

- This meeting is organised and paid for by Janssen
- Slide content has been reviewed by Janssen to ensure compliance with the ABPI Code of Practice for the Pharmaceutical Industry.
- Speakers may express personal opinions that are not necessarily shared by Janssen.
- Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard Adverse events should also be reported to Janssen-Cilag Ltd on 01494 567447.
- Prescribing Information is available at this meeting.

Janssen-Cilag Ltd, 50-100 Holmers Farm Way, Buckinghamshire, HP12 4EG, UK

▼ **Invokana® (canagliflozin)** *This medicinal product is subject to additional monitoring and it is therefore important to report any suspect adverse reactions related to this medicinal product.*

Complications of Diabetic Ischemia



Adie Viljoen

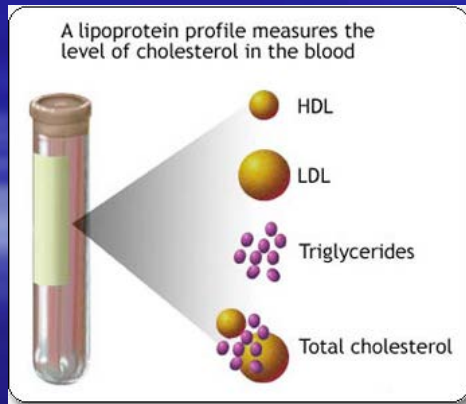
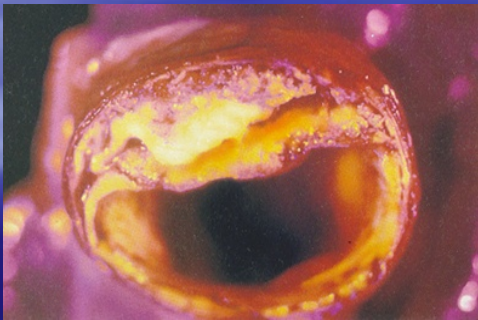
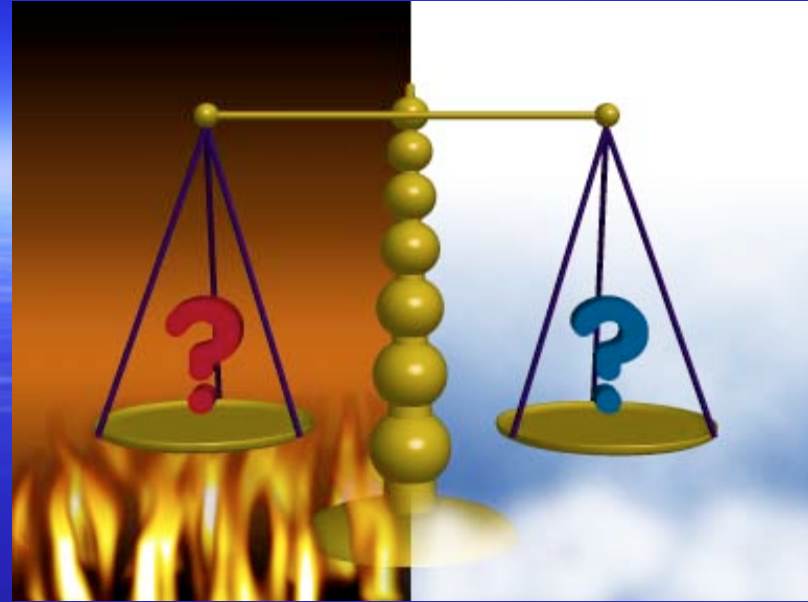
MBChB, MMed, FRCPath, FCP, MBA

Lister Hospital, Stevenage

Honorary Consultant Cambridge University Hospitals NHS Trust

Job number: PHGB/VOK/0515/0031

Date of Preparation: May 2015



Case 1*

- 56 year old man
- Admitted on 24th Dec 2013 with acute onset of chest pain

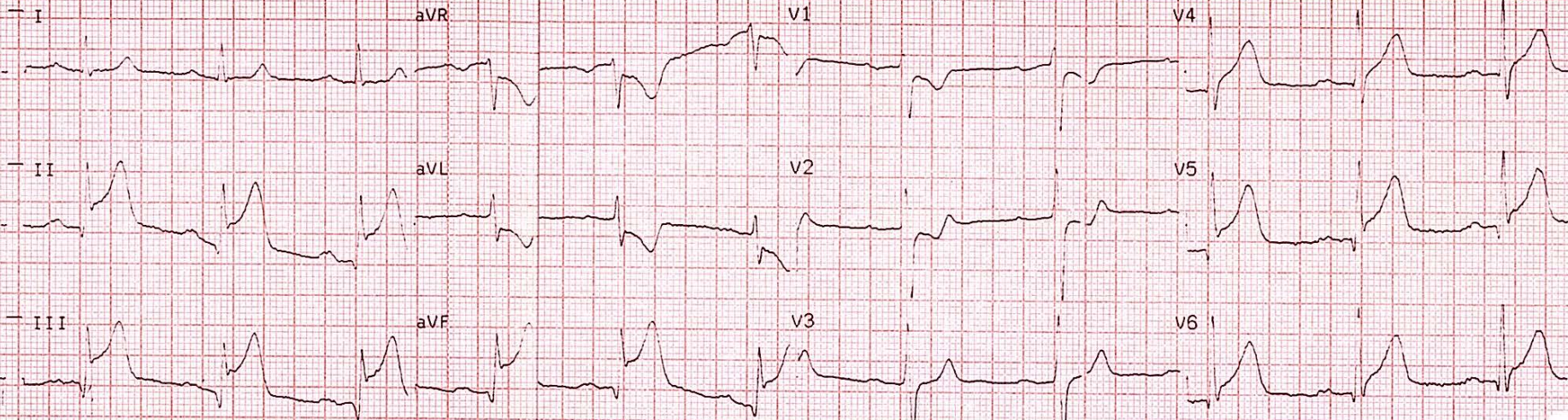
Case vignette 1

- Past medical history
 - Type 2 diabetes (diagnosed 3 years ago)
 - Hypertension
 - Current smoker 10-20/day
 - Cholecystectomy

Medication

- Simvastatin 40 mg
- Candesartan 8 mg
- Metformin 1 g bd
- Gliclazide 160 mg bd

11:26:52 24 DEC 13 HR= 66 DEVICE ID:EA34097 PATIENT NAME : PATIENT ID# :201312241114 Age:56 Sex: Male



00015185-0740000-1C78 25mm/sec 10mm/mV 0.05-40 Hz

ZL 8000-0300

Graphic Controls Ltd

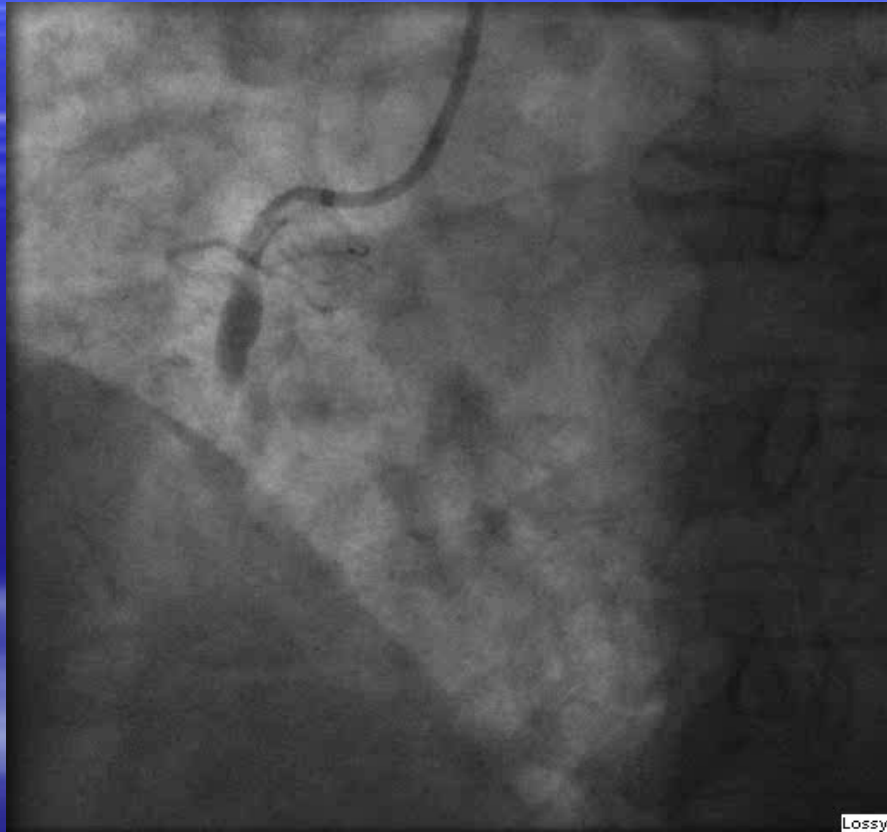
Examination & results

- Weight 111 kg
- BMI 36
- BP 127/83 mm Hg
- O₂ saturation 93%

Status: Printed

Report Date: 1

pJ Troponin I	* 2359	ng/L	[0 - 40]	* high
---------------	--------	------	----------	--------



Lossy



Case 2*

- 58 year old male
- Type 2 diabetes
- Diagnosed 4 years ago



Case vignette 2

- **Family history:**

- Mother †(68 MI), had type 2 diabetes for 8 years

- **PMH:**

- Not significant

- **Life style:**

- Doesn't get much exercise (lorry driver)

- **Medication:**

- Metformin 1g b.d.

Case vignette

- Clinical examination

- Overweight

- Weight 101 kg (222 lb, 16 stone)

- BMI = 33 kg/m²

- Waist circumference 103 cm (40 inches)

- BP 144/86 mm Hg

- Rest examination NAD

Case vignette

■ Special Investigations

- HbA1c 7.7% (61 mmol/mol)
- Fasting glucose 10.5 mmol/L
- Total cholesterol 6.4 mmol/L
- HDL-C 0.8 mmol/L
- TG 4.6 mmol/L
- Creatinine 88 μ mol/L
- ACR 2.9 mg/mmol (<2.5)

Case vignette - Treatment

- Life style
- Medication
 - Control hyperglycaemia?
 - Lipid lowering medication?
 - Anti-hypertensive?

What is he of risk at?

When did the problems start?

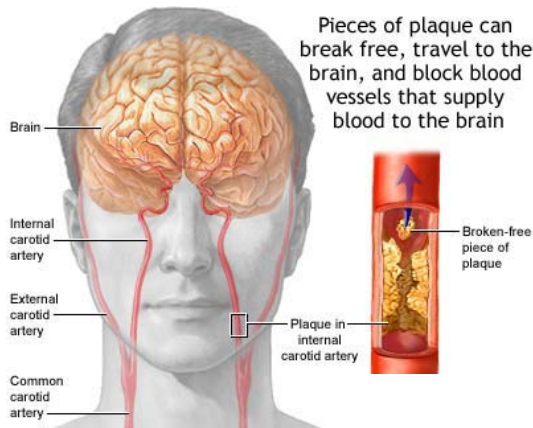
How should this be managed?

What is he of risk at?

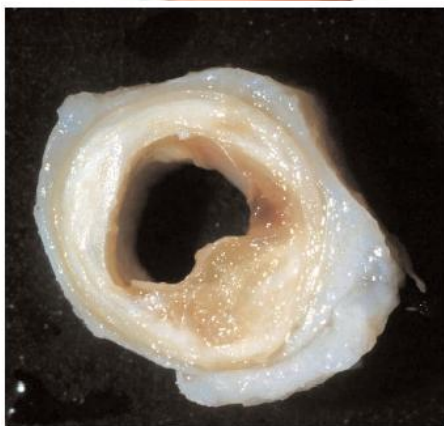
When did the problems start?

How should this be managed?

What do patients with diabetes die of?



Diabetic retinopathy



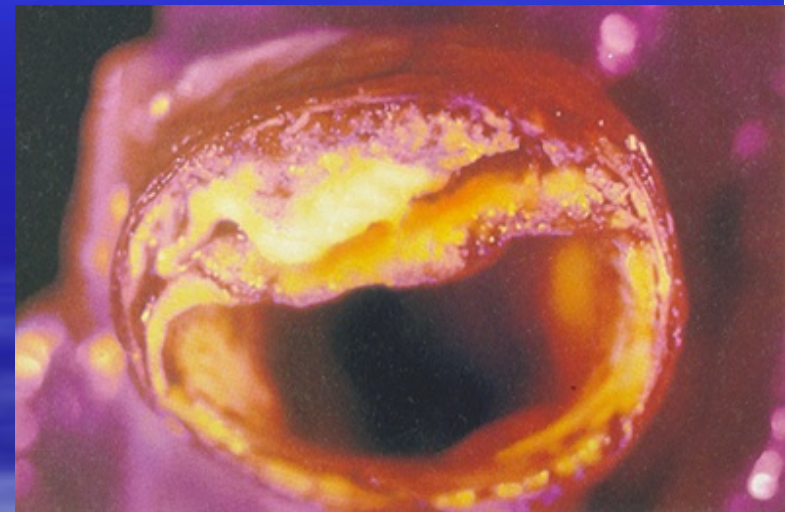
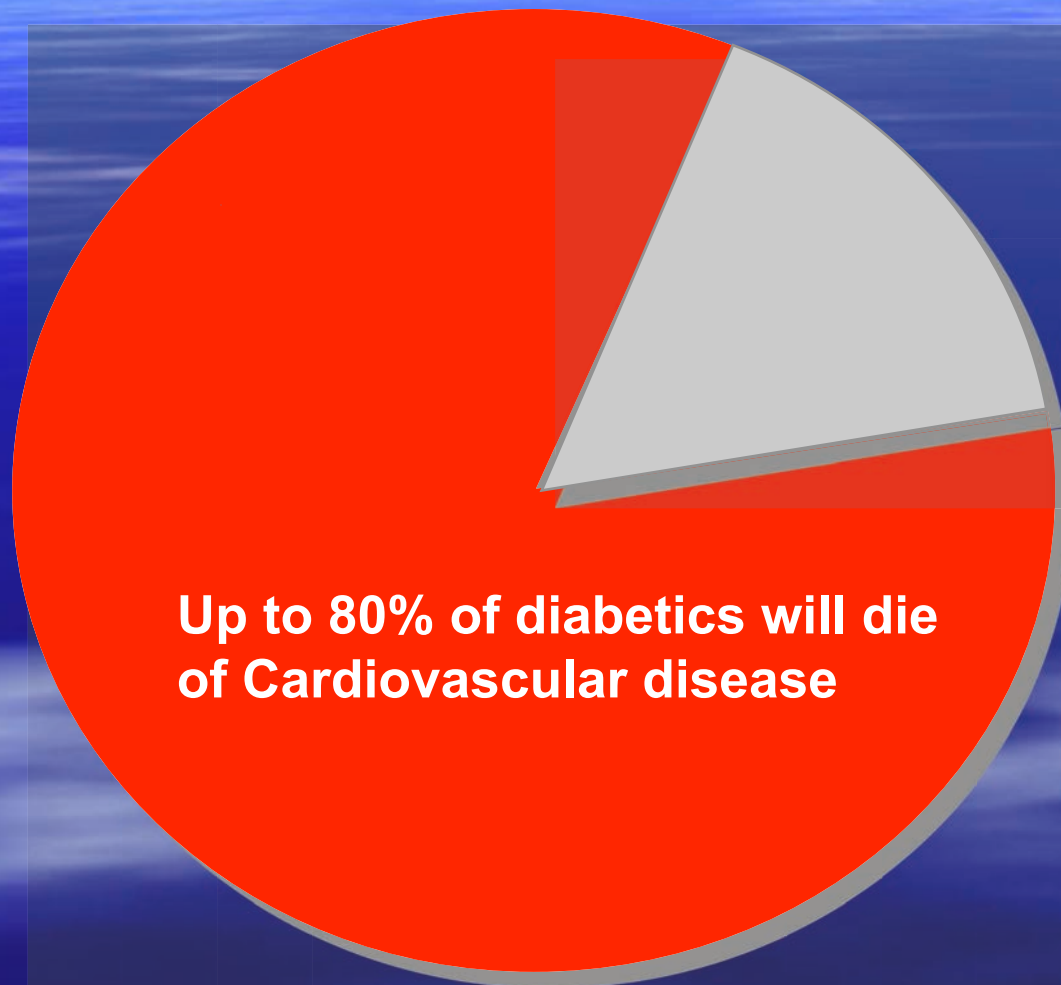
Coronary artery disease



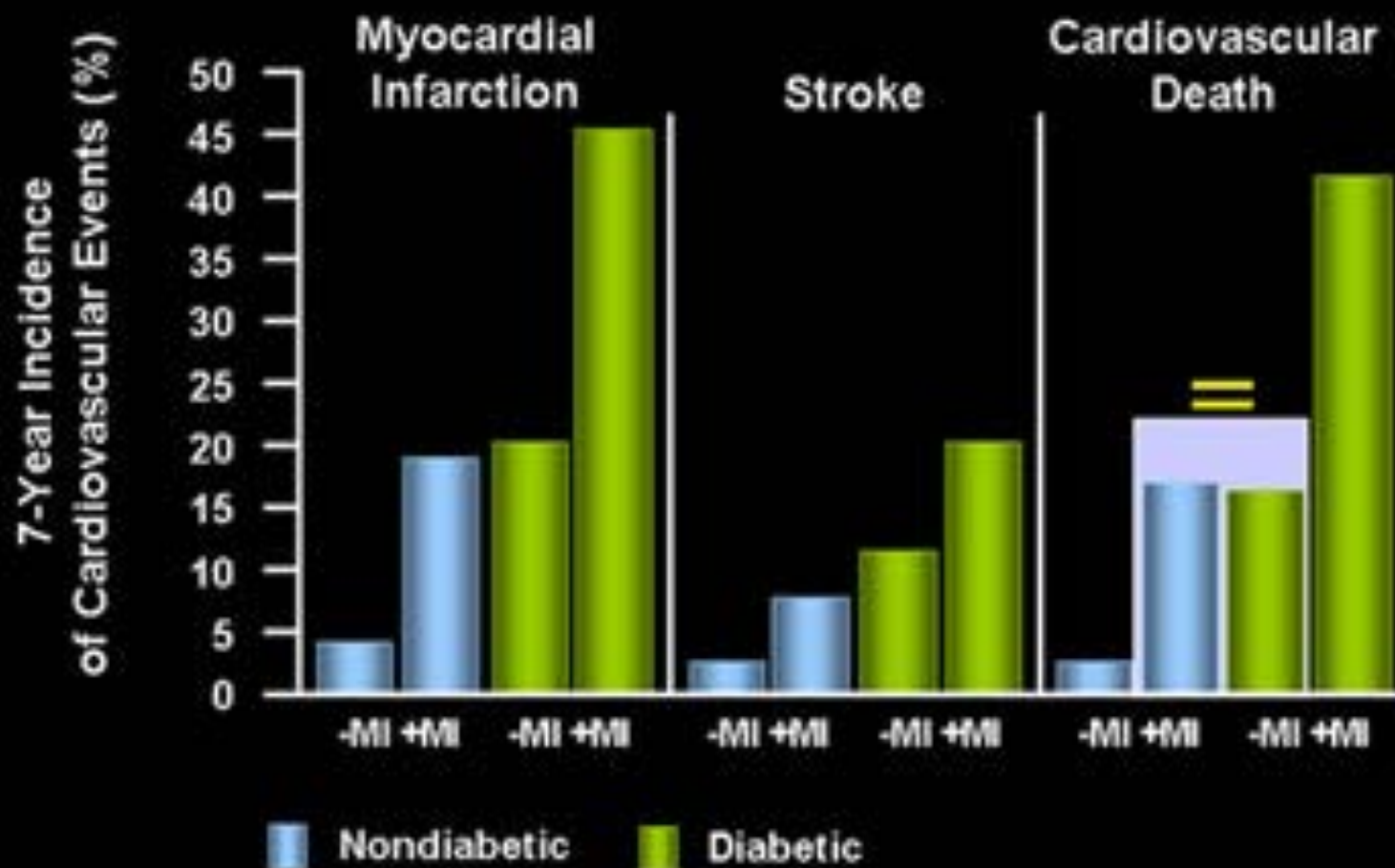
Kidney disease

Diabetic neuropathy

Diabetes = CVD



Diabetes Is a “CHD Equivalent”

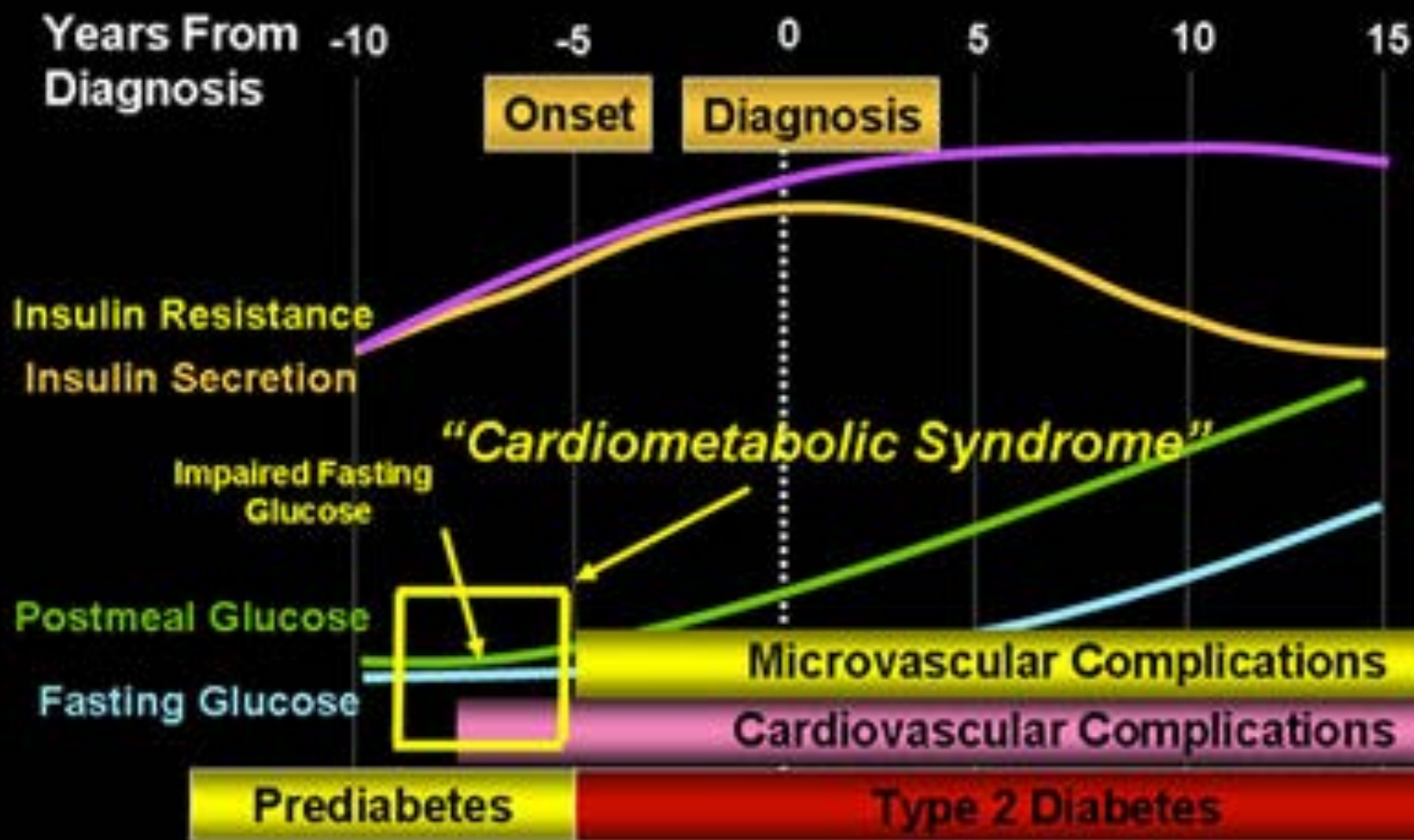


What is he of risk at?

When did the problems start?

How should this be managed?

Natural History of Type 2 Diabetes



What is he of risk at?

When did the problems start?

How should this be managed?

Treatment of Diabetes

- A
- B
- C
- D
- E
- F

Treatment of Diabetes – life style

- A
- B
- C
- Diet, Don't smoke
- Exercise, Education
- F



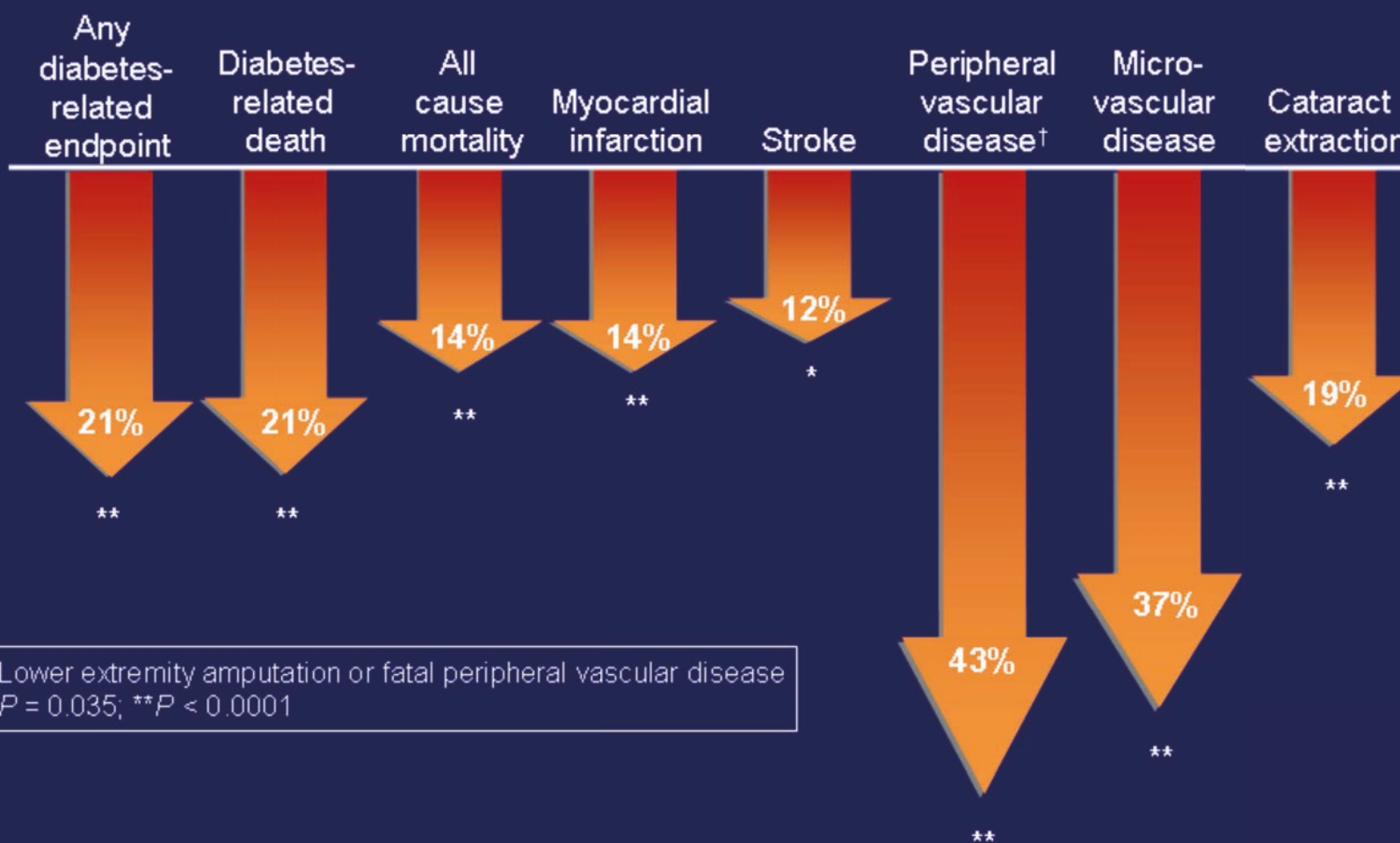
Treating diabetes

- A HbA1c
- B
- C
- D
- E
- F

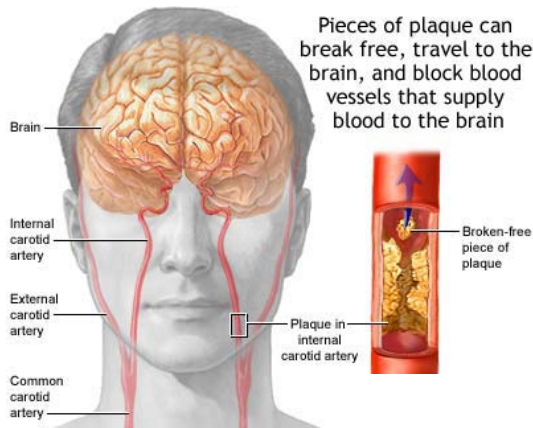
UKPDS: decreased risk of diabetes-related complications associated with a 1% decrease in A1C

Observational analysis from UKPDS study data

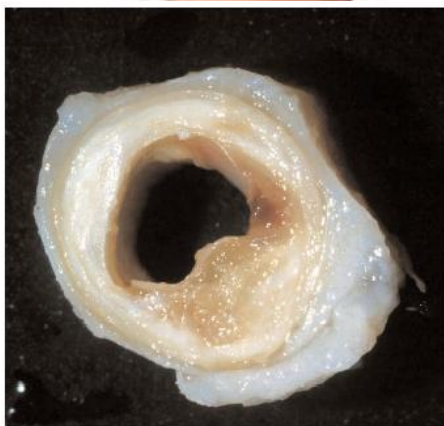
Percentage decrease in relative risk corresponding to a 1% decrease in HbA1C



†Lower extremity amputation or fatal peripheral vascular disease
* $P = 0.035$; ** $P < 0.0001$



Diabetic retinopathy



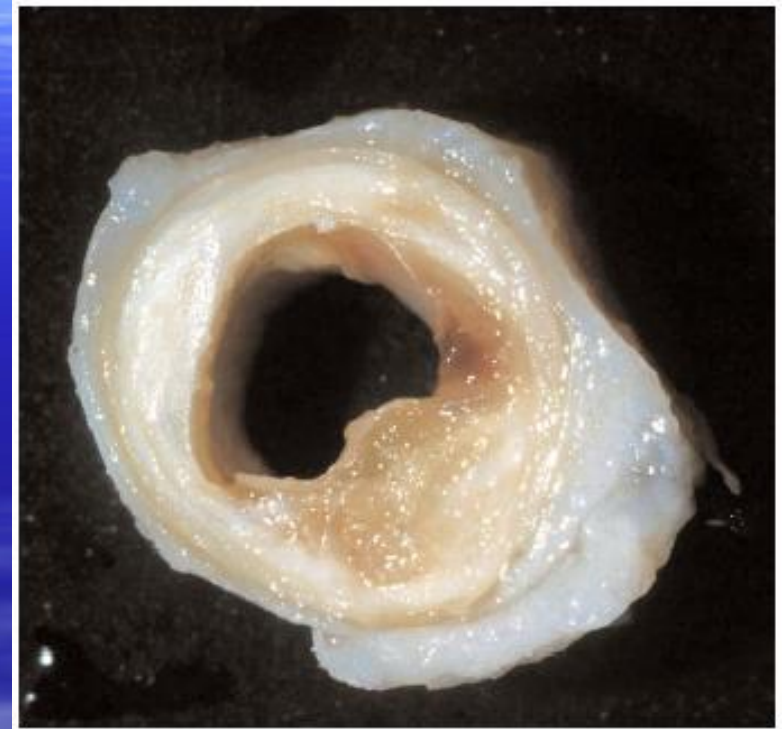
Coronary artery disease



Kidney disease



Diabetic neuropathy



Normal retina



Macula

Optic disk

Retinopathy



Hemorrhage

Aneurysms



[A correction has been published: N Engl J Med 2007;357\(1\):100.](#)

ORIGINAL ARTICLE

[◀ Previous](#)

Volume 356:2457-2471

June 14, 2007

Number 24

[Next ▶](#)

Effect of Rosiglitazone on the Risk of Myocardial Infarction and Death from Cardiovascular Causes

Steven E. Nissen, M.D., and Kathy Wolski, M.P.H.

CONCLUSIONS

Rosiglitazone was associated with a significant increase in the risk of myocardial infarction and with an increase in the risk of death from cardiovascular causes that had borderline significance. Our study was limited by a lack of access to original source data, which would have enabled time-to-event analysis. Despite these limitations, patients and providers should consider the potential for serious adverse cardiovascular effects of treatment with rosiglitazone for type 2 diabetes.

TIME

IN PARTNERSHIP WITH



The TIME 100

MAIN

ARTISTS &
ENTERTAINERS

LEADERS &
REVOLUTIONARIES

HEROES &
PIONEERS

SCIENTISTS & THINKERS

72 of 100

◀ Previous

Next ▶

Steven Nissen

By Dr. Mehmet Oz

In some ways, Steve Nissen's undergraduate years at the University of Michigan—which included crusading against the Vietnam War—were the toughest period of his life. But his extracurricular activism was just the training required for his

ARTICLE TOOLS

Print

Email

Sphere

AddThis

RSS



BBC - BBC One Programmes - Panorama, A Risk Worth Taking? - Microsoft Internet Explorer provided by East & North Herts NHS Trust

http://www.bbc.co.uk/programmes/b00tr25t

File Edit View Favorites Tools Help

BBC - BBC One Programmes - Panorama, A Risk Worth...

BBC News | Sport | Weather | iPlayer | TV | Radio | More Search the BBC

PANORAMA

The world's longest running investigative TV show - Mondays at 8:30 pm

Panorama
The Team
Previous Episodes
About Panorama
Contact Us


Related BBC sites
News
BBC One

A Risk Worth Taking?

AVAILABILITY:
Sorry, this programme is not available to watch again. (why?)
Last broadcast on Sun, 12 Sep 2010, 20:30 on BBC News Channel (see all broadcasts).

We're in the grip of a diabetes epidemic. The NHS spent more than half a billion pounds on medication for it in 2009. Patients trust that these drugs are safe, but does one come with a hidden cost to health? Shelley Jofre investigates the rise and fall of Avandia, until recently one of the UK's best-selling diabetes drugs, and asks whether the medicine's regulator is putting the interests of the drugs industry before patients.

DIABETES DRUG STILL AVAILABLE DESPITE SUSPENSION ADVICE

 A type two diabetes drug is still being prescribed in the UK two months after it was recommended for withdrawal, BBC Panorama learns.

- Read more about Panorama's findings

GLAXOSMITHKLINE STATEMENT TO PANORAMA

 Read the statement

More details
A PROGRAMME FROM
Panorama
WEBSITE
Go to the homepage for 'Panorama'
DURATION
29 minutes
More from BBC One
News
Around the BBC
Diabetes mellitus
Health care
Jeremy Vine
Rosiglitazone

Done

Internet 100%

Click to add notes

Draw AutoShapes

Slide 16 of 32 1_Stream English (U.K.)

start WinPath \\nhs-avon(pa... F:\ 2011 - Diabete... Diagnosis Diab... BBC - BBC One... 10:32

Numerous Studies Assessing CV Outcomes in T2DM Drugs Are Either Recently Completed or Ongoing

Trial Name	Drug	Target Enrollment	Timing*
DPP-4 Inhibitors			
SAVOR	Saxagliptin	N=16,492	Began 2010; Complete
EXAMINE	Alogliptin	N=5384	Began 2009; Complete
TECOS	Sitagliptin	N=14,000	Began 2008; Ending 2014
CAROLINA	Linagliptin	N=6000	Began 2010; Ending 2018
CARMELINA	Linagliptin	N=8300	Began 2013; Ending 2018
GLP-1 Agonists			
ELIXA	Lixisenatide ▼	N=6000	Began 2010; Ending 2014
EXSCEL	Exenatide	N=9500	Began 2010; Ending 2017
LEADER	Liraglutide	N=9340	Began 2010; Ending 2016
REWIND	Dulaglutide ▼	N=9622	Began 2011; Ending 2019
SUSTAIN 6	Semaglutide**	N=3260	Began 2013; Ending 2016
SGLT-2 Inhibitors			
CANVAS	Canagliflozin ▼	N=4410	Began 2009; Ending 2018
C-SCADE 8	Empagliflozin ▼	N=7000	Began 2010; Ending 2018
DECLARE	Dapagliflozin ▼	N=17,150	Began 2013; Ending 2019

*Trial ending dates are anticipated based on publicly available information.

**Not licensed in UK

Treating diabetes

- A
- B
- C
- D
- E
- F

Cholesterol

Lipid profile

- The Lipid Profile
 - Total Cholesterol
 - HDL-cholesterol
 - LDL-cholesterol
 - Triglycerides

A lipoprotein profile measures the level of cholesterol in the blood



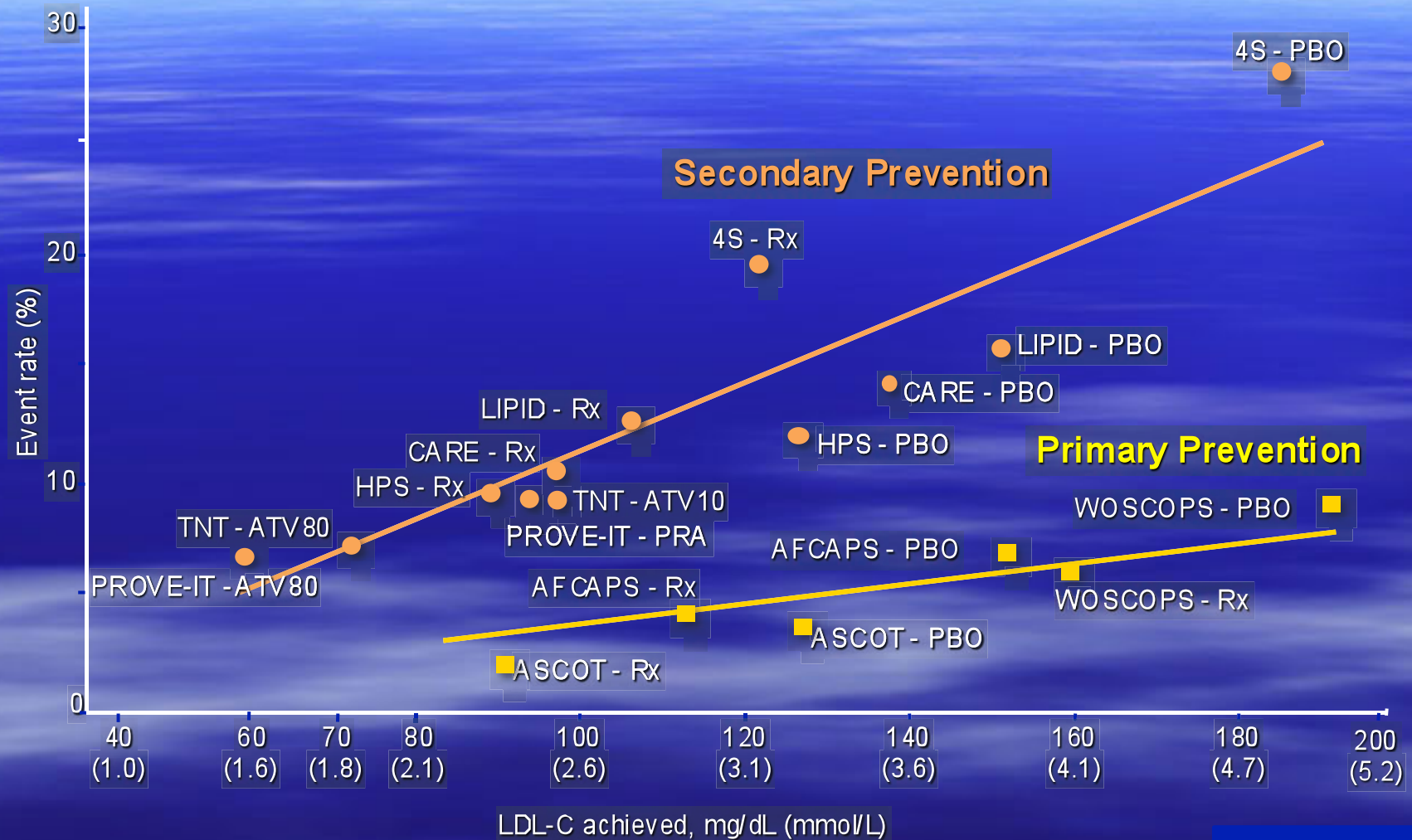
HDL

LDL

Triglycerides

Total cholesterol

On-Treatment LDL and CHD Events in Statin Trials



Adapted from Rosenson RS. Expert Opin Emerg Drugs. 2004;9:269-279.
LaRosa JC et al. N Engl J Med. 2005;352:1425-1435.



Everything
More

The web
Pages from the UK
More search tools

- statins
- statins **side effects**
 - statins **and grapefruit**
 - statins **and alcohol**
 - statins **and muscle pain**
 - statins **memory loss**
 - statins **danger**
 - statins **news**
 - statins **and memory loss**
 - statins **wiki**
 - statins **muscle pain**

Search

anced search

Sponsored links

[coenzyme q10 supplements](#)
 30mg 100mg & 300mg coq 10
 low prices free uk p&p
www.NaturesRemedy.co.uk
 England

[Statin danger](#)
 Get the Answers You're Looking For.
Statin danger
www.RightHealth.com

[Statin Side Effects](#)
 Find **Statin** Side Effects
 Everything you need is on Ask.
[Ask.com](#)

[Statin Dangers Exposed](#)
 Side Effects & Dangers of **Statins**.
 Get **Statin** Report Today - Free!
Mercola.com/Statin

[Statin Drug Side Effects](#)
 Your doctor might not be aware of
 the dangers of cholesterol drugs!
www.healthy-heart-guide.com

[See your ad here »](#)

[Cholesterol Hoax, Danger of Statin and Low Blood Cholesterol](#) ☆
 The Dangers of Low Blood Cholesterol. Bad Cholesterol: A Myth and a Fraud?
www.shirleys-wellness-cafe.com/cholesterol.htm - Cached

[The Undiscovered Danger of Statin Drugs](#) ☆
 8 Aug 2009 ... When you find out you have high cholesterol the doctor prescribes a drug to help
 out. Is that drug really a safe choice?
www.articlesbase.com/Health/Wellness - Cached - Similar

[Dangers of Statin Drugs - Side Effects of Statins](#) ☆
Statin Danger. When statin drugs entered the market they made great promises by replacing a
 line of pharmaceuticals that lowered cholesterol by preventing ...
www.progressivehealth.com/statin-risks.asp - Cached - Similar

[Cholesterol-lowering statins 'cut the danger of stroke by 20 per ...](#) ☆
 15 Apr 2009 ... Researchers revealed that **statins** not only lowered the overall risk of stroke, but
 also slowed progression of blockages in the carotid ...
www.dailymail.co.uk/.../Cholesterol-lowering-statin-cut-danger-stroke-20-cent.html - Similar

[The Dangers of Statin Drugs](#) ☆
Danger: Gastrointestinal disturbances. The most common side effects of **statins** are common to
 many drugs. Nausea, upset stomach, constipation, diarrhea, ...
www.squidoo.com/dangersofstatindrugs - Cached - Similar

[Are Statins Dangerous? | eHow.co.uk](#) ☆

bundle for only £19 a month
Rollover for legals

[Find a Job](#) | [Dating](#) | [Wine](#) | [Our Papers](#) | [Feedback](#) | [My Stories](#)

Monday, Sep 06 2010 9PM 14°C 12AM 14°C 5-Day Forecast

MailOnline



[Home](#) [News](#) [Sport](#) [TV&Showbiz](#) [Femail](#) **Health** [Science&Tech](#) [Money](#) [Debate](#) [Coffee Break](#) [Property](#) [Motoring](#) [Travel](#)

[Health Home](#) | [Health Directory](#) | [Health Boards](#) | [Diets](#) | [MyDish Recipe Finder](#)

[Login](#)

broadband

TV, broadband & calls for just £19 a month >>>

The other side of statins: They've saved countless lives - but now doctors fear for some, the side effects could be devastating

By JO WATERS
Last updated at 9:39 AM on 30th March 2010

[Comments \(94\)](#) [Add to My Stories](#)

Smallholder Paul Rhoades was counting his sheep - as he did every day - when he stopped, unable to focus or remember what he was doing. 'I couldn't remember which sheep I'd counted and which I hadn't,' he recalls. 'Counting was beyond me.'

Paul, who was then aged 57, was concerned. 'I had a flicker of panic that it might be signs of Alzheimer's, but this'



Search [Advanced Search](#)

Playtime may never be the same again

[Find out more](#)

FEMAIL TODAY

▶ Wayne Rooney prostitute Jennifer Thompson shamelessly breaks cover as disgraced footballer jets off with England squad Both looked glum



▶ A wannabe WAG who

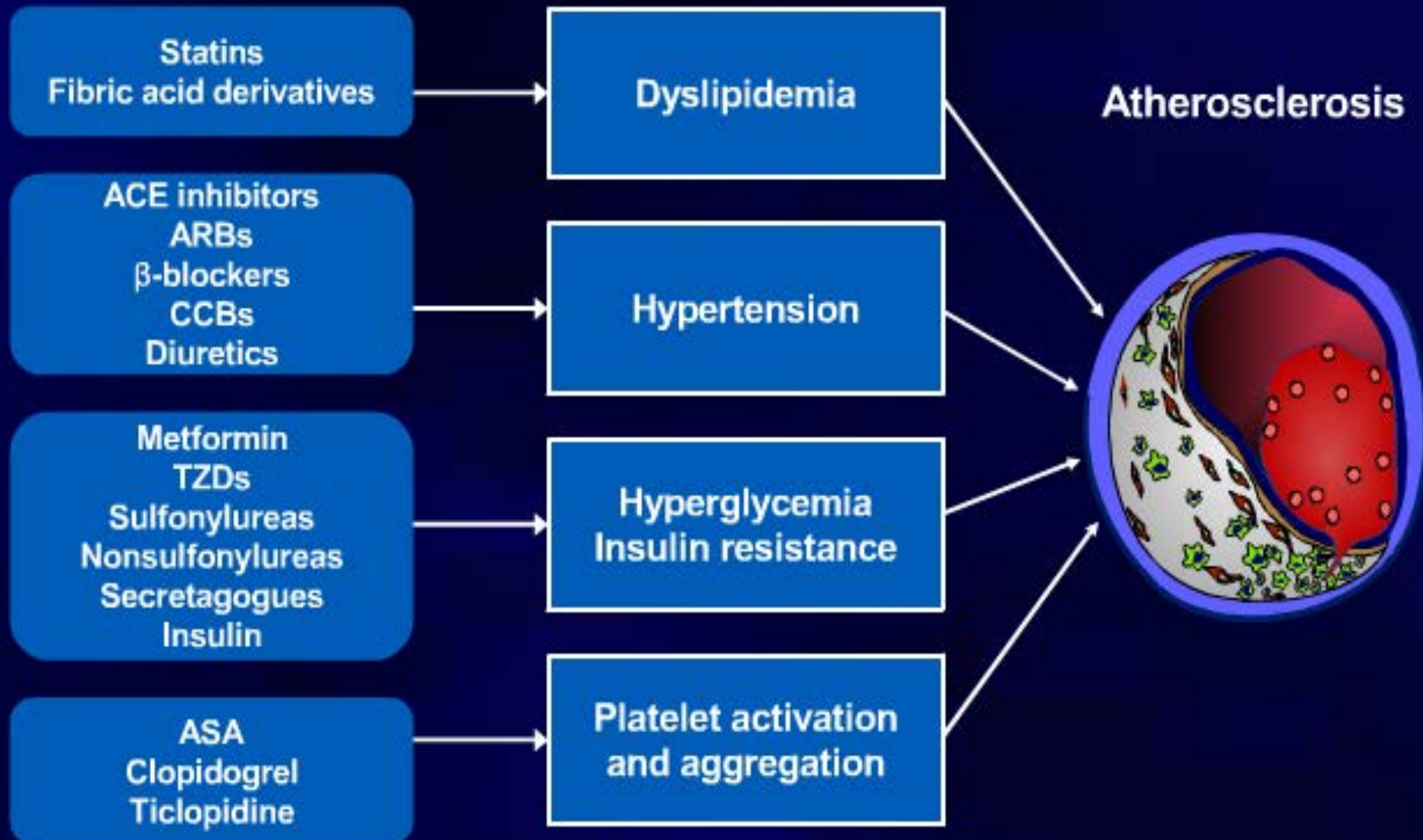


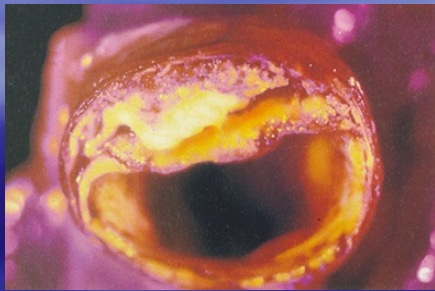
Done

Internet | Protected Mode: On

100%

Beyond lifestyle: Aggressive medical therapy in diabetes





Additional Cases

Case 3*

- 66 year old female
- Type 2 diabetes
 - No microvascular complications
- Diagnosed 4 years ago
 - HbA1c of 7.8% (62 mmol/mol)
 - Total cholesterol = 4.8
 - BP 140/80
- Questions?
 - Glycaemia, cholesterol



Case 4^{*}

- 88 year old man
- Recently diagnosed diabetes
- HbA1c 8.5% (69 mmol/mol)
- Lives care home
- Co-morbidities
 - Vascular dementia
 - Congestive heart failure NYHA 2-3
 - Renal impairment eGFR 18
 - Previous MI and CVA

