



# Doctor, Are We Pregnant?

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It's not that easy getting a urine sample from a white rhino.  
*Tom deMaar and Kimani Kuria explain.*

**H**OW DO YOU TELL IF A white rhino is pregnant? Even after a gestation period of eighteen months, a baby rhino at birth is insignificantly small compared to the mother. In the case of the white rhino, the mother may weigh 1,600 kilos while at birth the baby weighs only about 60 kilos. No wonder she barely shows any signs.

To make things more complicated, pregnant female rhinos are still often served by bulls, so sexual activity is no indicator—the mother may be keeping a secret. Even in the closely managed environment of a zoo many rhino pregnancies go unnoticed until the final months. The staff may have an idea that the mother is pregnant, but frequently no one is sure. So how can we tell the

condition of a rhino that roams freely over a large area?

The question of rhino pregnancy has become very important in rhino management. Today, rhino populations are so low that most animals are maintained within controlled environments. Within this system of rhino sanctuaries it is sometimes necessary to move certain animals for genetic reasons, for population control, or to create new sanctuaries. Moving a female before she is pregnant yields an empty cup. Much better to move a pregnant one so the operation yields two individuals at the new site instead of one. However, to move a female when she is in advanced pregnancy puts the life of the baby at risk. The key is to make the move while the baby is still small and well-protected

by its mother's body.

Fortunately there are several technologies that can determine pregnancy. One of these measures hormones related to pregnancy that are excreted by the mother. The same type of test is available for humans at most pharmacies. The human test is very simple: a few drops of urine on an indicator and moments later a colour change indicates yes or no. But how do you get urine from a wild rhino? It is a rather dangerous proposition unless one has a very long stick.

Several years ago, urine collection was attempted. Game rangers were armed with syringes to collect urine from leaves and any other place it was found. Unfortunately, this process yielded very variable samples. Some

were contaminated with sand or dust. Sometimes the urine would be diluted with morning dew and give wrong results. Perhaps looking in the stool would be easier? Granted, it is also contaminated, but the foreign material is a known entity and thus consistent. The added bonus is that rhino stool is available in large quantities.

The search for this technology led to the Deaconess Research Institute in Billings, Montana, USA, to a group led by Dr. Jay Kirkpatrick. They had already performed pregnancy diagnosis in a variety of wild species: Rocky Mountain elk, Rocky Mountain goat, American bison, bongo and black rhino. Technician Beaux Berkeley had already begun a survey of white rhinos using animals in Zimbabwe but she needed more samples since each species is unique and for each the levels and types of hormones present need to be standardised. Ms. Berkeley needed to compare white rhinos, measure their hormone levels, and wait to see which in fact gave birth. So we enlisted other rhino facilities and asked them to collect stool from their females. Thus we could answer our question and at the same time contribute to rhino research.

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Collecting rhino stool is a very meditative procedure. First you find your volunteer and identify her. Then you wait. Listening to wind and hoping a rhino will defecate is a strange pastime indeed. We watched the world of nature go by. We had a bird book with us and whenever a bird flew by we would scramble to identify it. However, we never forgot our true purpose and our eyes kept flicking back to check our volunteer. When she finally did her business we would pinpoint the spot and wait until she wandered off. Then we would move the truck forward, open the door and collect a still-warm specimen. Immediately it was labelled and placed in a cold box. Upon returning home a five-milligram sample was placed in liquid nitrogen for deep freezing. When all the samples were collected they were packed together and sent with a special courier to the laboratory in Montana.

Several days later in Montana, the canister of samples arrived in excellent shape. The stool samples were thawed and the hormone extracted from them. An ELISA (enzyme-linked immuno-absorbent assay) test was performed. In plain English this means that the hormone was measured by exposing it to antibodies specifically designed to grab it. Attached to the other side of the antibodies was a marker that would show a colour when exposed to a certain chemical reaction. It would be like a light floating in the water; many lights floating in the water give the whole area a colour. Measuring the amount of colour gives the level of hormone present.

A total of sixteen female white rhino samples were collected and sent. Samples were contributed from Ol Jogi Game Reserve, Lewa Conservancy, Solio Ranch and Mount Kenya Game Ranch. The results showed some pregnant and some not. Since the test, five of the eight animals that registered as pregnant have given birth or have been proven to be carrying; we are still waiting on the rest. The results show that this test can be a valuable management tool for rhino populations. In a short while all the results will be collected and this test will be validated for regular use when choosing females for translocation.

At Ol Jogi, we found one of our white rhinos was pregnant. She has not yet given birth, but since the test was performed we have noticed that her udder is beginning to form. Whether it will be a boy or a girl is another question. For the answer to that we will have to wait for the happy day.

**"The Visiting Card"**

As I Checked out of The Cullinan, Jo'Burg,

I handed my business card to the tall,  
attractive Afrikana girl on reception with the  
wish that one day she might fly up to Kenya  
and go on Safari with us.

She read the visiting card carefully, paused,  
smiled sadly and explained that she didn't  
own the hotel; then with a wistful smile she  
added:

**".....stl, meerciles dew 'ippen!"**

They certainly do!

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white collar worker on a good safari today,  
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for around one month's equivalent of  
his/her salary. Thirty five years ago, when we  
started the same safari would have cost them

one year's salary!

**So....."miracles do happen!"**

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