



UNC
SCHOOL OF MEDICINE

Promising New Approaches to Clinical Interventions Aimed at Reducing Obesity and Preventing Progression and Complications of Diabetes

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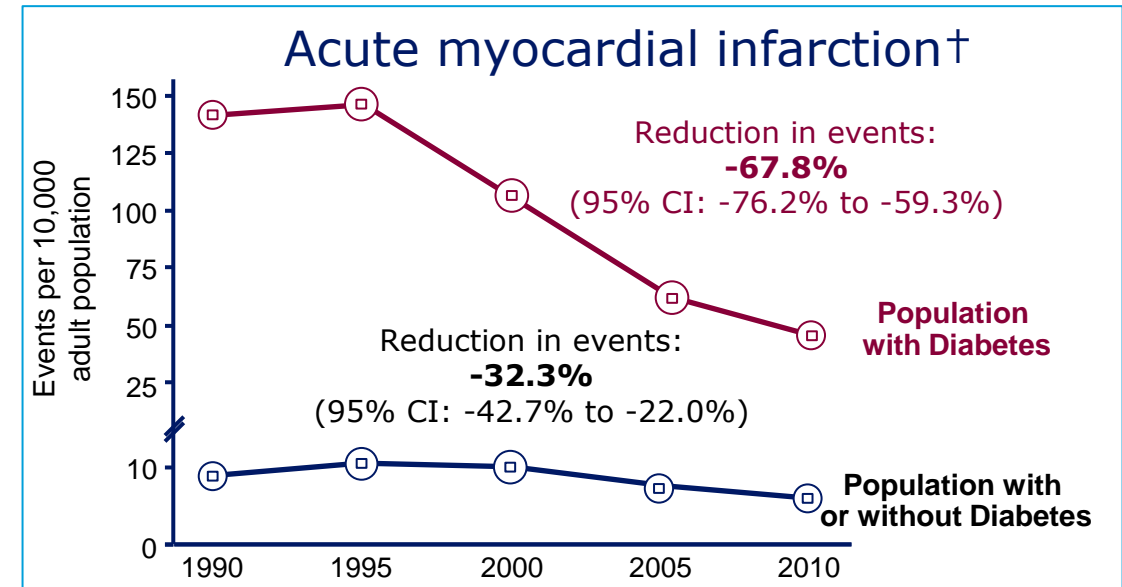
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Diabetes complications are preventable today!

What is the spectrum of diabetes complications?

- Microvascular complications (eye, kidney, nerve)
- Macrovascular complications (myocardial infarction, stroke, peripheral vascular disease)
- Emerging complications (cancer, liver disease, arthritis, dementia, heart failure . . .)
- Uncertain impact of type 2 diabetes in youth



What would it take to accomplish eradication of early disability and death from classical complications of diabetes at a population level?

- Detect prediabetes and type 2 diabetes by screening
- Treatment per guidelines (lifestyle, education, medications [glycemia, BP, statins, etc])
 - Individualized care delivered in a patient-centered way
 - Access to care
 - Avoid therapeutic inertia
 - Creative and opportunistic team-based care with social/societal support

*Sweden

A1c, glycosylated hemoglobin

Nordwall M et al. *Diabetes Care*. 2015;38(2):308-315.

† US

Adapted from Gregg EW, et al. *N Engl J Med* 2014;370:1514–1523.

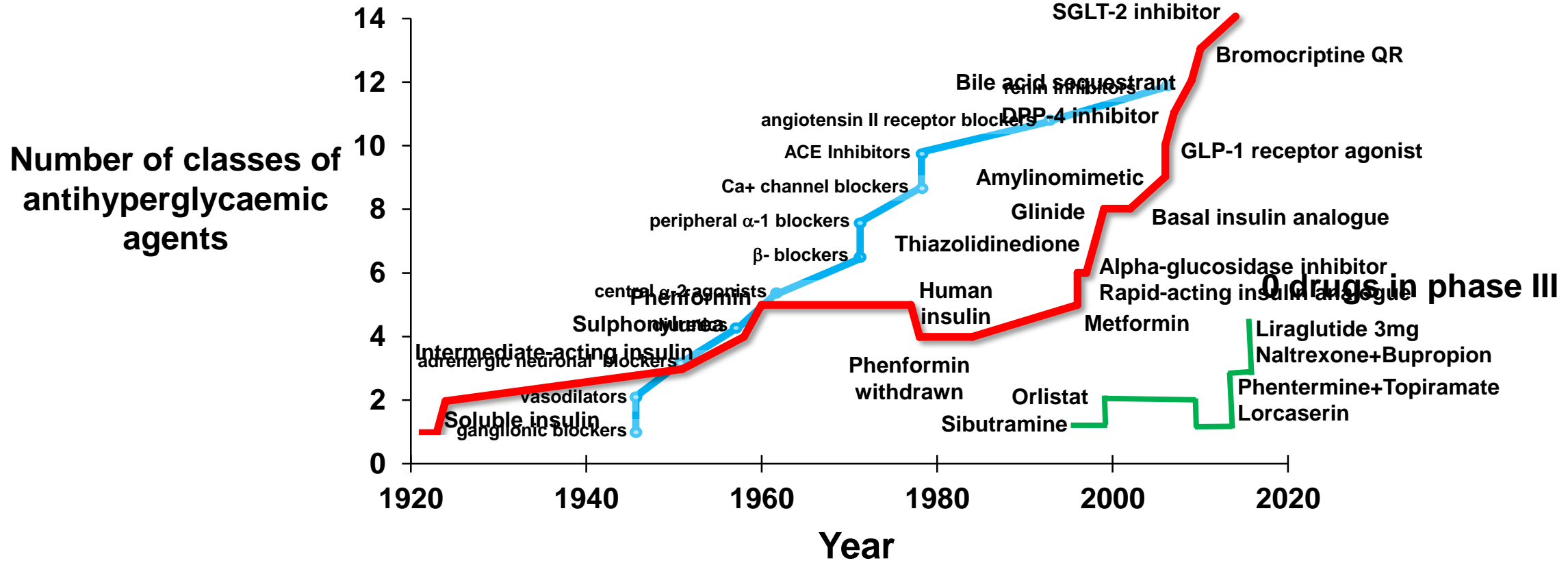
Every day, >1000 people die prematurely or are disabled as a result of diabetes in the US

What are the barriers to avoiding these poor outcomes to care?

- Access to care
- Other poorly understood drivers of health outcome “disparities”
- Lack of systems of care (with notable exceptions)
 - Non-adherence by patients
 - Non-adherence of providers
- Focus of payors on short-term costs as opposed to long-term benefits
- Insanity in the marketplace regarding pricing for goods and services
- Regulatory imbalance (drugs, devices, diagnostics, payors)
 - Poor pipeline of discovery to implementation
 - Prediabetes
 - Diabetes indications
 - Obesity
- In fact, it is in obesity management where the opportunities for benefit have been least developed



20-year History of Chronic Weight Management Therapeutics



Medications Approved for Obesity - 2016

Medication	Average Weight Loss*	Mechanism of Action	Potential Side Effects
Phentermine† (Adipex™, Ionamin™)	~ 5%	Adrenergic	Tachycardia, hypertension
Phentermine / Topiramate (Qsymia™)	10%	Adrenergic, CNS	Tachycardia, hypertension, cognitive dysfunction, neuropathy, teratogenicity
Liraglutide (Saxenda™)	7%	GLP-1 agonist	Nausea
Bupropion / Naltrexone (Contrave™)	4.5%	CNS; opioid antagonism	Seizures, confusion, anxiety, opiate withdrawal
Lorcaserin (Belviq™)	3.5%	Serotonergic (5HT _{2C})	Headache
Orlistat (Xenical™)	3%	Lipase inhibitor	Steatorrhea, incontinence

* Beyond placebo † Only approved for short-term use