

Supporting people with diabetes and severe mental illness in primary care and the community

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I have received fees for lecturing, consultancy work or attendance at conferences from the following companies: Astra Zeneca, Boehringer Ingelheim, Eli Lilly, Janssen, Lundbeck, Menarini, Mylan, NAPP, Novo Nordisk, Novartis, Otsuka, Sanofi.



The greatest mistake in the treatment of disease is that there are physicians for the body and physicians for the soul, although the two cannot be separated

Plato circa 370 BC



Overview

- Epidemiology of diabetes in people with severe mental illness
- Why is diabetes more common in people with severe mental illness
- Clinical implications

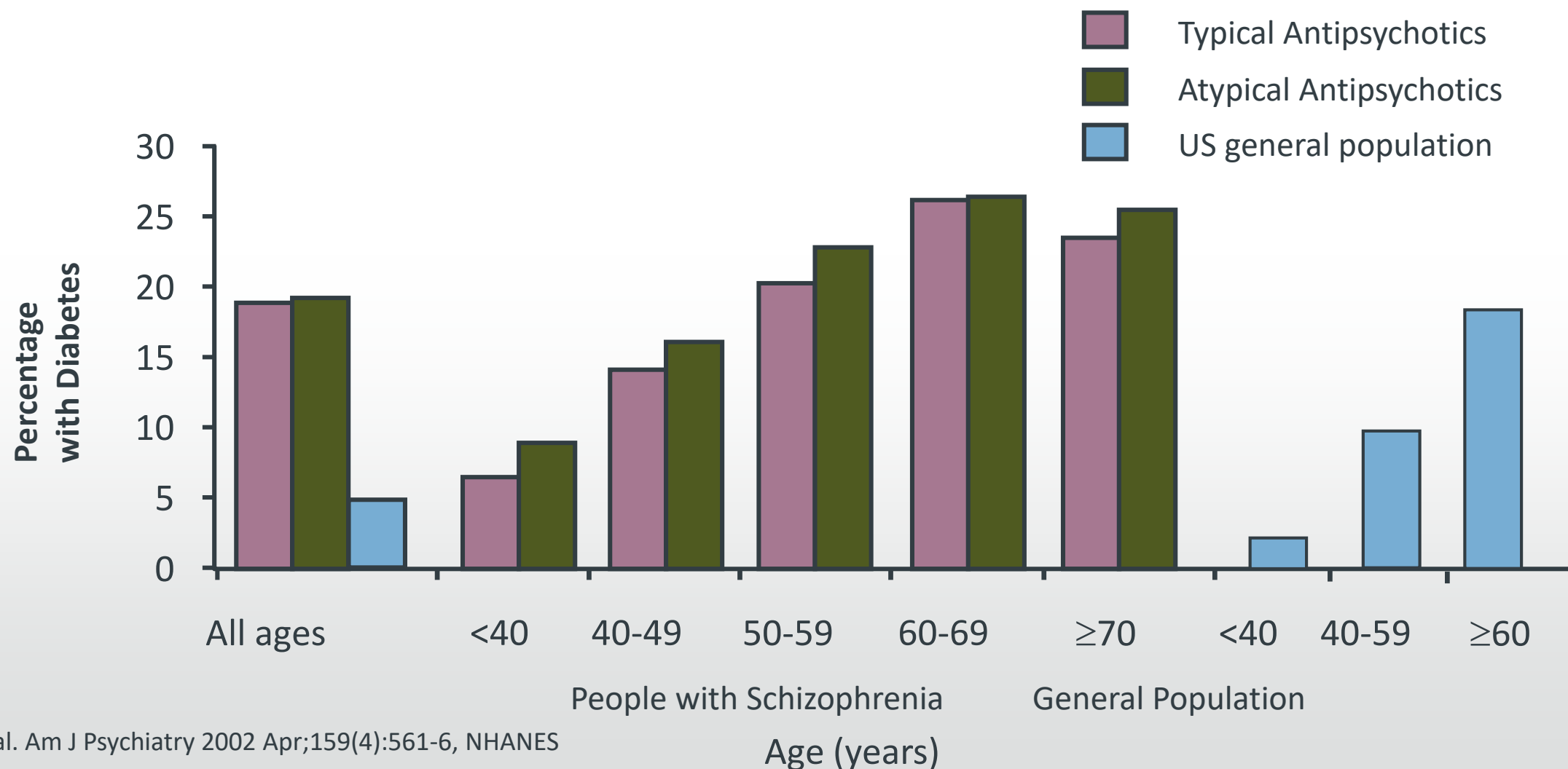
Prevalence of Diabetes

- Meta-analysis of 41 studies including 161,886 people with severe mental illness
- Overall prevalence was 9.0% (95% CI 7.3–11.1%)
- Risk of diabetes in people with multiple episodes of psychosis was doubled (OR 1.99; 95% CI 1.55–2.54)
- No increase risk of diabetes in first episode psychosis or treatment naive individuals

Vancampfort et al *World Psychiatry* 12, 240–250 (2013)

Holt and Mitchell *Nature Reviews Endocrinology* 11, 79-89 (2015)

Diabetes & Schizophrenia

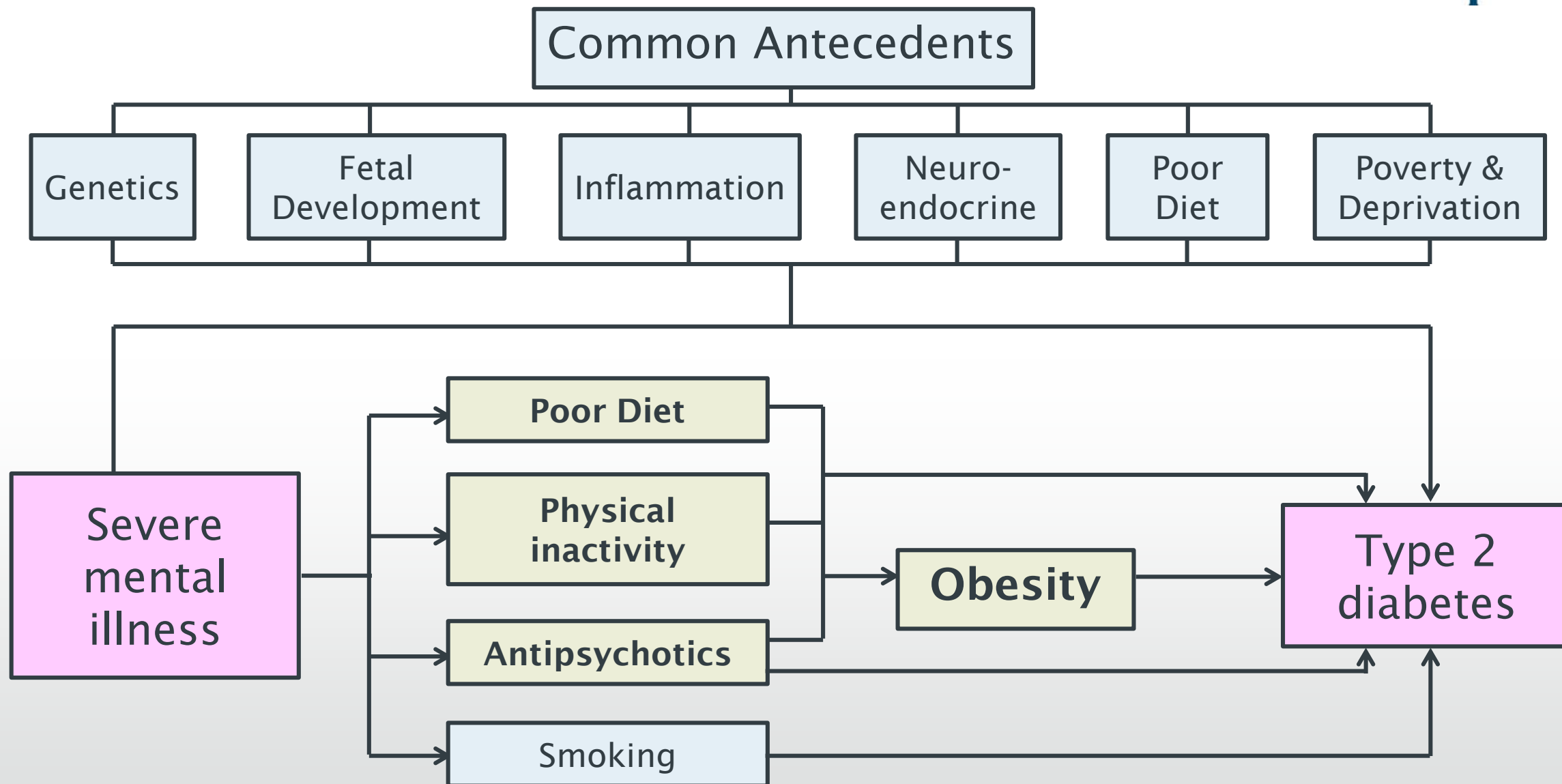


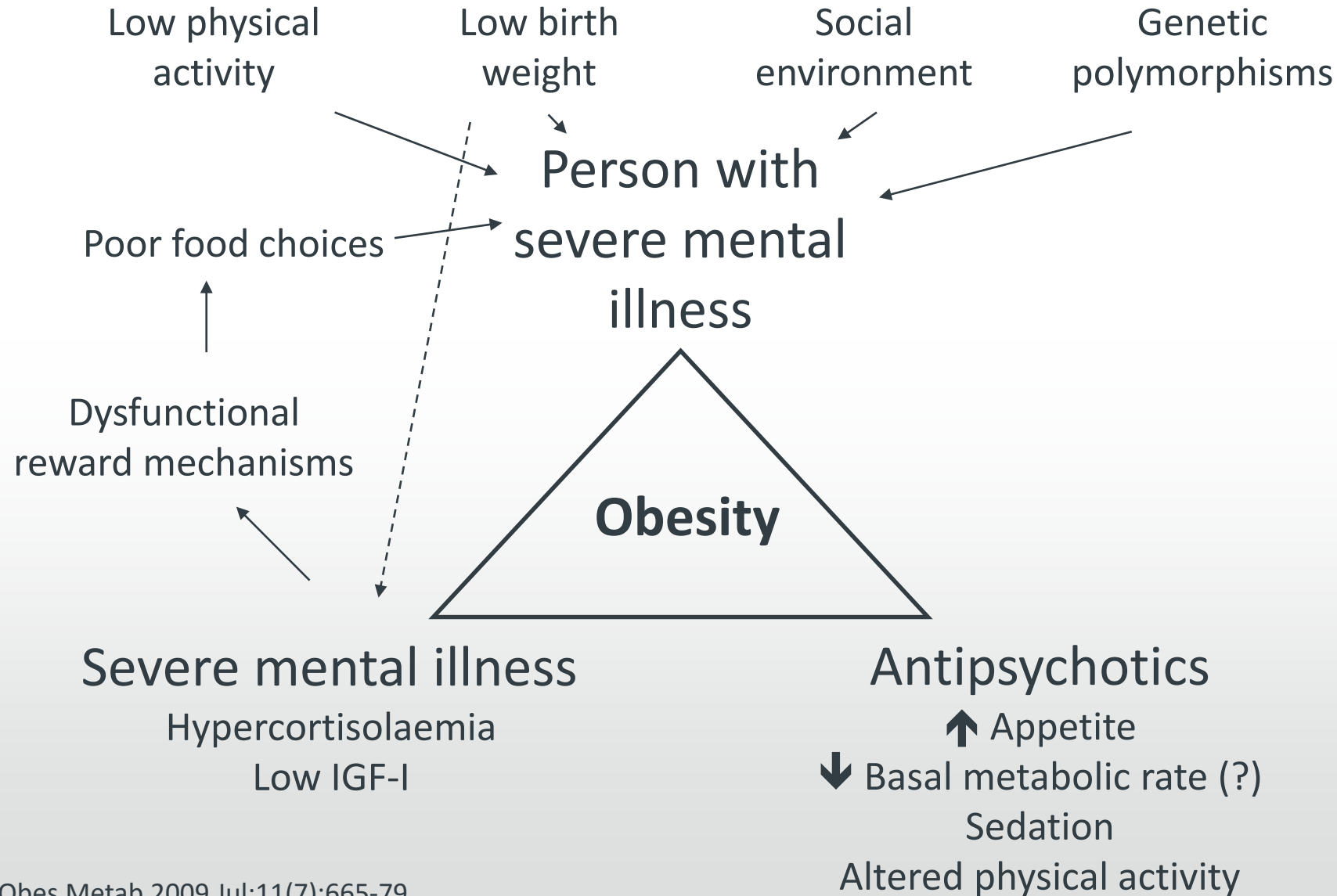
Consequences of diabetes in people with severe mental illness

- 74% more likely to develop acute complications associated with diabetes
- More likely to develop chronic microvascular complications
- 2-3 more likely to develop cardiovascular disease
- 6.14x more likely to die from DM

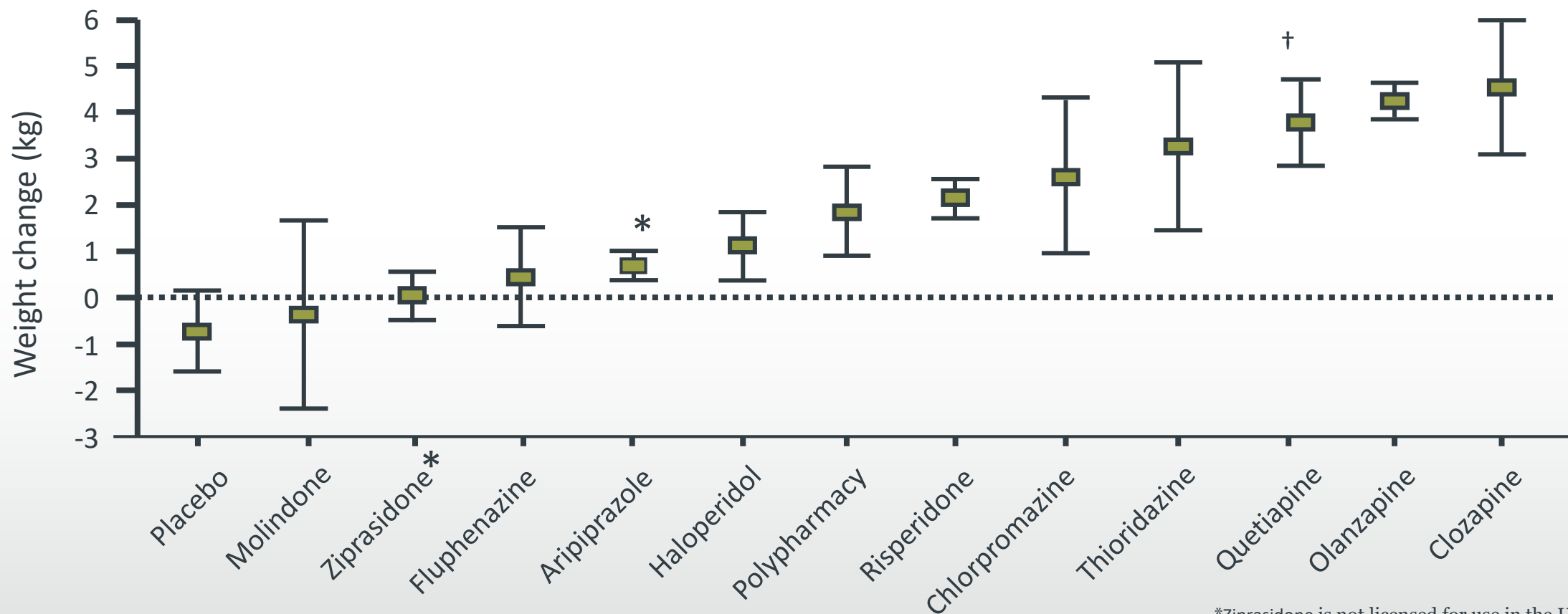
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Mean Change in Weight With Antipsychotics



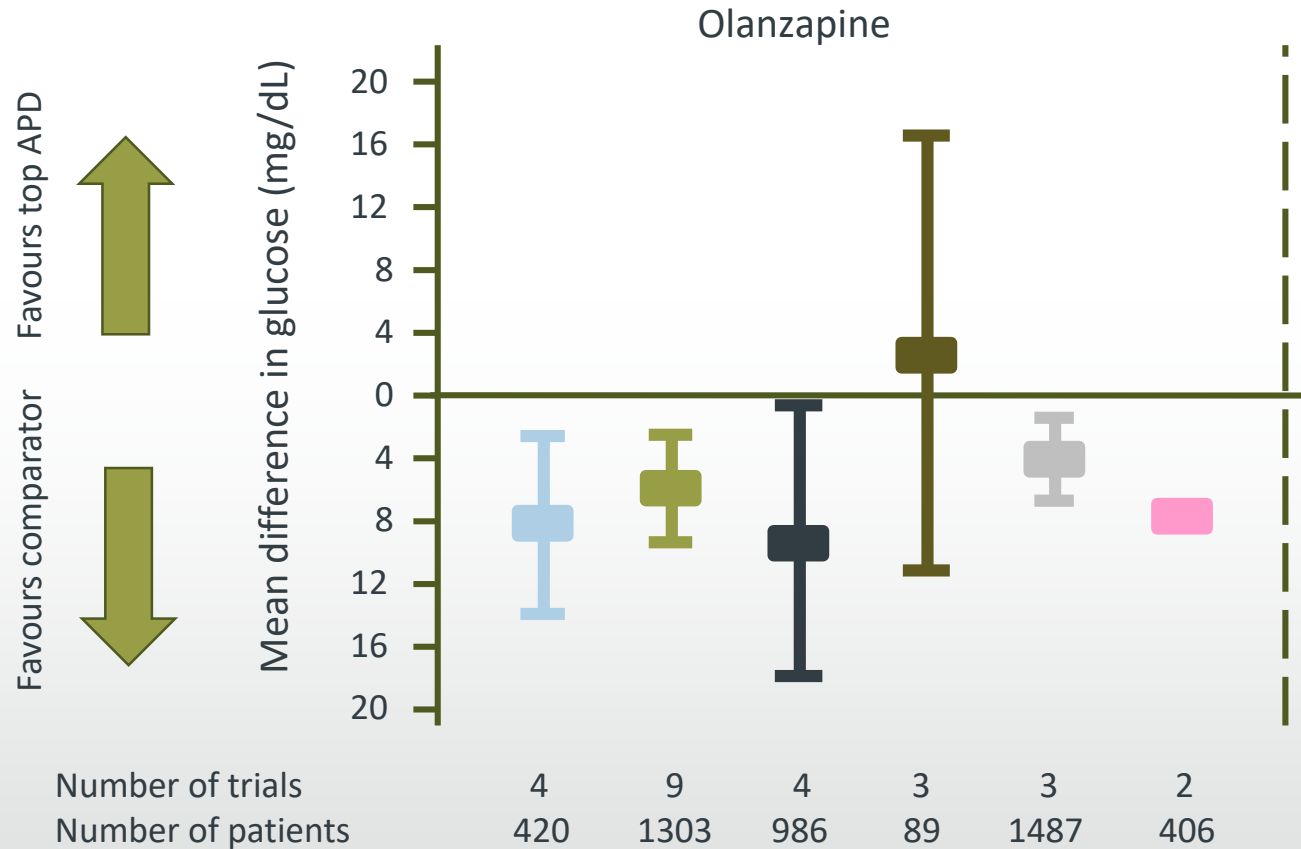
*Ziprasidone is not licensed for use in the UK

Please refer to product SmPC for complete information on prescribing and adverse events

*4-6 week pooled data (Marder SR, *Schizophr Res* 2003;61:123-36.). †Extrapolated from 6-week data.

Adapted from: Allison DB, *Am J Psychiatry* 1999;156:1686-96.

Head-to-head comparisons of effect of second generation antipsychotics on glucose



Comparator Antipsychotic

Ziprasidone*
Aripiprazole

Risperidone
Amisulpride

Quetiapine
Sertindole

Clozapine

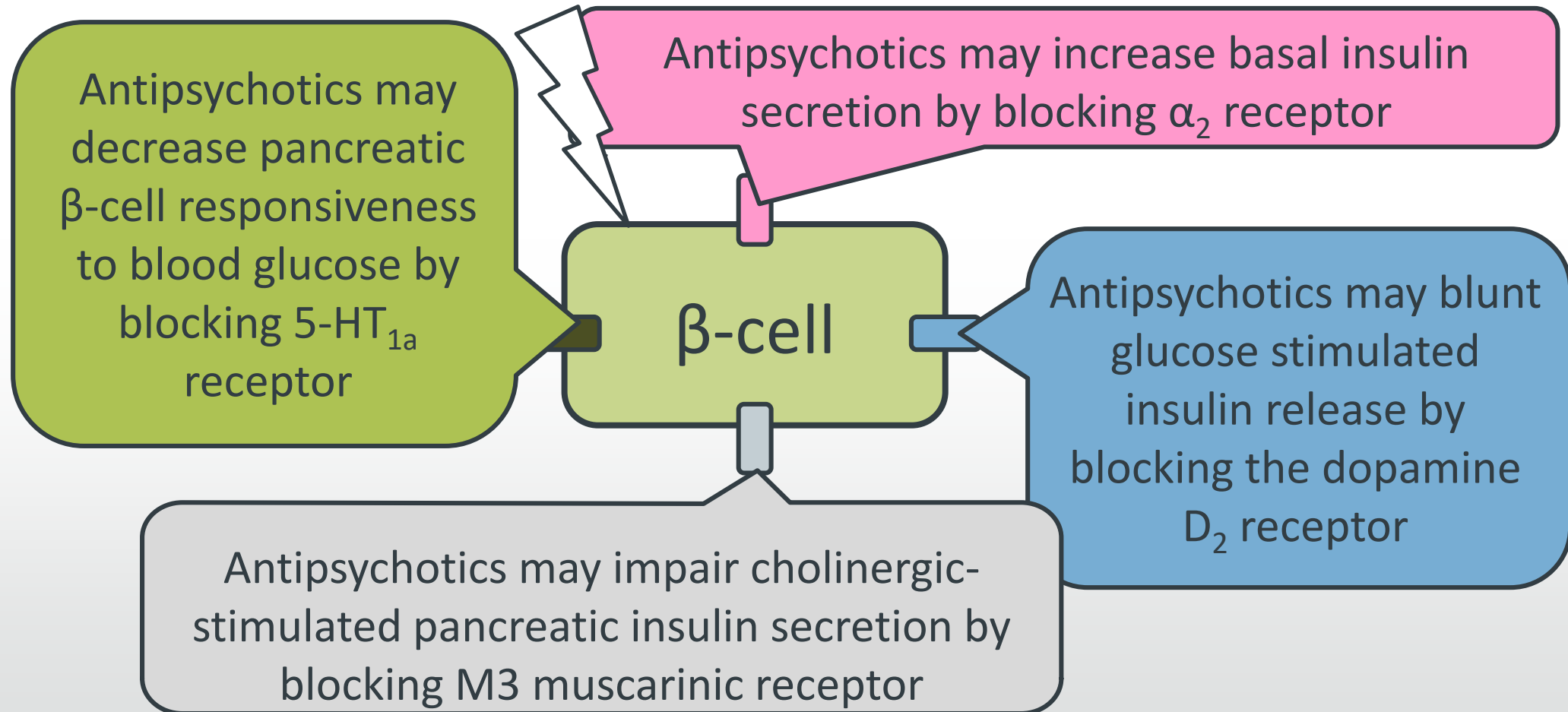
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Rummel-Kluge et al. Schizophrenia Res (2010) 123: 225–233

Possible effects of antipsychotics on β -cell function

Direct toxic effect





Hieronimus Bosch, Curing For removing the stone of madness
c.1475-1480



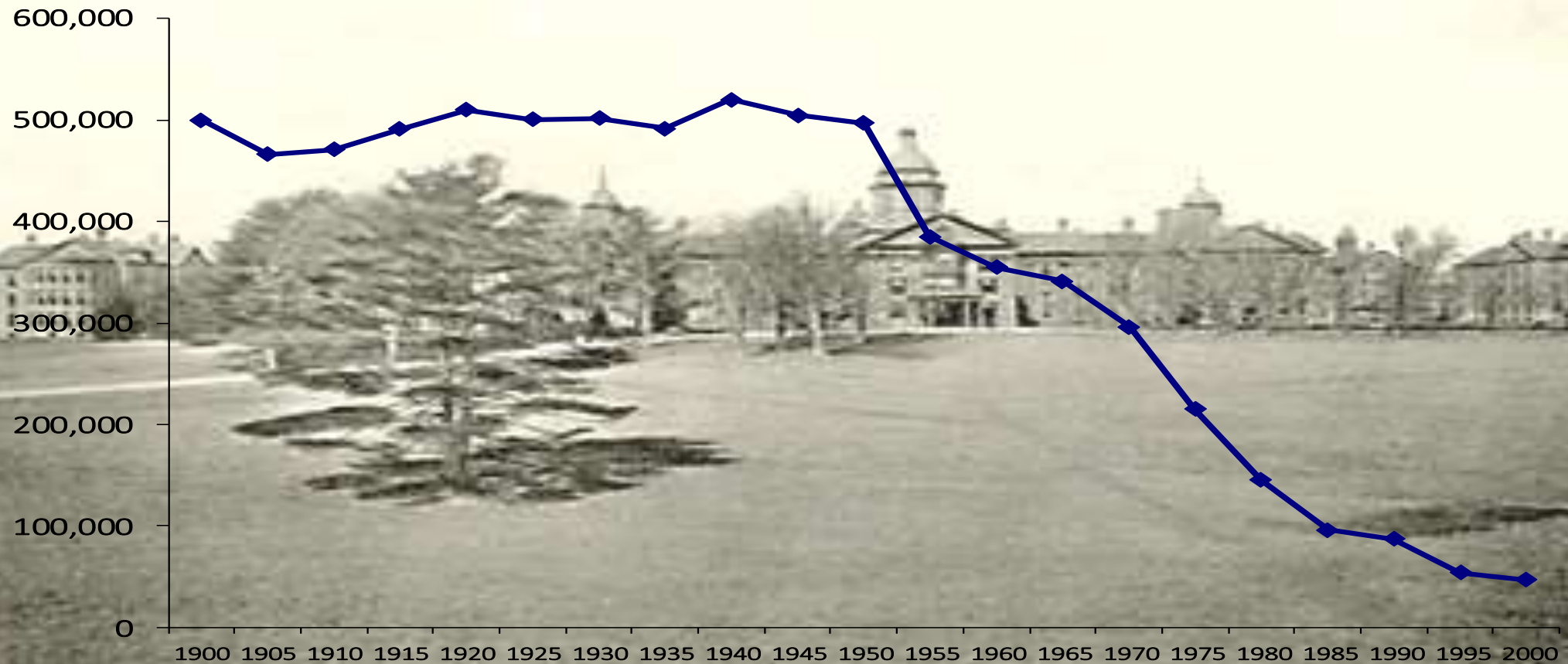
Benjamin Rush
Tranquilizer 1



Emil Kraepelin, *Psychiatrie*, 5th edition 1896

Number of psychiatric hospital beds

England 1900 - 2000







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Overview

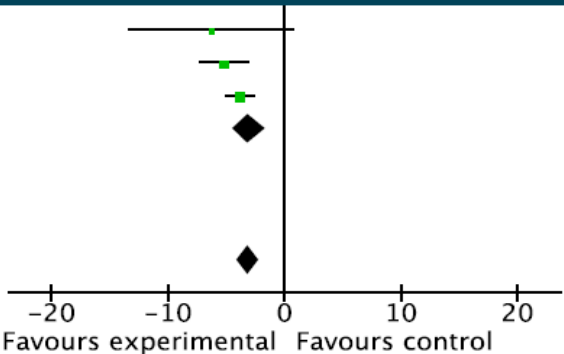
- Epidemiology of diabetes in people with severe mental illness
- Why is diabetes more common in people with people with severe mental illness
- Clinical implications
 - Prevention of diabetes

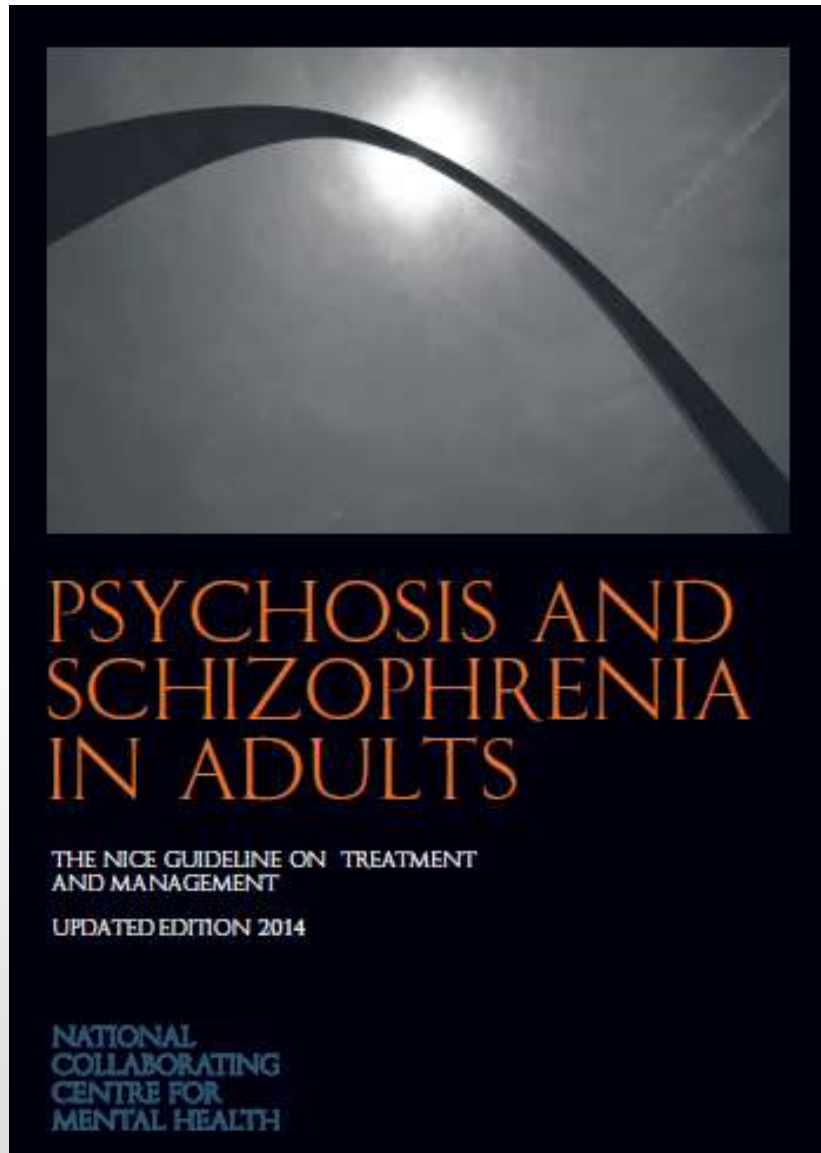
Meta-analysis of effectiveness of weight-management interventions

Study or Subgroup	Experimental			Control			Weight	Mean Difference IV, Random, 95% CI	Mean Difference IV, Random, 95% CI
	Mean	SD	Total	Mean	SD	Total			
1.59.1 Prevention trials									
Alvarez-Jimenez 2006	4.1	3.99	28	6.98	4.5	33	9.6%	-2.88 [-5.01, -0.75]	
Cordes et al 2011	3.4	4.2	13	4.5	6.1	18	4.8%	-1.10 [-4.73, 2.53]	
Evans 2005	2	3.6	23	6	2.6	11	9.7%	-4.00 [-6.13, -1.87]	
Littrell 2003	0.81	8.97	35	7.17	9.16	35	3.8%	-6.36 [-10.61, -2.11]	

Majority of these trials were of short duration, most lasting 12-16 weeks, with small participant numbers (median 53, range 15-110)

McKibbin 2006	58.5215	2.1228	28	59.2524	18.515	25	9.8%	-0.77 [-10.78, 9.25]	
Weber 2006	84.1848	6.54236	8	90.4667	7.35393	7	1.5%	-6.28 [-13.37, 0.81]	
Wu 2007	-4.2	4.4	28	1	3.4	25	9.8%	-5.20 [-7.31, -3.09]	
Wu 2008	63.4	2.6	32	67.2	2.6	32	14.5%	-3.80 [-5.07, -2.53]	
Subtotal (95% CI)			205			192	63.4%	-3.04 [-4.39, -1.68]	
Heterogeneity: Tau ² = 1.82; Chi ² = 17.54, df = 7 (P = 0.01); I ² = 60%									
Test for overall effect: Z = 4.40 (P < 0.0001)									
Total (95% CI)			373			348	100.0%	-3.12 [-4.03, -2.21]	
Heterogeneity: Tau ² = 1.08; Chi ² = 22.46, df = 13 (P = 0.05); I ² = 42%									
Test for overall effect: Z = 6.69 (P < 0.00001)									
Test for subgroup differences: Chi ² = 0.04, df = 1 (P = 0.84), I ² = 0%									





..People with psychosis or schizophrenia, especially those taking antipsychotics, should be offered a combined programme of healthy eating and physical activity by their mental healthcare provider....

STEPWISE: Change in Weight



Change in weight (kg)	Intervention (N=207)	Control (N=205)	Mean difference (95% CI)
3 months	-0.2 (4.4)	0.4 (4.7)	-0.58 (-1.48, 0.32)
12 months	-0.5 (7.9)	-0.5 (8.3)	0.04 (-1.60, 1.67)

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 - Screening for diabetes

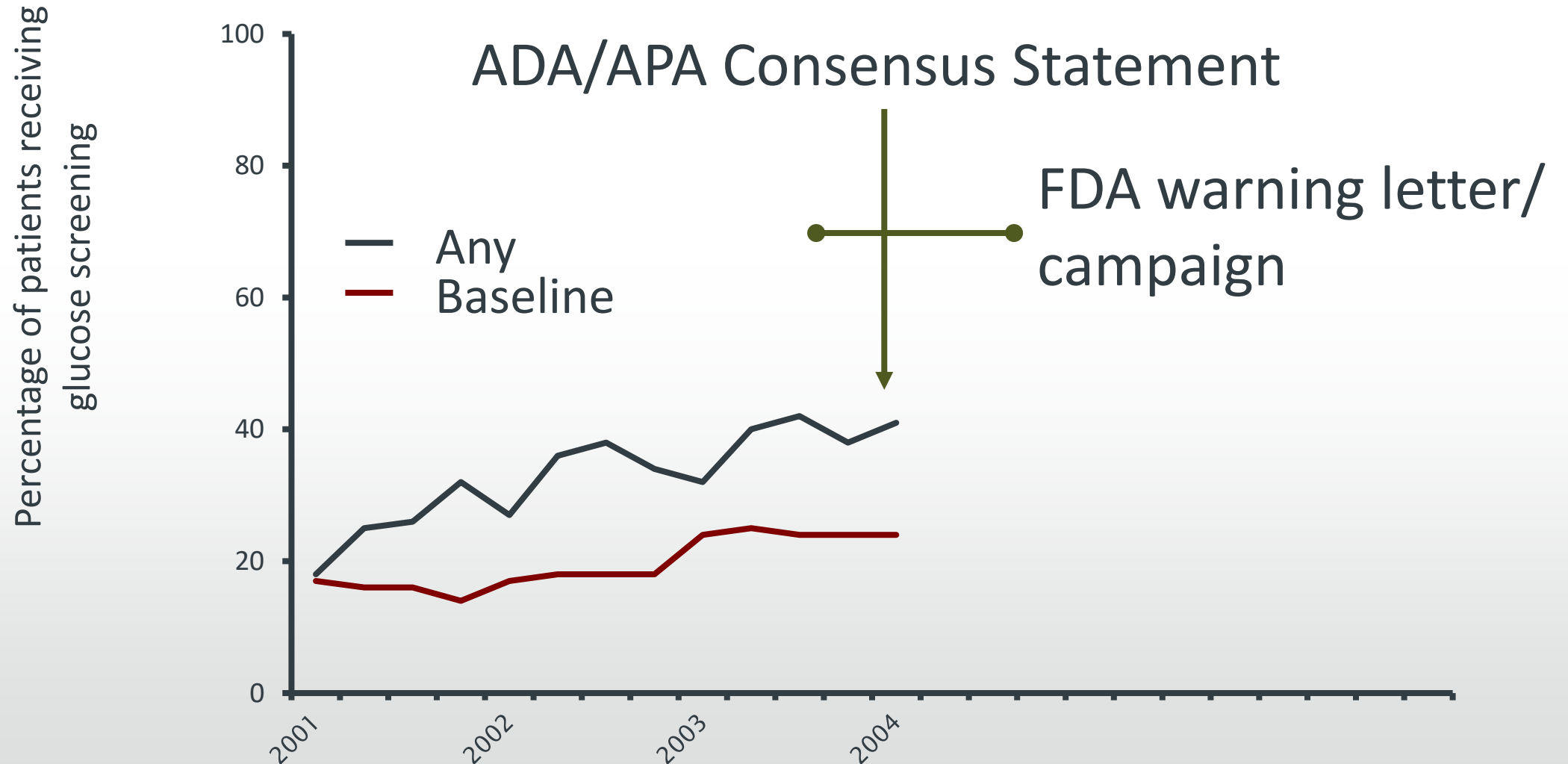
Recommended physical health screening

	Baseline	3 months	Annually
Medical History	✓	✓	✓
Height	✓		
Weight	✓	Every visit during 1 st 6-8 weeks of treatment. At least quarterly thereafter	✓
Blood pressure	✓	✓	✓
Glucose*	✓	✓	✓
HbA _{1c}	✓	(✓)	✓
Lipid profile	✓	✓	✓
ECG	✓	✓	✓

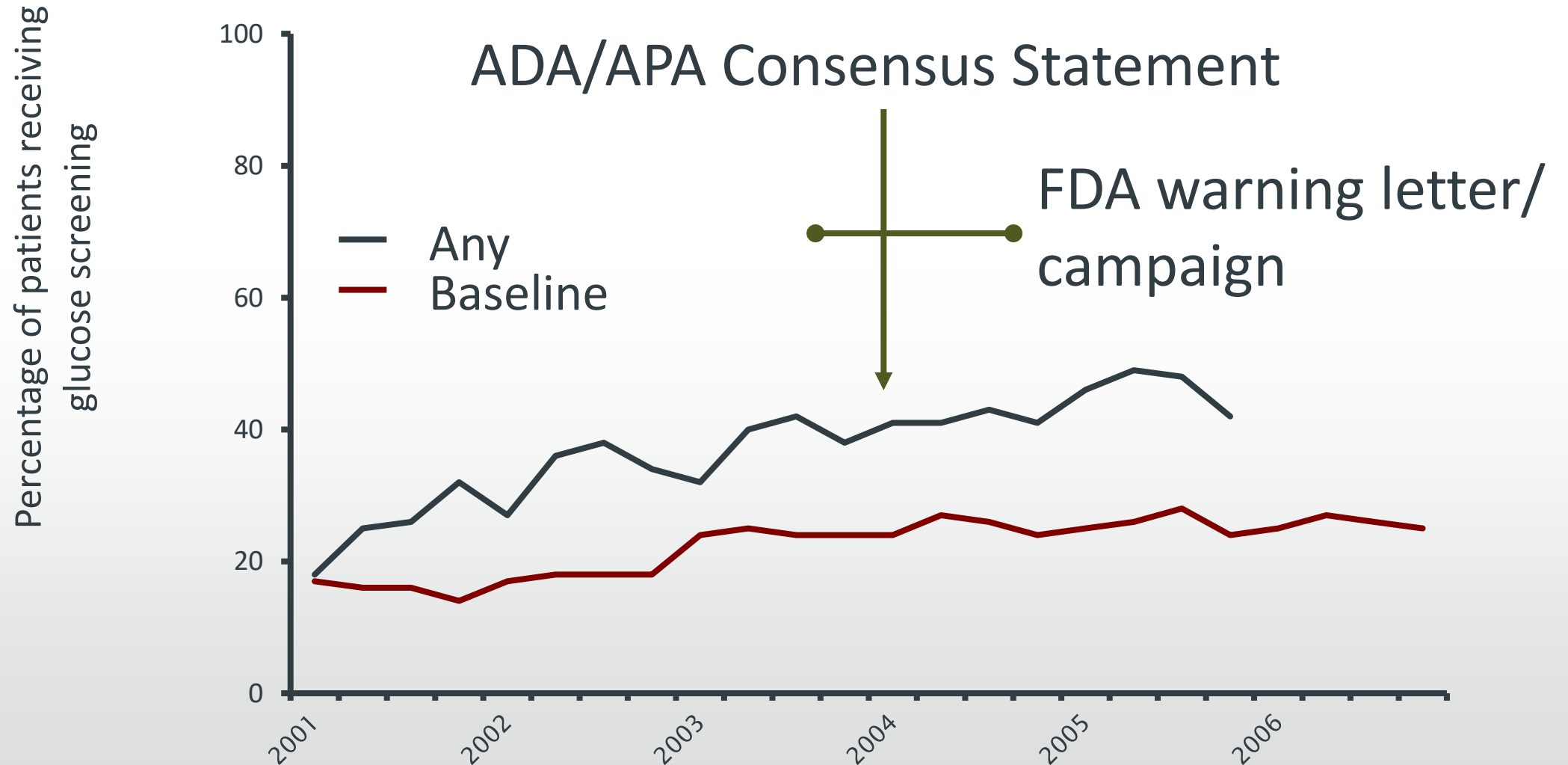
*Either fasting or random. oGTT only rarely indicated
 Beware HbA_{1c} may be normal if glucose is changing rapidly
 Holt Acta Psychiatr Scand 2015: 132(2):86-96

Always refer to individual product for complete monitoring information

The effect of the ADA and FDA guidance



The effect of the ADA and FDA guidance



Barriers to screening

- Lack of clarity about whose responsibility it is
- Lack of understanding about what should be measured and when
- Lack of confidence in interpreting results
- Lack of access to necessary equipment

Overview

- Epidemiology of diabetes in people with severe mental illness
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 - Management of diabetes

Management of diabetes

- Diabetes is a complex disease to manage
 - Medication
 - Life-style change
 - Empowerment of the patient
- Requires management by a multi-disciplinary team
 - Diabetes team
 - Psychiatric team
- Importance of treating the mental state

Should we stop the antipsychotic

Role of antipsychotic?

Risk of relapse?

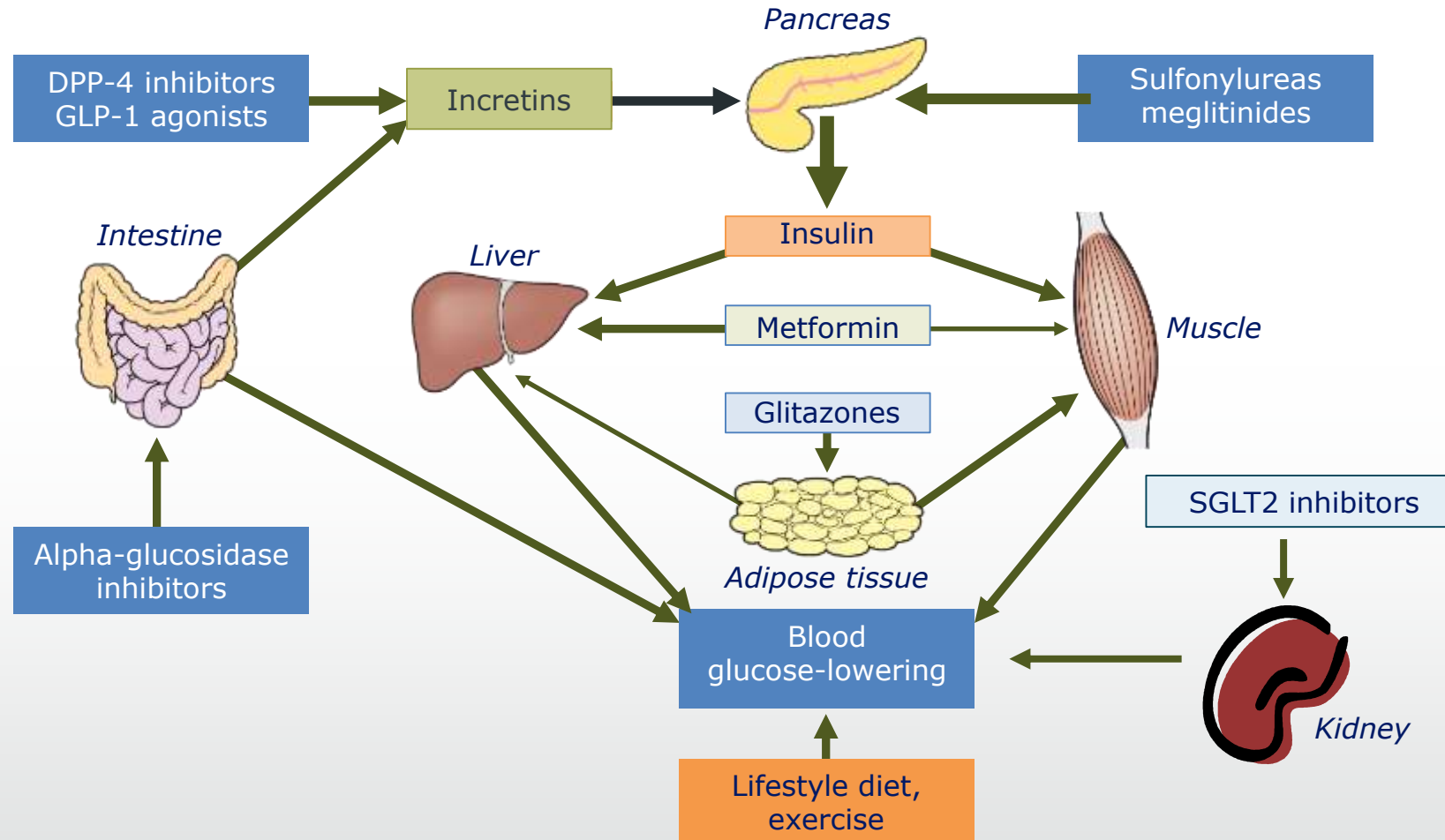
Duration of treatment?

Benefits of
treatment

Other risk factors?

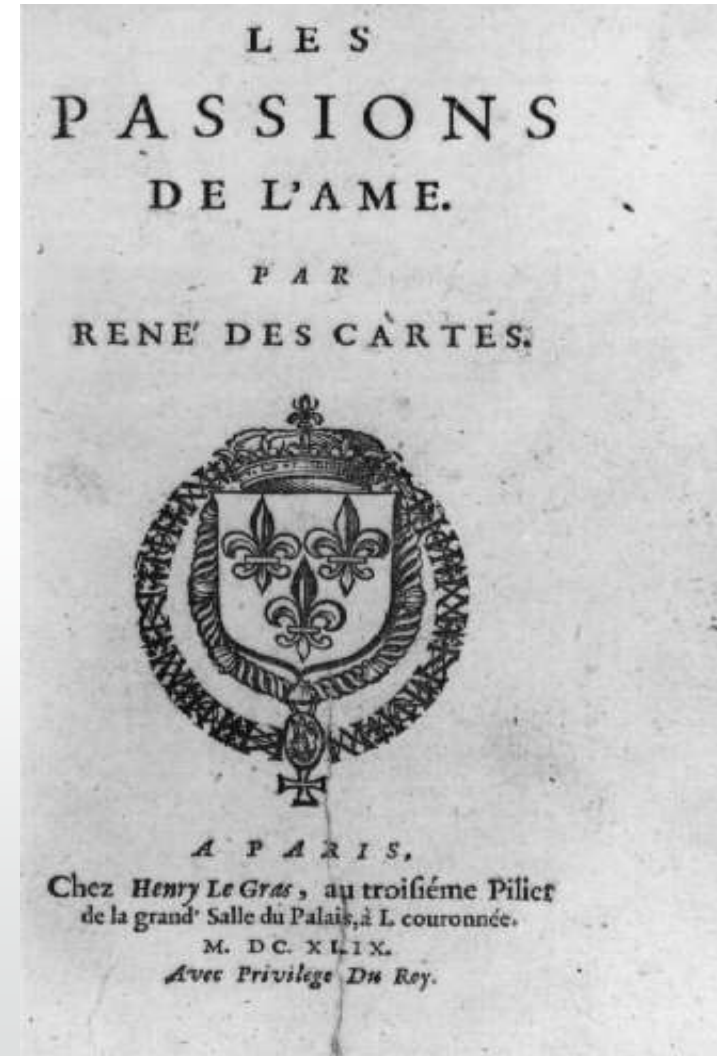


Drug treatments for type 2 diabetes



Overview

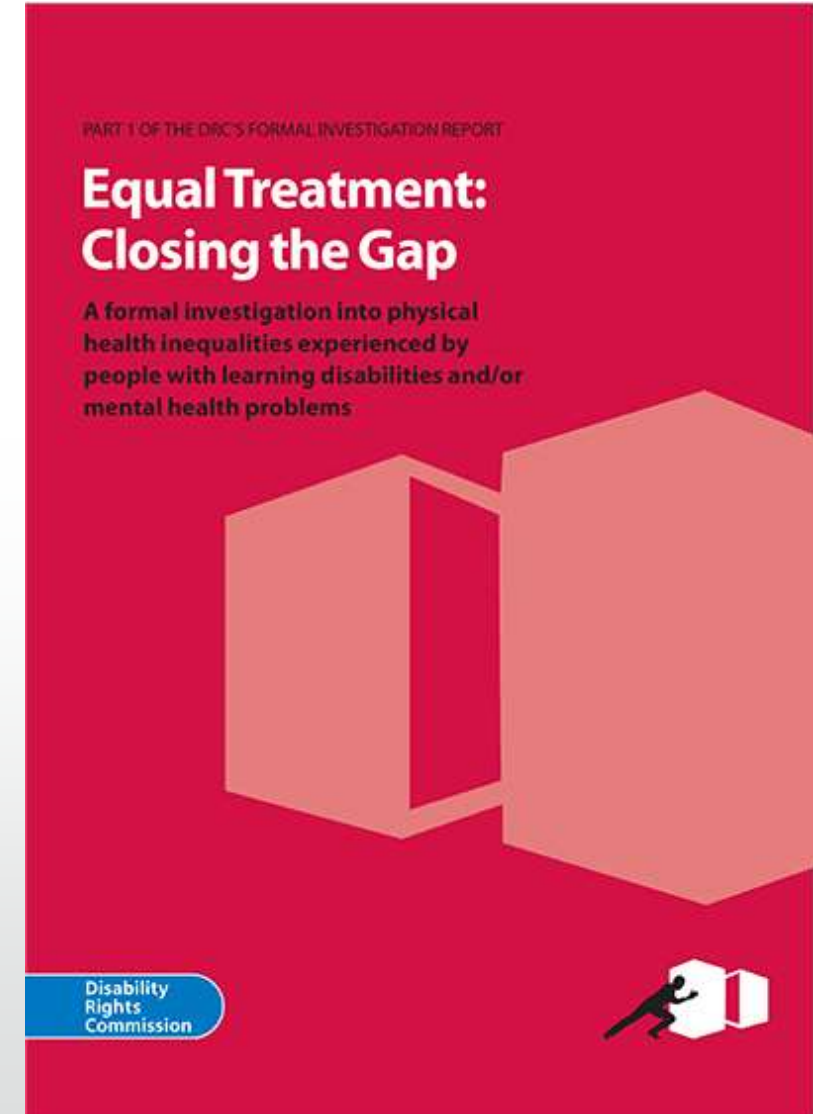
- Epidemiology of diabetes in people with severe mental illness
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- Clinical implications
 - Organisation of diabetes services



Over-shadowing

HCPs focus solely on their mental disorder and fail to take note of physical health needs.

Disability Rights Commission. Equal Treatment: Closing the gap. A formal investigation into physical Health inequalities experienced by people with learning difficulties and mental health problems. London, Disability Rights Commission; 2006 www.drc-gb.org



Review article

Quality of medical care for people with
and without comorbid mental illness
and substance misuse: systematic review
of comparative studies

Alex J. Mitchell, Darren Malone and Caroline Carney Doebbeling

- Less likely to be examined for eye or foot complications
 - Despite more clinic visits
- Less likely to be screened for HbA_{1c} or cholesterol
- Received less education
- Less likely to receive a statin

Summary

- Severe mental illness is associated with a 2-3 fold increase in the prevalence of T2DM
 - The mechanisms underlying the increase are multifactorial
- Individualised lifestyle and treatment is needed to reduce the risk of diabetes in people with severe mental illness
- Treatment of DM should follow standard treatment algorithms
- The management of DM in someone with DM and severe mental illness requires a multidisciplinary approach

Any questions?

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