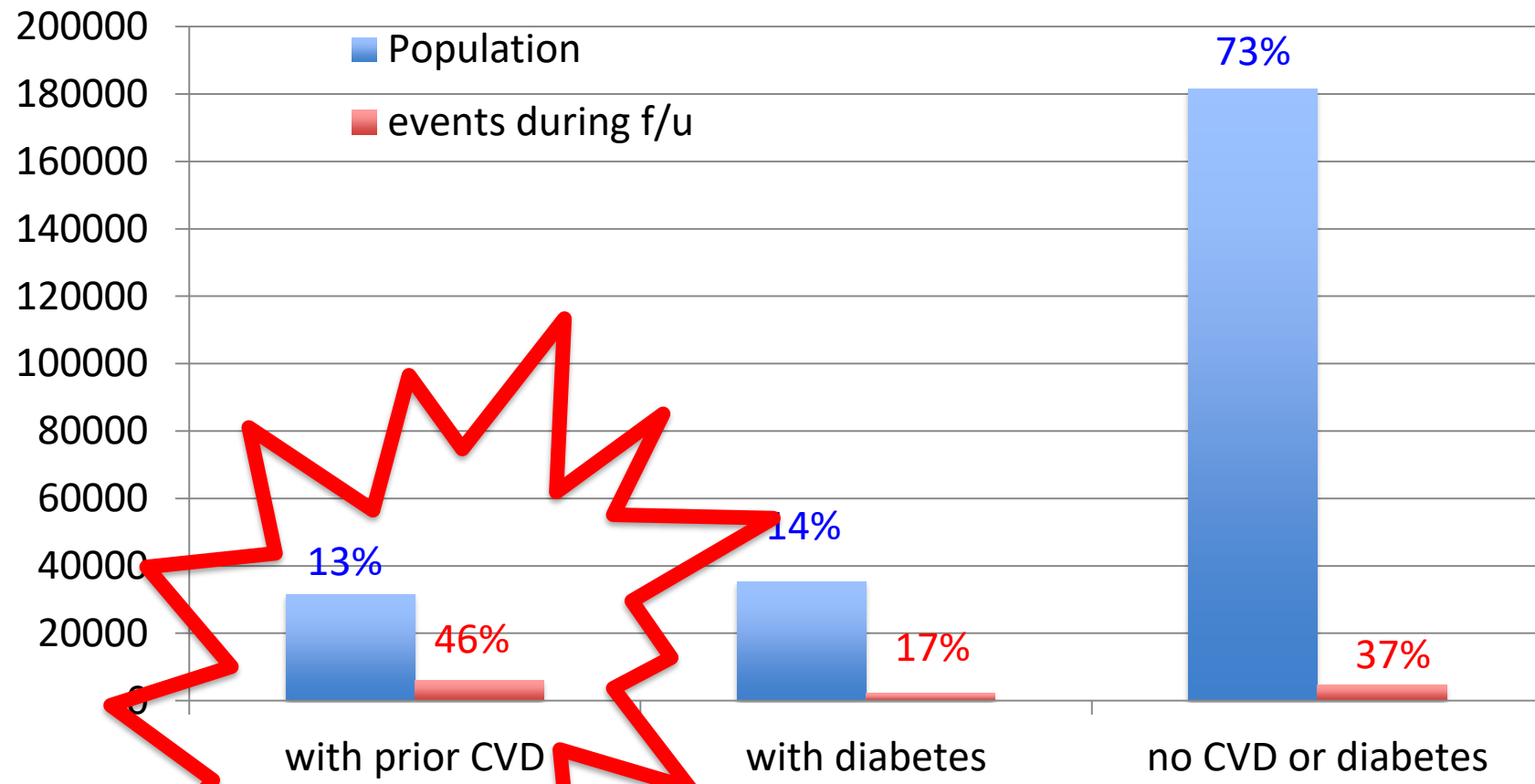
Harold



- 60
- STEMI –Angiography - Stent
- Discharged on standard therapy after 3 days.
- Follow up planned.
- Hasn't engaged with Cardiac rehab



CVD events during follow-up in PREDICT population 30-74 years, by clinical history



2002-2012

POST ACS CHECKLIST

Name

NHI

Provider

Date of event

Coding

IHD/Date

Specific Event /Date (e.g MI, NSTEMI, Angina)

Treatment / Date(PTCA/CABG)

Prescriptions

Aspirin

Ticagrelor (date of cessation on script)

Clopidogrel

ACEI/ARB

Beta Blocker

Statin

Medicines Counselling

Input from Clinical Pharmacist

Written information provided

Patient has a list of Medications printed

Lifestyle Conversations & Prompts to Care

Post an Acute Coronary Syndrome event



A patient centred prompt to care tool - personalised to individual preferences whilst promoting self-management.

Physical Activity 	Aim for minimum of 30 minutes of moderate intensity physical activity on most days of the week. Build intensity over several weeks. Resume slowly, e.g. walking to the letter box and back, then two – three lamp posts, slow incremental increases. What's available in the local region – leisure centre, walking group, cardiac club. Ensure able to hold a conversation throughout activity. Sexual Activity – if you can walk up two
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Conclusions



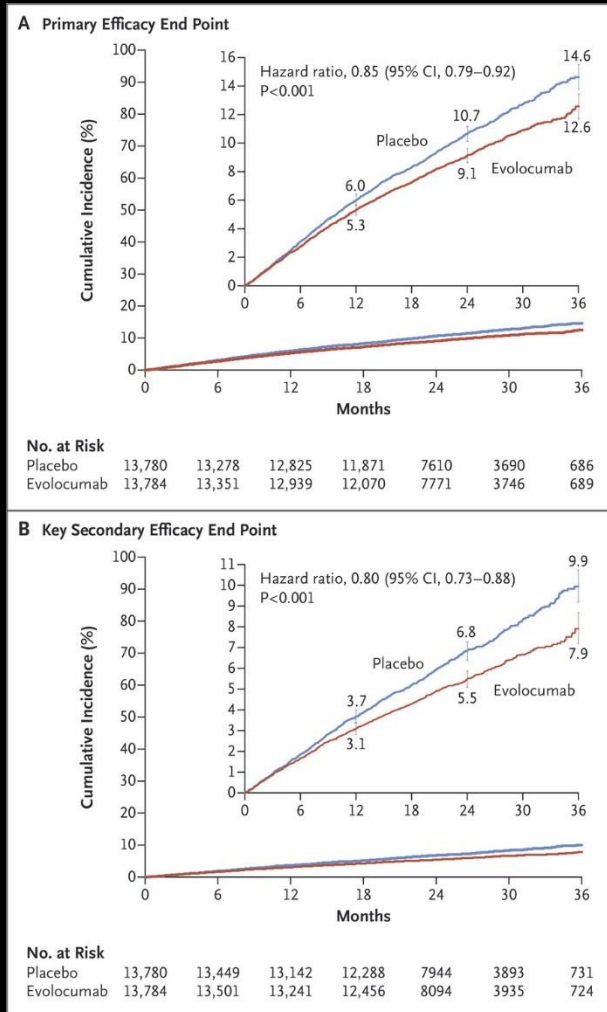
IMPROVE-IT: First trial demonstrating incremental clinical benefit when adding a non-statin agent (ezetimibe) to statin therapy:

- ✔ **YES:** Non-statin lowering LDL-C with ezetimibe reduces cardiovascular events
- ✔ **YES:** Even Lower is Even Better
(achieved mean LDL-C 53 vs. 70 mg/dL at 1 year)
- ✔ **YES:** Confirms ezetimibe safety profile

1.3_{mmol/l} **1.8**_{mmol/l}

- ➡ **Reaffirms the LDL hypothesis**, that reducing LDL-C prevents cardiovascular events
- ➡ Results could be considered for future guidelines

Cumulative Incidence of Cardiovascular Events.



Outcome trial of PCSK9 inhibitor.

Primary endpoint composite of cardiovascular death, myocardial infarction, stroke, hospitalization for unstable angina, or coronary revascularization. The key secondary efficacy end point was the composite of cardiovascular death, myocardial infarction, or stroke.

Standard arm had median LDL of around 2.3 compared with 0.78 in treatment arm.

Primary end point [9.8%] vs.[11.3%]; P<0.001

Secondary end point [5.9%] vs. [7.4] ;P<0.001

TARGETS

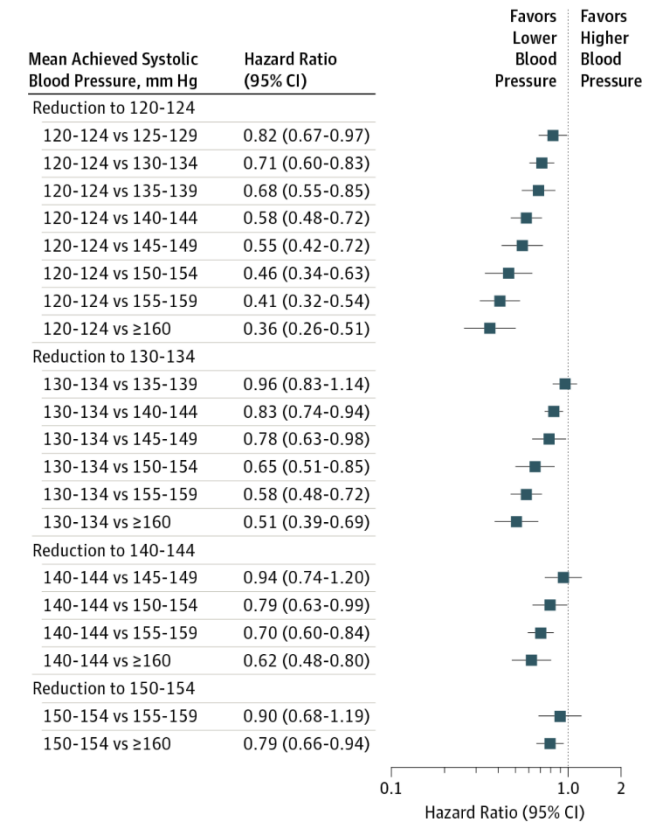
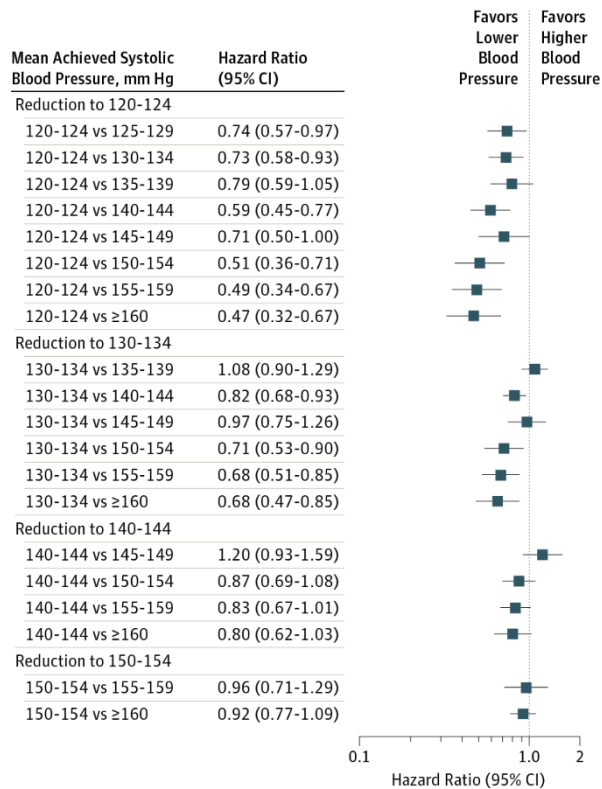
	CCS 2013	Australia 2012	AHA Stone 2014	NICE 2015	VA/DoD 2014	ESC 2012	JBS 2014	Mosca 2011
Target LDL (mmol/L)	Low risk >50% reduction	<2mmol/L	No target	>40% reduction	No target	Moderate risk <3mmol/L	<1.8mmol/L (although framed as <2.5mmol/L non HDL-C)	<2.5mmol/L
	Intermediate risk <2 mmol/L or >50% reduction					High risk <2.5mmol/L		Very high risk <1.8mmol/L
	High risk <2mmol/L or >50% reduction					Very High Risk <1.8mmol/L		



Systolic BP and risk

MORTALITY

CV disease



	NZ	Australia	ESC/ESH	JBS	JNC 8	NICE BP	VA/DoD	AHA ¹	CHEP
	2013	2012	2013	2014	2014	2011	2014		2013
BP threshold for diagnosis of Hypertension & management regardless of other factors	170/100	160/100	160/100	160/100	150/90 for >60y 140/90 for <60y	160/100	160/90		180/110
Standard BP target (Low Risk)	140/85	140/90	140/90	150/90	140/90	140/90	150/90		
Target for Low risk age > 80		150/90	150/90		150/90	150/90	150/90		150/90
Target for Low risk age 60-80		140/90	140/90		150/90	140/90	150/90		140/90
Target for those with DM	130/80		140/85	140/90	140/90	135/85	140/85		130/80
Target for those with CKD	130/80	140/90	140/90	140/90	140/90	140/90			140/90
Target for those w Micro-albuminuria	130/80	130/80	130/90			130/80			
Target for those with existing CVD	130/80	140/90	140/90	140/90				140/90	



Sebastian

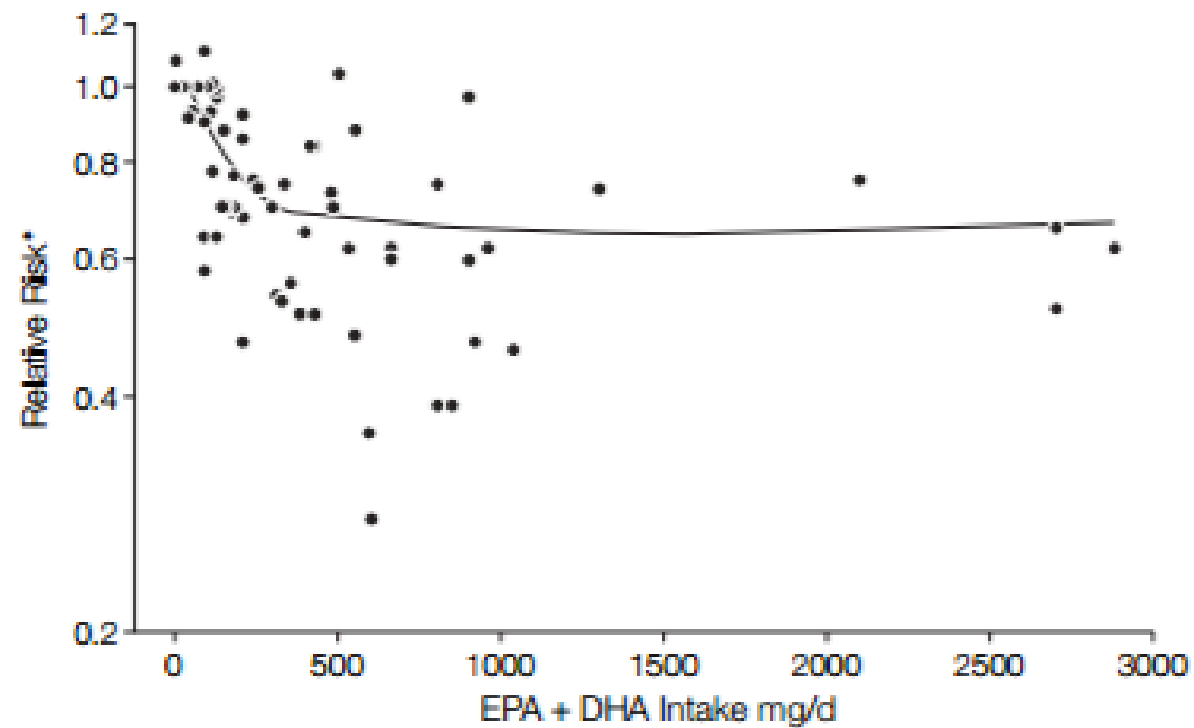


- Should I take fish oil?
- Co Q 10?



Fish Oil

Figure 2. Relationship Between Intake of Fish or Fish Oil and Relative Risks of CHD Death in Prospective Cohort Studies and Randomized Clinical Trials



Alfred



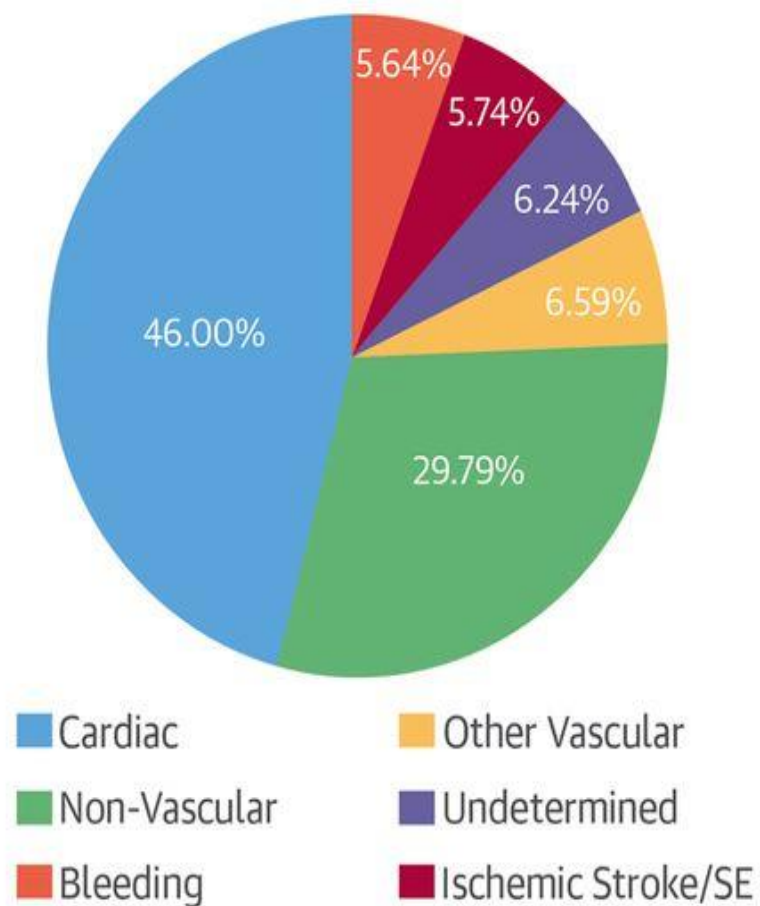
- Turns up for a Flu shot?
- Should we screen for AF?

Screening for AF?

- In 2012 the European Society of Cardiology recommended opportunistic screening for AF in patients 65 and over using pulse taking.
- In September 2016 the WHO released its “global roadmap to reducing premature cardiovascular disease mortality caused by AF” highlighting that the **lack of routine pulse checks in the >65s is the key gap in care.**



Causes of Death (n = 6,206)



Comparison Between DOACs and Warfarin for Causes of Death



Antonio Gómez-Outes et al. JACC 2016;68:2508-2521

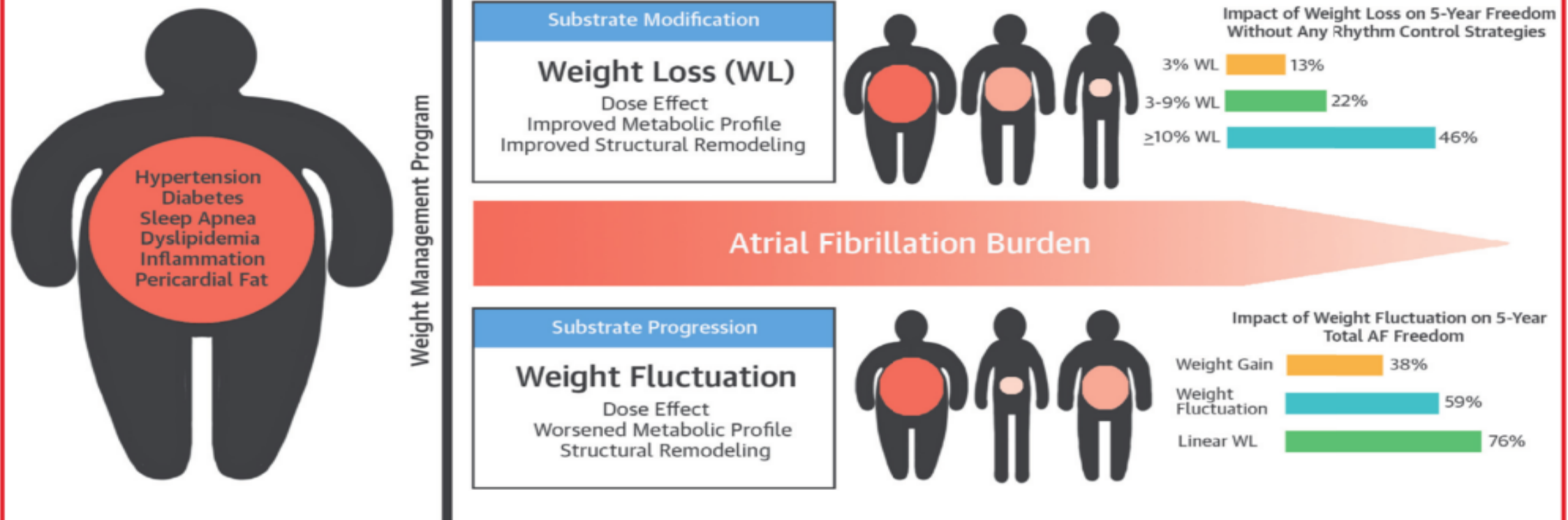
Alfred



- AF diagnosed
- Importance of lifestyle
- Under-treatment common



CENTRAL ILLUSTRATION Weight Management and Atrial Fibrillation



Pathak, R.K. et al. J Am Coll Cardiol. 2015; 65(20):2159-69.

(Left) Obesity is associated with a variety of associated comorbidities. These are all associated with progression of the atrial substrate and the development of atrial fibrillation (AF). **(Top)** A dedicated weight management program with weight loss (WL) is associated with reverse remodeling of the atrial substrate and a dose-dependent reduction in the AF burden, which is sustained in the long term. **(Bottom)** The consequence of weight fluctuation, which somewhat curtails the beneficial effects of WL.

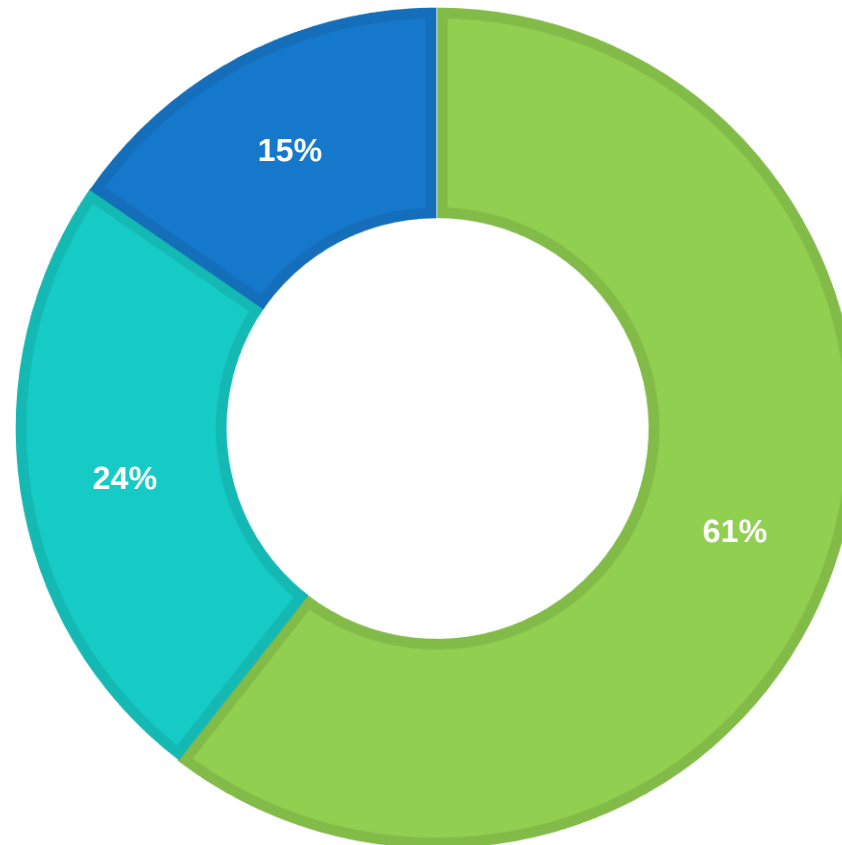


PROPORTION OF PATIENTS

■ Anticoagulants ■ Aspirin monotherapy ■ Neither

**Of the 81.9% who
were at high risk**

CHADS2VASC of ≥ 2



Alfred

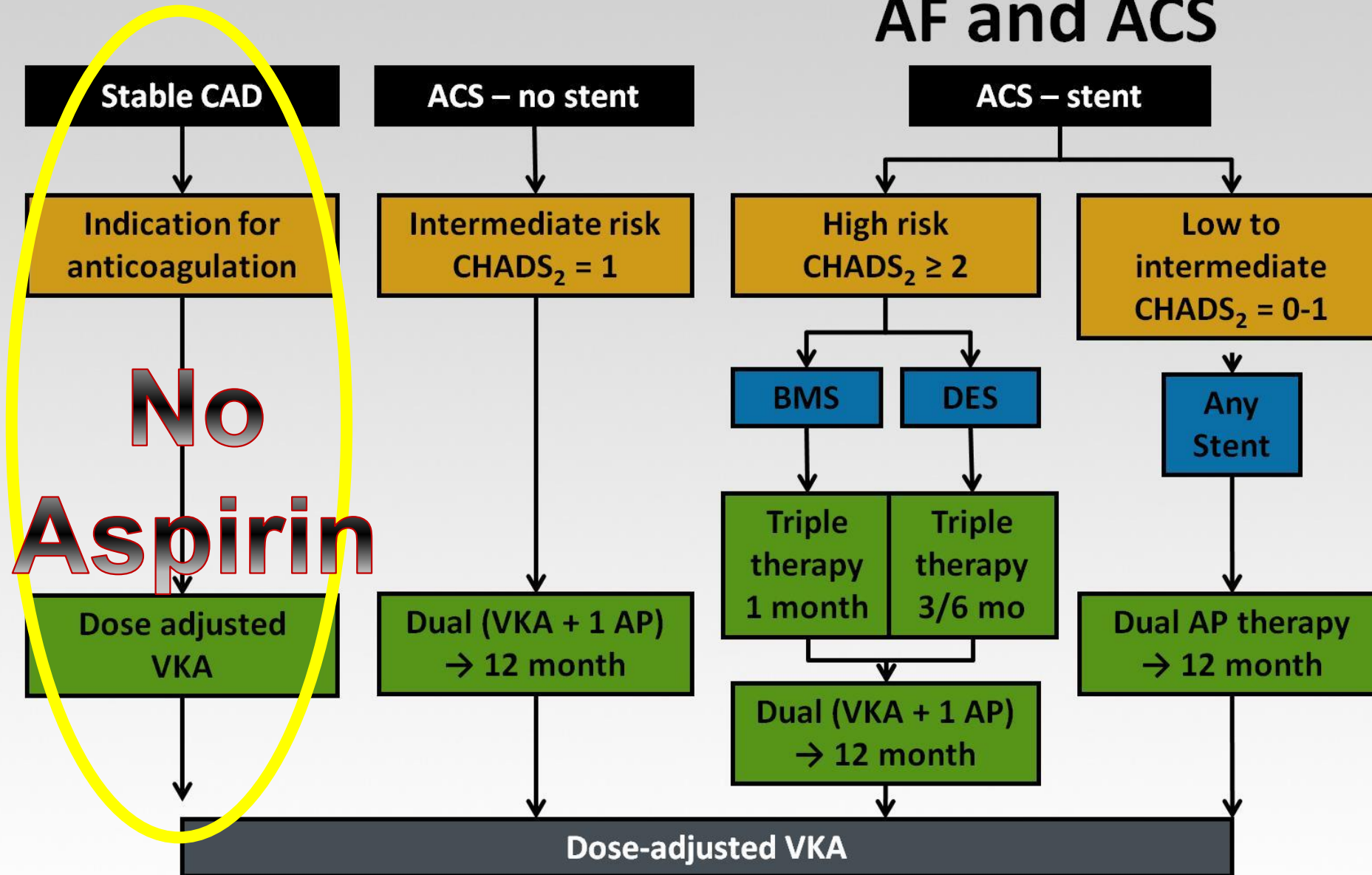


- AF diagnosed
- STEMI 1998 and well since
- Taking aspirin



ACCP Guidelines

AF and ACS



Murgatroyd



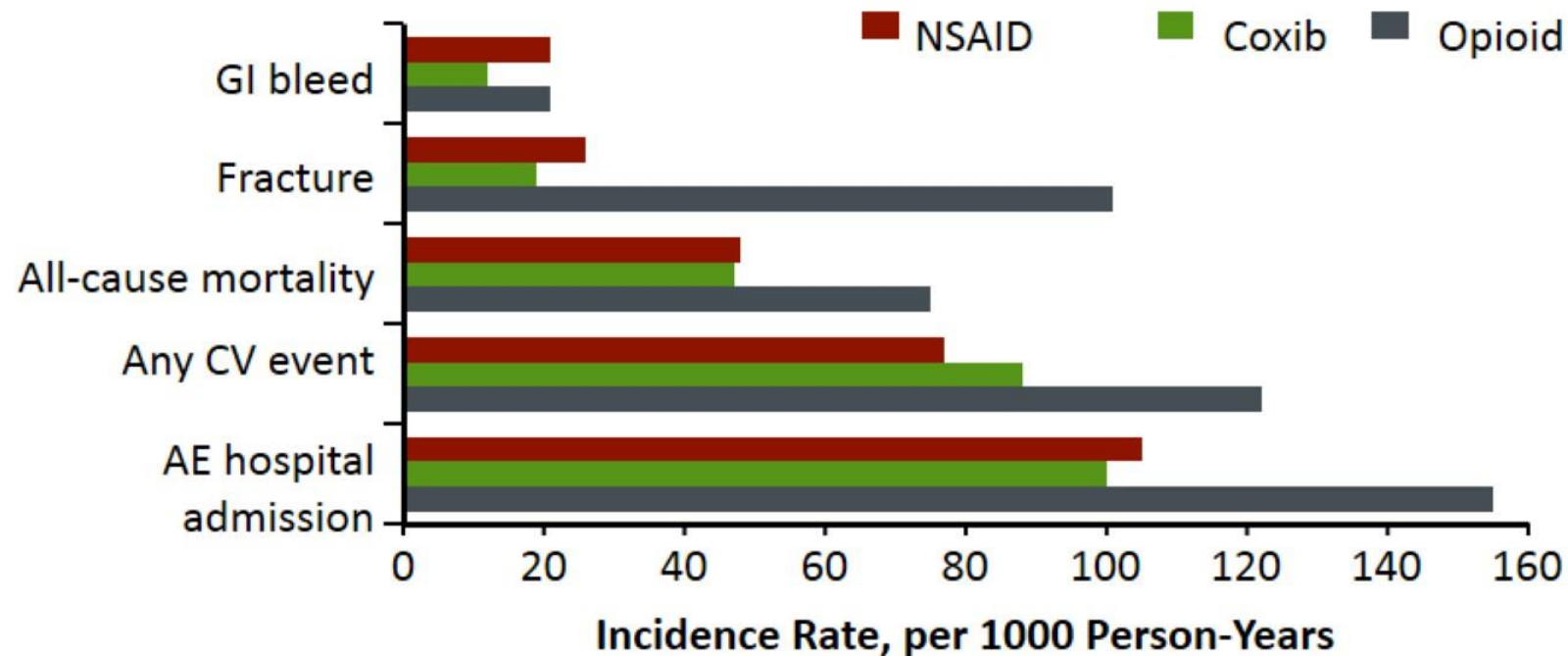
- MI 2008
- DM, non smoker
- BP 140/80
- Develops arthritis
- Safety of NSAIDs



CV Risks With NSAID Use

- SCOT and PRECISION trials have shown that:
 - NSAIDs can be used safely in patients with a high risk for CVD but without disease
 - The increased CV risk is the same for all NSAIDs
- Patients with early-stage RA are a lower-risk group because:
 - Most are relatively young, so their CV risk is likely to be lower than for older patients
 - NSAID use is short term
- HCPs need to prescribe the right treatment for each patient's needs

Opioids: Risks vs NSAIDs



- Study of Medicare records in USA, 1999-2005
- 12,840 older adults (mean age, 80 years; 85% women; mostly OA)
- Opioid use increased the risk for adverse events



**“The key is to
stay active – just
do something
every day”**

Dennis/Heart attack

Journeys

Real people sharing their stories to help
and support others.

Visit heartfoundation.org.nz/journeys
or call 0800 863 375

You are not alone



**FOR A MINUTE THERE
YOU BORED ME TO DEATH**



Population	Recommendation	Grade (What's This?)
Adults ages 50 to 59 years	The USPSTF recommends low-dose aspirin use for the primary prevention of cardiovascular disease (CVD) and colorectal cancer in adults ages 50 to 59 years who have a 10% or greater 10-year CVD risk, are not at increased risk for bleeding, have a life expectancy of at least 10 years, and are willing to take low-dose aspirin daily for at least 10 years.	B
Adults ages 60 to 69 years	The decision to use low-dose aspirin to prevent CVD and colorectal cancer in adults ages 60 to 69 years who have a greater than 10% 10-year CVD risk should be an individual one. Persons who are not at increased risk for bleeding, have a life expectancy of at least 10 years, and are willing to take low-dose aspirin daily for at least 10 years are more likely to benefit. Persons who place a higher value on the potential benefits than the potential harms may choose to use low-dose aspirin.	C
Adults younger than age 50 years	The current evidence is insufficient to assess the balance of benefits and harms of aspirin use to prevent CVD and colorectal cancer in adults younger than age 50 years.	I
Adults age 70 years and older	The current evidence is insufficient to assess the balance of benefits and harms of aspirin use to prevent CVD and colorectal cancer in adults age 70 years and older.	I

Draft USPSTF Recommendations due for publishing 2016



Lancelot



- 50, Non smoker, normotensive, No FMH of early IHD
- TC 8.3
- HDL 2.24
- LDL 5.7
- Ratio 3.7

