



SLEEPLESS IN AFRICA

by Frank Roman MD JD

I recently had the honor and privilege of traveling with a group of physicians to Africa, specifically the country of Tanzania, one of the poorest nations in the world. Tanzania is known for its tourist attractions ranging from Mt. Kilimanjaro and the Serengeti, to its precious stones, Tanzanite.

Embarrassing to admit, but I was very apprehensive about my first trip to Africa partly due to the Hollywood portrayal, for example, movies such as *Blood Diamond*, and, as a result of newspaper articles I read about the civil unrest in neighboring Kenya. I discretely updated my estate and said good-bye to the people I love and love me. That took about two minutes. In retrospect, the chances of dying violently are

probably higher at the hands of a disgruntled former employee, or for that matter my current employees, than in Africa. My other major fear of starvation was a non-factor. As a matter of fact, I gained weight on the native food.

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Our first stop on the very first day was the local supermarket, no different than the ones in America. Blaring from the overhead speakers was one of the great contemporary poets of our time, Tupac Shakur, (if you don't believe it, carefully listen to his songs several dozen times like I did.) Even more ironically was the song playing "Starin' Through My Rear View". Part of the lyrics follow, "Staring at the world through my rear view, Just looking back at the world, from another level you know what I mean. I'm seeing nuttin' but my dreams coming true while I'm staring at the world through my rear view". Quite a fitting song as we expanded our world from America to Africa.

From a medical standpoint Tanzania has 4,961 total health facilities but not one sleep center (I asked!). 90% of the population lives within 10 kilometers of a health facility. The doctor to general population ratio is 1 to 24,000 and the nurse to population ratio is 1 to 12,000. It is estimated that

two thirds of the population is under 21 with the five leading killers being Malaria at 22%, AIDS 17%, Tuberculosis 9%, Pneumonia 6.5%, Anemia 5.5%. Our guide for the trip, Samawe, was very knowledgeable through our safari regarding the local flora and fauna, but I had him good with my knowledge of the sleep habits of certain animals in the jungle. What he did not know, or for that matter my colleagues, was that I was carrying my copy of *Sleep and Rest in Animals*, by Corine Lacrampe (publisher L'Iconoclaste, Paris 2002), which I was discretely studying in my room at night before I would fall asleep.

The lack of television, radio, phones, and internet made it easy to practice good sleep hygiene. Despite these limitations I actually interpreted a few sleep studies from Africa, which was pleasing to my workaholic soul.

One night we stayed at the Serengeti Serena Lodge where wild animals roamed freely and it was strongly advised not to walk alone in the dark. Security guards would escort guests to their rooms. One night feeling brave, I wanted to walk alone and save 1,000 shillings only to be frightened back into my room when I heard strange growling sounds. I immediately

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"I need my second job to pay for the gas to get to my first job."

called security and they magically appeared a few seconds later making me wonder if they were the ones making the growling sounds to scare the tourists.

Regarding the sleep of some of the animals we saw, snakes have no eyelids so it is therefore difficult to tell if they are fully awake or resting. Snakes are unlike other reptiles in that their habits vary depending on the particular season between nocturnal, diurnal, or twilight, trying to take advantage of the sunlight. Crocodiles on the other hand rest or "sleep" with gapping mouths to maintain their internal ventilation. This is an effort to reduce their metabolism at rest. Birds seem to have a specific type of sleep interrupted by short bursts of alertness. One of the resting positions specific to birds is eyes closed with its beak tucked under its wing.

It seems the larger the animal the less it sleeps. On average an elephant may sleep four hours, actually two of the hours standing. Giraffes may sleep to 4.5 hours with possibly 0.5 hours in Stage REM. In contrast, baboons sleep 9.5 hours. Regarding REM sleep, each species has differing frequency and duration. For example, mice REM every four minutes, it increases to every 20 minutes in the pony and cow (which begs the question is it easier to cow tip when they are in Stage REM?) In felines, REM occurs every 30 minutes, horse every 40 minutes, and finally man every 1 1/2 hours. In general, it seems predators enjoy a deeper, longer sleep with more dreams.

Jerking limbs, twitching ears, and groans are common in large animals during paradoxical sleep. Just like humans, the animal is paralyzed except for sexual arousal and rapid eye movements. The absence of muscle tone prevents sleeping animals from mimicking their dreams. This also begs the question, does REM behavior disorder exist in the animal kingdom?

One significant deviation from sleep in mammals is the king of the jungle, the lion. A lion may actually sleep up to 20 hours in a day. His lionesses take care of the cubs and hunt for the extended family. Our guide, Samawe, informed us that lions copulate up to 240 times in a week during mating season. Older lions may drop down to 210 times in a week. We had the opportunity of watching a couple of lions for approximately 20 minutes with no obvious activity documented. This leads me to believe that lions and African men tend to exaggerate as much as their American counterparts. Until next time, La La Salama, (sleep well in Swahili).

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