

# MY JOURNEY TO CAMEL SCIENCE: BECOMING AN INVESTIGATOR AND AMBASSADOR OF CAMEL MILK FOR AUTISM TREATMENT

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## A Mother's Search for Answers

I began my professional life in media, aerospace, government and journalism, working at the Pentagon in Washington, D.C. for the US Army, then for various corporations and a state government. I then earned a Master's in Creative Writing from California State University. My world changed dramatically when my young son, Jonah, was diagnosed with autism at age two. Driven by a mother's determination, I devoted myself full-time to his recovery, orchestrating intensive therapeutic, dietary and medical interventions. My early advocacy work, including my memoir *A Real Boy: A True Story of Autism, Early Intervention and Recovery*, brought national attention and established me as a voice for autism families and policy reform, with appearances on National Public Radio and articles in the *Los Angeles Times*, *The Washington Post* and more.

## The Serendipitous Discovery of Camel Milk

My journey from advocate to scientific investigator began unexpectedly at a children's book fair in 2005, where I encountered a camel and its owner. Learning about camel milk's use in Middle Eastern hospitals for premature infants and its rumoured hypoallergenic, nutrient-rich qualities sparked a new hope in me: could camel milk help my son where other interventions had plateaued? I had already observed that dietary changes, particularly removing cow's milk, improved symptoms for many children with autism—including my son, who had adverse reactions and exacerbations of his autism symptoms (hand-flapping, walking in circles, being detached from people) when he ingested cow dairy. I hypothesised that the camel milk might boost his immune system functioning and thus result in better language production, as his immune status was always linked to his improvements per medical testing. I also thought it would be a good non-

allergenic milk substitute that contained calcium for bone health, unlike the potato-based milk powder I gave him.

Determined to find camel milk, I scoured scientific databases for research on camel milk and autism, finding only a handful of unrelated studies. The milk was not available in America and I didn't know any US camel owners. Undeterred, I navigated complex import regulations, safety issues and cultural and language barriers to source raw frozen camel milk from Bedouins in the Negev Desert of the Middle East, eventually securing special US Department of Agriculture permission to import it for Jonah—a pioneering move in the United States.

## From Mother to Investigator: Documenting the Impact

The results were immediate and profound. After his first half-cup of camel milk (four ounces/120 millilitres), Jonah showed remarkable overnight improvements in speech, emotional connection and motor skills. I meticulously documented these and other changes as the days and weeks of his camel milk consumption followed. Soon, he was able to cross the street without my assistance, calm down from dangerous hyperactive states and carry on more reciprocal conversations. Small bumps under his skin also disappeared. After months of sustained observation and non-biased school data, I estimated a 30% improvement in his overall functioning based on medical and educational evaluations. This experience reinforced my commitment to further research into the science behind camel milk's potential benefits and its effects on autism.

## Becoming a Self-Taught Expert

I immersed myself in camel experiences and lore, traveling across the United States and internationally to learn first-hand about camels and

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their biology, milk, meat and usage. I visited camel farmers and herders in America, including farmers of Middle Eastern heritage and interviewed Somali and Indian sources. I traveled to Dubai the first time to sample camel milk products and visited camels in the desert camps and made a trip to India's Rajasthan desert. I recorded traditional knowledge and modern practices from as many sources as I could find, including old books and Toureg nomads from Niger who visited the US to sell their traditional jewellery. I also kept importing camel milk and drove to many airports late at night to pick up the precious and very expensive suitcases full of frozen litre bottles. My son needed it on a regular basis to maintain his gains and health, so this was a constant endeavour.

### **Advocacy and Global Impact**

In 2011, I learned that Amish farmers in America had just begun milking camels and selling the milk quietly from a few tiny farms. I obtained that milk and it worked the same way as the Middle Eastern milk for my son. With a reliable and safe source now available in the U.S., I went public with my findings. My 2012 article "Got Camel Milk?" went viral in many languages, catalysing global interest among autism families and entrepreneurs. I followed up with a patient report, "Autism Spectrum Disorder Treated with Camel Milk," published in a peer-reviewed science journal. I discussed it on a television show for autism, which drew international scientific attention and invitations to visit innovative camel dairies abroad. I visited the farm where the Camelicious brand is produced in Dubai, gave media interviews, met the public, visited camel races and a Bedouin camp and most importantly, collaborated with the outstanding veterinary scientists there. My continued interactions with camel people and scientists around the world provided me with a deep and nuanced perspective of the complex cultural, economic, supply chain and dairy production issues related to camel milk, as well as the scant, little-known science around its health benefits. My research extended to collaborations with scientists, including work in a Nobel Prize-winning lab at the University of California, Irvine, analysing the unique components of camel milk.

I also regularly heard from families and adults using camel milk for autism, food intolerances, autoimmune issues and other health issues. Hearing their stories enhanced my knowledge base and I shared this information in many national speaking engagements and media appearances, as well as on my website. I wrote several articles about camels,

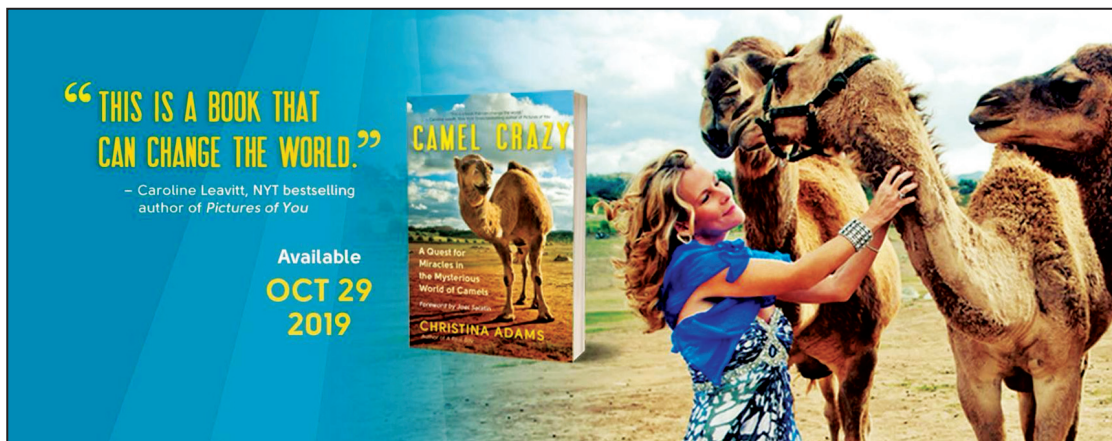
including one about the challenges facing Rajasthan's camels, and one in OZY, a milestone, because working as a journalist, it was difficult at the time to get mainstream media attention for camels.

Eventually, I knew that I had to write a book about this topic in order to best share information about the importance of camels. I made another trip to India to lecture, meet the Raika camel herders at Camel Charisma with Dr. Ilse Kohler-Rollefson and visited UAE's Al Ain Farms along with other camel milk and tourism-related sites. I spent time with the large Somali community in the US to learn from their leaders and continued my visits to the growing number of small American camel farms to observe their camel training, milking, bottling and shipping methods. I lectured at various universities and conferences held in Pakistan, India, Europe, the US and more.

In late 2019, I published the book *Camel Crazy: A Quest for Miracles in the Mysterious World of Camels*. The book chronicles my journey and my son's experience, but also highlights the deep culture around camels and the global importance of their milk, meat, labour, spiritual significance and economic value to the world. A Users' Guide in the back of the book gives practical guidelines for families and health professionals interested in camel milk as a therapeutic option, such as how much milk to use for autism, diabetes and other health issues. The book won a Nautilus Book Award and a San Diego Writers' Conference Choice Award. It was later translated into Mongolian and sold out within months in 2024.

I have been to Mongolia two times and helped start a camel dairy there, which is now producing liquid and powdered milk under the Camwell brand. Most importantly, by encapsulating the science of camel milk in an entertaining true story and generating media appearances and press coverage, I have been able to bring camel milk to the attention of millions of people around the globe. This has been my goal for nearly 20 years now—getting camel milk to the people who need it. One example of this is being a recent guest on a popular South African radio station, after which all the commercially available camel milk in South Africa was sold out in a day. Another is having an article on my work in the Eastleigh Times and other outlets in Kenya about camel milk, which helped connect me with local herders and led me to a greater understanding of their challenges. Several camel milk retail operations have started over the years after seeing one of my media pieces, including one in Africa recently, so that is highly gratifying.





Patrika.com interviewed Christina on the publication of her book CAMEL CRAZY.



Christina gives a talk on camel's milk benefits for autism and human health at the Rajasthan Patrika 's office in Jaipur, India (Left); Autism File Family cover photo: Christina and her family (right).

## Scientific Contributions and Ongoing Research

I feel very fortunate that my experience is recognised by researchers and camel industry stakeholders globally. I have been able to contribute to peer-reviewed publications; this includes co-authoring "Camel Milk and Other Dietary Treatments in Autism" with Dr. T.K. Gahlot and "Camel-Assisted Services" with Dr. Carlos Pastrana, which outlines the value of camel-assisted interventions for humans. I advise camel milk producers, help guide dairies and promote standards for safety and quality around the world. My work highlights camel milk's unique therapeutic properties—antibodies, vitamins and enzymes with antioxidant, anti-inflammatory and immunomodulatory effects—as well as research suggesting how it may

benefit children with autism by improving gut health and reducing oxidative stress, as well as providing vitals nutrients like calcium for underweight or food-intolerant youths. Ongoing scientific collaborations continue to stimulate further research.

## A Continuing Mission

Today, I continue to bridge cultures and disciplines, educating the public, advocating for greater access to camel milk (including support for pastoral camel herders) and supporting research into its benefits. I have spoken at the United Nations and at international conferences in Saudi Arabia, Morocco, India, Pakistan, China and many more. I have produced and been featured in documentaries in



Christina and colleagues on stage at Marwar Camel Culture Festival organised by Dr. Ilse Kohler-Rollefson in Sadri, Rajasthan (Left); A conference in Berlin, Germany on camel science - Christina was a keynote speaker on camel milk, with other participants (right).



Christina spoke to autism parents and professionals at Mountain Empire Community College in Virginia's Appalachian mountains (Left) and her book's Mongolian Edition launch at Ulaanbaatar, Mongolia (Right)

Mongolia, Saudi Arabia and India and have met with government officials in many countries to promote camel milk, most recently in Mongolia's Gobi Desert and China's Northwest during the 2024 UN Year of Camelids. In 2023, I founded Nomad Ventures to share the stories of nomadic and pastoralist cultures. The short film I co-produced with Solid Partners of Mongolia, titled "Mongolian Camel Culture," is available on YouTube. I also hear from families, nomadic people, companies and journalists as they seek to understand camels and their milk.

My journey from mother and media professional to scientific expert and advocate was an unexpected one. But the power of personal experience, persistence and cross-cultural collaboration has enabled me to advance new frontiers in autism care and global health.

As I complete two decades of seeking and developing camel knowledge, the world of camels is still mysterious in many ways. It remains my goal to highlight, investigate and protect the treasure that is the camel.



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