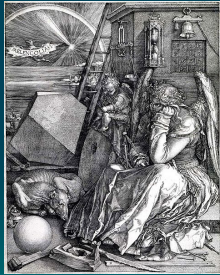


Medicine | UNIVERSITY OF Southampton

# Dealing with Diabetes and Depression



Albrecht Dürer: Melencolia I c1514

Richard IG Holt  
Professor in Diabetes and Endocrinology  
Diabetes Nepal, Kathmandu  
16 February 2013

Medicine | UNIVERSITY OF Southampton

## Overview

- Prevalence of Diabetes and Depression
- Potential Mechanisms
- Consequences of co-morbidity
- Clinical Implications

2

Medicine | UNIVERSITY OF Southampton

## Depression

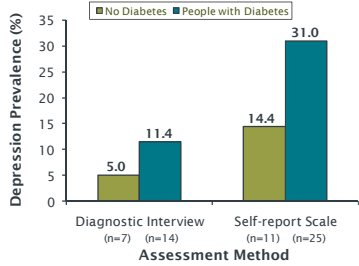
- Affects 340 million people worldwide
- 1 in 7 people will develop depression during their lives
- Accounts for 12% of global disability
- Predicted to become 2<sup>nd</sup> leading cause of disability by 2020 (after CVD)
- Although depression can be reliably diagnosed & treated, <25% receive effective treatment

3

Medicine | UNIVERSITY OF Southampton

## Prevalence of Depression in People with Diabetes

Depression is twice as common in people with diabetes than the general population



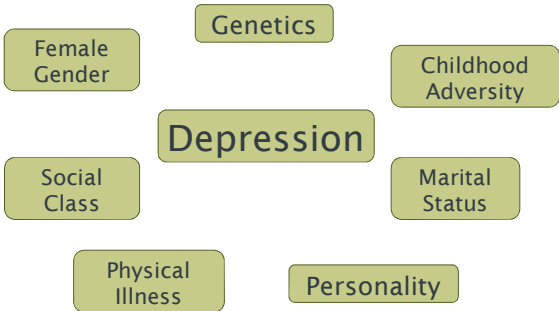
Assessment Method	No Diabetes (n=7)	People with Diabetes (n=11)	People with Diabetes (n=25)
Diagnostic Interview	5.0	11.4	-
Self-report Scale	14.4	31.0	-

The 'No Diabetes' group consisted of subjects from controlled studies; the 'People with Diabetes' group consisted of subjects from controlled and uncontrolled studies. n=Number of studies. Anderson RJ, et al. *Diabetes Care*. 2001;24:1069-78.

4

Medicine | UNIVERSITY OF Southampton

## Risk factors for Depression

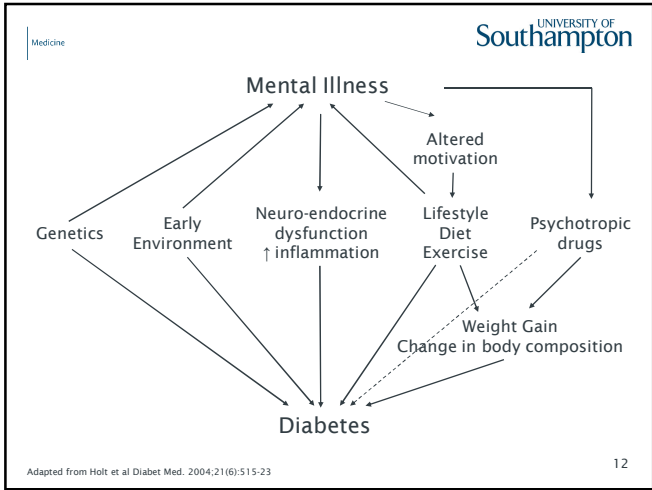
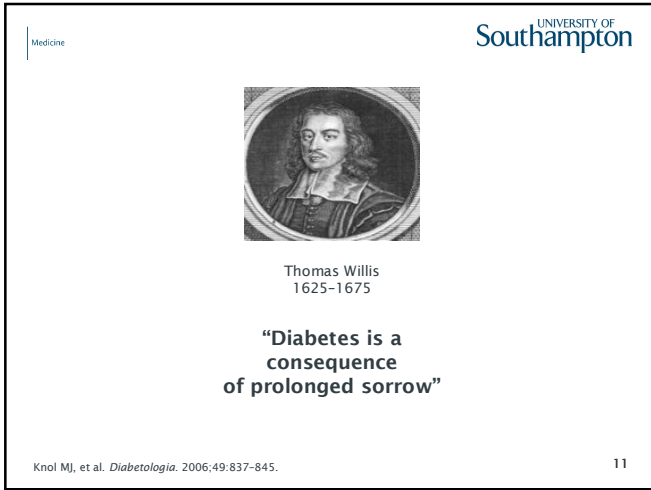
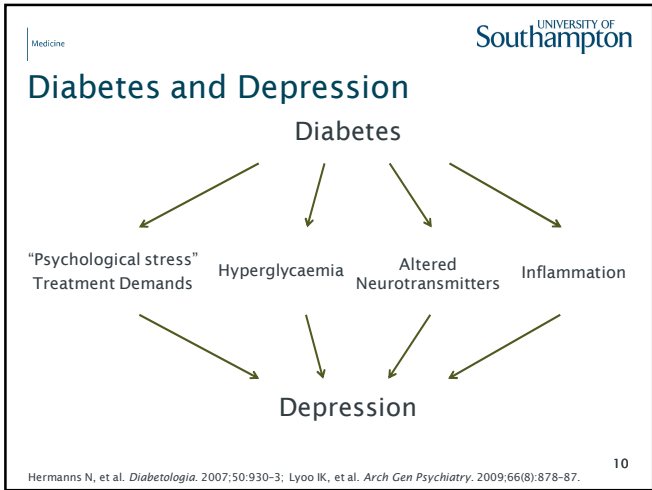
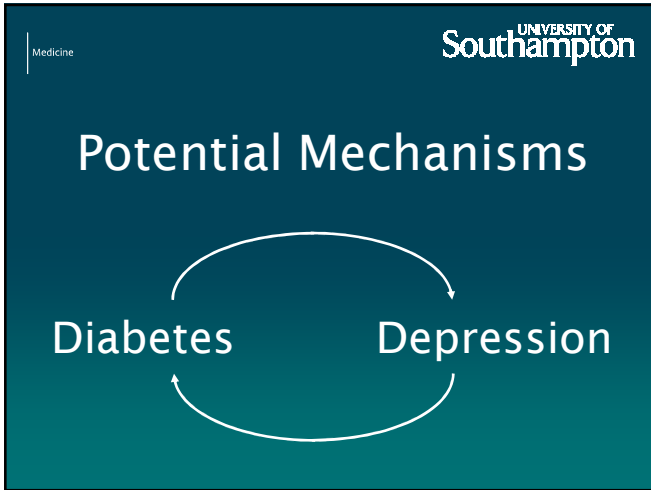
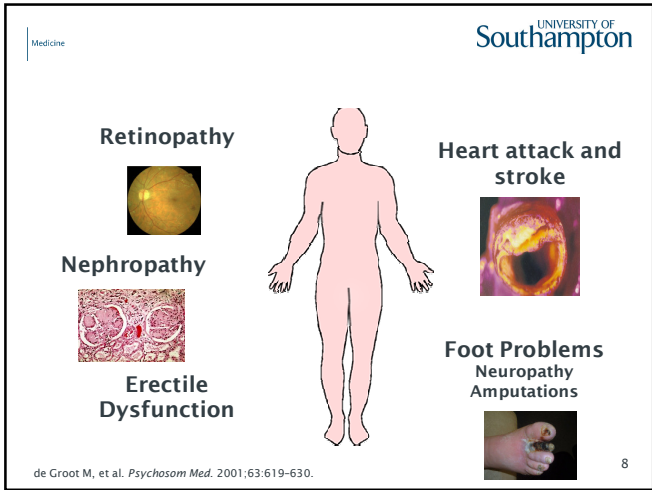
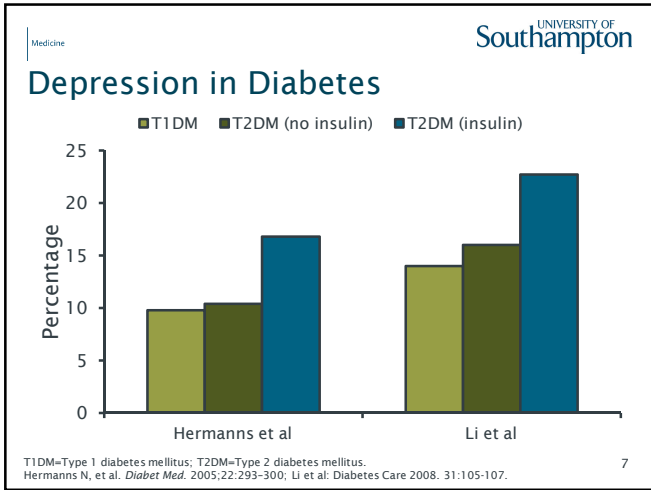


Female Gender, Genetics, Childhood Adversity, Marital Status, Personality, Physical Illness, Social Class

5

Medicine | UNIVERSITY OF Southampton

## Diabetes Specific Features



UNIVERSITY OF Southampton

Medicine

# Consequences of co-morbidity

UNIVERSITY OF Southampton

Medicine

## Depression & Quality-of-Life in Diabetes

Quality-of-Life Dimension	No DM/No Depression	DM Only*	DM and Depression*
General Health	76	61	57
Vitality	65	64	42
Mental Health	80	85	59
Physical Function	83	72	69
Social Function	88	87	66

\*Those with diabetes and depression experience the most severe comparative impact on quality-of-life for every dimension. Diabetes overall and the diabetes without depression groups have a moderate-to-severe impact on the physical functioning and general health scales (p<0.05).  
SF-36=Short form health-related quality-of-life questionnaire.  
Goldney RD, et al. *Diabetes Care*. 2004;27:1066-1070.

14

UNIVERSITY OF Southampton

Medicine

## Depression and Self-care Behaviour

Self-care Behavior	Low Depression	Medium Depression	High Depression
SMBG	0.14* (SD 0.94)	0.08* (SD 0.91)	-0.02* (SD 0.95)
Exercise	0.20* (SD 0.90)	-0.02* (SD 0.84)	-0.15* (SD 0.87)
Diet Amount	0.28* (SD 0.74)	-0.07* (SD 0.87)	-0.18* (SD 0.93)
Diet Type	0.14* (SD 0.63)	-0.03* (SD 0.66)	-0.15* (SD 0.75)

\*Adjusted for co-variables. SD=Standard scores; SMBG=Self-monitoring of blood glucose.  
Ciechanowski PS, et al. *Arch Intern Med*. 2000;160:3278-3285.

15

UNIVERSITY OF Southampton

Medicine

## Depression and Medication

Depressive Symptom Severity Tertile	Days in OHTI (%)
Low Depression	7.1* (SD 12.0) n=65
Medium Depression	9.3* (SD 15.5) n=67
High Depression	14.9* (SD 20.0) n=68

\*Adjusted for co-variables. OHTI=Oral Hypoglycaemic Therapy Interruption  
Ciechanowski PS, et al. *Arch Intern Med*. 2000;160:3278-3285.

16

UNIVERSITY OF Southampton

Medicine

## Effect of Depression on Development of Complications

Complication Type	No Depression	Mild Depression	Mod/Severe Depression
Microvascular	1.00	1.31	1.36
Macrovascular	1.00	1.00	1.25

Adjusted for any prior event, demographic characteristics, clinical characteristics, and self-care and diabetes control measures.  
Lin EHB, et al. *Diabetes Care*. 2010;33:264-269.

17

UNIVERSITY OF Southampton

Medicine

## Mortality and Co-morbid Depression & Diabetes

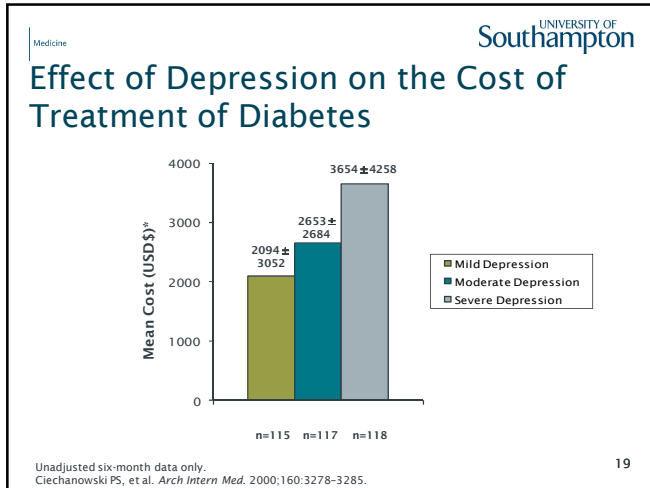
Survival (%)

Follow up (years)

Legend:  
 - No DM or depression  
 - Depression only  
 - Diabetes only  
 - DM and Depression

Egede et al *Diabetes Care*. 2005;28(6):1339-1345

18



UNIVERSITY OF Southampton

### Over-shadowing

- Healthcare professionals focus solely on the mental disorder and fail to take note of physical health needs
  - Leads to decreased screening rates for diabetes and inferior diabetes care

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-qb.org](http://www.drc-qb.org)

UNIVERSITY OF Southampton

BiPsych The British Journal of Psychiatry 2006; 190: 491-499. doi: 10.1192/bjp.bp.107.040702

### 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 Doobling

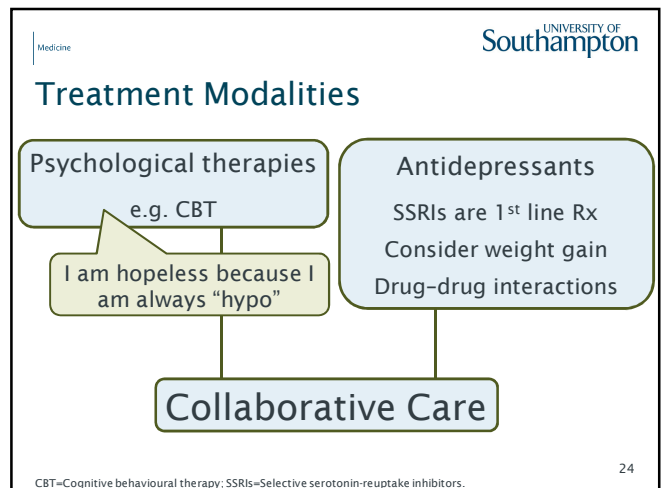
- Less likely to be examined for eye or foot complications
  - Despite more clinic visits
- Less likely to be screened for HbA<sub>1c</sub> or cholesterol
  - Less likely to receive a statin
- Receive less diabetes education

UNIVERSITY OF Southampton

### Screening for Depression

- Short screening questionnaires
  - Beck Depression Inventory (BDI)
  - Center for Epidemiologic Studies Depression Scale (CES-D)
  - Patient Health Questionnaire (PHQ-9)
  - Hospital Anxiety and Depression Scale (HADS)

Roy T, et al. *Diabet Med.* 2012;29(2):164-75.



Medicine

UNIVERSITY OF  
Southampton

## Predictors of Poor Response

- Severe depression
- Poor metabolic control
- Poor adherence to self-monitoring of blood glucose
- Presence of diabetes complications

Optimal management of depression in diabetes requires equal emphasis on both medical and mental disorders

25

Medicine

UNIVERSITY OF  
Southampton

## Provision of psychological support

- Most care will be provided by primary care or diabetes teams
  - Extra training and awareness are needed
- Need for more psychological support
  - Non-specialists are better able to provide care if expert psychological support is available


26

Medicine

UNIVERSITY OF  
Southampton

## Novel Delivery of Care

- RCT of Web based cognitive behaviour therapy
- Reduced depressive symptoms by 41% v 24% in usual care group
  - 56% v 24% in per protocol group
- Also reduced diabetes distress



<http://www.diabetergestemd.nl/>

van Bastelaar KM et al. Diabetes Care. 2011 Feb;34(2):320-5.

27

Medicine

UNIVERSITY OF  
Southampton

## Conclusion

- Diabetes is associated with a 2-fold increase in the prevalence in depression
- Precise nature of the relationship is not fully understood but is bi-directional, at least for type 2 diabetes
- Co-morbid diabetes and depression has significant adverse consequences for the patient and for society
- Prompt screening and treatment is needed if we are going to achieve the best for our patients

28

Medicine

UNIVERSITY OF  
Southampton

Any questions?  
righ@soton.ac.uk

29