

# Research and Development of Onpery's Menstrual Cup



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## Overview Writeup

Pramod Priya Ranjan, at his co-founded venture Care Form Labs Pvt Ltd with trademark Onpery, co-designed and co-developed a utility patent filed for Menstrual Cup, which has better usability and ergonomics. This menstrual cup addresses key challenges faced by menstruators, such as comfort, usability, and environmental sustainability. By integrating user-centric design, the Onpery Menstrual Cup stands out as a pioneering design in India's menstrual health landscape.

The project started in July 2019, and the final design version (Version 2.0) was concluded in January 2025.



## Background and Need for Innovation:

Menstrual health remains a critical issue worldwide, with millions of menstruators lacking access to safe and affordable products. Traditional menstrual products, such as disposable pads and tampons, generate immense waste and can contain harmful chemicals. Menstrual cups offer a sustainable alternative, but many existing designs present difficulties in insertion, removal, and cleaning, leading to hesitancy in adoption. Recognizing these gaps, Pramod Priya Ranjan and his team embarked on developing a more user-friendly, sustainable, and accessible menstrual cup.

## Design and Development:

- The Onpery Menstrual Cup was designed through extensive research, user testing, and iterative prototyping. The cup's shape and flexibility were optimized for comfort, ease of insertion, and removal, catering to a wide range of anatomies.
- **Curved Top Rim:** Reduces insertion difficulty and ensures a gradual, comfortable fit.
- **Cervix-Friendly Shape:** Designed to avoid cervix contact, preventing discomfort and leakage.
- **Flat Surfaces for Grip:** Enhances grip, making removal easier and breaking suction instantly.
- **Spill-Resistant Back Ribs:** Prevents leakage while removing the cup.
- **Concave Grooves:** Ensures proper unfolding and an airtight seal for leakage prevention.
- **Asymmetric Design:** Makes handling intuitive, particularly for first-time users.



## Patent and Recognition:

The Onpery Menstrual Cup's unique design led to its patent application (US20220409423A1), which highlights its innovations in structure and usability. The product has also gained recognition for its contribution to menstrual health and sustainability, setting it apart from conventional menstrual cups.

## Collaboration and Institutional Support:

The development of Onpery Menstrual Cup was supported by multiple institutions and funding bodies, including:

- **Biotechnology Industry Research Assistance Council (BIRAC):** Provided primary sponsorship under the Biotechnology Ignition Grant Scheme (BIG 16-cycle Grant).
- **AIC-MIT ADT Incubator Forum:** Offered mentorship and research facilities to refine the design and production processes.
- **United Nations Development Programme (UNDP) Accelerator Lab India and Youth Co:Lab India:** Acknowledged the product's potential in addressing period poverty and promoting sustainable menstrual practices.

## Verification:

The Onpery Menstrual Cup was initially soft-launched in 2021 for the verification of the design interventions, with the final version aimed to be released in 2025. Its reception has been positive, particularly among users seeking eco-friendly and comfortable menstrual products.

**Findings from the verification study conducted in 2021-22 on the initial version of Onpery Menstrual Cup, which was led by Pramod Priya Ranjan and conducted by the AIC-MIT ADT Incubator Forum:**

**Ease of Use & Adoption:** 93.33% of users found the Onpery cup easier to insert and place, with 83.33% adapting within the first two menstrual cycles.

**Ergonomics & Comfort:** 93.33% found it ergonomic, particularly due to its cervix-friendly design.

**Removal & Spill Resistance:** 83.33% found removal easy, while 93.33% rated it as spill-resistant.

**Sustainability & Preference:** Many participants chose Onpery for its Indian design, sustainability benefits, and user-friendly features.

## Impact:

Beyond providing a comfortable menstrual solution, the Onpery Menstrual Cup addresses environmental concerns by offering a reusable alternative to disposable products. This shift promotes sustainability and aligns with global efforts to reduce plastic waste. Additionally, the affordability and durability of the cup make it accessible to a broader demographic, potentially alleviating period poverty and empowering menstruators with a reliable product.

## Conclusion:

This innovative Menstrual Cup is a testament to the power of design thinking in solving real-world challenges. By prioritizing user comfort, sustainability, and accessibility, Pramod Priya Ranjan and his team have contributed a game-changing product to menstrual health. Their work not only addresses individual needs but also paves the way for broader social and environmental impact in the field of menstrual health and hygiene.

### Onpery menstrual cup Version 1.0



**India's first**  
functionally novel patent-applied menstrual cup!

#### Easier insertion and ergonomic

For easier insertion and ergonomics, the product has a curved-inclined rim.

The cup has to be folded to insert it into the vagina through the vulva. This intervention allows the top folded area of the rim to be smaller compared to any generic menstrual cup, and also a gradual insertion and removal through the vulva.

The intervention further makes the cup to be ergonomic as the cervix too is tilted/inclined and not linear to the vagina.

#### Onpery menstrual cup



#### Generic menstrual cup

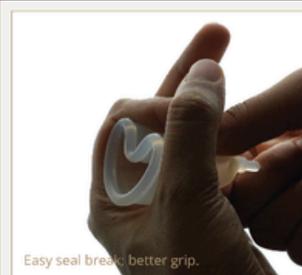


#### Easier removal and better grip

For easier removal and a firm grip to pull out, the product has a large flat face at the front and a small flat face at the back.

When the cup is to be removed, the cup is to be pinched from sideways for the cup's suction to break with the vaginal wall. When pinched on the intervened large flat face at the front, it helps the rim to instantly and effectively move inside to break the suction for easier removal.

Further both the faces enable the user to firmly hold the cup while pulling out.



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