

# Differences in Hba1c among different ethnicities; is it just a matter of mean glycaemia?

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## Background

Several studies have described ethnic differences in Hba1c. Non-Caucasian patients have been found to have a higher Hba1c than Caucasian ones. These differences have often been attributed to disparities in access to medical care or quality of the care.

## Objectives and Hypothesis

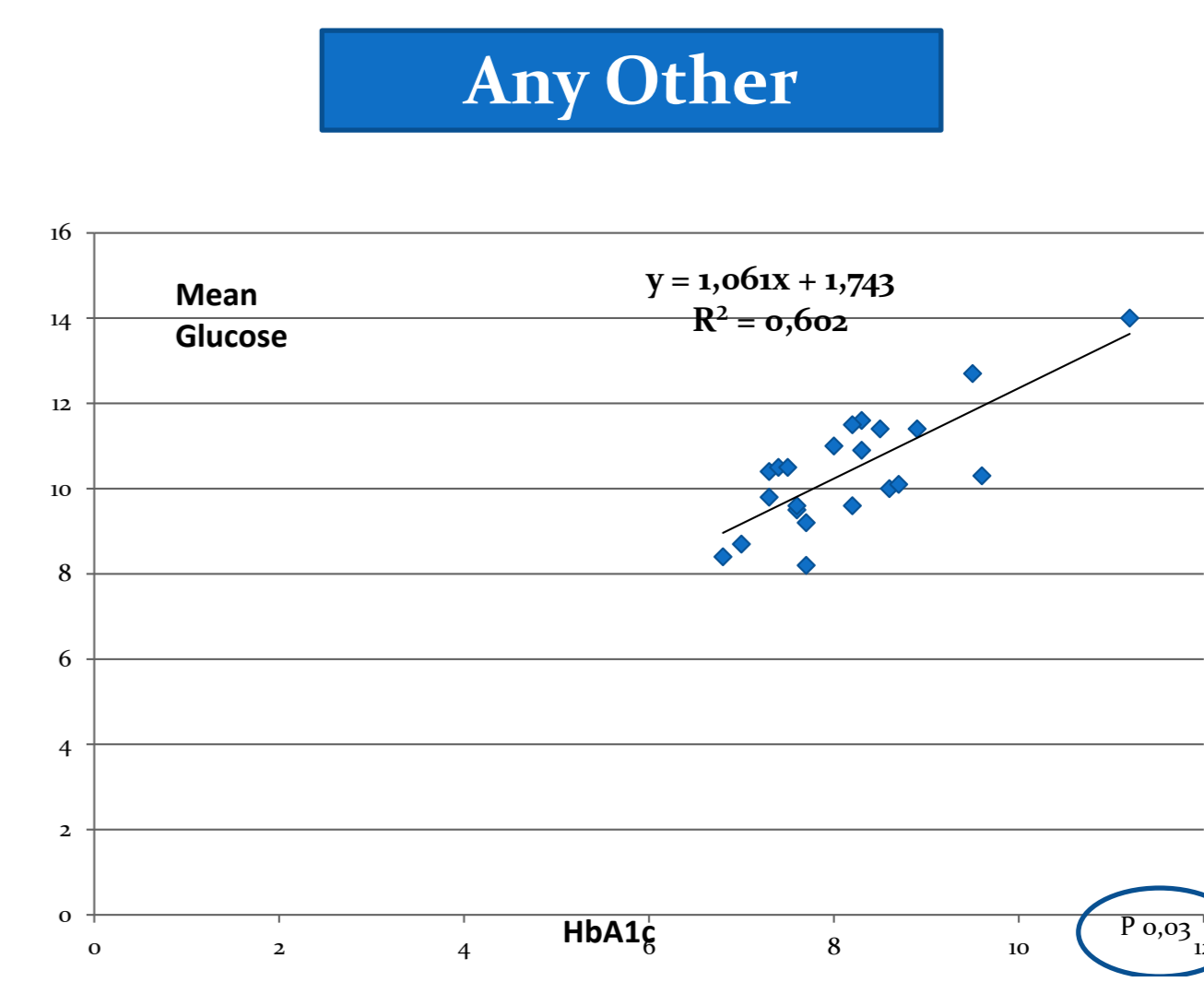
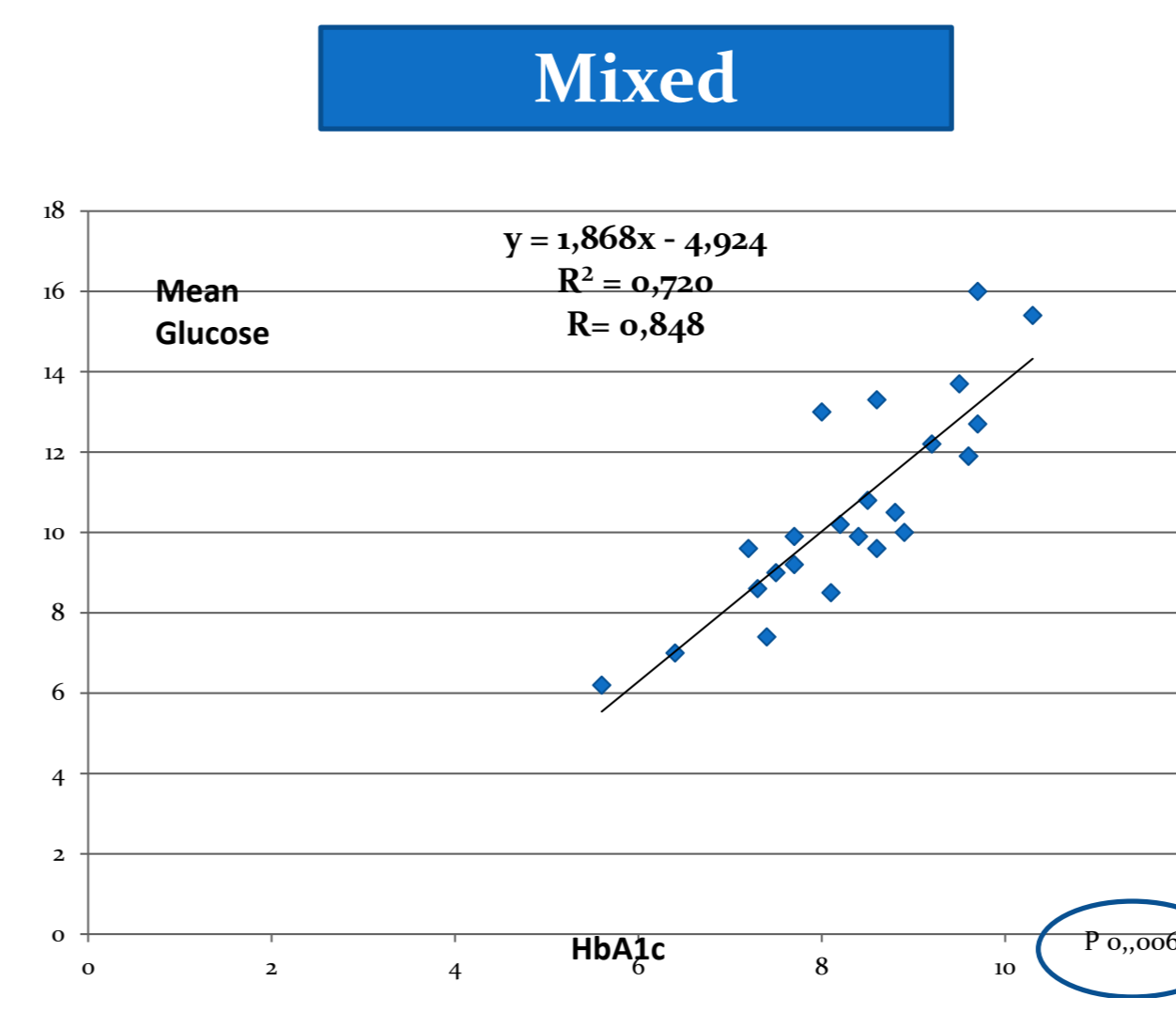
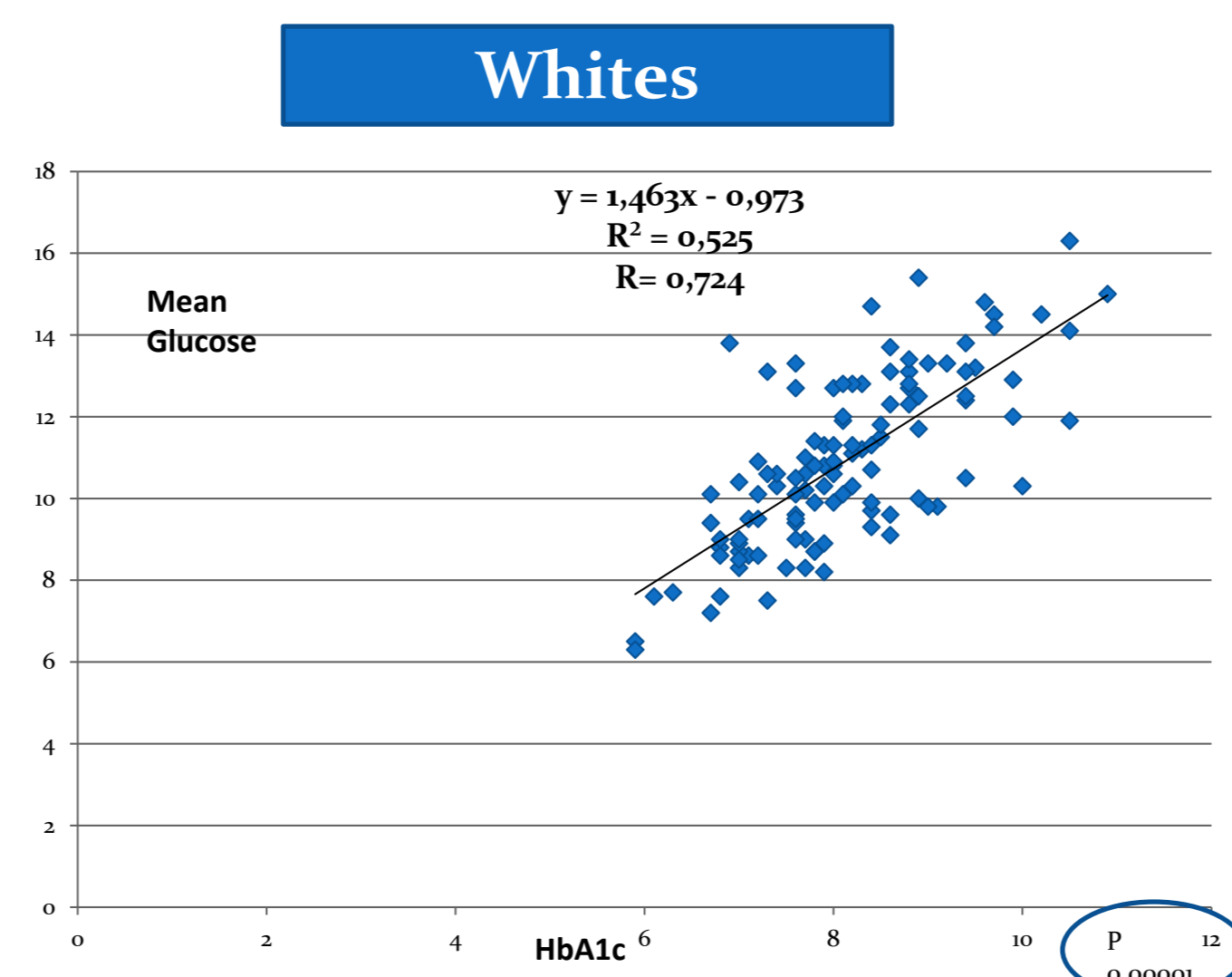
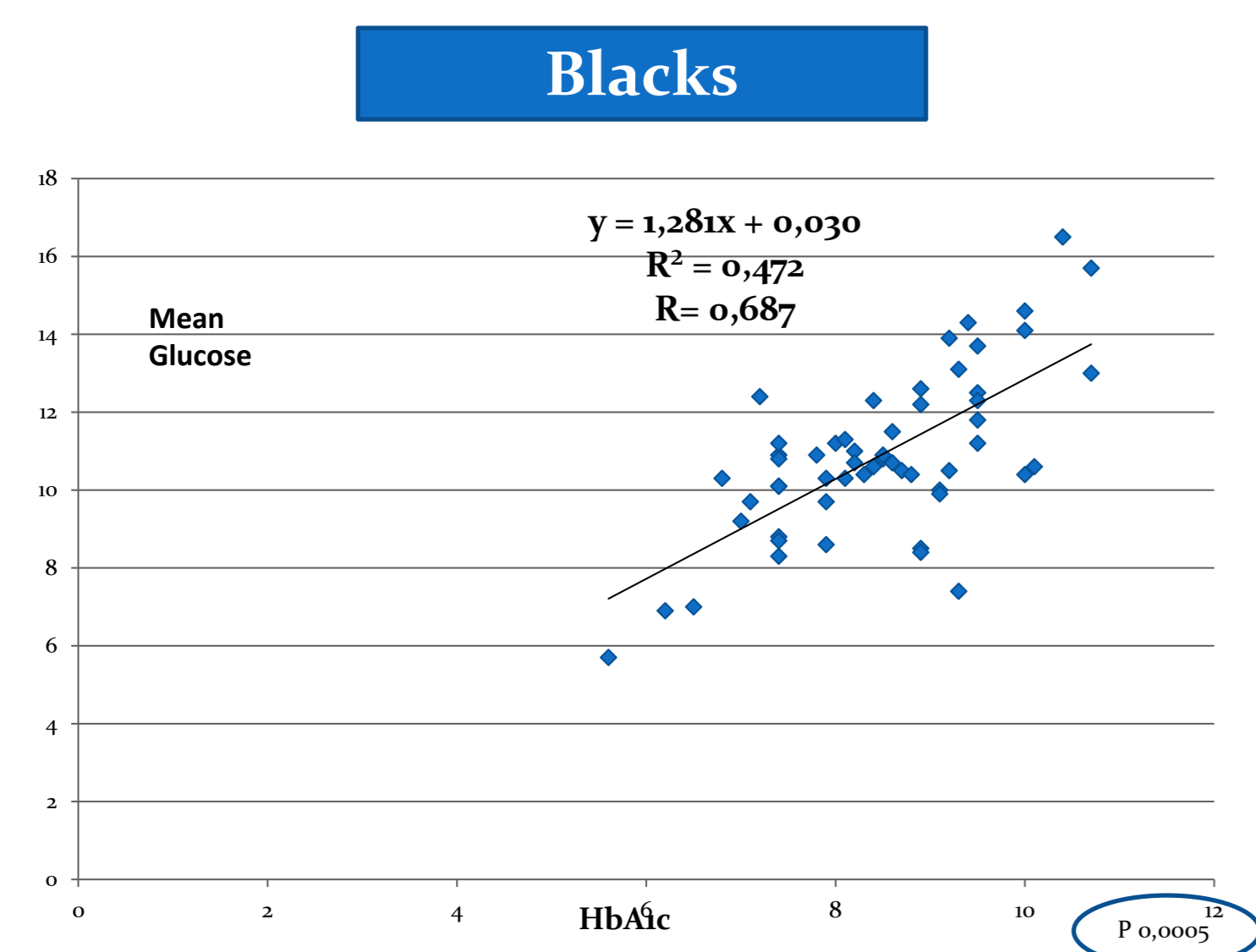
Differences in Hba1c among the ethnicities could be related not only to mean glycaemic level.

The aim of our study is to observe if there is a similar correlation between Hba1c and mean glucose among different ethnicities and if, at the same level of mean glucose, the Hba1c of Non-Caucasian patients was higher than the Caucasian ones.

## Methods

We enrolled 214 patients with type 1 and type 2 diabetes (56 blacks, 112 whites, 24 mixed and 22 of any other ethnicity) from 3 different hospitals of London who had checked their blood glucose levels at least twice a day. From each patient's history we chose a Hba1c value and, starting from the date of that value, we collected, via Diasend®, the correspondent mean glucose of the previous 3 months.

MEAN GLUCOSE	HBA1C BLACKS	HBA1C WHITES	HBA1C MIXED	HBA1C ANY OTHER	PREDICTED HBA1C
7-9	5,4-6,9	5,4-6,8	6,3-7,4	8,7-12	6,5-7,5
11-13	8,5-10,1	8,1-9,5	8,5-9,5	15,3-18,6	8,5-9,5
15-17	11,6-13,2	10,9-12,2	10,6-11,7	22-25,3	10,5-11,5



## Results

The correlation between mean glucose and Hba1c was found to be very strong for all ethnic groups (R: 0,687 for blacks, R: 0,724 for whites, R: 0,848 for mixed; R: 0,602 for any other).

As shown in the table for low level of mean glucose the level of Hba1c is very similar among all the ethnicities. However, for a high mean glucose, the Hba1c is higher for blacks in comparison with the whites and the mixed. This effect is even stronger for the "any other" group (likely mostly SE Asian ethnicity).

## Conclusion

Hba1c values are higher for high mean glucose levels in blacks and 'any other' ethnicity. This could indicate that there are other factors that may influence the final value of Hba1c in these groups( interindividual variation in red cells turnover, genetic variation in haemoglobin glycation) and has important clinical implications as tighter daily glucose control will be needed to get improved Hba1c in these populations.

## References

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I have no conflict of interest to disclose

