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Managing Diabetes in Mental Health

James Lee

Senior Clinical Pharmacist, Devon Partnership NHS Trust

SUNOVION

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Disclosures: James Lee

I have an interest in relation with one or more organizations that could be perceived as a possible conflict of interest in the context of this presentation. The relationships are summarized below:

Interest	Name of organization
Grants	**Sunovion Pharmaceuticals sponsored talk**
Shares	**No share holdings in pharmaceutical companies**
Paid positions, honoraria and advisory boards	**None**

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Content

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Part 1: Diabetes & Mental Health

– *what's the link?*

Part 2: Managing Diabetes in Mental Health

– *why are mental health patients more at risk?*

Part 3: Improving the Situation

– *what can be done to make things better?*

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Part 1

DIABETES & MENTAL HEALTH: *WHAT'S THE LINK?*

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Mental Health

Diabetes

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Mental Health

People with diabetes 2 more likely to develop depression

Only 1/3 with a mental health condition get a diagnosis

Anxiety & phobic disorders often co-exist

Females twice as likely to develop an eating disorder: 10-15% young females

People with diabetes twice as likely to develop Alzheimer's Dementia

Diabetes

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"[Diabetes is a caused by] long sorrow and other depressions."

Thomas Willis (1621-1675)

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Diabetes & Depression

- Depression affects 9-25% of diabetics.
- **Underdiagnosed, undertreated & misinterpreted.**
- One large study found only half of cases detected, of which half received any treatment.
- Total healthcare expenditure is 4.5 times higher.

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Diabetes, Depression & Risks

- Concurrent depression is associated with
  - decreased metabolic control
  - poor adherence to medication & diet
  - reduced quality of life
  - increase in health care expenditures.
- Specifically linked to prognostic variables in diabetes such as micro- and macrovascular complications
- Poor metabolic control may exacerbate depression and diminish response to antidepressant regimens.

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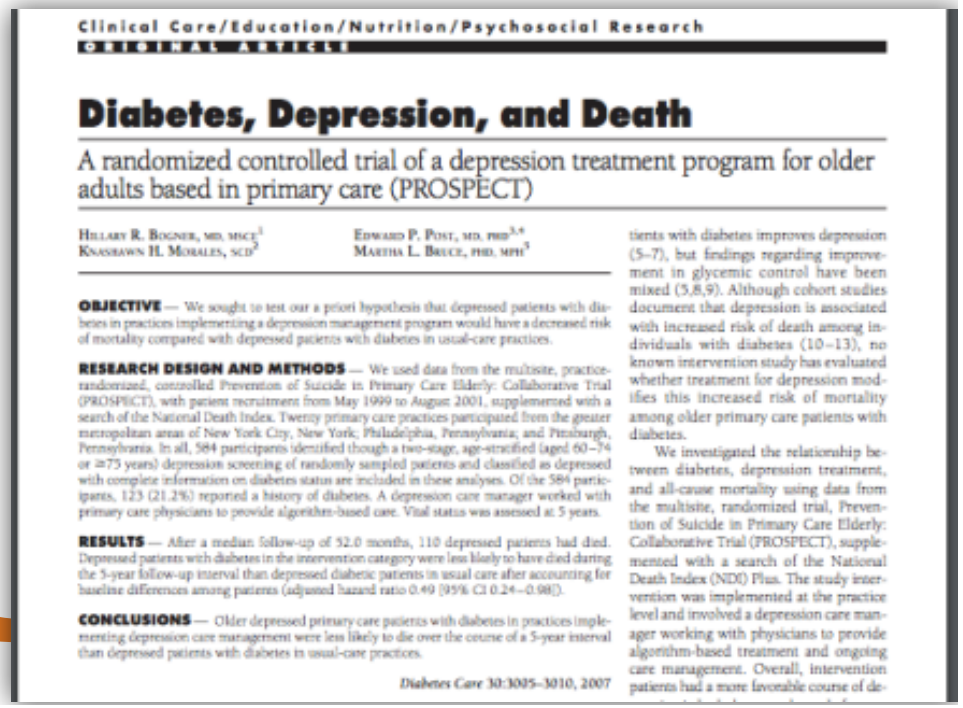
Diabetes, depression & death:

a randomized controlled trial of a depression treatment program for older adults based in primary care (PROSPECT)



Clinical Care/Education/Nutrition/Psychosocial Research

ORIGINAL ARTICLE

Diabetes, Depression, and Death

A randomized controlled trial of a depression treatment program for older adults based in primary care (PROSPECT)

HILLARY R. BOGNER, MD, MSCE[1]
KNASIBAWN H. MORALES, SCD[2]
EDWARD P. POST, MD, PHD[3,4]
MARTHA L. BRUCE, PHD, MPH[5]

OBJECTIVE — We sought to test our a priori hypothesis that depressed patients with diabetes in practices implementing a depression management program would have a decreased risk of mortality compared with depressed patients with diabetes in usual-care practices.

RESEARCH DESIGN AND METHODS — We used data from the multisite, practice-randomized, controlled Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT), with patient recruitment from May 1999 to August 2001, supplemented with a search of the National Death Index. Twenty primary care practices participated from the greater metropolitan areas of New York City, New York; Philadelphia, Pennsylvania; and Pittsburgh, Pennsylvania. In all, 584 participants identified though a two-stage, age-stratified (aged 60–74 or ≥75 years) depression screening of randomly sampled patients and classified as depressed with complete information on diabetes status are included in these analyses. Of the 584 participants, 123 (21.2%) reported a history of diabetes. A depression care manager worked with primary care physicians to provide algorithm-based care. Vital status was assessed at 5 years.

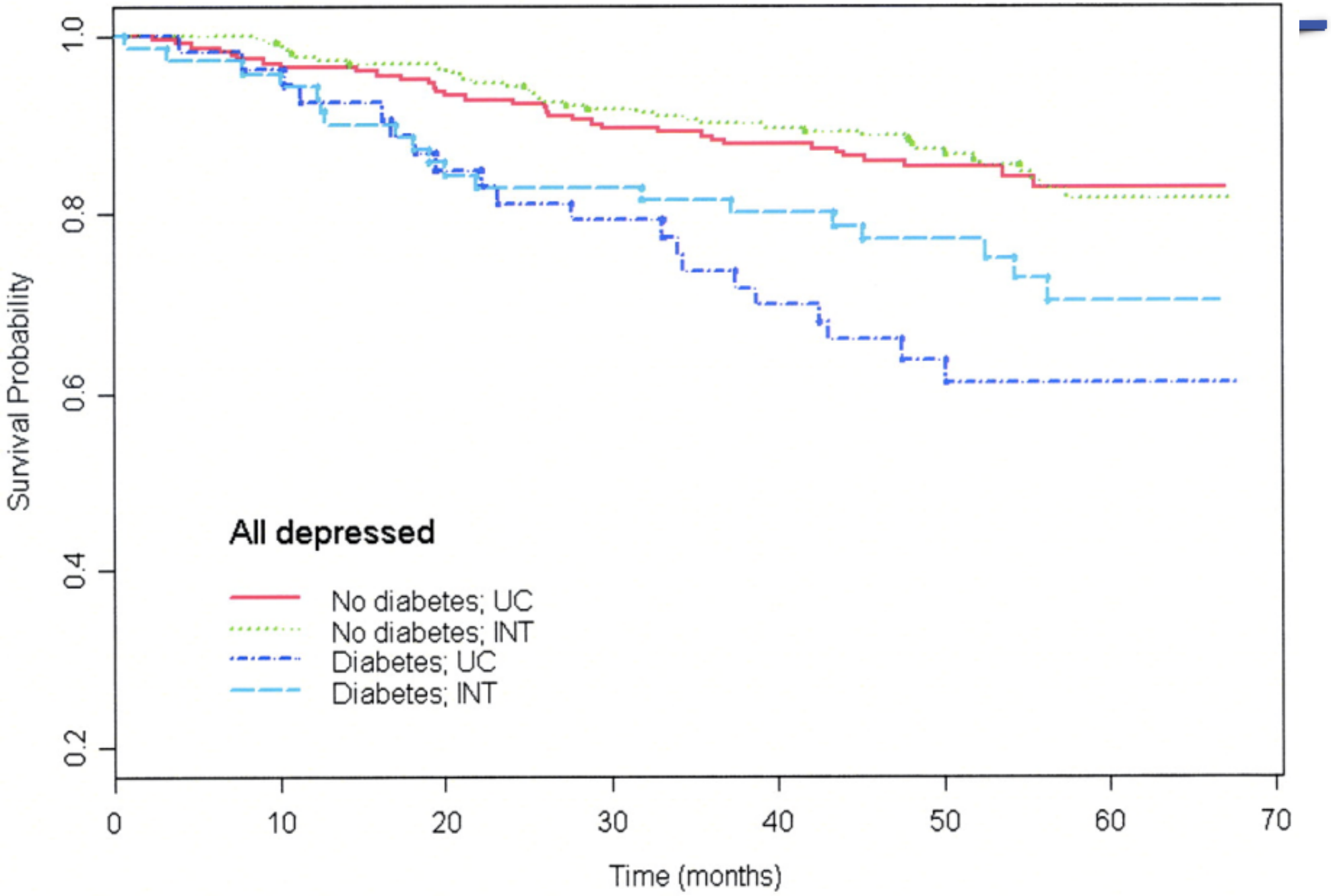
RESULTS — After a median follow-up of 52.0 months, 110 depressed patients had died. Depressed patients with diabetes in the intervention category were less likely to have died during the 5-year follow-up interval than depressed diabetic patients in usual care after accounting for baseline differences among patients (adjusted hazard ratio 0.49 [95% CI 0.24–0.98]).

CONCLUSIONS — Older depressed primary care patients with diabetes in practices implementing depression care management were less likely to die over the course of a 5-year interval than depressed patients with diabetes in usual-care practices.

Diabetes Care 30:3025–3030, 2007

tients with diabetes improves depression (5–7), but findings regarding improvement in glycemic control have been mixed (5,8,9). Although cohort studies document that depression is associated with increased risk of death among individuals with diabetes (10–13), no known intervention study has evaluated whether treatment for depression modifies this increased risk of mortality among older primary care patients with diabetes.

We investigated the relationship between diabetes, depression treatment, and all-cause mortality using data from the multisite, randomized trial, Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT), supplemented with a search of the National Death Index (NDI) Plus. The study intervention was implemented at the practice level and involved a depression care manager working with physicians to provide algorithm-based treatment and ongoing care management. Overall, intervention patients had a more favorable course of de-


Survival Probability
1.0
0.8
0.6
0.4
0.2
All depressed
No diabetes; UC
No diabetes; INT
Diabetes; UC
Diabetes; INT
0
10
20
30
40
50
60
70
Time (months)

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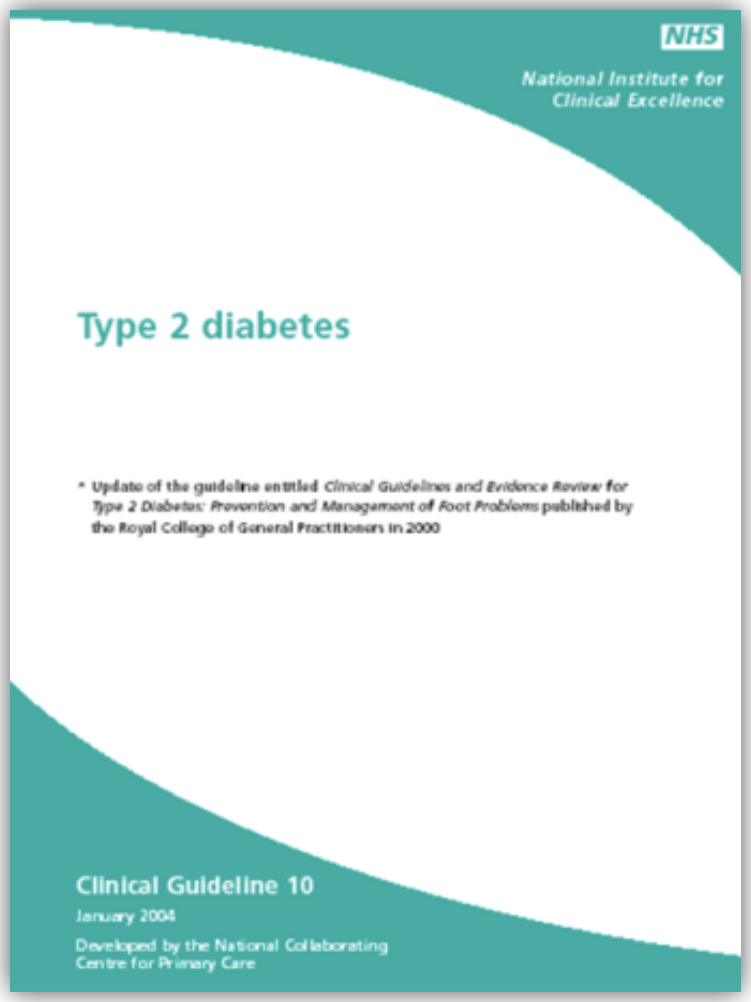
Diabetes, Depression & NICE

- Diabetes care teams should have appropriate access to mental health professionals.
- Members of professional teams […] should be alert to […] depression and/or anxiety, in particular where someone appears to be having difficulties with self-management.
- Diabetes professionals should […] be familiar with counseling techniques & appropriate drug therapy while arranging prompt referral to specialists of those people with psychological difficulties.
- Professionals should be alert to the possibility of bulimia nervosa, anorexia nervosa […] in type 1 diabetes.



Diabetes, Depression & Treatment

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- Treatments of depression with diabetes improves depression *(unsurprisingly!)* but findings regarding improvement in glycemic control have been mixed.
- Psychotherapy & pharmacotherapy are effective in the presence of diabetes
  - both CBT & **SSRIs** are weight neutral and have been associated with glycemic improvement in some studies.

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"Diabetes is a disease which often shows itself in families in which insanity prevails."

Henry Maudsley (1835-1918)

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Diabetes & Psychotic Disorders

- Diabetes 2-3 times more common with schizophrenia
- Both diabetes and SMI have a strong genetic link specific to type 2 diabetes
- A large proportion of schizophrenia patients have family history of type 2 diabetes (17-30%)
- Prevalence of type 2 diabetes among schizophrenia patients with family history of type 2 diabetes is much higher compared to those without (33% vs 10%)

Thrifty Phenotype Hypothesis

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- Reduced foetal growth linked to a number of conditions later in life
- Poor nutritional condition of the mothers 'activates' metabolic adaptions to help the foetus survive.
- Offspring have lower metabolic rate and increased insulin resistance but also influences brain development
- Thrifty phenotype hypothesis, autonomic hyperactivity and other genetic links may all be responsible

Diabetes & Dementia

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- >60y.o. with T2DM are thought to be twice as likely to develop Alzheimer's Dementia.
- Diabetes can damage the small blood vessels which feed cells and nerves.
- Diabetes is also a risk factor for developing Vascular Dementia.

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Part 2

MANAGING DIABETES IN MENTAL HEALTH:
WHY ARE MENTAL HEALTH PATIENTS MORE AT RISK?

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Mental Health

Major depression doubles one's lifetime risk of developing type 2 diabetes

Certain antipsychotics increase the risk of diabetes

Schizophrenia sufferers are 2-3 times more likely to develop diabetes

Certain psychotropics cause significant weight gain leading to diabetes

Those with mental health conditions are less likely to engage with healthcare

Diabetes

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People with mental ill-health more likely to develop diabetes

Why?

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Multifactorial

Mental Health & Diet

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- Adoption of unhealthy dietary preferences, particularly foods rich in fats and sugars.
- Activation of the endocannabinoid system, which increases appetite and may alleviate depression, reinforces eating behaviour.
- The use of food as a coping strategy for emotion regulation.
- Lack of engagement in weight loss programs.

Access to services

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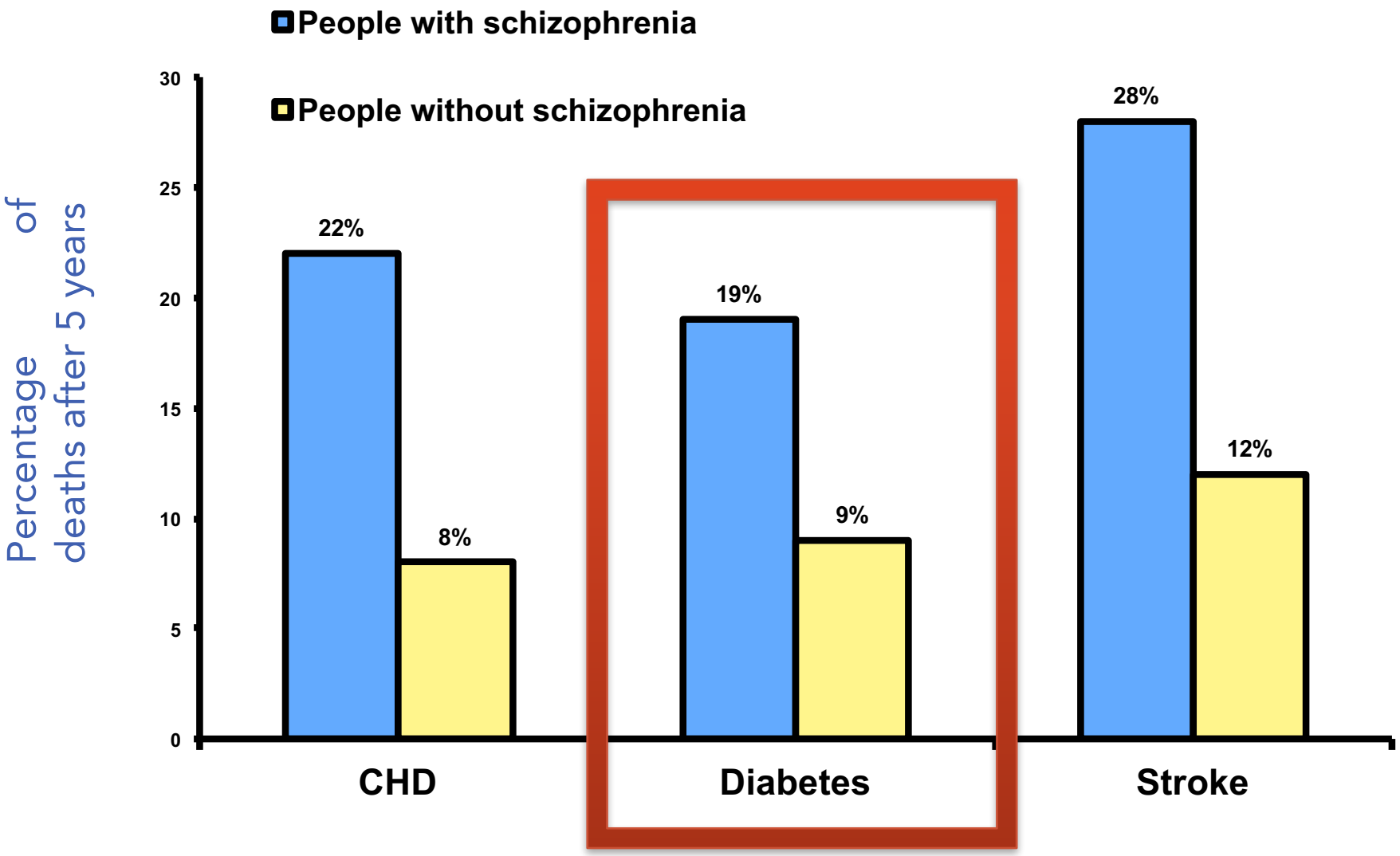
- Less likely to engage in services
  - Related to mental health condition
  - Unaware of physical health problems
  - Fragmentation of healthcare services
  - Access
  - Poor follow-up
  - Stigma

Why worry?

- Men die 20 years earlier, women die 15 years earlier
- Die faster once they have health problems
- 2–3 times more likely to develop diabetes
- 2–3 times more likely to suffer a heart attack or stroke

Five-year survival rates are lower for people with schizophrenia than for the rest of the population



Hippisley-Cox J et al (2006) A comparison of survival rates for people with mental health problems and the remaining population with specific conditions. Disability Rights Commission. Equal treatment: closing the gap, July 2006

Department of Health

Public Health England

NHS England

Improving the physical health of people with mental health problems:

Actions for mental health nurses

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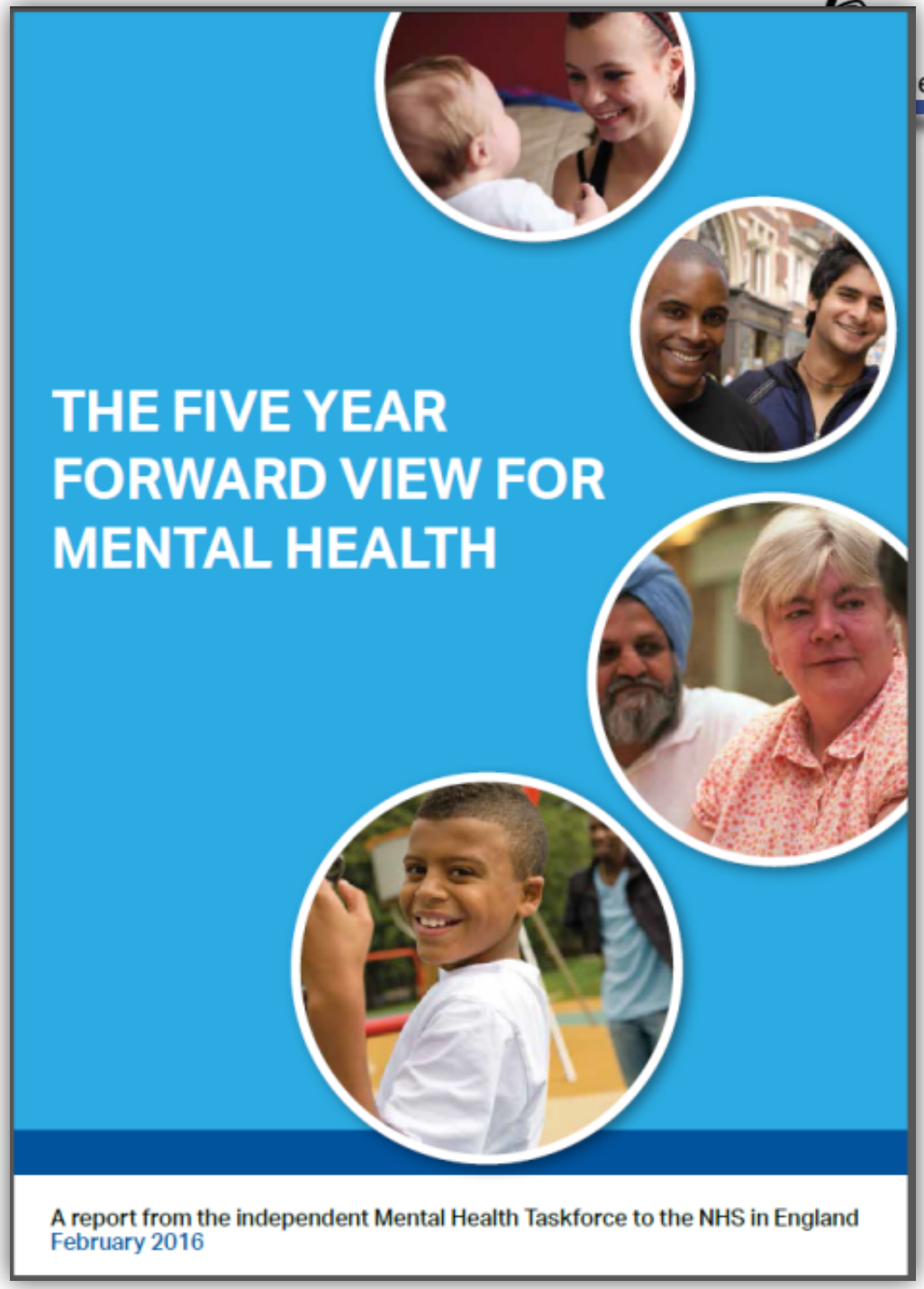

Antipsychotics

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- Can increase risk of diabetes through different mechanisms:
  - Indirect: weight gain
  - Direct: receptor-level changes
- **Second-generation antipsychotics** have a bigger impact than **first-generation**.
- Reported to affect 80% of those treated.

Antipsychotics & Weight Gain

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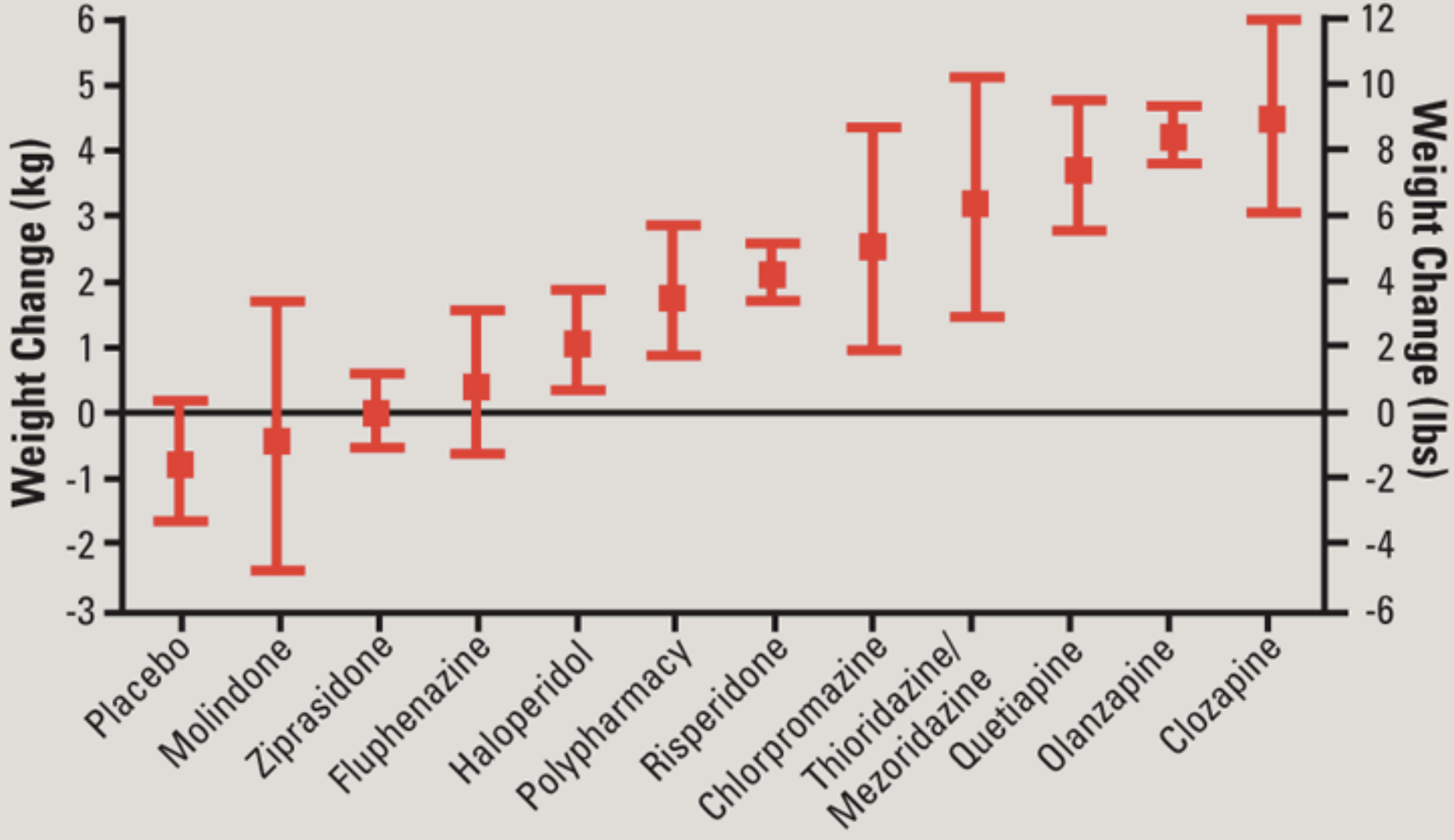
- Mainly though increase appetite & reduced satiety
- Increased food intake & decreased exercise

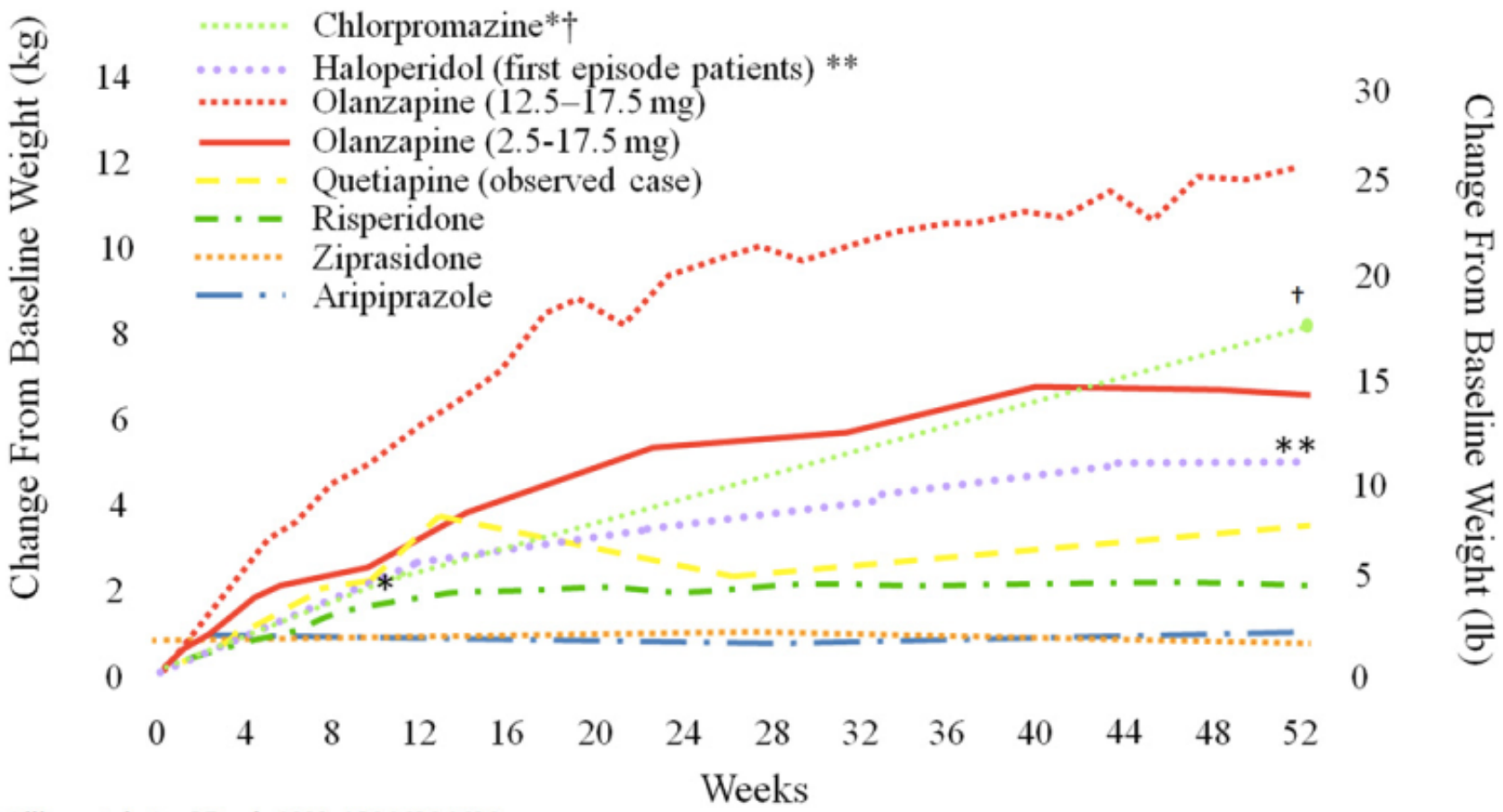
Low Risk	Moderate Risk	High Risk
Amisulpride	Quetiapine	Clozapine
Haloperidol	Risperidone	Olanzapine
Aripiprazole	Paliperidone	
Lurasidone	Chlorpromazine	

SLIDE 2

Antipsychotics and Weight Gain: Meta-Analysis[3]



1-Year Weight Gain: Mean Change From Baseline Weight



*(est 10 wks) Allison et al. *Am J Psych*. 1999; 156:1686-1696.
†(median 131 wks drug naïve) Lieberman JA, et al. *Neuropsychopharmacology*. 2003; 28:995-1003.

Nemeroff CB. *J Clin Psychiatry*. 1997;58(suppl 10):45-49; Kinon BJ, et al. *J Clin Psychiatry*. 2001;62:92-100; Brecher M, et al. American College of Neuropsychopharmacology; 2004. Poster 114; Brecher M, et al. *Neuropsychopharmacology*. 2004;29(suppl 1):S109; Geodon® [package insert]. New York, NY: Pfizer Inc; 2005. Risperdal® [package insert]. Titusville, NJ: Janssen Pharmaceutica Products, LP; 2003; Abilify® [package insert]. Princeton NJ: Bristol-Myers Squibb Company and Rockville, MD: Otsuka America Pharmaceutical, Inc.; 2005.
**Zipursky RB, et al. 2005; *British Journal of Psychiatry*. 187:537-543.

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Antipsychotics & Weight Gain

Receptor	Activity	Effect/Mechanism
Dopamine-2	Antagonism	Causes weight gain via decrease in limbic dopaminergic activity, possibly increasing reward-seeking behaviors such as food intake; can also contribute to weight gain via disinhibition of prolactin release from the hypothalamus
Histamine-1	Antagonism	Causes weight gain via increase in hypothalamic AMP-related kinase activity, which leads to increased appetite; sedative effects may lead to reduction in mobility
Muscarinic-3	Antagonism	Not directly correlated with weight gain, but causes diabetes via impairment of glucose tolerance and reduction of insulin secretion from pancreatic beta cells
Serotonin-1A	Partial agonism	May mitigate weight effects due to serotonin-2C antagonism; may decrease carbohydrate craving
Serotonin-2C	Antagonism	Causes weight gain via disinhibition of hypothalamic neuropeptide Y neurons and inhibition of pro-opiomelanocortin neurons; may also influence leptin resistance

Antipsychotics & Weight Gain

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Early intervention can prevent: monitor closely, especially early

Options:

- Switch antipsychotics to a lower risk option
- Add **aripiprazole**
- Add metformin 1.5-2g/day
  (reduces & reverses antipsychotic weight gain but increases risk of B12 deficiency)

Even on stopping/switching, effects modest – behavioural intervention needed…

Antipsychotics & Cholesterol

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- Raise triglycerides > cholesterol
- Raised triglycerides associated with obesity & diabetes
- Can be independent of weight gain

Low Risk	Moderate Risk	High Risk
Amisulpride	Quetiapine	Clozapine
Haloperidol	Risperidone	Olanzapine
Aripiprazole	Paliperidone	
Lurasidone	Chlorpromazine	

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Antipsychotics & Diabetes

- May occur without weight gain
- Studies suggest more impact from SGA
- Clozapine – highest risk, possibly 1/3 might develop diabetes within 5 years

Minimal Effect	Low Effect	Moderate Effect	High Effect
Aripiprazole	Haloperidol	Risperidone	Clozapine
Amisulpride		Quetiapine (dose related)	Olanzapine

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Antipsychotics & Diabetes

- Indirectly through weight gain but also direct effects
- Relative antagonist potency at 5-HT_{2C} receptors roughly matches weight gain potential however not fully.
- Inhibitions of glucose transport increase cellular levels of the glucose transporter isoforms. This leads to hyperglycemia, increasing insulin release.
- Prolonged hyperinsulinemia eventually leads to insulin resistance.

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Antipsychotics & Diabetes

Monitoring – risk higher in younger adults & first episode.
Rapid weight gain & rise in triglycerides predict diabetes.

Treatment:

- Switch if possible to aripiprazole, lurasidone or amisulpride
- Standard anti-diabetic treatment if not

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Antidepressants & Diabetes

- Highest risk: Mirtazapine, TCAs & MAOIs
- Low risk: SSRIs & Venlafaxine
- Weight gain induced

Receptor	Activity	Effect/Mechanism
Dopamine-2	Antagonism	Causes weight gain via decrease in limbic dopaminergic activity, possibly increasing reward-seeking behaviors such as food intake; can also contribute to weight gain via disinhibition of prolactin release from the hypothalamus
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Mood Stabilizers & Diabetes

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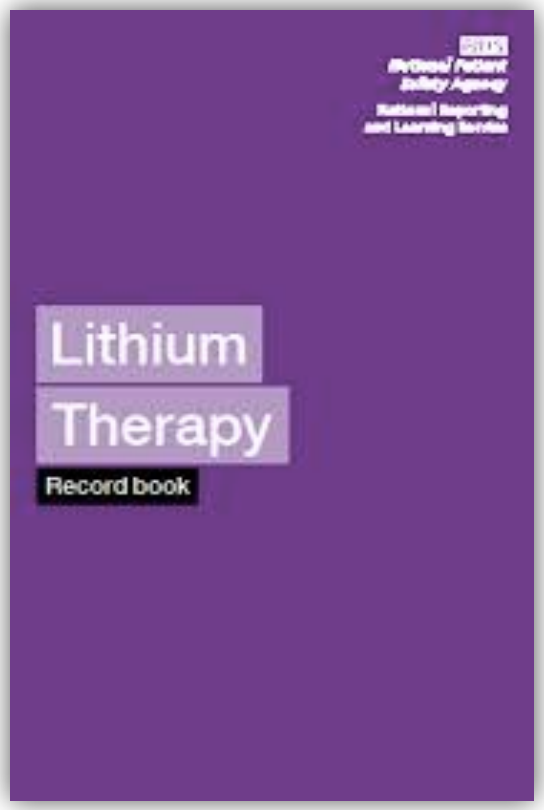
- Both Valproate & Lithium highest risk
- Mechanisms unclear:
  - Increased thirst
  - Carbohydrate craving
  - Hypothyroidism



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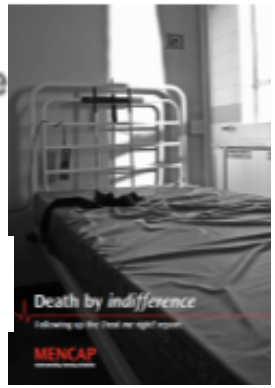
Part 3

IMPROVING THE SITUATION: *WHAT CAN BE DONE TO MAKE THINGS BETTER?*

Tools & Resources

hscic Health & Social Care Information Centre



CPPE

NAS NATIONAL AUDIT OF SCHIZOPHRENIA CCQI

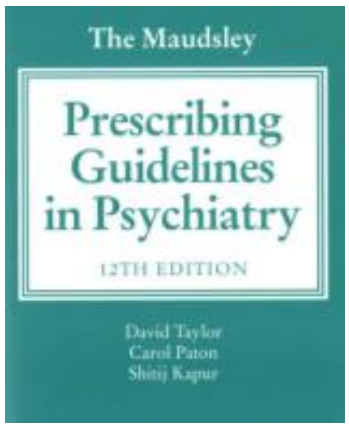
NICE National Institute for Health and Care Excellence

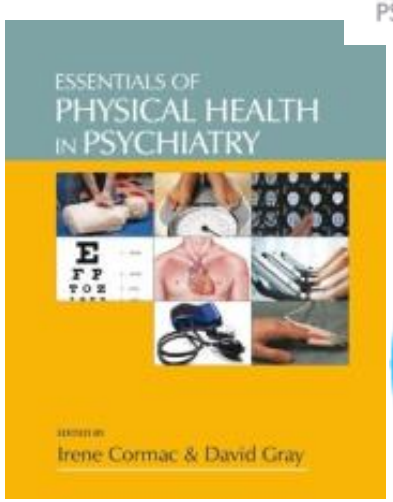
RC PSYCH ROYAL COLLEGE OF PSYCHIATRISTS

POMH-UK PRESCRIBING OBSERVATORY FOR MENTAL HEALTH-UK CCQI

Devon Partnership NHS Trust
Wellbeing Passport

Improving Health and Lives: Learning Disabilities Observatory
Health Inequalities & People with Learning Disabilities in the UK: 2010
Eric Emerson and Susannah Baines





Rethink Mental Illness.

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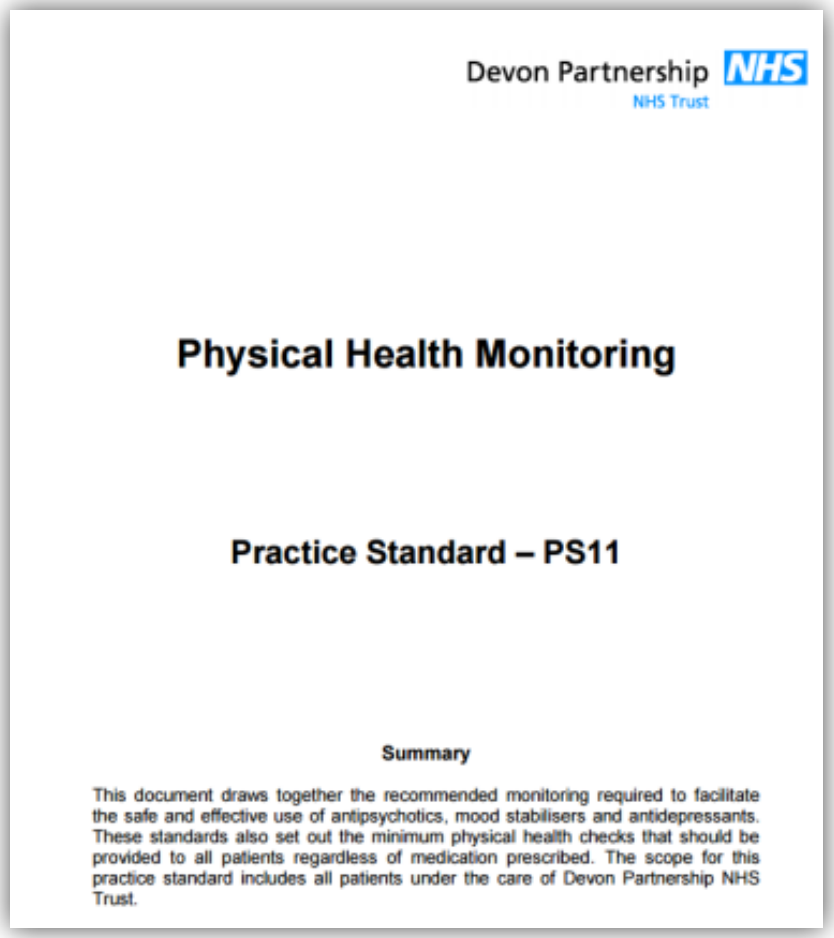
Physical Health Standards



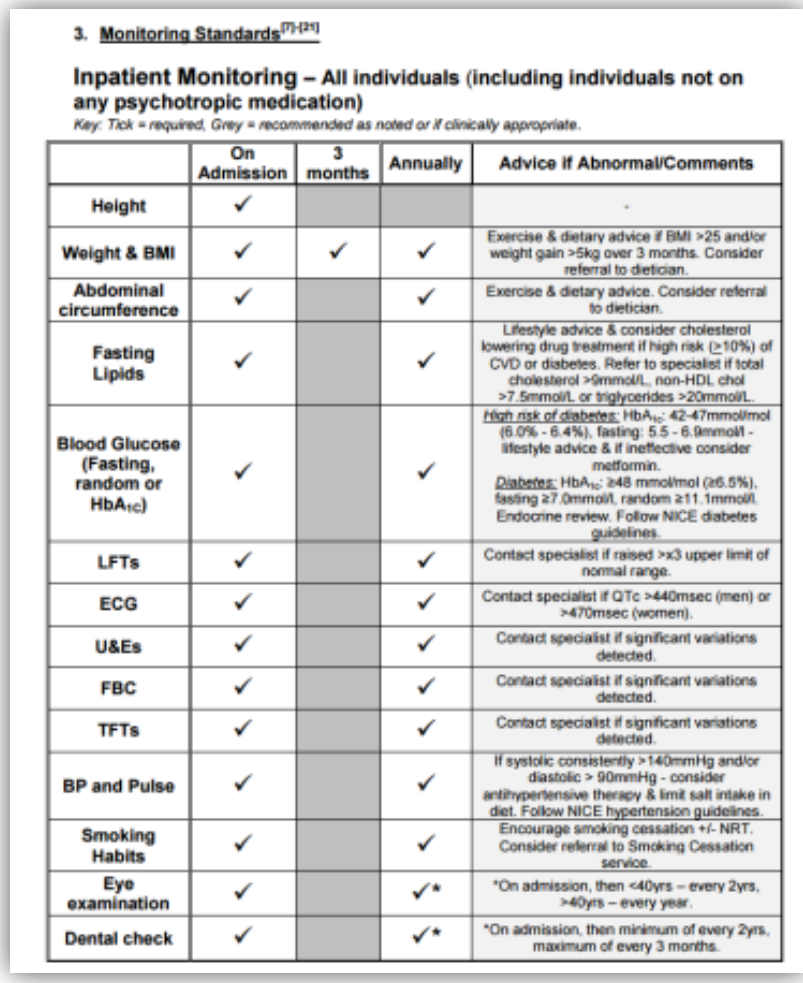
Devon Partnership NHS
NHS Trust

Physical Health Monitoring

Practice Standard – PS11

Summary

This document draws together the recommended monitoring required to facilitate the safe and effective use of antipsychotics, mood stabilisers and antidepressants. These standards also set out the minimum physical health checks that should be provided to all patients regardless of medication prescribed. The scope for this practice standard includes all patients under the care of Devon Partnership NHS Trust.



3. Monitoring Standards[7]-[21]

Inpatient Monitoring – All individuals (including individuals not on any psychotropic medication)

Key: Tick = required, Grey = recommended as noted or if clinically appropriate.

	On Admission	3 months	Annually	Advice if Abnormal/Comments
Height	✓			-
Weight & BMI	✓	✓	✓	Exercise & dietary advice if BMI >25 and/or weight gain >5kg over 3 months. Consider referral to dietician.
Abdominal circumference	✓		✓	Exercise & dietary advice. Consider referral to dietician.
Fasting Lipids	✓		✓	Lifestyle advice & consider cholesterol lowering drug treatment if high risk (>10%) of CVD or diabetes. Refer to specialist if total cholesterol >9mmol/L, non-HDL chol >7.5mmol/L or triglycerides >20mmol/L.
Blood Glucose (Fasting, random or HbA_{1c})	✓		✓	*High risk of diabetes:* HbA_{1c}: 42-47mmol/mol (6.0% - 6.4%), fasting: 5.5 - 6.9mmol/l - lifestyle advice & if ineffective consider metformin. *Diabetes:* HbA_{1c}: ≥48 mmol/mol (≥6.5%), fasting ≥7.0mmol/l, random ≥11.1mmol/l. Endocrine review. Follow NICE diabetes guidelines.
LFTs	✓		✓	Contact specialist if raised >x3 upper limit of normal range.
ECG	✓		✓	Contact specialist if QTc >440msec (men) or >470msec (women).
U&Es	✓		✓	Contact specialist if significant variations detected.
FBC	✓		✓	Contact specialist if significant variations detected.
TFTs	✓		✓	Contact specialist if significant variations detected.
BP and Pulse	✓		✓	If systolic consistently >140mmHg and/or diastolic > 90mmHg - consider antihypertensive therapy & limit salt intake in diet. Follow NICE hypertension guidelines.
Smoking Habits	✓		✓	Encourage smoking cessation +/- NRT. Consider referral to Smoking Cessation service.
Eye examination	✓		✓*	*On admission, then <40yrs – every 2yrs, >40yrs – every year.
Dental check	✓		✓*	*On admission, then minimum of every 2yrs, maximum of every 3 months.

Antipsychotics

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Monitoring – Antipsychotics *Key: Tick = required, Grey = recommended as noted or if clinically appropriate.*

	Baseline	Weekly for 6 weeks	1 Month	3 Months	6 Months	12 Months & Annually	Advice if abnormal/Comments
Weight & BMI	✓	✓	✓	✓	✓	✓	Exercise & dietary advice if BMI >25 and/or weight gain >5kg over 3 months. Consider referral to dietician.
Fasting Lipids	✓			✓	Olanzapine	✓	Lifestyle advice & consider cholesterol lowering drug treatment if high risk (>10%) of CVD or diabetes. Refer to specialist if total cholesterol >9mmol/L, non-HDL chol >7.5mmol/L or triglycerides >20mmol/L.
Blood Glucose (Fasting, random or HbA_{1C})	✓	Olanzapine	Olanzapine	✓		✓	*High risk of diabetes:* HbA1c: 42-47mmol/mol (6.0% - 6.4%), fasting: 5.5 - 6.9mmol/l - lifestyle advice & if ineffective consider metformin. *Diabetes:* HbA1c: ≥48 mmol/mol (≥6.5%), fasting ≥7.0mmol/l, random ≥11.1mmol/l. Endocrine review. Follow NICE diabetes guidelines.
LFTs	✓					✓	Contact specialist if raised >x3 upper limit of normal range.
ECG	✓			Recommended for high dose or combination treatments.			Contact specialist if QTc >440msec (men) or >470msec (women).
U&Es	✓					✓	Consider stopping the antipsychotic and contact specialist if significant hyponatraemia (<133 mmol/l) or hypokalaemia (<3.5 mmol/l) detected.
FBC	✓					✓	Contact specialist if significant variations detected.
TFTs	✓					Quetiapine	Contact specialist if significant variations detected.
Prolactin	✓			✓		✓	Not for aripiprazole, quetiapine, olanzapine. Consider switching antipsychotic or adding aripiprazole* (*off – label use).
Side-effect Rating Scale	✓		✓	✓	✓	✓	Glasgow Antipsychotic Side-effect Scale (GASS).
BP and Pulse	✓		✓	✓	✓	✓	If systolic consistently >140mmHg and/or diastolic > 90mmHg - consider antihypertensive therapy & limit salt intake in diet. Follow NICE hypertension guidelines.
Smoking Habits	✓					✓	Encourage smoking cessation +/- NRT. Consider referral to Smoking Cessation service.
CPK	If NMS suspected. If CK elevated >x3 upper limit of normal range (0-190 U/L) stop antipsychotic and contact specialist.						

Clozapine

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Monitoring – Clozapine

Key: Tick = required, Grey = recommended as noted or if clinically appropriate.

	Baseline	1 Month	3 Months	6 Months	9 Months	12 Months & Annually	Advice if abnormal/Comments
Weight & BMI	✓	✓	✓	✓	✓	✓	Exercise & dietary advice if BMI >25 and/or weight gain >5kg over 3 months. Consider referral to dietician.
Fasting Lipids	✓		✓	✓	✓	✓	Lifestyle advice & consider cholesterol lowering drug treatment if high risk (>10%) of CVD or diabetes. Refer to specialist if total cholesterol >9mmol/L, non-HDL chol >7.5mmol/L or triglycerides >20mmol/L.
Blood Glucose (Fasting, random or HbA_{1c})	✓	✓	✓	✓		✓	*High risk of diabetes:* HbA1c: 42-47mmol/mol (6.0% - 6.4%), fasting: 5.5 - 6.9mmol/l - lifestyle advice & if ineffective consider metformin. *Diabetes:* HbA1c: ≥48 mmol/mol (≥6.5%), fasting ≥7.0mmol/l, random ≥11.1mmol/l. Endocrine review. Follow NICE diabetes guidelines.
LFTs	✓					✓	Contact specialist if raised >x3 upper limit of normal range.
ECG, Troponin & CRP	✓	Clozapine may cause cardiomyopathies and myocarditis. Plasma troponin should be checked if suspected. Use QTc as marker for Torsades des Points.					Contact specialist if QTc >440msec (men) or >470msec (women).
U&Es	✓					✓	Contact specialist if significant variations detected.
FBC	As per clozapine protocol. Weekly for 18 weeks, fortnightly up to 1 year and then 4 weekly. Additional monitoring may be required if appropriate.						Contact specialist if significant variations detected.
TFTs	✓						Contact specialist if significant variations detected.
Side-effect Rating Scale	✓	✓	✓	✓		✓	Clozapine GASS.
BP and Pulse	Daily during titration. See Trust Clozapine initiation.	✓	✓	✓		✓	Review if pulse regularly >100bpm, consider ECG & assay level. If systolic consistently >140mmHg and/or diastolic > 90mmHg - consider antihypertensive therapy & limit salt intake in diet. Follow NICE hypertension guidelines.
Smoking Habits	✓					✓	Encourage smoking cessation +/- NRT. Consider referral to Smoking Cessation service. **Caution: consider effects on plasma clozapine level**
Serum Level Clozapine	At end of initial titration. Clozapine levels can be helpful in checking concordance, adverse reactions, or changes in smoking habits.					✓	Contact specialist if >0.6mg/L.

Antidepressants

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Monitoring – Antidepressants

Key: Tick = required, Grey = recommended as noted or if clinically appropriate.

	Baseline	3 months	6 Months	12 Months & Annually	Advice if abnormal/Comments
Weight & BMI	✓	✓		✓	Exercise & dietary advice if BMI >25 and/or weight gain >5kg over 3 months. Consider referral to dietician.
Fasting Lipids				✓	Lifestyle advice & consider cholesterol lowering drug treatment if high risk (>10%) of CVD or diabetes. Refer to specialist if total cholesterol >9mmol/L, non-HDL chol >7.5mmol/L or triglycerides >20mmol/L.
Blood Glucose (Fasting, random or HbA_{1C})	✓			✓	High risk of diabetes: HbA1c: 42-47mmol/mol (6.0% - 6.4%), fasting: 5.5 - 6.9mmol/l - lifestyle advice & if ineffective consider metformin. Diabetes: HbA1c: ≥48 mmol/mol (≥6.5%), fasting ≥7.0mmol/l, random ≥11.1mmol/l. Endocrine review. Follow NICE diabetes guidelines.
LFTs	✓ + three weeks (agomelatine only)	✓ (agomelatine only)	✓ (agomelatine only)	✓	Consider stopping antidepressant and contact specialist if raised > x3 upper limit of normal range. LFT monitoring mandatory for agomelatine (Refer to SPC and PG03)
ECG	If additional risk factors exist			If additional risk factors exist	Risks are higher with tricyclic antidepressants; consider monitoring at therapeutic doses and annually.
U&Es	✓		✓	✓	In high risk patients: at 4 weeks then 3 monthly. Monitor for hyponatremia.
FBC			✓	✓	In high risk patients: at 4 weeks then 3 monthly.
TFTs	✓			✓	Contact specialist if significant variations detected.
Prolactin	Only where symptoms suggest hyperprolactinaemia.				Contact specialist if significant variations detected.
BP and Pulse	✓		✓	✓	More frequently for Venlafaxine above 300mg per day.
Side-effect Rating Scale	✓		✓	✓	Antidepressant Side-Effect Checklist (ASEC).
Smoking Habits	✓			✓	Encourage smoking cessation +/- NRT. Consider referral to Smoking Cessation service.

Mood stabilisers

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Monitoring – Mood stabilisers

Key: Tick = required, Grey = recommended as noted or if clinically appropriate.

Medication*:	Lithium				Valproate				Carbamazepine				Advice if abnormal/Comments
	Baseline	3 months	6 Months	12 Months & Annually	Baseline	3 months	6 Months	12 Months & Annually	Baseline	3 months	6 Months	12 Months & Annually	
Weight & BMI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Exercise & dietary advice if BMI >25 and/or weight gain >5kg over 3 months. Consider referral to dietician.
Fasting Lipids	*Indicated (initial & annual health check) for people with bipolar disorder- not required for monitoring during treatment with 'mood stabiliser'*												Lifestyle advice & consider cholesterol lowering drug treatment if high risk (>10%) of CVD or diabetes. Refer to specialist if total cholesterol >9mmol/L, non-HDL chol >7.5mmol/L or triglycerides >20mmol/L.
Blood Glucose	*Indicated (initial & annual health check) for people with bipolar disorder- not required for monitoring during treatment with 'mood stabiliser'*												High risk of diabetes: HbA1c: 42-47mmol/mol (6.0% - 6.4%), fasting: 5.5 - 6.9mmol/l - lifestyle advice & if ineffective consider metformin. Diabetes: HbA1c: ≥48 mmol/mol (≥6.5%), fasting ≥7.0mmol/l, random ≥11.1mmol/l. Endocrine review. Follow NICE diabetes guidelines.
LFTs					✓		✓	✓	✓		✓	✓	Consider stopping medication and contact specialist if raised > x3 upper limit of normal range.
ECG	If additional risk factors exist								If additional risk factors exist				Contact specialist if QTc >440msec (men) or >470msec (women).
U&Es	✓		✓	✓					✓			✓	Contact specialist if significant variations detected.
Calcium	✓		✓	✓									Contact specialist if significant variations detected.
FBC					✓		✓	✓	✓		✓	✓	In high risk patients: at 4 weeks then 3 monthly.
TFTs	✓		✓	✓									Contact specialist if significant variations detected.
Prolactin	*Not routinely indicated*												Contact specialist if significant variations detected.
Serum levels	!	✓	✓	✓									! Refer to Clinical Protocol CP05 (Prescribing and monitoring lithium therapy) and the product SPC for further information
BP & Pulse	*Indicated (initial & annual health check) for people with bipolar disorder- not required for monitoring during treatment with 'mood stabiliser'*												If systolic consistently >140mmHg and/or diastolic >90mmHg - consider antihypertensive therapy & limit salt intake in diet. Follow NICE hypertension guidelines.
Monitor for side-effects		✓				✓				✓			Ask about or monitor for side effects of medication at each appointment

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So, who should do the monitoring?

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What does NICE recommend?

1.3.6.5 The secondary care team should maintain responsibility for monitoring service users' physical health and the effects of antipsychotic medication for at least the first 12 months or until the person's condition has stabilised, whichever is longer. Thereafter, the responsibility for this monitoring may be transferred to primary care under shared care arrangements. **[new 2014]**

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Improvement Projects in Devon

1. Helping patients take responsibility
2. Dedicated clinics
3. Accurate recording & communicating

Wellbeing Passports

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Wellbeing Clinic, Exeter

WONFORD HOUSE, EXETER, RETREAT FOR THE INSANE.

Wellbeing Clinic, Exeter

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- All clozapine patients in Exeter attend 1-4 weekly.
- Initially weight, BP and pulse checks.
- Expanded to include annual check of U&E, LFT, cholesterol, HbA1C, assay level, diet, exercise and smoking.
- With a consultant psychiatrist

Form Creation

Form Date*	17/02/2016
Form Time*	13:19

Physical Health Monitoring Support

Date Provided	
Discussed and provided with Wellbeing Passport	☐

Blood Pressure

Date:	Time:	Systolic (mmHg)	Diastolic (mmHg)	
				Add row

Blood Tests

Date Requested:	☐ Full Blood Count	☐ Urea and Electrolytes	☐ Creatanine	☐ Liver Function	☐ Thyroid Function
	☐ Fasting Blood Glucose	☐ HbA1c	☐ Prolactin	☐ Blood Lipid Profile	☐ Sample Sent
Results Upload:	Choose File No file chosen				Add row

Side Effect Rating Scale

Date:	☐ Rating Completed		
			Add row

Dental Appointment

Date Last Attended	Date Appointment Booked	Date Next Appointment		
				Add row

The Barriers

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- Staff training
  - Lack of familiarity
  - Lack of chances to practice
- Equipment
  - Limited access especially in the community
- Money
  - Equipment & tests cost
- Communication & Documentation
  - With GP

Summary –What can you do?

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- Make sure people are aware of their physical health
- Make sure people are being monitored **(and followed up)**
- Identify those at higher risk:
  - Medication
  - Smoking
  - Diet & exercise

Questions…?

Latuda® ▼(lurasidone)
PRESCRIBING INFORMATION-SCHIZOPHRENIA
FILM-COATED TABLETS

Please refer to the full Summary of Product Characteristics (SPC) before prescribing, particularly in relation to adverse reactions, precautions and contraindications. **Presentations:** Latuda film-coated tablets, containing lurasidone hydrochloride equivalent to 18.6mg, 37.2mg and 74.5mg lurasidone. **Indication:** Latuda is indicated for the treatment of schizophrenia in adults (≥18 years). **Dosage and Administration** For oral administration: Adults: Recommended starting dose: 37mg once daily with a meal. No initial dose titration is required. Effective dose range: 37 to 148mg once daily. Dose increase should be based on physician judgement and observed clinical response. Maximum dose: 148mg per day. Elderly (≥65 years): Caution when treating with higher doses. Children and adolescents (<18 years): Not recommended, safety and efficacy not established. Dose adjustments are required in moderate and severe hepatic and renal impairment, see SPC for further details. **Contraindications:** Hypersensitivity to the active substance or any excipients. Concomitant administration of strong CYP3A4 inhibitors and inducers. **Warnings and Precautions:** Clinical improvement may take a few days to some weeks; closely monitor patient during this period. Use with caution in elderly patients with dementia who have risk factors for stroke. Not studied in elderly patients with dementia. Discontinue if patient develops signs or symptoms of neuroleptic malignant syndrome. Consider discontinuation if signs of tardive dyskinesia appear. May exacerbate underlying parkinsonism symptoms. Risk of extrapyramidal symptoms. Caution and clinical monitoring is recommended in patients with a history of seizures or conditions which potentially reduce seizure threshold, cardiovascular disorders, orthostatic hypotension, diabetes or risk factors for diabetes and weight gain. May elevate prolactin levels. All risk factors for venous thromboembolism (VTE) should be identified before and during treatment and preventative measures taken. Caution in patients with a family history of QT prolongation, hypokalaemia and concomitant medication known to prolong the QT interval. Closely supervise high risk patients for risk of suicide. Avoid grapefruit juice. **Pregnancy and lactation:** Do not use during pregnancy unless potential benefit clearly outweighs potential risk to the foetus. Breast feeding should be considered only if the potential benefit of treatment justifies the potential risk to the child. **Interactions:** Caution is advised when combining with alcohol or CNS active medications, and medicines known to cause QT prolongation; P-gp and BCRP inhibitors may increase exposure to lurasidone, lurasidone is an inhibitor of P-gp and BCRP, see SPC for details. Dose adjustment is recommended in combination with CYP3A4 inhibitors and inducers, see SPC for details. Monitoring recommended when lurasidone and CYP3A4 substrates known to have a narrow therapeutic index are coadministered. **Undesirable effects:** In clinical trials, the following adverse drug reactions were reported: very common (≥10%): akathisia, somnolence; common (≥1% to <10%): weight increased, insomnia, agitation, anxiety, restlessness, parkinsonism, dizziness, dystonia, dyskinesia, nausea, vomiting, dyspepsia, salivary hypersecretion, dry mouth, upper abdominal pain, stomach discomfort, musculoskeletal stiffness, blood creatinine phosphokinase increase, serum creatinine increase, fatigue; uncommon (≥0.1% to <1%): decreased appetite, blood glucose increased, catatonia, tardive dyskinesia, tachycardia, hypertension, hypotension, alanine aminotransferase increase, blood prolactin increased; rare (≥0.01% to <0.1%): eosinophilia, rhabdomyolysis, neuroleptic malignant syndrome (NMS). This is not a complete list of adverse reactions. Prescribers should consult the SPC in relation to all adverse reactions. **Special precautions for storage:** Store in the original package in order to protect from light. **Special precautions for disposal and other handling:** Any unused medicinal product or waste material should be disposed of in accordance with local requirements. **Legal classification:** Prescription Only Medicine (POM). **Package Quantities and Basic NHS Costs:** Latuda 18.5mg, 37mg and 74mg £90.72 per pack of 28 tablets. **Marketing Authorisation Holder:** Sunovion Pharmaceuticals Europe Ltd, Southside, 97 – 105 Victoria Street, London, SW1E 6QT. Latuda is a registered trade mark. **Marketing Authorisation Number(s):** EU/1/14/913/001-021. **Date of Preparation:** February 2016 (MI-LAT-000781).

▼ This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse reactions

Adverse reactions should be reported. Reporting forms and information can be found at

www.mhra.gov.uk/yellowcard

Adverse reactions should also be reported to Sunovion Pharmaceuticals Europe Ltd. on

020 7821 2899