



# Improving outcomes in pregnancy



## IMPROVING DIABETES CARE IN SCOTLAND 2018

UNDERSTANDING THE PRESENT AND SHAPING THE FUTURE

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## How do we improve outcomes ? Pregnancy Pathways

Type 1 diabetes

Type 2 diabetes

gestational diabetes

Pre pregnancy / pregnancy preparation

Early pregnancy/ recognition of cases

Management in pregnancy

Postpartum



Type 1 diabetes

Type 2 diabetes

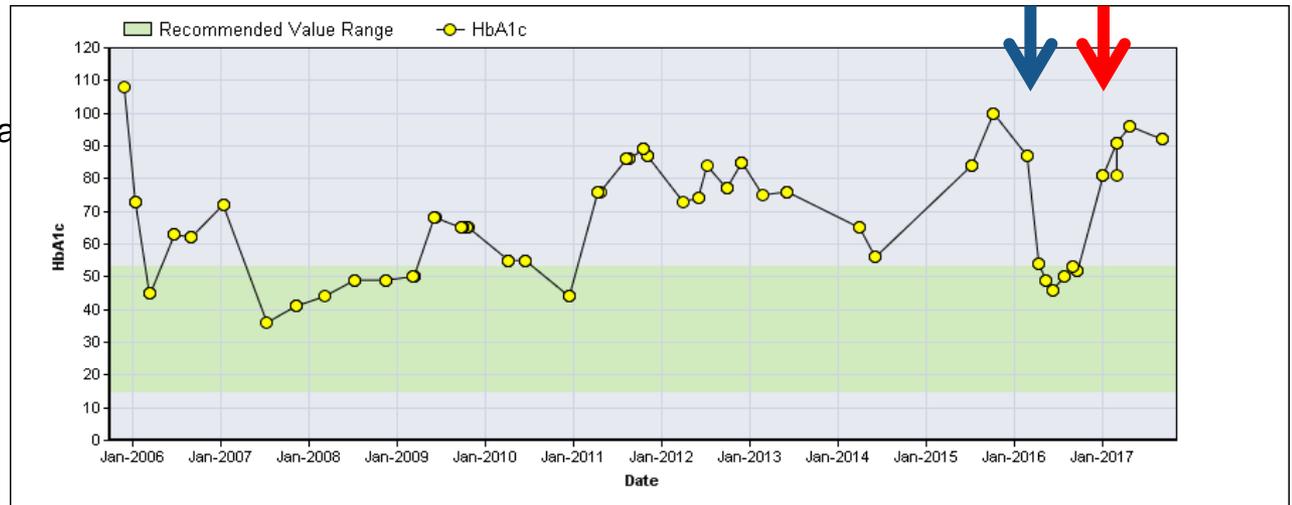
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Type 1 diabetes

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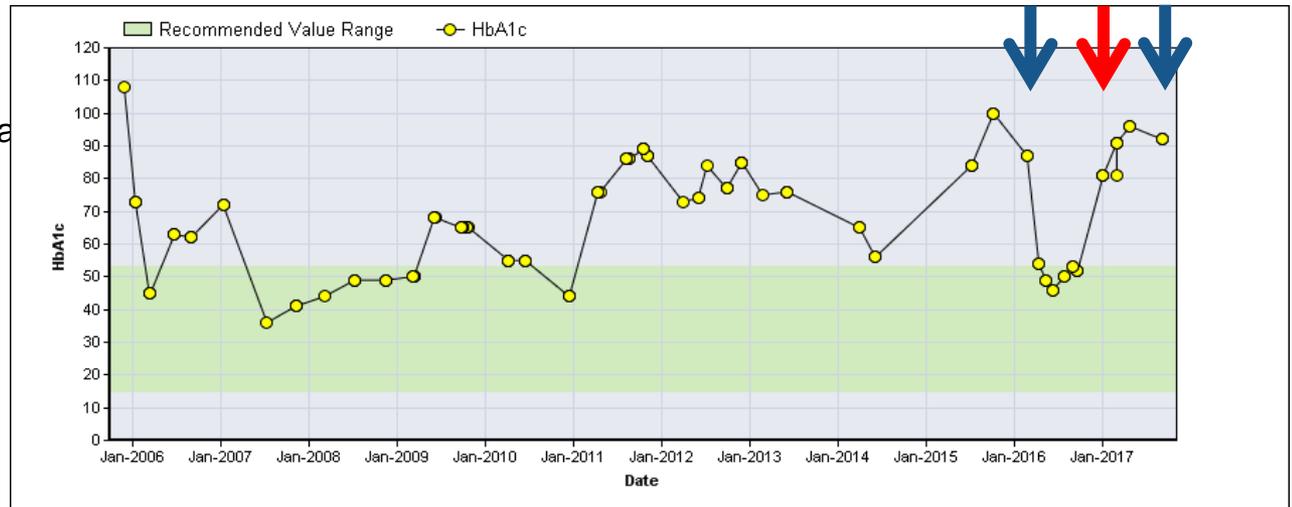
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# Prevalence of diabetes in pregnancy

	T1DM	T2DM	Total Scottish births
1998/99	1 in 272	1 in 946	55789
1999/00	1 in 298	1 in 1090	53396
2000/01	1 in 291	1 in 582	51820
2001/02	1 in 254	1 in 705	50076
2002/03	1 in 258	1 in 662	50336
2003/04	1 in 302	1 in 626	51931
2004/05	1 in 258	1 in 438	52598
2005/06	1 in 251	1 in 493	52264
2006/07	1 in 241	1 in 466	54048
2007/08	1 in 220	1 in 513	56926
2008/09	1 in 269	1 in 494	57753
2009/10	1 in 248	1 in 520	57219
2010/11	1 in 222	1 in 437	56834
2011/12	1 in 236	1 in 534	57111
2012/13	1 in 210	1 in 504	55427

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Diabetologia  
<https://doi.org/10.1007/s00125-017-4529-3>

## ARTICLE



## Diabetes and pregnancy: national trends over a 15 year period

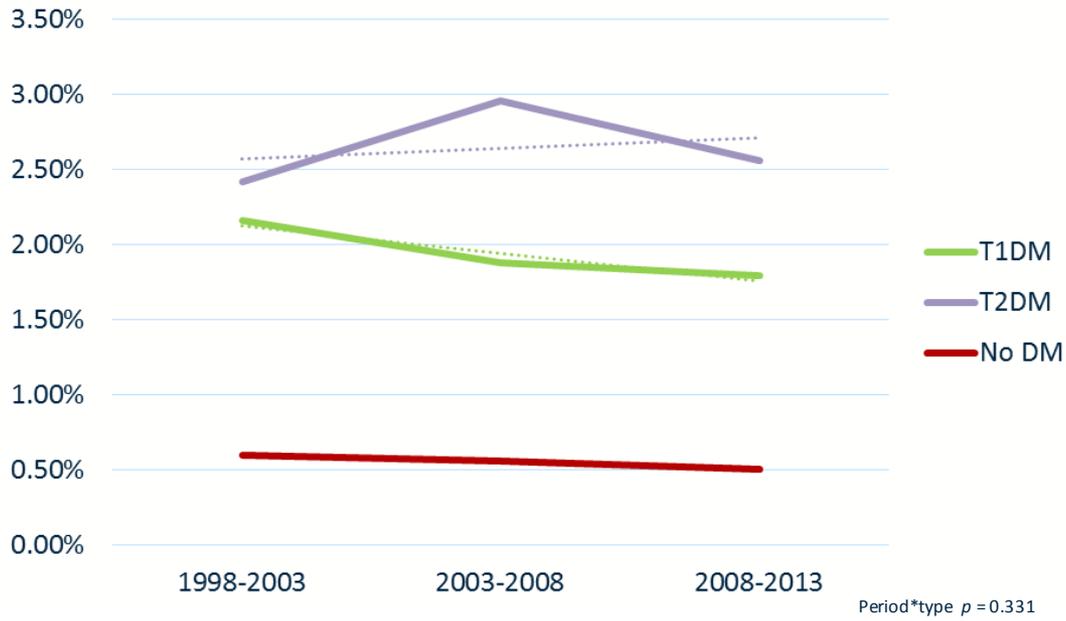
Sharon T. Mackin<sup>1</sup> · Scott M. Nelson<sup>2</sup> · Joannes J. Kerssens<sup>3</sup> · Rachael Wood<sup>4</sup> · Sarah Wild<sup>4</sup> · Helen M. Colhoun<sup>5</sup> · Graham P. Leese<sup>6</sup> · Sam Philip<sup>7</sup> · Robert S. Lindsay<sup>1,8</sup> · on behalf of the SDRN Epidemiology Group

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Abstract ...



# Perinatal Mortality Rates

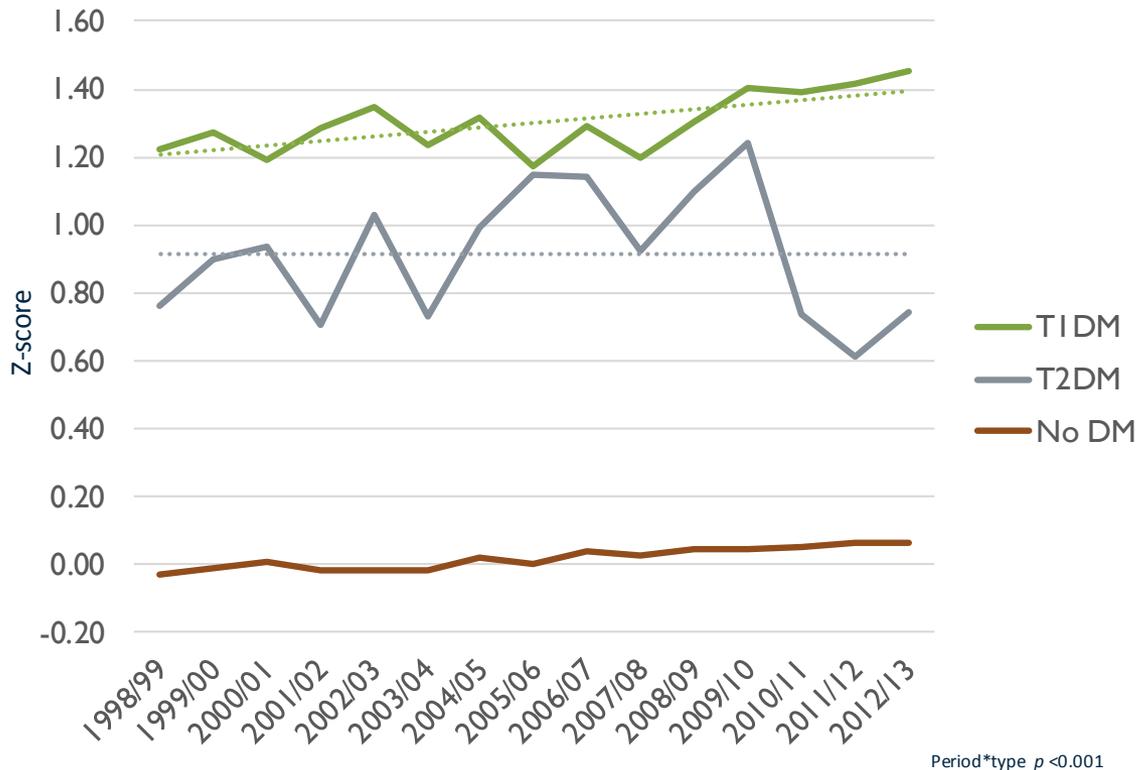


## Mean 1998-2013 (per 1,000 births)

T1DM	T2DM	No DM
20.1 [14.7-24.3]	26.9 [16.7-32.9]	6.0

$p < 0.01$  T1DM or T2DM vs no DM

## Birthweight z-score

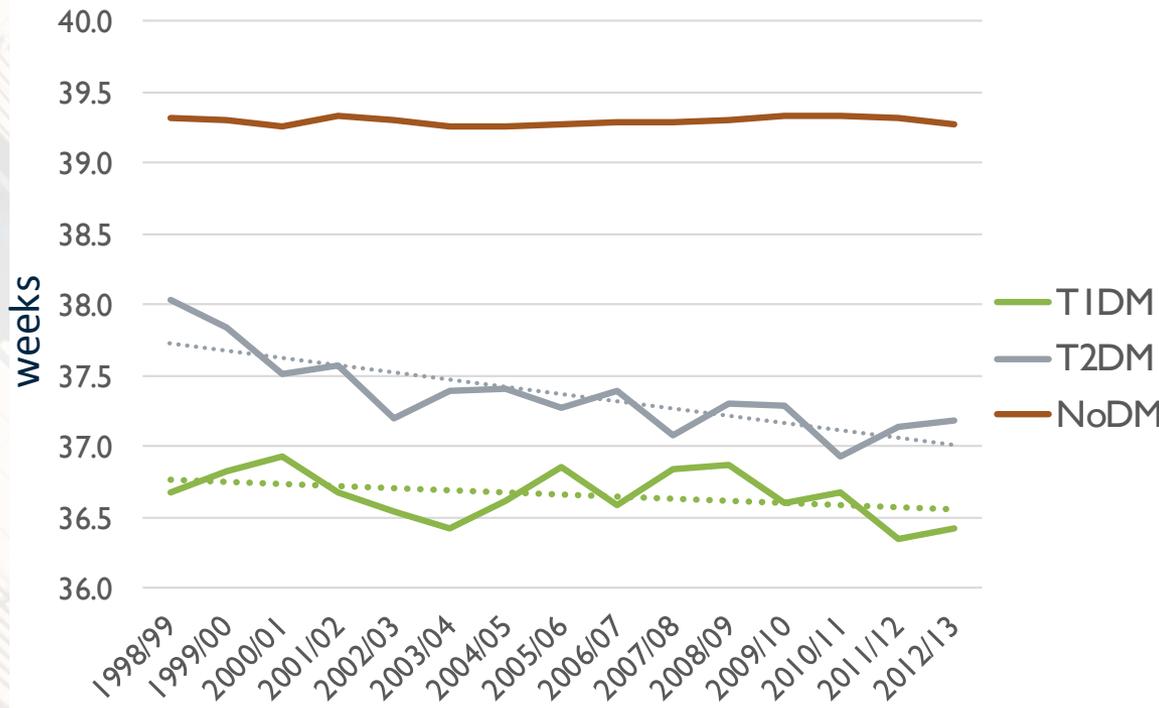


### Mean 1998-2013

T1DM	T2DM	No DM
<b>1.33</b> (SD 1.34)	<b>0.92</b> (SD 1.33)	<b>0.04</b> (SD 1.01)

$p < 0.01$  T1DM or T2DM vs no DM  
 $P < 0.01$  T1DM vs T2DM

## Gestational Age at Delivery



### Mean 1998-2013

T1DM	T2DM	No DM
36.7 (SD 2.3)	37.3 (SD 2.4)	39.3 (SD 1.99)

$p < 0.01$  T1DM or T2DM vs no DM  
 $P < 0.01$  T1DM vs T2DM

Period\*type  $p < 0.001$



## Scottish Diabetes Group : Diabetes and Pregnancy subgroup

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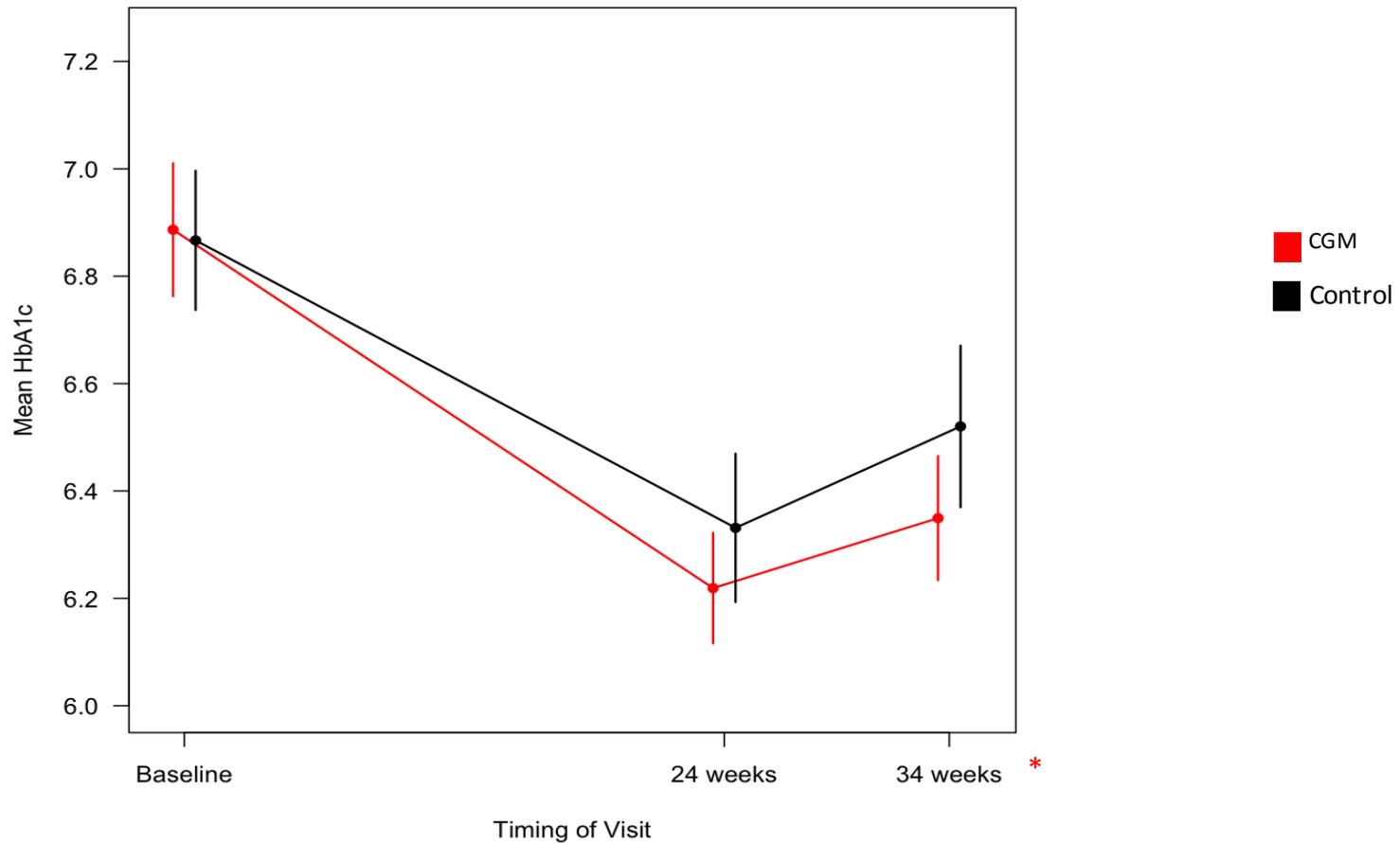
# Continuous Glucose Monitoring in Women with Type 1 Diabetes in Pregnancy Trial

C  NCEPTT

Co-Principal Investigators:  
Dr Denice Feig, Canada & Prof Helen Murphy, UK



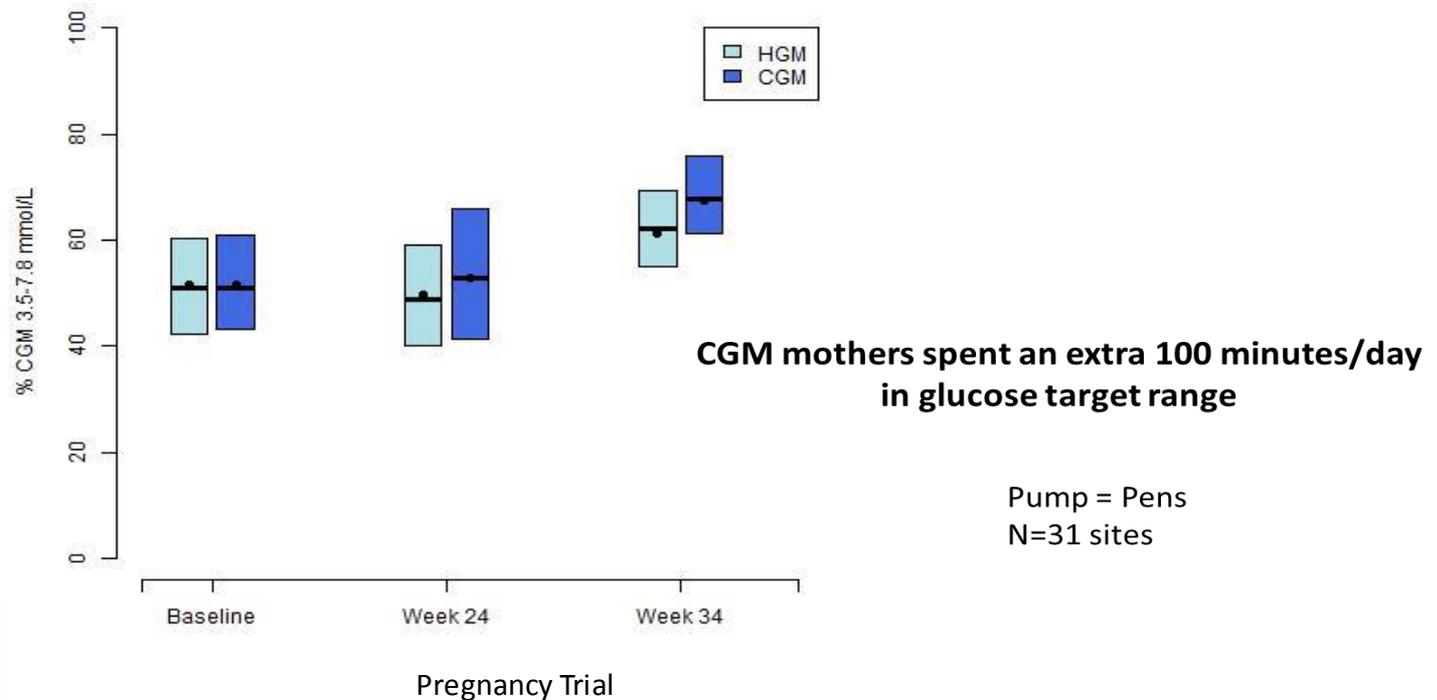
# Primary outcome



\*mean difference -0.19%; 95% CI -0.34—0.03; p = 0.0207

# % Time in target range 3.5-7.8mmol/L

Pregnant	Baseline		Week 34		P-value
	CGM N=107	Control N=107	CGM N=77	Control N=77	
% CGM 3.5-7.8 mmol/L	52% ± 13% 12.5hrs/day	52% ± 14% 12.5hrs/day	68% ± 13% 16.3hrs/day	61% ± 15% 14.6hrs/day	<b>0.0034</b>



# Summary of neonatal outcomes



- **LGA 53% CGM vs 69% control;  
Odds ratio 0.51; 95%CI 0.28—0.90, p=0.0210** **NNT 6**
- **Neonatal hypoglycaemia requiring iv treatment  
15% vs 28%;  
Odds ratio 0.45; 95%CI 0.22—0.89, p=0.0250** **NNT 8**
- **NICU admission>24hrs; 27% CGM vs 43% control;  
Odds ratio 0.48; 95% CI 0.26-0.86; p=0.0157** **NNT 6**

CONCEPT



	<b>SDG subgroup</b>	<b>Today</b>
Pathway for pre-existing DM	management during pregnancy	Improving pre-pregnancy care
Pathway for women with GDM	Screening, management in pregnancy	Preventing diabetes, Improving health for next pregnancy