Seasonal variations of plasma normetanephrine levels: the authors reply

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Dear Editor,

On behalf of all coauthors we were pleased to see that Yu and Wei have so rapidly validated our findings of higher plasma concentrations of normetanephrine with associated higher rates of false-positive results in winter than in summer months (1). It is very interesting that an impact of season is apparent even in Los Angeles, where the temperature difference between winter and summer is much less compared with northern Europe. Indeed, as suggested by Yu and Wei, ambient temperature might not be the only contributing factor. Higher humidity and even the way people adapt to temperature may also be factors. Furthermore, we noted that the plasma concentrations of normetanephrine reported by Yu and Wei were up to 56% higher than those reported by us, presumably a consequence of seated sampling commonly adopted in the USA and which we have recently described may exaggerate responses of

normetanephrine to other influences (2). We agree that regardless of the underlying mechanisms, seasonal variations should be considered in the interpretation of plasma normetanephrine levels in the diagnosis of pheochromocytoma. More importantly, these findings indicate that precautions to minimize impact of an activated sympathetic nervous system on false-positive test results should also be considered at the time of blood sampling.

References

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- 2 Därr R, Pamporaki C, Peitzsch M, Miehle K, Prejbisz A, Peczkowska M, Weismann D, Beuschlein F, Sinnott R, Bornstein SR *et al.* Biochemical diagnosis of pheochromocytoma using plasma-free normetanephrine, metanephrine and methoxytyramine: importance of supine sampling under fasting conditions. *Clinical Endocrinology* 2014 **80** 478–486. (doi:10.1111/cen.12327)

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