Flattened circadian cortisol rhythm in type 2 diabetes.

While altered cortisol concentrations have been observed in subjects with type 2 diabetes their circadian cortisol profile is unknown. Using a cross-sectional design, we studied 63 ambulatory individuals with type 2 diabetes and 916 non-diabetic control subjects of the Cooperative Research in the Region of Augsburg (KORA)-F3 study. Circadian cortisol profiles were derived from saliva cortisol concentrations, determined on a regular weekday upon wake-up (F0), as well as 8 h (F8) and 14 h (F14) after wake-up. Diabetic subjects exhibited a flattened circadian cortisol profile (rm-ANOVA: F[3, 654] = 3.41, p = 0.02), with lower morning and higher afternoon and evening cortisol concentrations. We observed a flattened circadian cortisol rhythm in subjects with type 2 diabetes, providing evidence for a specific HPA system dysfunction.