

Hormones tied to elderly sleep problems

April 12 2011, by Deborah Braconnier

(PhysOrg.com) -- Have you ever wondered why grandma and grandpa head to bed early but are up with the sun every morning? A new study by Lucia Pagani and Steven A. Brown of the University of Zurich recently published in the *Proceedings of the National Academy of Sciences* may have the answers.

The human body's circadian clock is controlled by the expression of circadian genes with the cells, and our sleep pattern is determined by the expression peaks in these genes. Within the elderly, the peak expression is usually earlier than that seen in the younger population.

Researchers collected skin cells from both young and elderly individuals in order to compare the internal circadian cycles. In the first experiment, both sets of skin cells were grown in a bovine serum. When observed, these skin cells showed no difference in the [circadian rhythms](#).

In the second experiment, researchers cultured the skin cells in human serum collected from older donors. When these cells were observed, the circadian rhythms were seen to all have shifted to that normally seen in the elderly.

The results of this research show that changes in [hormone](#) levels found in the blood of the elderly may play a role in the changing of the circadian clocks.

Further research is needed, however, the possibility that hormones could be responsible for the sleep disturbances and changes seen in the elderly

open the possibility for the creation of medications targeted at these changes.

Researchers do say that other factors could play a role in the earlier [sleep](#) schedules of the elderly, such as less sunlight or time spent outdoors.

More information: Serum factors in older individuals change cellular clock properties, *PNAS* April 11, 2011. Published online before print April 11, 2011, [doi: 10.1073/pnas.1008882108](https://doi.org/10.1073/pnas.1008882108)

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