


# He or She?



**SHADOW OF A DOUBT:** Arizona Helen raced 96 times against fillies and mares before being reclassified as a horse on Feb. 9.

Genetic tests reveal surprising truth about pacing 'mare' Arizona Helen

by Nicole Kraft

**R**ick Bilach held the phone to his ear, his mouth hanging open slightly in disbelief.

On the other end of the line was a judge from Harrah's Chester with surprising news—the Bilach-trained mare, Arizona Helen, who had recently romped to a pair of Chester victories and set two new lifetime marks, had also tested positive for the male hormone testosterone.

When his shock passed, Bilach became indignant. The test result was, he declared, inaccurate; in the two months that he had trained Arizona Helen, he had never given the mare any such supplemental hormones.

There was simply no way that she could have elevated testosterone levels in her system.

Or was there?

Bilach had to admit that the daughter of Arizona Jack was, well, a little different. She was

PHOTO BY STEPHEN J. ANVEL PHOTOGRAPHY



a solid-bodied mare, who, in athletic terms, looked more like an East German shot putter than a Russian gymnast. She was, he described, "strong-faced and determined," aggressive on the track to the point of her drivers nearly losing control.

She arched her bay neck and nickered to Bilach when he walked by her stall, a greeting he had received in the past from colts and stallions—but never from mares.

Rather than swallow a positive test he knew could not be correct, Bilach sent Arizona Helen to the clinic of Dr. Patty Hogan and asked if the renowned veterinarian could possibly figure out a cause for the high testosterone readings.

Hogan quickly found one—in the form of internal gonads and a small, penile-like structure under "her" tail. Turns out the mare Arizona Helen was not actually a mare at all, but rather a male pseudo-hermaphrodite—a genetic male born with external genitalia that looks female.

And just like that, she became he.

"It was pretty unbelievable," admitted Bilach. "Looking back, I guess it all made sense, but it wasn't the first thing I would think of."

Nor was breeder Stanley W. Miller thinking anything was amiss when his Bret Hanover mare Bret's Excellence birthed on March 25, 2003, her seventh foal—and what appeared to be her seventh straight filly—but first by Arizona Jack.



**NO ALLOWANCE** Arizona Helen picks up his first win as a horse in a \$20,000 claimer at Pocono Downs April 22.

## Much Ado

Dr. Scot Waterman was thinking that steroid testing, introduced to horse racing in 2008, would yield some interesting results. He was, however, not expecting among its first findings a male pseudo-hermaphrodite in racing's midst.

Waterman, head of the Racing Medication and Testing Consortium, was contacted late in 2008 by the USTA when the spotlight first shined on the unique case of Arizona Helen. He immediately approached an international group of veterinarians and chemists to ask how





**"POWERFUL HORSE":**

Left: Arizona Helen standing tall after a walk. Right: With Michael Rashkin, the pacer's current trainer.

**“She was not a little, frail filly. She was a nice stout mare,”** said Stanley W. Miller. **“But as a yearling, when she was still out with fillies, she would mount the other fillies. I never had one do that before.”**

Dubbed Arizona Helen, the filly was a robust bay with a white right hind heel. She was also a tad more aggressive than Miller's other foals.

“She was a good-sized horse,” he recalled. “She was not a little, frail filly. She was a nice stout mare. But as a yearling, when she was still out with fillies, she would mount the other fillies. I never had one do that before.”

Miller started racing Arizona Helen as a 2-year-old in Illinois in 2005, winning once in 12 starts and earning \$6,848. After 11 starts in 2006, including a trio of victories, the mare was claimed for \$13,000 by trainer Todd Crone, for whom she earned more than \$100,000.

Though Crone conditioned Arizona Helen for nearly two years, he never noticed anything out of the ordinary, except that she never seemed to come into heat.

“Once I had [a] vet check her ovaries and he said she had real small ovaries, but we weren't overly concerned,” he said. “She was nothing but a success story for us. We missed her when she was

gone. She was the best horse we had at the time—the kind of horse you looked forward to seeing every day.”

Arizona Helen moved to Peter Fusco's barn in March 2008 for a single purse start before racing eight times for Richard “Nifty” Norman, winning once.



they handled such a situation. Their response: They never had one.

“This is very rare,” said Waterman. “The international folks have been testing for anabolics for 30 or 40 years, and have not seen it. The fact that we saw it in our first year is entirely coincidental.”

A more common “positive” in steroid testing may come from geldings that still possess some testicular tissue, due to an incomplete castration or a well-disguised retained testicle. Testing labs deal with this issue through a

Human Chorionic Gonadotropin—or HCG—Challenge Test.

Geldings with high testosterone tests are injected with HCG, which will increase testosterone production if the hormone is being produced naturally. A positive result means the horse will remain a gelding to the public but be listed as a “rig” among regulators and racing commissions. He will no longer be subjected to the testosterone test.

Waterman does not expect many of these findings, either. In fact, he said

equine steroid testing in general may soon be much ado about nothing.

“People have moved on, and [steroids] aren't an issue anymore,” he said. “We are glad to see that. We suspected that would be the case.

“Just as many geldings race in Australia as here, and they live without steroids just fine. Just as many fillies race everywhere in the world, and they race just fine. We suspected it would be the same here, but you never really know until you do it.”



**“I might as well put her in cross-ties the opposite way,”** said Michael Rashkin. **“People just want to see under her tail. There’s really not much to see—he looks like a mare under there.”**

By August she was north of the border in the barn of Daniel Lagace, who raced her with mild success at Mohawk, Georgian Downs, Woodstock, Grand River and Western Fair. By November 2008, she had been transported from Canada to Bilach’s New Jersey barn and was available for sale.

“They told me to jog and train her, and see what I thought,” Bilach recalled. “She was priced right, but when I trained her she acted like her front end and back end were completely off. She was slow up front and fast behind.

“Andy Miller had driven her and told me her gait was a little different. I had her for another week and did a shoeing change, and her gait got better. I qualified her at Gaitway, and she beat some really nice mares [in 1:55.1].”

It was in that qualifier that Arizona Helen caught the attention of horse agent Steve Manzi, who was seeking a bargain for owner Niele Jiwon of British Columbia. Impressed with the mare’s effort, Manzi struck a deal for her purchase and left her in Bilach’s care.

She looked to be a good buy on Nov. 25, when Arizona Helen went wire-to-wire from post 8 in a Chester fillies and mares conditioned event, and won in 1:53.2. A week later she moved up in class and romped again, this time in a lifetime-best 1:52.2.

Then the judges gave Rich Bilach a call.

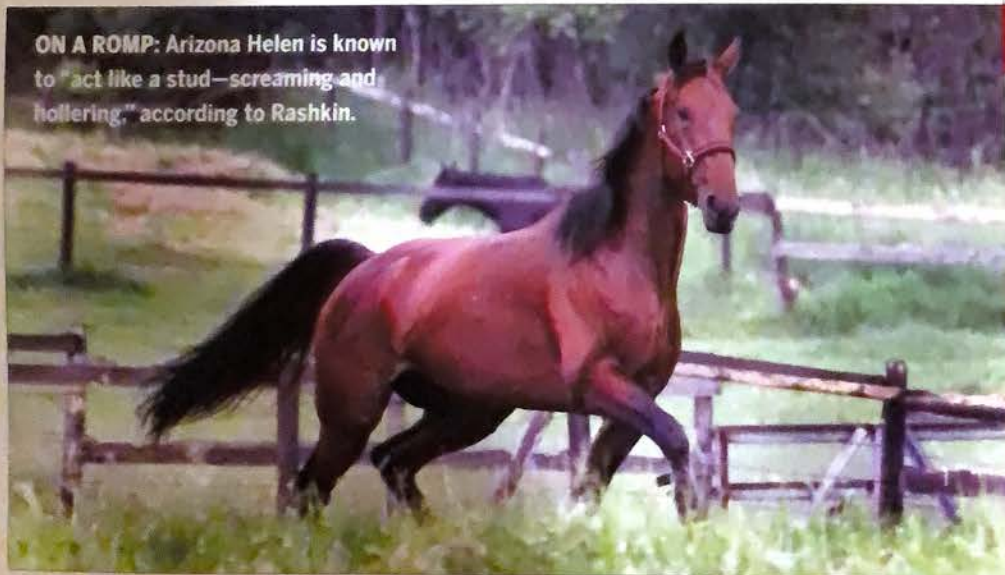
“I told them, ‘There is no way she tested positive for hormones,’” said Bilach. “No one gives her Equipoise, Winstrol—she’s on nothing! They said, ‘We are just telling you that’s how the test came back.’ I told them I was going to send her to the clinic and prove the horse naturally has high testosterone.”

Arizona Helen was sent to Dr. Patty Hogan, who became the first person to take an up close and personal look at the pacer’s external and internal genitalia. What she found did not reflect the mare Arizona Helen claimed to be.

An examination under the mare’s tail revealed an extra-long space between the anus and the vulva—like a tear drop. And in a rectal exam, which should have



**ON A ROMP:** Arizona Helen is known to “act like a stud—screaming and hollering,” according to Rashkin.



## Unique Case

The USTA had never before addressed the issue of pseudo-hermaphrodites, but the vets at the University of Pennsylvania’s New Bolton Center say they see at least one or two each year.

The condition often manifests in what might be considered puberty for the horse, with the sexual organs changing in appearance, and aggressive male tendencies developing in a previously docile female.

“Anatomical differences also may



**MAN OF THE MOMENT:** Below: Rashkin trains Arizona Helen at a training center near Binghamton, N.Y. Right: "Hermie" watches groom Elaine Finch deliver a flake of hay.



uncovered a vagina, cervix, uterus and ovaries, Hogan found no reproductive organs except what she believed to be a small testicle.

"When Richie called me, I knew there were only two things it could be—one was a tumor of the ovary, and the other was a hermaphrodite—so I had an idea what to look for," said Hogan. "I'm not an expert in reproduction, but I could tell she had no reproductive track."

"If you were not really paying attention to it, you would think it was OK, but the distance and shape of things were very revealing."

In an effort to better understand Arizona Helen's physiology, the pacer was sent next to the University of

Pennsylvania's New Bolton Center, where she was entrusted to veterinarians Sue McDonnell, a reproductive behavior specialist, and resident Mark Knobbe.

The first noticed anomaly, according to Knobbe, was the enlarged phallic-like structure under Arizona Helen's tail, where a mare's clitoris would be. In addition, the vulva had not separated like an anatomically normal mare. An internal ultrasound revealed "characteristics of a male"—namely a pair of structures in the inguinal area in the abdomen that appeared to be testicles.

"Normally testicles travel from the abdomen into the scrotum," said Knobbe. "These did not make it to the scrotum."

become more pronounced," said Dr. Mark Knobbe. "As horses mature, the amount of differentiation between males and females becomes more pronounced. These horses will be larger in size than average females and have cresty necks, along with the behavior."

Arizona Helen, however, remains unique in that he is the first veterinarians have ever seen with a complete Y chromosome, making it even harder to understand how his physical abnormality occurred.

"He has all the genes we know that are responsible for normal male development," said Knobbe. "All his genes seem to be in the right place on the Y



**CLOSE-UP:** A view under the tail shows Arizona Helen has an extra-long space between the anus and vulva.

chromosome with no mutations. That is not something we have ever seen before."

"The possibility remains that there are deletions not yet understood," added Dr. Sue McDonnell. "Another way these accidents occur is if the fetus is exposed to certain conditions that can produce abnormal hormonal conditions—like exposure to a twin with hormone output. And, of course, there could have been other animals like this that just went through life undetected."



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## Arizona Helen

## What is (S)He?

Arizona Helen might be unique physiologically, but he is not alone. And he shares more than just the condition with a recently diagnosed pacer.

Indiana-bred Martha Maxine was, until June, a daughter of Park Place and one of the top pacing mares of 2009 for owners Erv Miller, Tony Alagna and Brittany Farms. But after winning the Cape & Cutter Series and a leg of the Classic Distaff, she, too, raced at Harrah's Chester—

and came away from her two starts there with a high testosterone level on the newly instituted steroid tests.

Physical and biological exams at the University of Pennsylvania's New Bolton Center revealed Martha Maxine had a pair of gonadal structures, consistent with testicles, high in her abdominal area. She exhibits "normal stallion-like behavior" when faced with an ovulating mare, and had a normal amount of both X and Y

**FAMILY MATTER?:** Classic Distaff leg winner Martha Maxine, whose dam is a half-sister to Arizona Helen, has also recently been reclassified as a horse.



Confirmation of external assumptions came through skin, hair and blood samples sent to the Molecular Cytogenetics Laboratory in the Department of Veterinary Anatomy and Public Health at Texas A&M University. Females of all species possess XX chromosomes. Males, however, acquire a Y chromosome from their father to produce an XY chromosome pairing.

Arizona Helen's sample came back XY.

To have been a true hermaphrodite, Arizona Helen would have needed to possess both male and female sex organs. The pacer had testicles but no ovaries, so in clinical terms, she was said to fit the intersex classification of a male pseudo-hermaphrodite—the outward appearance of incomplete masculinization/partial feminization with male gonads.

Put more simply: "She was geneti-

cally male," said McDonnell.

There was, however, nothing simple about the situation for Arizona Helen and her connections. She—or now, he—was forced off the track by her positive test and remained in limbo while all questions of genetic sex were answered. The pacer was given permission on Dec. 30 to begin qualifying, which he did at The Meadowlands Jan. 2 in 1:54.2 and Jan. 15 in 1:56.2.

One big question remained: Where could he now race?

"We discussed three proposals," said USTA Registrar Janet Forry. "We could leave her as a her, make her a gelding—although we could not require that she have those [testes] removed—or make her a ridgling, who is questionable for breeding."

Arizona Helen had raced 96 times against fillies and mares, but officials said that hardly seemed fair now. After



chromosomes. Clinically, the pacer was "64 XY male pseudohermaphrodite." More simply, she was also a he.

A pedigree analysis revealed another interesting piece to the puzzle. Martha Maxine's dam, Another Agenda, is out of Bret's Excellence—making her a half-sister to Arizona Helen. Bret's Excellence had nine foals—eight of which were originally registered as mares, although Arizona Helen has now been changed to be a horse.

Another Agenda has had five foals, four of whom were registered as mares—including Martha Maxine, who has since been deemed a "horse."

And the U.S. does not have exclusivity on the condition. Australia has its own horse with an identity crisis—the pacer appropriately named What Am I. Though born with male chromosomes, What Am I has female-looking genitalia, owner Basil King told the *Queensland Courier Mail*.

months of discussion between Jiwan and Manzi, New Bolton, the New Jersey Racing Commission and the USTA, Arizona Helen was on Feb. 9 officially reclassified as a "horse" (H), and would be required to race as such.

"Arizona Helen is not eligible to compete in filly and mare races and may only race against horses and geldings or in open events," USTA Regulatory Officer Kent "Chip" Hastings wrote in a memo to the New Jersey Racing Commission. "The horse may also race in open claiming events but will not be given any allowance for sex."

In addition, the association put the following notation on Arizona Helen's registration papers: "Arizona Helen has been determined to be a 'genetic male' and is unsuitable for breeding," and required the same language appear in race programs whenever the pacer competed.

Much has changed in the life of Arizona Helen—beyond the obvious. A falling out between Jiwan and Bilach resulted in the pacer's move to Mark Kesmodel's barn, but Arizona Helen had clearly lost a step since his moments of Chester glory. He raced five times for Kesmodel, finishing fourth four times and sixth once, before he was leased to Michael Rashkin on April 1.

And after months of racing in filly and mare conditioned events—rising as high as the Open class—Arizona Helen dropped to a \$15,000 claimer.

"I like the horse a lot," said Rashkin, who is racing Arizona Helen at Pocono Downs. "She's a fast, powerful horse—definitely not built like a mare. I can see why she had a distinct advantage against the mares. She acts like a stud, screaming and hollering."

"Listen to me—I still can't help calling him 'her'!"

Rashkin said his barn has become a lot more popular since he welcomed Arizona Helen—whom he's thinking of nicknaming "Hermie," short for hermaphrodite—with horsemen and vets happening by with a single request: "Can I see it?"

"I might as well put her in cross-ties the opposite way," he said with a laugh. "People just want to see under her tail. There's really not much to see—he looks like a mare under there. But all kinds of people want to come and look."

Though his popularity is still growing, Arizona Helen's biggest fan may still be Bilach. The conditioner said the pacer simply loves to win races, and that won't change—regardless of the gender on paper.

"When I first got her, she was like a lion getting out of a cage—she wanted to go as fast as she could," said Bilach, also unable to make the pronoun switch. "She has speed. No matter what else she has, she has speed."

"She's just living proof you can't judge a book by its cover. You have to open that book up."

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