

# TESTOSTERONE REPLACEMENT IN MEN WITH TYPE 2 DIABETES LOWERS HbA1c ABCD WORLDWIDE AUDIT OF TESTOSTERONE AND DIABETES



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## INTRODUCTION

High prevalence - 40% of men with type 2 diabetes have symptomatic testosterone deficiency. Kapoor D. et al. Diabetes Care 2007;30:911-17

Testosterone deficiency is associated with an adverse effect on cardiovascular risk factors, osteoporosis, muscular strength (including frailty), anaemia, sexual dysfunction and psychological well-being.

Testosterone replacement therapy (TRT) in T2DM has been shown to:

- Improve insulin resistance and in some studies lower HbA1c.
- Reduce body weight and Waist Circumference.
- Can improve Sexual Function and Quality of Life

## OBJECTIVES

The audit sets out to help individual clinicians and to determine from several centres the clinical effects and monitoring of testosterone replacement therapy in men with type 2 diabetes and hypogonadism in real world clinical practice in the short and longer term.

Data can be used from retrospective as well as new treatment prospectively.

On-line audit tool forms for new and follow up clinic appointments as per routine patient management

Patient details are encrypted and not visible to anyone else apart from the registered clinicians and centre.

The screenshot shows the ABCD Worldwide Audit website. It features a navigation menu with options like 'Home', 'Live ABCD audits of new therapies and devices', 'All ABCD nationwide audits', 'Future audits of new therapies', and 'ABCD worldwide audits'. A central bar chart displays testosterone levels (TT) for different age groups (40-49, 50-59, 60-69, 70+). Text on the page describes the audit's purpose and provides links to various resources like 'Register for the Testosterone & Diabetes audit', 'Audit objectives', 'Rationale for Audit Form', 'Helpful clinical tips and suggestions', 'Links to clinical guidelines on management of testosterone deficiency', 'AMS questionnaire', 'AMS evaluation form', 'Download first visit data entry form', and 'Download follow up visit data entry form'.

## CURRENT AUDIT RECRUITMENT

34 Centres in 8 Countries mainly UK but also in Germany, Canada, Brazil, South Africa, New Zealand, Malaysia, Vietnam  
Patients 428

Two Year evaluable paired data from 104 patients  
(from 224 patients with up to 24 months data)  
First Early analysis presented today

BASELINE DATA (n=224)

Mean Age 68.76 + 8.89 years

Weight 114.24 + 17.54 kg

Waist Circumference 104.8 + 16.8 cm

Testosterone 9.03 + 1.74 nmol/l

Aging Male Symptom Score (AMS) 54.99/85 Normal  
Range <30/85

Diabetes Medication – Insulin n=99, Metformin 193,  
GLP-1 n=5, SGLT-1 (n=1)

Testosterone Formulations – Testosterone  
Undeconoate (Nebido®) long-acting i/m injection,  
Testosterone gels (Testogel®, Tostran®).

## RESULTS

Paired Cohorts

TIME month (months)	3 Month (n= 80)	12 month (n=104)	24 (n=121)
0	71.27	71.27	71.4
3	66.26*	-	-
12	-	61.26*	-
24	-	-	55.97*

HbA1c mmol/mol

Statistical Analysis – t test: paired two sample means, Pearson Correlation \* P<0.001

## CONCLUSIONS

Early evidence that Testosterone replacement in a population of men with Type 2 Diabetes is associated with a reduction in HbA1c over 2 years.

This finding is supported by evidence from some RCT's and Registry studies.

The audit with a greater number of patients inputted and longer-term data is likely to provide valuable data on which patients are those which respond and those who may not.

The audit will provide evidence of longer-term safety.

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[www.diabetologists-abcd.org.uk/n3/previous\\_ABCD\\_audits.htm](http://www.diabetologists-abcd.org.uk/n3/previous_ABCD_audits.htm)  
OR

Google "ABCD Testosterone Audit"