

Gestational chronodisruption leads to persistent changes in the rat fetal and adult adrenal clock and function

Salazar, E. R.

Richter, H. G.

Spichiger, C.

Mendez, N.

Halabi, D.

Vergara, K.

Alonso, I. P.

Corvalán, F. A.

Azpeleta, C.

Seron-Ferre, M.

Torres-Farfan, C.

© 2018 The Authors. The Journal of Physiology © 2018 The Physiological Society Key points: Light at night is essential to a 24/7 society, but it has negative consequences on health. Basically, light at night induces an alteration of our biological clocks, known as chronodisruption, with effects even when this occurs during pregnancy. Here we explored the developmental impact of gestational chronodisruption (chronic photoperiod shift, CPS) on adult and fetal adrenal biorhythms and function. We found that gestational chronodisruption altered fetal and adult adrenal function, at the molecular, morphological and physiological levels. The differences between control and CPS offspring suggest desynchronization of the adrenal circadian clock and steroidogenic pathway, leading to abnormal stress responses and metabolic adaptation, potentially increasing the risk of developing chronic diseases. Abstract: Light at night is essential to a 24/7 society, but it has negative consequences on health.