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# Cortisol and Insulin in Depression and Metabolic Syndrome

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In their letter to the Editor, Castillo-Quan et al. suggest that hyperinsulinemia might be an underlying factor explaining the relationship between depression, hypercortisolemia, metabolic syndrome and diabetes. Although this is indeed a potentially interesting mechanism, our data do not provide much evidence for a large effect of hyperinsulinemia. In our study among 867 older persons (Vogelzangs et al., 2007), we showed that hypercortisolemic depression was associated with the metabolic syndrome in an older population. Although we found a weak association between 24-h urinary cortisol and serum glucose in the total sample (adjusted $\beta = 0.08$, $p = .02$), among depressed persons (N=179) cortisol appeared to be associated more strongly with the obesity-related components of the metabolic syndrome such as waist circumference, triglycerides, and high density lipoprotein cholesterol than with serum glucose. Actually, for the latter, the correlation with urinary cortisol was not found to be significant ($\beta = -0.07$, $p = .39$, see Table 3 in our paper).

In our study, we also had assessments of serum insulin available. When exploring the association between urinary cortisol levels and serum insulin, we found a significant but not very large association ($\beta = 0.07$, $p = .04$). However, as with glucose, the association between cortisol and insulin was not significant among the depressed ($\beta = 0.05$, $p = .48$). It seems therefore rather unlikely that in our conducted study insulin was the driving force behind the association between hypercortisolemic depression and the metabolic syndrome.

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## References

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