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Combinator



INVEST IN PIROUETTE MEDICAL (YC S21)

Reimagining life-saving injections for the \$750B market

pirouettemedical.com

Portsmouth, NH



Technology

Y Combinator

Notable Angel

B2B

Healthcare

Highlights

VC-Backed

Raised \$250K or more from a venture firm



Y Combinator

Raised from Y Combinator



Investment Memo

An investor has written an Investment Memo



- 1 Backed by Y Combinator & leading VCs including Safar Partners, Liquid 2 Ventures, & Gaingels
- 2 Led by 3 rocket scientists from MIT, Harvard Medical School, Harvard Business School, GE, & NASA
- 3 22 patents awarded & 3 patents pending- Pirouette owns all IP
- 4 Awarded \$327K Phase I SBIR grant from NIH & the National Institute on Drug Abuse (NIDA)
- 5 Targeting FDA approval & commercialization by 2027
- 6 \$750B injectable drug delivery market
- 7 Forecasting \$400M+ in revenue within 5 years (not guaranteed)
- 8 93% of surveyed patients (n=918) & 70% of surveyed prescribers (n=258) want to switch to Pirouette

Featured Investors



Safar Partners

Invested \$5,500,000 

Follow

Notable Investor

Safar Partners nurtures innovations in sustainable energy, clean water, food management, and healthcare to tackle today's biggest challenges, including climate change and global health.

safar.partners

Arunas Chesonis, Managing Partner

"An investment in Pirouette is not just promising; it's a unique opportunity seldom seen in the medical industry, where the public can directly invest in an emerging medical company that will save lives and enable affordable healthcare. Pirouette is poised to revolutionize the \$600 billion injectable drug market and transform how life-saving injections are administered and accessed."

[View Investment Memo](#)



KingsCrowd Capital

Invested \$20,000 ⓘ

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KingsCrowd Capital is the first 'index'-like fund product that utilizes a data-driven investment approach.

kingscrowd.com

"With a dedicated founding team and support from notable accelerators and venture..."

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Other investors include [Y Combinator](#) [Notable](#) , [Gaingels Syndicate](#) [Notable](#) , [Liquid 2 Ventures](#) [Notable](#) , [MAGIC Fund](#) [Notable](#) , [Asymmetry Ventures](#) [Notable](#) & 1797 more

Our Team



Conor R. Cullinane, Ph.D. President & CEO



Engineering ace & healthcare innovation executive. Former NASA & Mass General. Innovations span rockets, spacesuits, and prosthetics. Clarkson University - Aeronautical Engineering BS. MIT/Harvard Medical School - Medical Engineering & Medical Physics PhD



Elijah Kapas CTO

Auto-injector tech genius. Expertise in FDA regulation and intellectual property strategy. Managed \$2M budget at Bechtel, global engineering & construction company. Former GE Manufacturing Engineer. Clarkson University - Mechanical & Civil Engineering BS



Matthew Kane COO

Operations Guru. Leader in quality systems, operations, & FDA regulatory strategy. Clarkson University - Aeronautical & Mechanical Engineering BS. University of Notre Dame - Aerospace Engineering MSc



Surbhi Sarna Investor & Advisor

Healthcare partner at Y-Combinator. Medical device & pharmaceutical industry experience. Founder of nVision, acquired by Boston Scientific for \$270M. Board Director at Penumbra Medical, Biora, Omniscent Neurotechnology, YourChoice Therapeutic, & AOA



Parinaz Motemedy Investor, Board Member

Partner at Safar Partners (\$800M AUM). Previously led investments for AccorHotels, Europe's #1 largest hospitality company. Former Blackstone (\$1T AUM). Harvard University - Philosophy BA

why **pirouette**.



Pirouette is on a mission to revolutionize healthcare accessibility by ushering in the future of injections. We make auto-injectors designed to be approachable and easy to use. With Pirouette, it's not just about saving lives; it's about empowering them.

Led by rocket scientists and top engineering minds from MIT, Harvard Medical School, Harvard Business School, Clarkson University, NASA, and General Electric, Pirouette is developing proprietary technology to save lives – whether a patient is facing an overdose or a child has severe allergies.



50M

Americans are at risk



100,000+

Americans are dying

of life-threatening
allergic reactions.

of narcotic overdoses
every year.

Y-Combinator, and notable venture capital funds including Safar Partners, Liquid 2 Ventures, and Gaingels all agree: Pirouette can be a disruptive force to the massive \$750B injectable drug delivery market.



The dinosaur \$750B injections industry hasn't evolved in over 50 years

For over half a century, injection technology has remained largely unchanged, relying on outdated syringes wrapped in plastic to reduce accidents and errors. These attempts are far from optimal.

Injector design hasn't

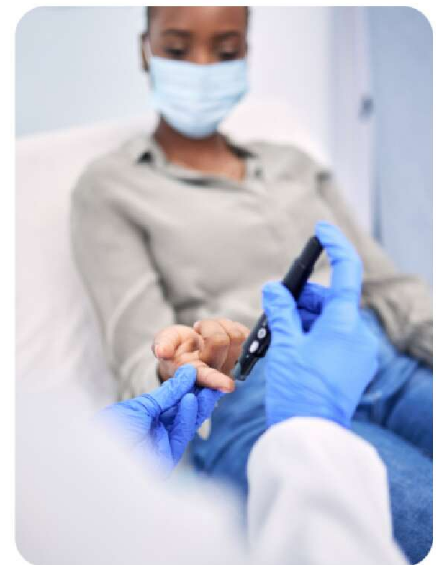
**seen much innovation
over the past 50 years.**



Injections continue to cause fear and anxiety, often stemming from a patient's anticipation of pain, the visual impact of a giant needle penetrating the skin. This fear can petrify patients and caregivers, preventing them from readily administering medicines they need to survive.



Auto-injectors were introduced in the 1970s to improve access to critical medicines, like epinephrine for allergic reactions, and later for other chronic conditions such as asthma, diabetes, and multiple sclerosis.



While auto-injectors sought to reduce the need for healthcare providers on-site, they didn't address the needle phobia nor eliminate use errors, and simultaneously drove up costs.

and simultaneously drove up costs.

2 epinephrine auto-injectors

\$390

**Today's auto-injectors
are costly, complex,
and anxiety-inducing.**

For individuals in potentially fatal situations, the daunting task of self-administering or administering medication to someone else adds unnecessary anxiety to an already overwhelming experience. For some, this fear of injecting medicine can be paralyzing.

In situations where every second counts, there's no time to grapple with the fear and stress of using an auto-injector. Choosing not to administer could be the difference between life and death.



**A revealing study with 370 patients
attempting simulated injectors**



14%

Would not
attempt an
injection

30%

Resulted in
incorrect
administration

*Tracked by the FDA as a tracked safety issue for epinephrine auto-injectors

Equally anxiety-inducing is the exorbitant cost of auto-injectors. Even with insurance, high copays and limited annual purchase allowances often result in inadequate access to these essential devices, leaving patients financially burdened or without the support they need.

88%

of people living with
life-threatening allergic
reactions go without
purchasing
Epinephrine each year.





The injections market is in critical need of an intuitive and affordable solution.

A new era of life-saving injections

At Pirouette, our goal is to make injections as easy as pushing a button.



World's only intramuscular injector with a 2-inch diameter stable base

Features

All instructions on top.

Oversized cap and ridge provide a

Features

The **safety cap** is on the **same side** as the **needle**.

ridge provide a natural gripping surface.



There are several arrows, text, and colorcoding on the labeling to help orient.



Features

Adhesive on the bottom, indicating that surface should be applied to the skin/ clothing at the injection site



Features

After removing the safety cap, the injector is oriented correctly.



Compact

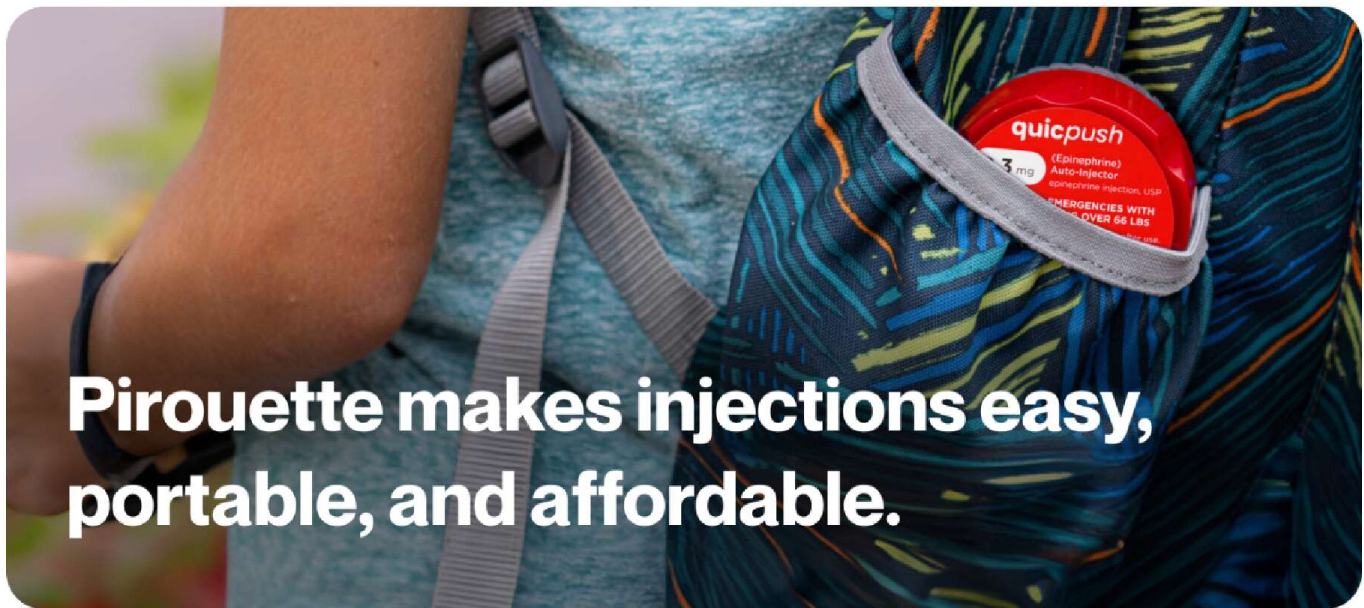


Conveniently transportable



Top-mounted instructions are highly visible and designed to be easy-to-understand.

Pirouette's auto-injector looks different for a reason. We started from scratch, leveraging design thinking methods to ground our approach in real patient needs and insights intended to address the most important factors: ease-of-use, portability, and affordability.



With Pirouette, patients administering an injection would never see the needle. The steps to administer the injection were designed to be intuitively simple, with the goal to reduce the risk of errors, such as accidental injections or lacerations that could result from incorrect administration.



“Pirouette’s **patented auto-injector technology** shows great promise to decrease user error through a safe, easy-to-use, and more efficacious means of administering Naloxone”



Nels Kloster, MD
Addiction Medicine Specialist



50M Americans are at risk of life-threatening allergic reactions. 300 Americans are dying of narcotic overdoses every day. Pirouette wants to simplify the administration of life-saving medications like Epinephrine and Naloxone for you, your loved ones, or your neighbor who might depend on them. But it doesn't stop there - the vision encompasses a wide array of drug applications.



Our patented technology aims to offer unparalleled usability and stability

We want to revolutionize the way critical life-saving treatments are administered, starting with severe allergic reactions and drug overdoses.

**QuicPush™ — Pirouette's flagship
epinephrine auto-injector**



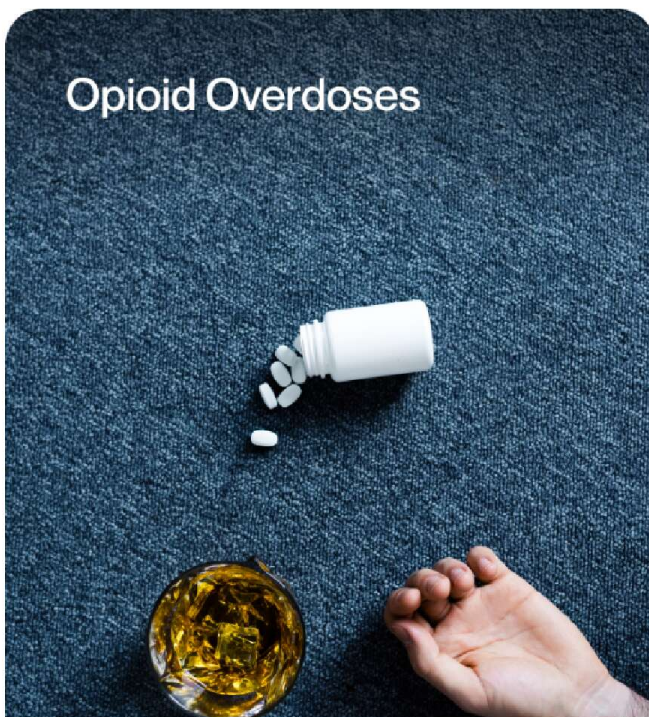
is designed for people at risk of allergic reactions. We aim to offer the device at an affordable price to yield 75% in potential savings for patients as compared to current epinephrine auto-injectors.



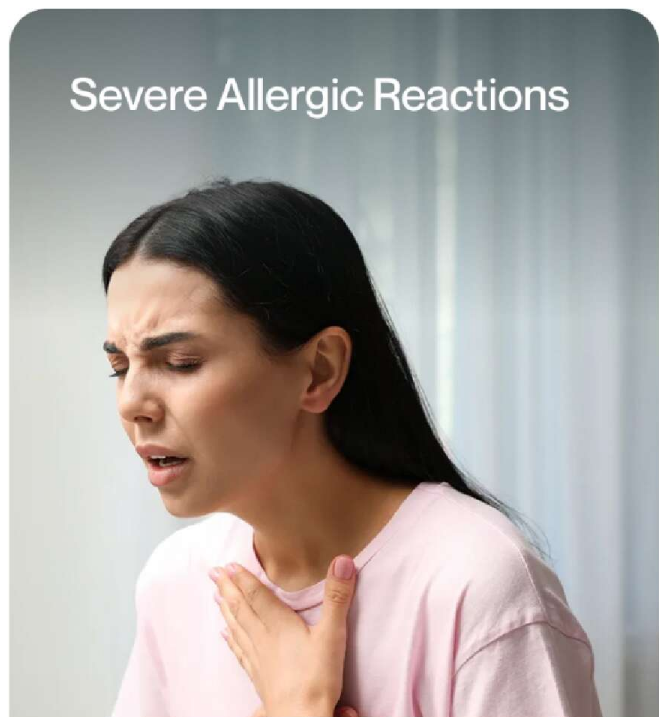
With the support of the National Institute on Drug Abuse, we are also pairing our technology with Naloxone to treat opioid overdoses, addressing the opioid epidemic.

Pirouette's auto-injector is designed with the capability to pair with any injectable drug. Our technology has the potential to be applied to an array of new markets, such as medicines for those struggling with chronic obesity or trying to start a family via in vitro fertilization (IVF).

Opioid Overdoses



Severe Allergic Reactions





By using one standard auto-injector platform for multiple medications, we can streamline production and keep costs low. This uniquely low cost of goods sold (COGS) and price model could open the door to a significant advantage over competitors, broadening both access and market penetration.

Pirouette aims to revolutionize healthcare by expanding our scope of intuitive and affordable injectable medicine to millions, transforming access to vital treatments for millions.



Pirouette aims to unlock a massive \$750B market

The total addressable market (TAM) for injectable drugs surpasses \$750B with an 8% annual growth in U.S. prescription rates. Pirouette's first-generation auto-injector, focusing initially on epinephrine and naloxone, already has the potential to reach to nearly half of this vast market (\$250B).

The global Naloxone market is, unfortunately, significant and growing rapidly: \$320M+ (by conservative estimates) in 2023 with a compound annual growth rate (CAGR) of 11.1%. This market is expected to reach a projected \$743M+ by 2028.

Pirouette's first-generation auto-injector, focusing initially on Epinephrine and naloxone, **already has the potential to**

\$750B
Total Addressable Market

\$250B

reach to nearly half of this vast market.

Immediately
Addressable



While our current solution can immediately assist people with severe allergic reactions and address the 106K+ Americans dying every year from opioid overdoses, our auto-injector has the potential to expand its reach to a broader audience in the future through additional drug products like those for **obesity, IVF, glucagon, flu vaccines, atropine, animal health**, and more.

We envision a future where all injectable medications can be seamlessly delivered through Pirouette's best-in-class auto-injectors, thereby transforming the colossal \$750B market.

**Patients and
prescribers want
Pirouette now**

93%

Intended patient
adoption

70%





Intended prescriber adoption

Pirouette's intuitive device and affordable design are already catching the attention of potential patients and prescribers. We know because they've told us themselves.

Data from our recent survey conducted in collaboration with the University of Rochester shows that a staggering 93% of more than 900 patients want to make the switch to Pirouette's epinephrine auto-injector and over 70% of more than 250 prescribers want to begin prescribing it.



"QuicPush™ a unique and patented delivery mechanism will offer **dependable performance every time.**"



Lead Investor

Former President of Abbott Laboratories & Pirouette Investor



We have 21 utility patents & 3 patents pending globally.

Pirouette's impressive technology is fortified by a powerful collection of

robust utility patents.

Our auto-injector is shielded by an extensive intellectual property moat that protects our internal mechanisms, design, and future iterations of the technology.

A photograph of a person wearing a blue suit jacket and tan trousers, holding a red auto-injector device in their right hand. The person's left hand is resting on their right thigh, showing a ring on the ring finger. The background is a plain, light-colored wall.

Designed to meet FDA's
Reliability Requirements for
Emergency Use Devices

99.99%

Essential performance standard

99.99%

Successful activation

Our team is led by **3 rocket scientists** from Harvard Medical School, Harvard Business School, MIT, General Electric, & NASA

Conor Cullinane, Ph.D.

Elijah Kapas

Matthew Kane, M.Sc.

Co-founder, President,
CEO



Co-founder, CTO



Co-founder, COO



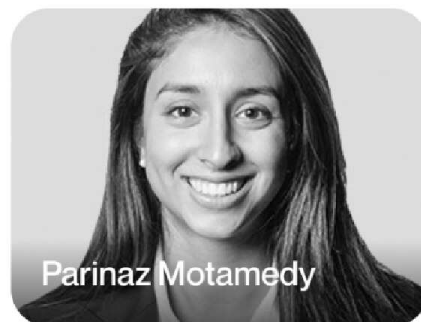
Surbhi Sarna



Joe Nemmers



Parinaz Motamedy



Tom Hook



Mark Bubak, MD





Pirouette's team is made up of a dynamic powerhouse of creative engineering minds from MIT, Harvard Medical School, Harvard Business School, Clarkson University, NASA and General Electric. With over a decade of tackling highly regulated industries together, from aerospace to medical devices, our team brings experience in bridging the gap between cutting-edge technology and patient-centered healthcare solutions.



"The founders themselves are so well qualified to work on this specific problem. As an investor, you always want to see progress. The thing that kills companies is standing still and this is not a team who under any amount of stress is going to stop working on this product. **They not only have the conviction, but they have the operational chops to do so.**"



Surbhi Sarna

Pirouette Medical's YC Partner



Strategic partnerships with leading healthcare distributors drive growth

We plan to make Pirouette injections accessible via a network of wholesale distributors, leveraging their capabilities to reach retail pharmacies, clinical sites, and patients directly.



Our pipeline of potential partners is enthusiastic and ready to back our distribution efforts.

Pirouette is on track for FDA approval and commercialization by 2027

We're laser-focused on two strategic goals: 1) securing FDA approval and 2) launching two flagship products in the market: the epinephrine and naloxone auto-injectors. Once we achieve these goals, we can scale and rapidly expand our product offerings.

Current auto-injector platform ($\leq 0.4\text{mL}$)

- 1 REZQGO RX Naloxone HCl Auto-Injector (10mg/0.4mL) in US (FDA, Rx)
- 2 REZQGO OTC Naloxone HCl Auto-Injector (2mg/0.4mL) in US (FDA, OTC) // QUICPUSH Adult Epinephrine Auto-Injector (0.3mg/0.3mL) in US (FDA, Rx)
- 3 Additional Epinephrine Doses (Child 0.15mg/0.3mL, Infant 0.10mg, High 0.5mg)



Next generation auto-injector platforms

- 1 Larger volume applications (i.e., 0.5mL, 1.0mL, 2.0mL)
- 2 Digital connectivity applications.
- 3 Expansion of FDA approved drug-device combinations internationally (i.e., MDSAP)
- 4 Pairing additional injectable drug products (obesity, glucagon, flu vaccine, atropine, animal health, etc.)
- 5 New medical technologies





We're posed to reach **\$400M** revenue in 5 years

As Pirouette's auto-injector makes its debut, our cutting-edge functionality and affordable pricing will position us for market disruption and corresponding revenue growth.

Our initial focus on our epinephrine and naloxone auto-injectors alone has the potential to capture 17% of the market over the next five years. Please note, this is a forecast and can not be guaranteed.

Projected Revenue

● REZQGO (Naloxone HCl)

● QUICPUSH (Epinephrine)

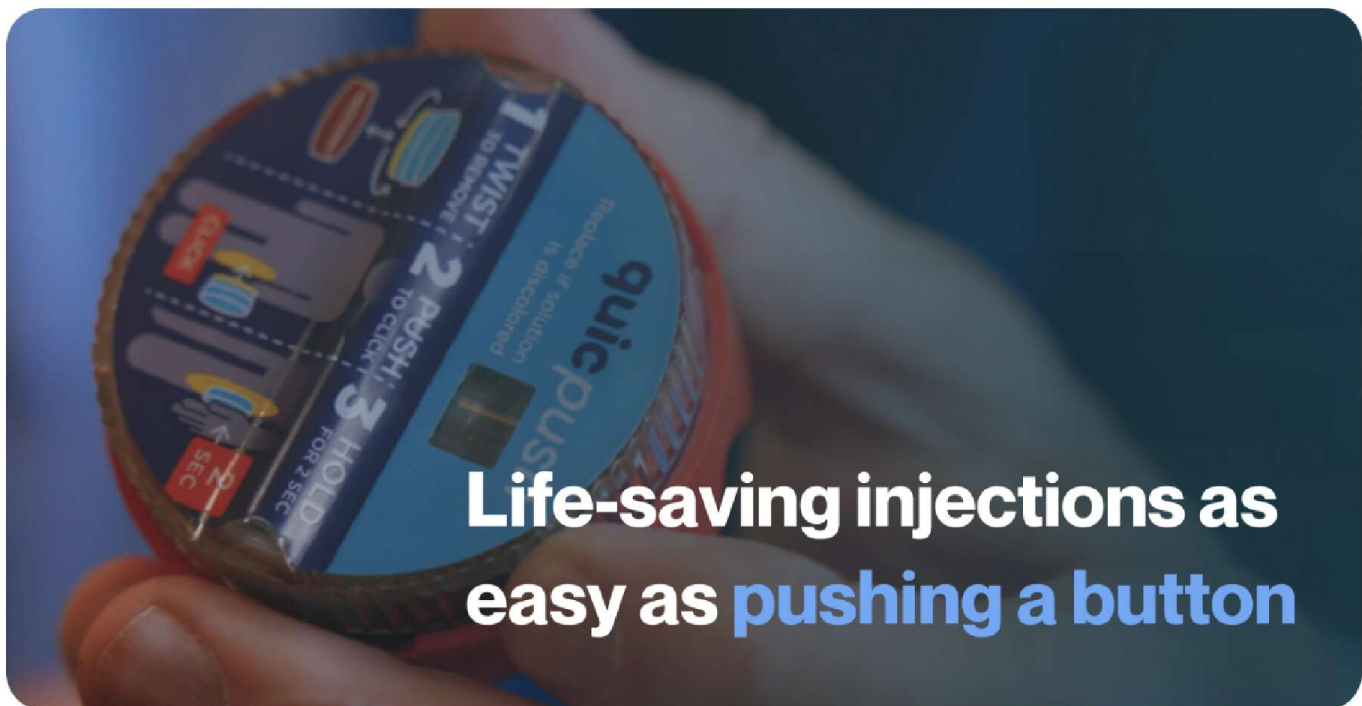


Assumptions

- Naloxone and Epinephrine product lines only
- Conservative estimate of 8.5% market capture in the first year (2027), based on previous market entrant performance, proportioned by the total number of months on the market

- Conservative estimate of 12.5% market capture in years 2 (2028) and 17% in year 3 (2029)

Injectable drug delivery now touches more lives than ever, as millions rely on auto-injectors for both chronic and emergency care. Pirouette envisions a future where injections are as easy as pushing a button - meticulously designed with patients in mind.



We're raising on Wefunder because we believe that everyone should have the opportunity to invest in making life-saving medications convenient and accessible for all and to engage the communities that we are working so diligently to advocate for.





Watch on  YouTube

**Together, we're building a future
where life-saving injections are
within **everyone's reach.****

Today, you'll have the chance to invest alongside leading
venture capital funds.



Gaingels



**Invest in
Pirouette today**



NON-MARKETING DISCLAIMER

Pirouette has **not** received regulatory approval to market any auto-injector nor any other medical device. The funds from this campaign will support the development of Pirouette's auto-injector technology on the pathway to a potential future submission requesting regulatory approval. An investment is not a purchase of a device. No devices, of any kind, will be provided in connection with an investment in this fundraising campaign.