

3 x 50mins

wildlife clipshow

MOODY

BEASTS

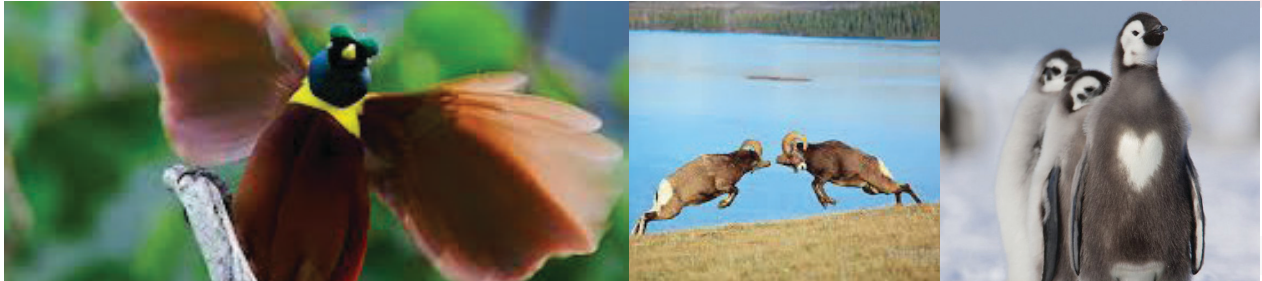
**IF YOU THOUGHT PMS WAS BAD, CHECK
OUT THESE HORMONAL BEASTS....**



wildbear
entertainment

MOODY BEASTS

IF YOU THOUGHT PMS WAS BAD, CHECK OUT
SOME OF THESE HORMONAL BEASTS



Remember the cute clownfish from Finding Nemo? Well, there's a good chance that Nemo is now Norma. What compels a Male seahorse to go into labour and give birth, male Indonesian fruit bats to lactate or amorous elephants to rampage? Hormones... powerful chemical cocktails raging around an animals body that controls everything from sex to parental care, flight or fight response, and completely "over the top" displays of male bravado and attention seeking. Be entertained by the "Moonwalking" red manakin and penis fencing flatworms and poop spraying hippos. In this light-hearted and often playful TV series our comedic narrator will take us on a journey of discovery into the world of Moody Beasts.

The editing style will allow viewers to indulge in the entertaining side of the effects of hormones- a sure fire antidote to any midlife crisis or pubescent mood swing.

Using the vast archives of HD footage available to Absolutely Wild Visuals, along with stylised graphics, this 3 x 50 documentary series combines amazing natural history and good science to explore some of the most bizarre hormone-induced animal behaviors responses that make up the world's most Moodiest Beasts.

Episode 1: I'm sexy and I know it...

The good and bad of reproductive behaviour

INCLUDES: albatross, Antechinus, camels, elephant, Bower bird, rifle bird, Ibex, sheep, elk, peacock

Episode 2: Who's your momma?...

How hormones make an exemplary parent... or their evil twin.

INCLUDES: scrub turkey, cassowary, Nazca booby, red kangaroo, Dayak fruit bat, Australian pelican, saltwater crocodile, meerkat, kookaburra.

Episode 3: Killer instinct...

What causes one male to rise above all rivals to become the king pin, or the supreme hunter in the pack?

INCLUDES: albatross, salt water crocodile, bull shark, red kangaroo, lion.

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Episode 1: I'm sexy and I know it.

Sample Treatment...

Tease:

The outrageous, humorous and bizarre mate-attraction behaviour of several species - from mammals to fish, and insects to birds.

The drive to find a mate takes nature to the extremes of animal behavior. The mouse sized *Antichinus* goes on a mating frenzy, abstaining from everything but sex until he loses all his fur and drops dead from exhaustion. Bizarre behavior driven by something we can't even see: Hormones.

They're the chemical messengers of the animal world... as many as 17,000 reactions a day... working far below any conscious level... that effect how animals act and react in ways we're only just beginning to fully understand.

They can even change an animal's appearance. What's even more incredible is how these compounds actually work inside our bodies.

Journey into the bizarre, sometimes funny, sometimes frightening world of hormones. We'll go to jungles, deserts, forests... even under water... and delve into the hidden world inside the body to find out just what makes Beasts Moody.hormones. We'll go to jungles, deserts, forests... even under water... and delve into the hidden world inside the body to find out just what makes us all Moody Beasts."

ACT 1 - The mating game

A montage of mating rituals; albatross dancing, camels in the Australian outback frothing at the mouth, a Rhinoceros beetle with a huge horn wins a mate over a rival with a shorter horn. An elk threatens an opponent with his massive rack of antlers.

An Adele penguin rolls a stone to the feet of his mate, throws his head back and sings for all he's worth, flippers aquiver. Red-sided Garter snakes squirm into a massive mating ball. The Manikin's 'moonwalk'.

A fundamental drive of every organism on Earth is to reproduce, to pass on our genetic makeup and ensure the survival of our kind. And to do that, you have to find a suitable mate. The way nature works is that the strongest, fittest specimens have the best chance of success in the mating game -- the ones most likely to be chosen by a partner. What is it that makes them attractive to the opposite sex? And who decides who's Mr. or Ms. right? Hormones.

A Bare-necked umbrella bird in the mountains of Costa Rica inflates his brilliant red throat pouch, spreads his black crest, and issues a haunting call at a lek - a gathering of males competing to win the affection of females.

There is an endless number of amazing, bizarre and often funny ways that animals, insects and birds attract mates. We analyze the characteristics that animals display, or how they behave. E.g., the Bower male is judged by his construction abilities, his extravagant feathers, and elaborate dance. The male Frigate bird inflates his throat pouch into a brilliant red, heart-shaped balloon, then waggles it from side to side.

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Peacocks exhibit a fabulous display of tail feathers.

The peacock's brilliant display drove Charles Darwin crazy... he understood that the male peacock's iridescent tail feathers were the calling card that would win a mate. The larger and more colourful the display, the better his chances. But those huge feathers had no other use to help the bird survive -- in fact, they could even hinder its ability to run or fly. So what triggers the fierce fashion show competition, and how does it benefit the survival of the species?

Hormones play a larger role in mating behaviour than we once thought, and we're still learning how those hormones manifest themselves. But we do know how they work...

Sight: A chameleon's eyes lock on target, and its tongue shoots out. Sound: A bat flies by at night. Touch: A grasshopper struggles in a web, and a trap-door spider pounces.

The nervous system informs us about the environment outside our bodies... with senses like sight, smell, touch and sound -- conveyed almost instantaneously by electrical impulses. But that perception of what's outside triggers another response inside... a chemical one.

CGI - How Hormones Work

In CGI, the image of an ape morphs, increasingly quickly, into a number of different animals, until the change is almost a blur. The camera dives inside these morphing bodies, revealing a basic, representative body plan, then dives deeper into the hypothalamus region of the brain, right into the blood vessels. A 'puff' of chemicals is jetted into the blood... and the camera follows it.

The endocrine system is the chemical messenger system of the body... and the currency of that system is hormones. They take longer to get going than electrical signals, but their effects are profound... and can last for hours, days or weeks.

The cloud of hormones reaches a group of cells. Some cells have receptors that link with the hormone, some don't.

Hormones travel in the blood, reaching virtually every part of the body. But what's crucial is that this message system only acts on the part of the body it's intended for; receptor sites within certain tissues and cells that accept the chemical signals, and initiate changes within the body.

Different parts of the body are receptive to the same hormone... but produce vastly different results that often work in concert for fight, flight, fun, or procreation.

Crash zoom out of the body to find:

A cheetah freezes on the savannah, ears and eyes alert. Nearby, a gazelle is grazing...

ACT 2 - Pump it up

What happens next unfolds very quickly. The cheetah charges; the gazelle is alerted by the sound and movement. It turns and bounds away, accelerating even as the cheetah is almost upon it. The gazelle stays just out of reach and the big cat tires. The chases last just a few moments.

... you could say that it was quick reflexes that saved the gazelle's life... but that's not the whole story. Here's what really happened... and why the gazelle owes its life to hormones.

As we replay the incident, we learn what's happening at a fantastic rate, inside the gazelle's body.

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The cheetah's charge was an alarm bell for this gazelle, and one look told him in a flash that he was in big trouble. His mind tells him he better get moving, but he needs a lot more than that to outrun the fastest cat.

The signals from the gazelle's eyes and ears travel straight to the hypothalamus. It, in turn, triggers the adrenal gland to produce Adrenocorticotrophic hormone - and that causes the adrenal gland to flood the blood stream with epinephrine - aka adrenaline.

This incredibly fast chemical reaction is what's kept animals... and humans... alive throughout time. In the blink of an eye, adrenaline reaches organs throughout the gazelle's body. Blood supply to the digestive system is cut off, shunted to carry more oxygen to the core organs, muscles and the brain. The heart rate skyrockets. Suddenly, the gazelle is capable of physical effort beyond ordinary... like executing this powerful sprint out of harm's way.

Hormones also have longer term effects, controlling and changing our body processes like moods, growth, metabolism, and sex.

The effects of those hormones show up in some amazing and bizarre ways. Why does the male Mandril have these amazingly colourful body parts? What's the purpose... and how does this happen?

The dominant male Mandrill is much more colorful and larger than other, less successful males -- he gets to mate with many females. He also has much higher levels of the male hormone testosterone. And other males, who you might expect would challenge him, often hang back.

Why? Because investing in bright colours is energetically wasteful.. and getting into fights means you can get hurt.

Our host explains that evolution has made female Mandrills attracted to their brightly coloured men. Testosterone drives the desire to procreate... and positive reinforcement triggers hormones in the male's body to produce the brightest pigmentation it's capable of. (Andy Warhol on steroids!)

But the world of hormones can be a real puzzle. In a world where competition is fierce among males for breeding rights, how is it that the testosterone levels of the other males is suppressed? What happens when they want some female company?

ACT 3 - Getting to know you

Giraffe courtship.

When male giraffes feel sexy, they strut their stuff to the girls. To see if a female is in oestrus, they nudge her hindquarters to urge her to urinate. And when she does, he takes a few mouthfuls. Pheromones in her urine will confirm if she's in heat.

If another male encroaches, a battle ensues -- fueled by ramped up androgens. The giraffes shove each other, and use their long necks to deliver head blows to their opponent, called 'necking'.

But sometimes, hormones make giraffes do strange things: after some battles, with the sex drive running high, males actually begin to court each other... even leading up to mounting and climax.

Hormones can effect more than behaviour -- they can change an animal's physical appearance... and even their physiology.

On the Great Barrier Reef, observing a colony of clownfish living with its host anemone.

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This is a clownfish family. You find them living symbiotically with sea anemones all around the indo-pacific. The big one is in charge... the dominant fish... and it's a she. We'll call her Nancy. She's quite aggressive... keeping everyone else in line.

Next on the totem pole is this guy... her mate, Nemo. They're married for life -- in a monogamous relationship. But life isn't easy for the rest of the family. The female's aggressive behaviour keeps them from becoming sexually mature. But if the alpha female dies something really bizarre happens: Nemo becomes Norma.

CGI - Hormones change everything

A live-action clownfish becomes animated; we peel away its skin to reveal organs.

We learn that at birth, clownfish have both male and female immature sexual organs. As they grow, testosterone levels increase, triggering receptive genes to create proteins that cause the male organs to mature. The ovarian organs remain as tiny, primary growth stage lumps.

The dominant female bullies the juvenile clownfish, a stress that triggers areas in their small brains to produce a stress related hormone, cortisol.

Scientists believe that in a complicated chain of chemical events, cortisol inhibits the switching on of certain genes which produce aromatase enzymes -- specifically linked to converting the male hormone testosterone into its female counterpart: estradiol. If they're right, cortisol means no estradiol; no estradiol means no female development. A juvenile clownfish left on its own will automatically develop into a female.

On the reef, Ms. Big has her main squeeze and the young ones all to herself. But when she dies, so does her aggressive behaviour. Stress levels... and

cortisol... goes down in the alpha male. Aromatase enzymes can now trigger estradiol and, suddenly, the alpha male's latent female organs grow, and his male reproductive organs degenerate.

And Voila! A new dominatrix is born (again, so to speak). The next juvenile in line becomes Mr. Mom's partner, and the cycle continues.

But sometimes, getting the gal... or the guy... isn't the recipe for a wonderful life.

ACT 4 - 'Til death do us part

It's near dark in the hills of the Blue Mountains of New South Wales. All is quiet. But within seconds, the forest floor seems to come alive with... Antechinus, tiny marsupial mice.

The mice are frantically running here and there, chasing and running away - and copulating. This is the one moment of the year when Antechinus mate. It's an extraordinary event in the very short lifespan of these animals - when males and females mate with as many partners as they can, over and over again. And the end result is bizarre...

The male Antechinus is driven to mate, above all else. Food, water, shelter... nothing matters but the need to reproduce. They consume all of their energy reserves in a marathon of copulation that can last twenty-four hours... they lose body mass, their fur falls out, their immune system is compromised... yet on they run, chasing females until they literally drop dead in their tracks. The females are left to raise the kids by themselves.

It's an unusual reproductive strategy, driven by fierce competition among the males for a mate... to be the one who passes on his genes. But what fires up this truly once-in-a-lifetime event? Hormones drive the need to reproduce, drive Antechinus to the utmost of their physical ability... and hormones ultimately drive them to death.

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CGI - Mice

Throughout this sequence, we transition back and forth between live action of mice and CGI inside their bodies.

A male *Antechinus* is poised to run on the forest floor. He seems cute and calm. But inside his body, testosterone levels are building at a rapid rate. Winter breeding season is approaching.

With levels of testosterone reaching a peak, aggressive behaviour is raging. This male will fight, and ignore food... highly stressful conditions triggering the release of cortisol, the stress hormone. Cortisol is a catabolic steroid - in times of stress, like low food supplies, it causes the breakdown of muscle tissue into sugars the body can use to survive.

But the testosterone flooding the mouse's system is doing something else... it meets receptors in the liver, signaling a decrease in the production of corticosteroid-binding globulin (CBG), the agent that normally binds with cortisol to control its severe effects on the body.

It's a double-whammy dose of hormones - testosterone driving an all-out effort to compete and reproduce, stressing the animal to the max... and stress-induced cortisol, finding the fuel to keep this suicide mission going by telling the mouse's body to consume itself.

Luckily, finding a mate doesn't always have to end this way. But finding a partner isn't the end of the hormone game...

ACT 5 - She's mine!

Male Bighorn sheep protect their harem against a long line of would-be interlopers. The rams face off, slamming their massive horns into each other

in competition for a female's attention. The ram who gives up, loses the right to mate... unless he wins the next battle.

The North American moose, the largest living member of the deer family, stands two meters tall at the shoulder and boasts a massive rack of antlers. During mating season, or the 'rut', female moose attract males with a deep call and pheromone-laced scent. The male's body reacts, ramping up the production of testosterone -- making the moose very aggressive. Males will use their huge antlers to threaten each other, and sometimes to fight. But the flood of hormones in the moose's body make them dangerous to everything else in their path - many people have been charged and trampled by sex-crazed moose.

A male elephant seal can weigh as much as a ton. Graceful and weightless in the water, he struggles to move his massive bulk on land, where mating occurs with the many females in his harem. Another bull has to fight him to win mating rights... triggering epic battles that can rage for hours. Deep, bloody gashes show that this is no game. Focused on each other, the males are oblivious to other animals around them... frequently crushing pups and even females in their frenzy to win. Some sea lion colonies lose two thirds of their pups this way.

Some animals exhibit horrific behaviour in the hormonal drive to compete with rivals, attract a mate, and procreate.

Once a year, at the same time, female Quolls go into heat - triggering a breeding frenzy. Male Quolls will try to mate with as many females as possible. With hormones raging, they grab a female by the neck to subdue her, then copulate for as much as a full day. Their ruthless biting and scratching of the females is brutal... sometimes enough to kill the object of their affection.

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Praying mantis females allow a male to copulate - their mating ritual even includes a dance and antennae stroking. But if the female is hungry, she'll eat her partner's head during the act.

The effects of hormones on animals are apparent... we can see the extraordinary behaviours and changes in the physiology associated with mating, amazing feats of strength in battles against enemies, or remarkable endurance to environmental stress. But we're only beginning to understand how hormones are triggered in animals, and just how much they're involved in the survival of species.

Act 6 - Of frogs and polar bears

We've understood the importance of hormones to humans for decades, and have used them to create specific responses in our bodies. The birth-control pill is a perfect example.

What we hadn't realised, and have only just begun to understand, is how manmade chemicals can mimic natural hormones... and finding their way into the environment can cause unexpected and frightening results.

In the high arctic, the snow-covered landscape is ruled by a massive and deadly predator, the polar bear. The polar bear's primary diet is seals that have accumulated pollutants concentrated in the fish that they eat.

Some chemicals used in industry and agriculture are structurally similar to natural hormones... and can be easily assimilated by animals.

The adverse affects of this chain-effect - concentrating these chemicals, and moving them up the food chain - is readily apparent in the ferocious polar bear.

Chemicals used in the production of flame retardants have found their way into the marine environment, and travelled the food chain to the bears.

CGI - Bear trouble

In a polar bear's blood, an artificial compound binds with an enzyme receptor that usually triggers estrogen production. But instead, this different chemical inhibits the production of estrogen and physiological changes begin to occur.

The result: genetically female polar bears with both male and female genitalia! With these pseudo-hormones in their systems, the bears' reproductive systems are compromised, but the issue doesn't stop there. The chemicals also affect thyroid and endocrine hormones, too. The long-term survival of polar bears is questionable.

The problem in our environment of man-made chemicals with hormone-like effects is pervasive. Like the proverbial canary in the coal mine, frogs have become a symbol of this issue... and of the powerful effects of hormones... chemicals we can't see and rarely consider.

The Pill, used by generations to prevent pregnancy, contains a chemical that resembles natural estrogen... but is 50 to 100 times more powerful. Excreted in women's urine, it's found its way into lakes and streams... and is causing eggs to develop in the testes of fish.

The herbicide atrazine is one of the most commonly used pesticides in the world... and it's now present in ground, surface, and drinking water. Along with being a weed killer, atrazine is also a powerful disruptor of the endocrine system, even at relatively low concentrations. And that's a problem for frogs.

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CGI - Frog

In photo-real CGI we identify atrazine in the water around a frog. Diving into the frog's body, we follow atrazine in the blood stream. Pushing in even closer, we see the atrazine at the molecular level.

When atrazine enters the blood it causes certain cells to produce an excess of aromatase genes. The excess aromatase turns testosterone - the male hormone - into estrogen, the female reproductive hormone. For frogs that are genetically programmed to be males, this is a massive problem... because instead, they become female.

The result threatens to devastate frog populations. Male frogs' larvae lose their male characteristics, even becoming feminised as adults and able to produce offspring. Short of that, those that developed as males could no longer reproduce.

The mating game in the animal kingdom - from when animals mate to how they attract each other... and a broad range of behaviours in between - is influenced by chemical signals in their bodies they in no way control. Hormones affect everything about survival - readying the body to survive environmental stress, to fight or run, to do their utmost to attract a mate... and to procreate.

The evidence of the power of hormones is seen in the dramatic aggression of an elephant in musth, the drive of salmon up rivers to mate and die, and

the frightening physiological effects of artificial hormones leached into our water systems.

Preview montage of animal aggression and submission (lions, hyenas, bonobos, dolphin), and parenting behaviour (pigeons).

We've seen the extremes of physical appearance and behaviour when hormones drive a species to find and win a mate. But survival in a dangerous world is more than sex...

Join us as we investigate how hormones help dictate social order... animal parenting... and are the knife edge between killing or being killed.



For more information

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