

BIOLOGY IN ENGLISH

The epiphysis, or pineal gland, is involved in biorhythms

The **pineal gland**, also called **epiphysis**, which is located in the brain, produces the hormone **melatonin**, primarily at night. Melatonin is involved in our daily sleep-wake cycle; normally we grow sleepy at night when melatonin levels increase and awaken

once daylight returns and melatonin levels are low. Also, because light suppresses melatonin secretion, the duration of secretion is longer in the winter than in the summer (**figure 1**). Daily 24-hour cycles such as this are called **circadian rhythms**, and they are controlled by an internal timing mechanism called a *biological clock*.

Animal research indicates that melatonin also regulates sexual development. In humans, researchers have noted that children whose pineal gland has been destroyed due to a brain tumor experience early puberty.

ANSWER

Would you expect animals, including humans, to sleep more in the winter or in the summer?



Figure 1 Melatonin production according to seasons and daily time.