

# The Ticking Timebomb – Type 2 Diabetes

## Complications of Type 2 Diabetes

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# Case

- 54 year-old man, Diabetes x 10 years
- Feels well, no symptoms, only visits his GP to collect prescriptions
- Referred re new prescription



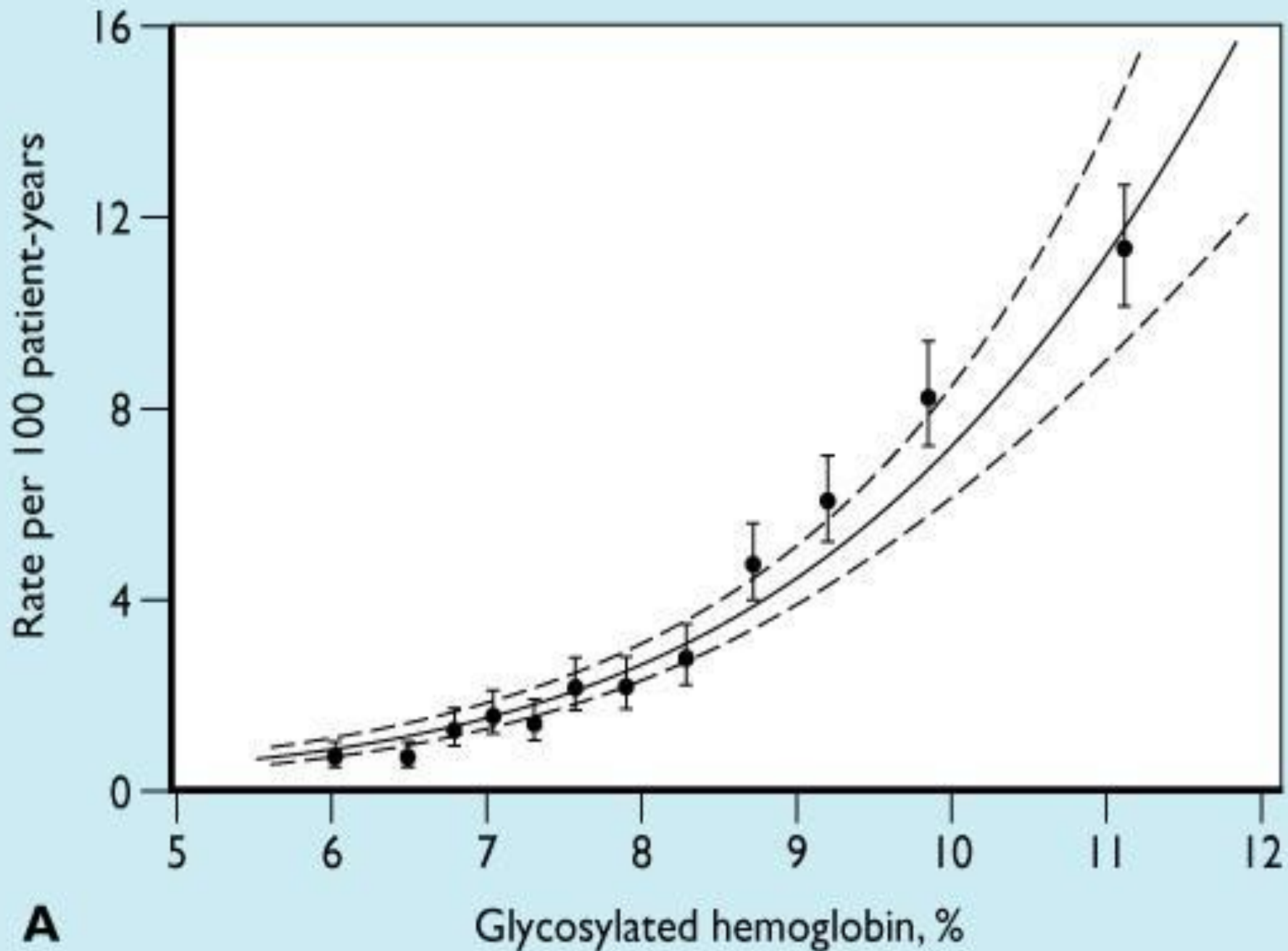
# Case

On review:

- Severe eye disease
- Significant reduction in kidney function

Blood results:

- HBA1c = 9%
- Cholesterol = 7 mmol/L
- Blood Pressure = 160/100



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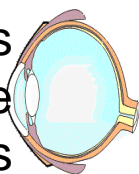
# ‘Ticking Time-Bomb’

- Complications can develop in patients who have no symptoms
- Complications can be irreversible from the time they cause symptoms
- Complications can be present at diagnosis



# Complications of DM

Leading cause  
of blindness  
in working age  
adults

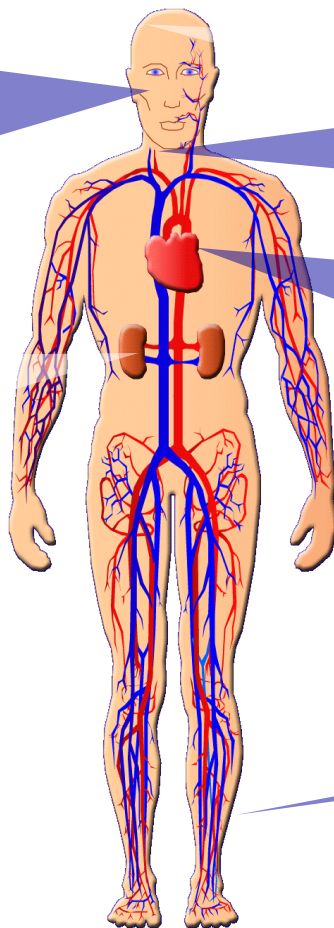


**Eye damage**

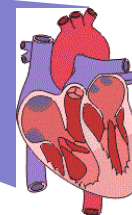


**Kidney  
Problems**

Leading cause of  
end-stage kidney  
disease



**Stroke**



**Heart disease**

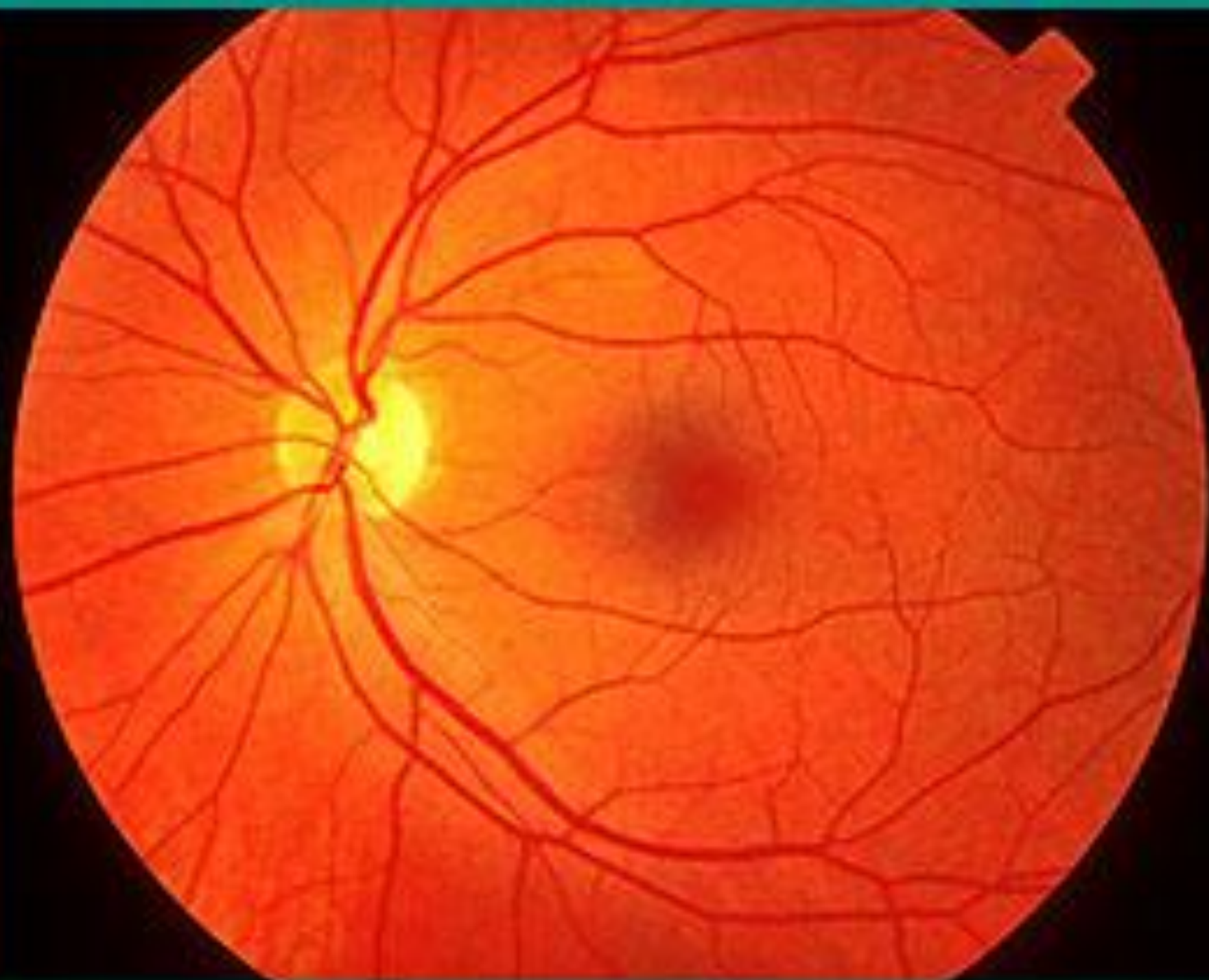


**Damage to  
nerves**

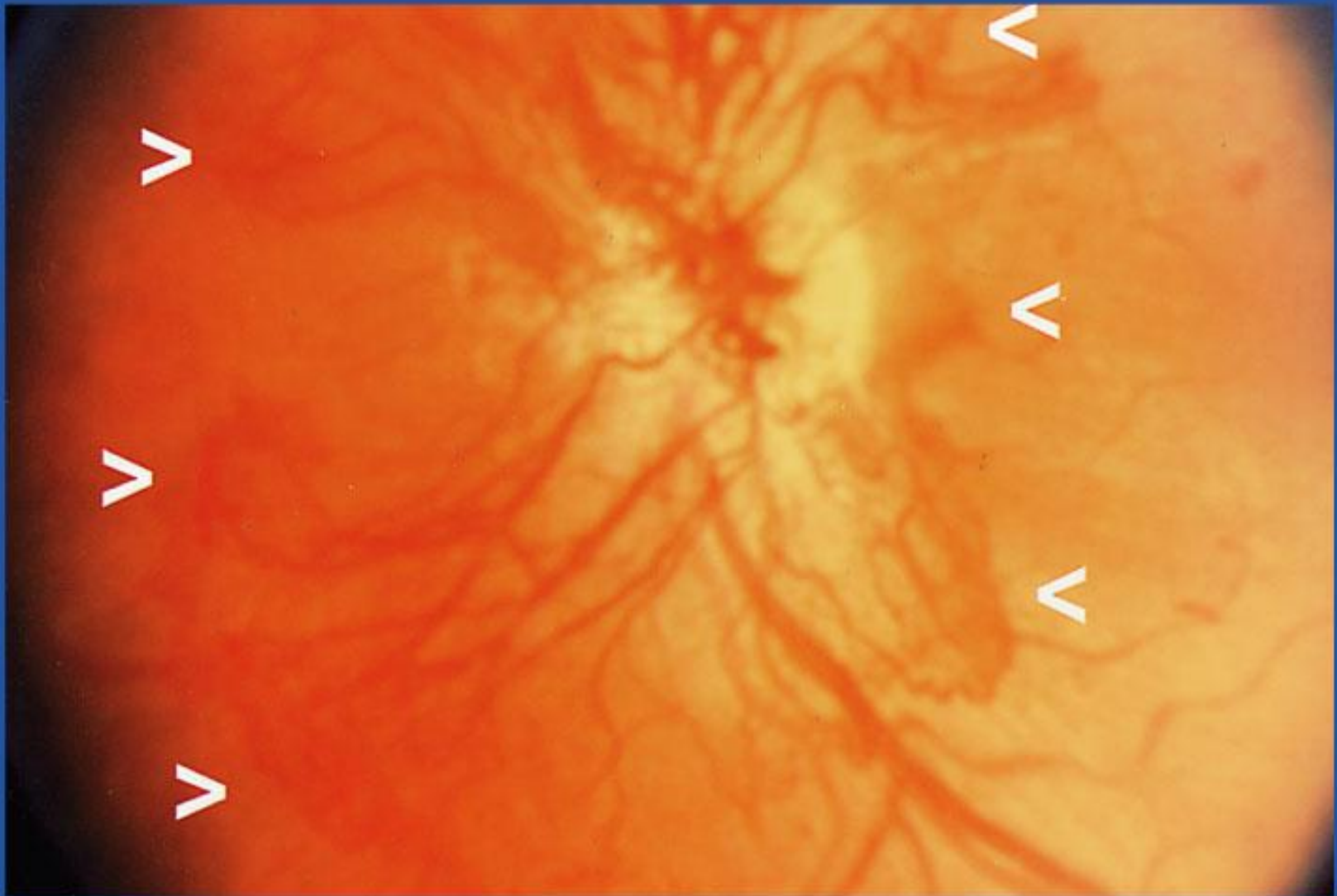


# Diabetic Eye Disease

- Patients usually have no symptoms until very advanced stages
- With advanced disease patients may have a sudden painless loss of vision due to a bleed



# Characteristic clinical manifestations of proliferative diabetic retinopathy





# Diabetic Nerve Disease

- Most commonly affecting the nerve supply to the feet
- Burning/Tingling/Numbness/Pain
- Impaired pain/temp sensation → loss of 'protective' sensation





# Cardiovascular Disease

- Heart attack and stroke are the leading causes of death in Diabetes
- High blood pressure, cholesterol common in Type 2 diabetes
- Risk of cardiovascular disease is 2 to 5 times that in people without diabetes



## But...

- Developing complications is not inevitable



# Reducing Complications

- Screening for earliest stages of complications → preventive treatment
- Modern target-driven, evidence-based treatment



# Screening for Complications

- Eye disease
- Kidney disease
- Nerve disease



# Screening for Complications

- Dilate pupils, eye exam with ophthalmoscope
- Slit lamp examination by ophthalmologist
- Retinal photograph

# Panretinal laser photocoagulation for proliferative diabetic retinopathy



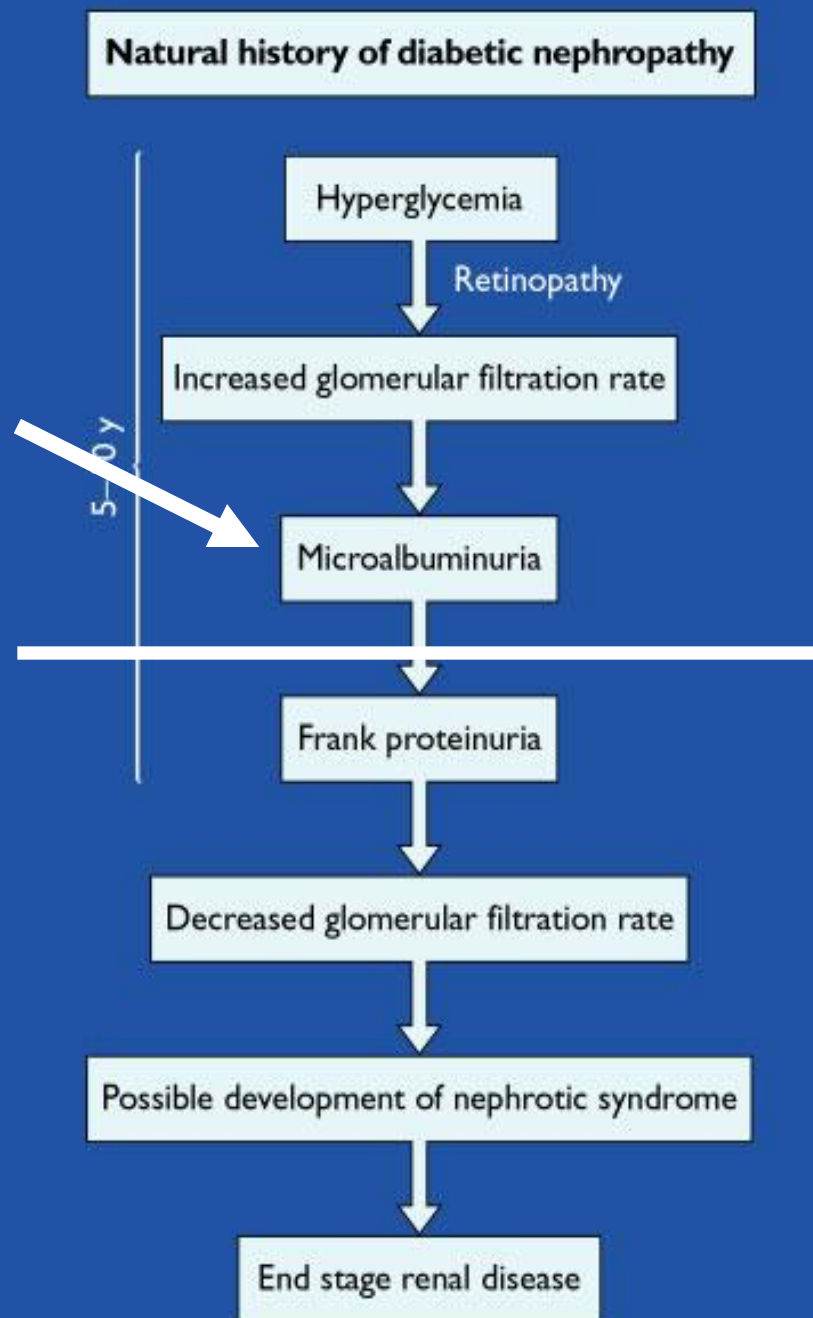


# Screening for Complications

- Eye Disease
- Kidney disease
- Nerve Disease

# Natural history of diabetic nephropathy

ACE inhibitor/  
Angiotensin  
receptor  
Blocker





# Screening for Complications

- Eye Disease
- Kidney disease
- Nerve Disease



# Screening for Complications

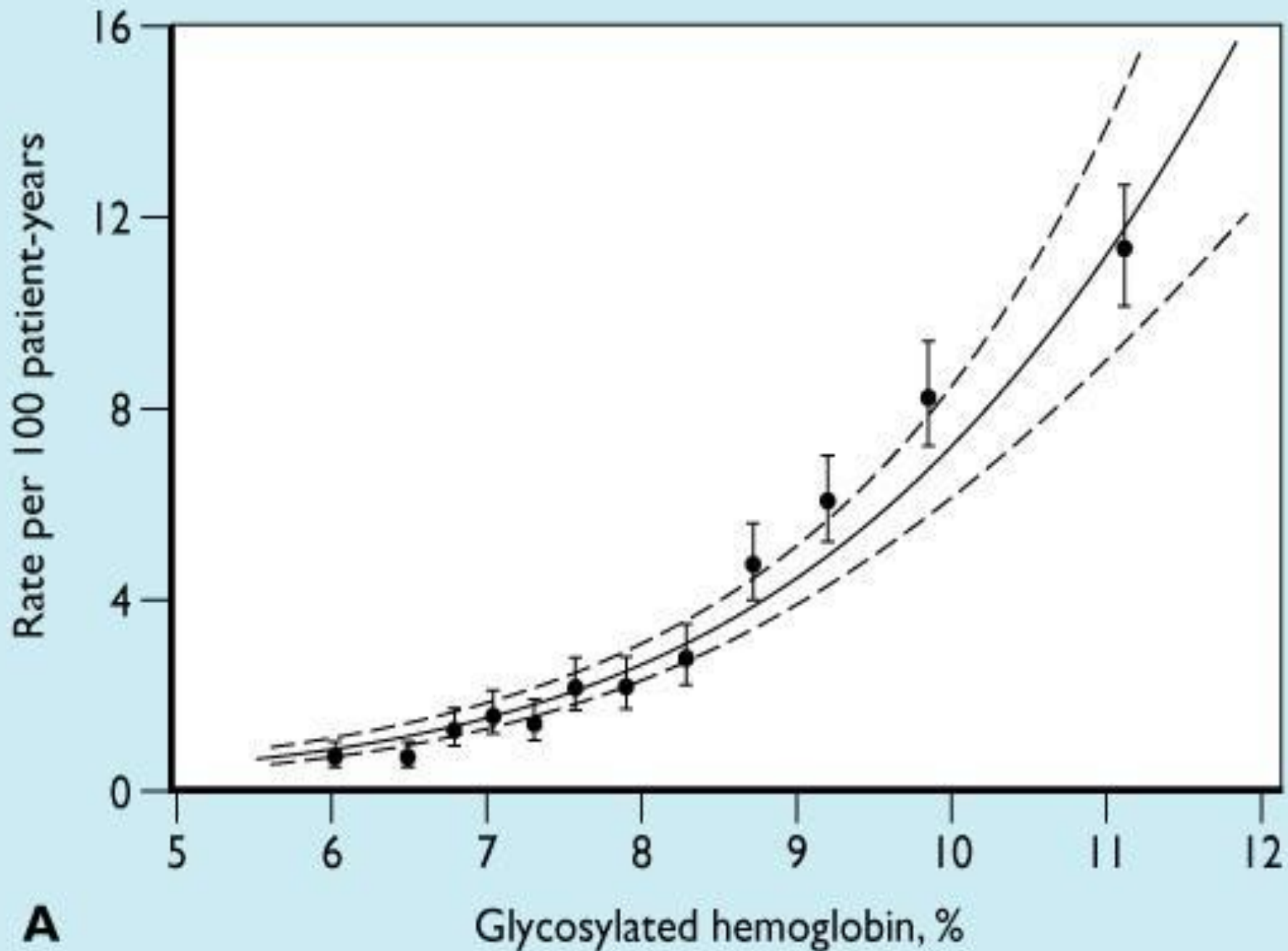
Examination to identify 'at risk foot':

- Knee/Ankle reflexes
- Vibration sensation
- Pressure sensation
- Circulation
- Foot inspection



# Reducing Complications

- Studies have shown that good control of blood sugars/cholesterol/BP - to specific targets - can reduce the risk of complications
- An ever-increasing variety of medications are now available if needed to help achieve this

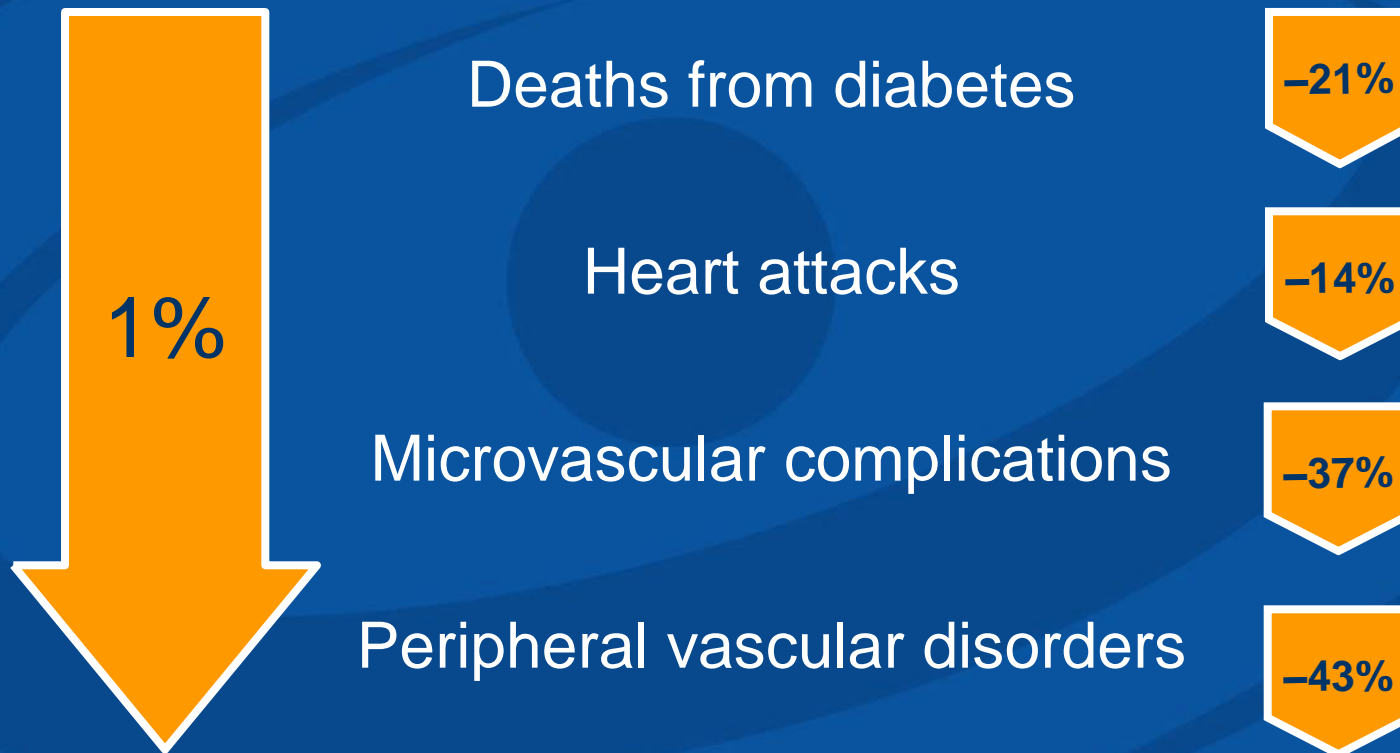


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# Lessons From UKPDS: Better Glucose Control Means Fewer Complications

EVERY 1%  
reduction in HbA1c

REDUCED  
RISK\*



\* $p < 0.0001$ .

Stratton IM et al. UKPDS 35. *BMJ*. 2000;321:405–412.



# BP and Cholesterol-Lowering

- A 47% reduction in significant loss of visual acuity for patients who reduced their blood pressure by 10/5 (e.g from 155/95 to 150/90)
- 37% reduction in cardiovascular events in patients with diabetes taking ‘statins’ for cholesterol-lowering

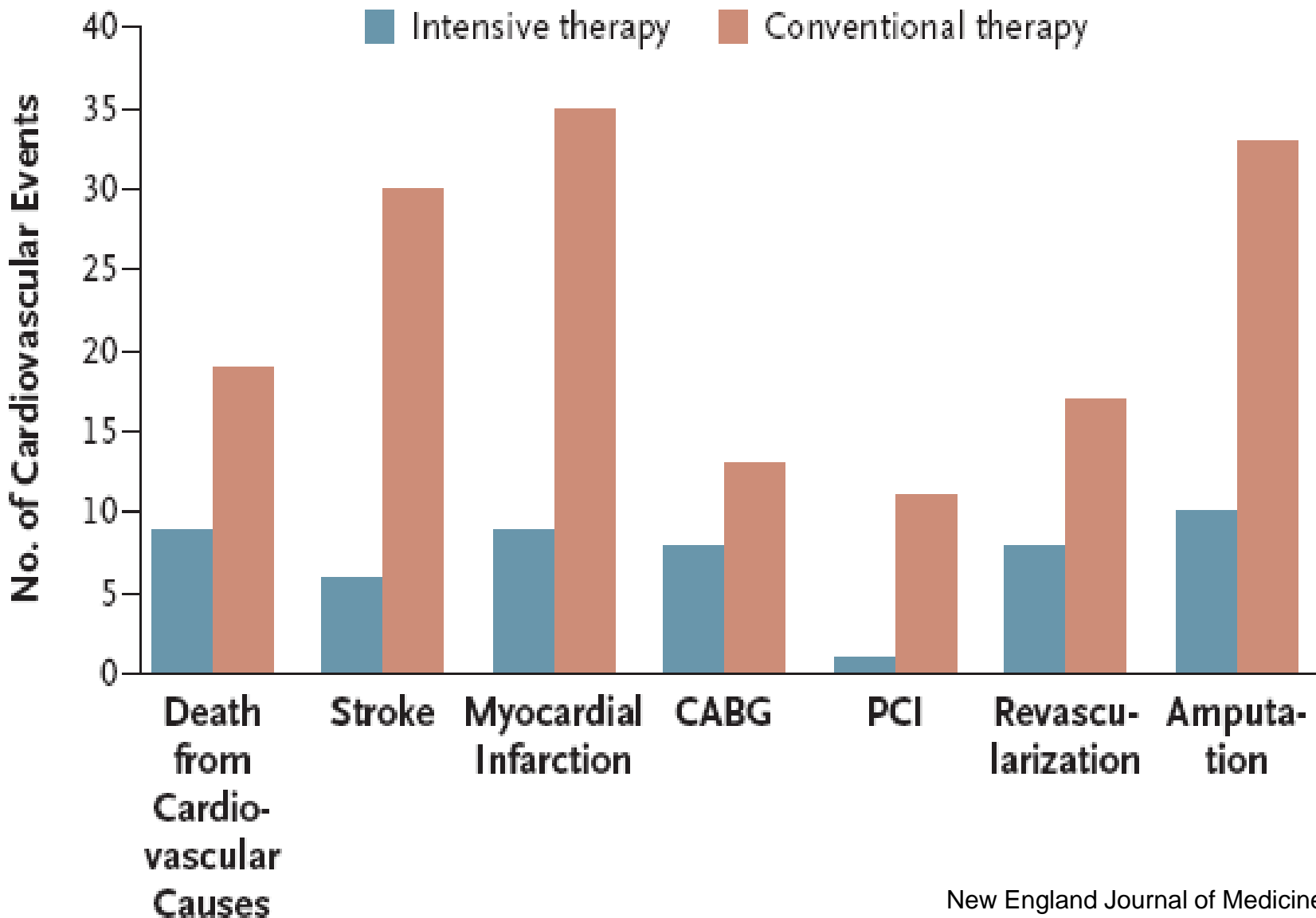


## Steno-2 study

- Treating patients with ‘target-driven therapy’
- Cholesterol-lowering, BP lowering, glucose-lowering
- Reduced risk of retinopathy, neuropathy, nephropathy, CV disease



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## How to reduce risk of complications?

- Go to scheduled appointments even if feeling well: for screening & blood tests
- Follow lifestyle advice, and take medications as prescribed, to achieve 'target' blood sugar/blood pressure/cholesterol



# Summary

- Complications of diabetes can be devastating
- Development of complications is not inevitable
- Good compliance with treatment and follow-up is essential

