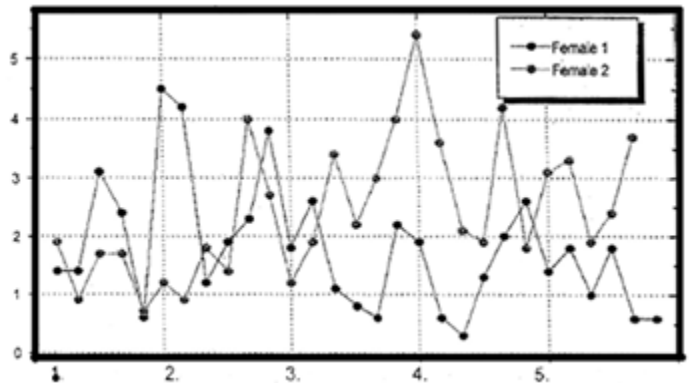


## Hormone Fluctuations

We've all been taught that laboratory analysis should confirm your clinical impression, and when it doesn't one of the two is likely wrong. A third option exists however, when the laboratory values simply fail to give the entire picture. It is well known that cortisol levels change throughout the day. They are highest in the morning, reaching a peak within 30 minutes of waking and gradually decline as the day goes on. Single laboratory analysis (in serum and saliva) of cortisol levels is routinely done in the morning, with the intention of capturing the highest point of the day.

The reproductive hormones such as progesterone, testosterone, DHEA and the estrogens however, can fluctuate significantly throughout the day without a predictable pattern making it difficult to know when to test, and what the tested levels actually mean to the overall clinical picture. With no pre-described outline, a single measurement may or may not confirm a clinical hypothesis, even if the measurement is technically accurate.

Recent analysis of two women during the luteal phase measured estradiol levels in saliva every 10 minutes. The results varied by as much as 150% over a 30 minute period indicating that running a single sample analysis could result in an inaccurate treatment. Laboratory analysis generally gives us a snapshot of what is going on the body, like freezing the frame of a movie and then trying to deduce what the story is about. If the snapshot is taken while a particular hormone is at its peak you may come to an entirely different conclusion than if the picture was taken at a low point in the day.



This evidence indicates the importance of looking at multiple data points through the day, to best assess a hormone's overall influence on tissues. While serum analysis does not lend itself to multiple samples due to obvious collection difficulty, saliva testing enables easy collection of scheduled samples throughout the day. The patient can collect the saliva on their own without the need for a phlebotomist and the multiple samples can be pooled and homogenized, eliminating the cost of multiple hormone assays while still providing a more accurate reflection of overall hormone levels.

Knowing that hormone levels can vary so radically and in such an unpredictable pattern should certainly affect the ways in which we test for them. Accurate laboratory analysis can provide insight into the entire story, and not just a brief glimpse of one data point, enabling you to treat your patients correctly and help them achieve optimal health and hormonal balance.