EAR CLEAN® BELLOW PIPETTE

We are pleased to introduce a medical device with the potential to significantly reduce the incidence of hearing loss in children—particularly in settings where access to specialized ear, nose, and throat care is limited. The project is founded on a collaboration between Rotary clubs in Sweden and Rotary Club of Luanda, with the aim of implementing this method in primary healthcare through a Rotary Global Grant initiative.

A precision-engineered, single-use device for **atraumatic ear cleaning and irrigation** with shown effect in treatment of Chronic Suppurative Otitis Media (CSOM).

DESIGNED FOR SAFE AND EFFECTIVE EAR CARE

EarClean is a user-friendly pipette developed for **controlled aspiration and gentle irrigation** of the ear canal.

✓ Single-use – hygienic and safe
✓ Controlled suction – minimizes risk

✓ No electricity required
✓ Easy to use in any setting

“Two states. One purpose. Superior ear care.”

EarClean in its neutral position – demonstrating optimal functionality for effective and gentle ear cleaning.

Engineered for clinical performance, EarClean combines safety, simplicity, and reliability in every use.

EarClean – a precision-engineered, single-use device enabling safe, atraumatic, and cost-efficient ear care.

EarClean in its compressed form – designed for precision, control, and safe insertion.
Each aspiration delivers approximately 9– 10 ml of fluid for controlled irrigation of the ear canal. The pipette demonstrates consistent performance without fatigue, even during repeated aspirations and rinsing cycles, ensuring reliable and efficient clinical use.

THE EFFICACY OF 2% ACETIC ACID IN THE TREATMENT OF CHRONIC SUPPURATIVE OTITIS MEDIA VIA A CUSTOMIZED PIPETTE DELIVERY SYSTEM

Report from a study performed by dra Palmira Kuatoko and colleagues at the ORL clinic at Hospital Josina Machel in Luanda,Angola 2025.

Background: A significant proportion of the population in Luanda, Angola, resides in environments characterized by inadequate sanitation and limited access to potable water, contributing to high mortality rates among children under five. Patients suffering from chronic suppurative otitis media (CSOM) frequently encounter barriers to timely healthcare or present with advanced stages of the disease. In such settings, antiseptics— specifically 2% acetic acid—offer an effective antimicrobial alternative for managing ear infections.

Materials and Methods: A novel pipette (EarClean) was developed to facilitate the safe aspiration of secretions from the external auditory canal and the subsequent irrigation of the ear with a selected therapeutic solution. This prospective study was conducted between March

and October 2025 at the Otorhinolaryngology (ORL) Department of the Josina Machel Hospital in Luanda, Angola.

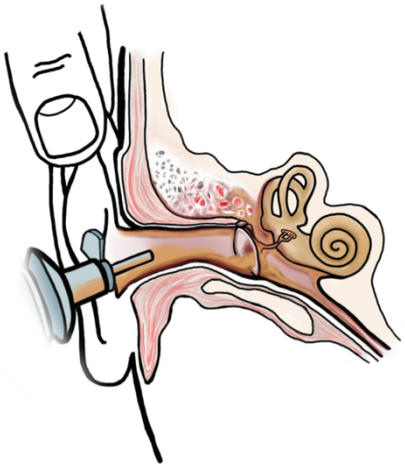
Results: A total of 76 patients were enrolled. In 30 cases, ear discharge had persisted from one month to over a year, with 28 patients presenting with bilateral CSOM. The clinical procedure involved the aspiration of secretions using a specialized pipette, followed by irrigation with 2% acetic acid via a second pipette; this protocol was repeated two to four times daily until clinical resolution. Patients were provided with four pipettes for continued home administration. Follow-up was achieved in 64 patients, of whom 59 (92%) showed significant clinical improvement or resolution.

Conclusions: The **EarClean pipette**, used for combined aspiration and **acetic acid irrigation**, represents a **cost-effective and accessible** method to reduce the burden of childhood hearing loss and related complications in underserviced areas.

The pipette is easy to handle and you can comfortably support the childs head while handling the pipette, sucking and rinsing according to the instructions in the user manual.

The suction effect is intentionally limited. The nozzle is designed to be very narrow, preventing a complete seal and thereby reducing suction strength. This significantly minimizes any risk of injury. In addition, the integrated stopper prevents over-insertion of the pipette.

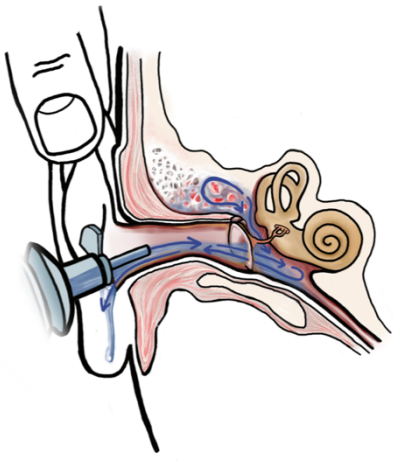
We recommend use from the age of one year, as the ear canal widens relatively quickly thereafter.



Use of Vinegar for Ear Care

Vinegar is an affordable and widely available solution, even in low-resource communities. When properly diluted with clean water, it can be used to support basic ear hygiene and help manage mild external ear conditions.

Dilution is essential to avoid irritation. Gentle rinsing of the ear canal may be performed several times daily, for example morning and evening. The positive effect is likely due to the repeated cleansing action, which gradually removes debris, helps maintain a balanced environment in the ear canal, and supports natural healing.

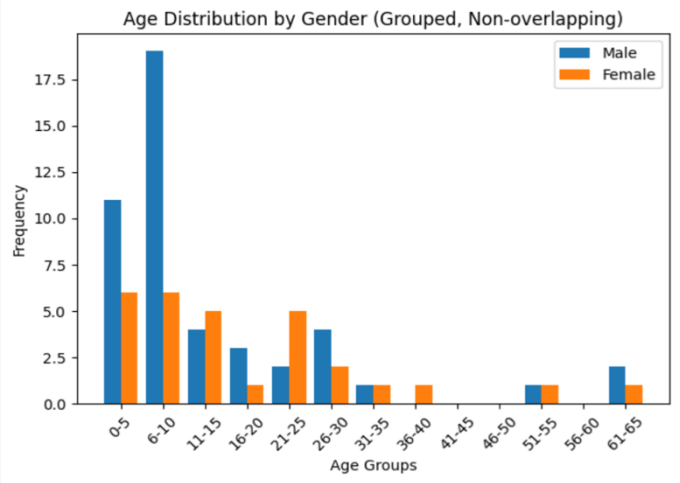


It is important to always dilute the vinegar to avoid irritation. Gentle rinsing of the ear canal can be performed several times, morning and evening. The beneficial effect may be explained by the repeated cleansing action, helping to gradually reduce debris, restore the natural environment of the ear canal, and support recovery.

Providing safe ear care to children at risk of hearing loss—Hospital Josina Machel, Luanda.

A 4 % vinegar solution diluted with an equal volume of clean water was used.

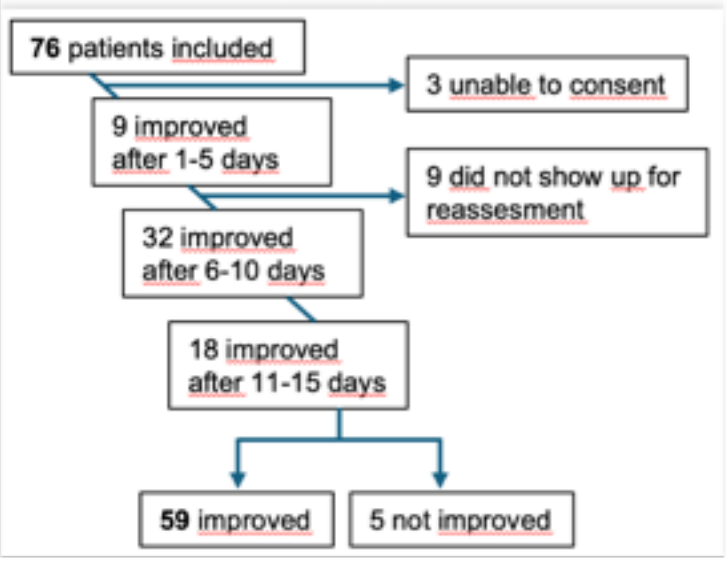
MATERIAL AND RESULTS



Clinical Observation – CSOM Patients

A total of 76 patients with Chronic Suppurative Otitis Media (CSOM) were included. The majority were children, with ear discharge often beginning at an early age. Many patients lived far from the hospital and could not be followed up regularly.

Follow up was possible in 64 patients. After five days the discharge had stopped in 9 patients and after 10 days in another 32 patients. After 15 days another 14 patients had dry ears. **The end result was dry ear(s) in 55 of the 60 patients corresponding to 91,66 %.**



76 patients included.- Follow-up in 64 patients. Chronic cases (up to >1 year).Result: 92% Improved. Rapid reduction of discharge and symptom relief

A SIMPLE SOLUTION TO PREVENT CHILDHOOD HEARING LOSS

Chronic suppurative otitis media (CSOM) is an important cause of hearing loss in children and constitutes a serious health problem globally with a strong association to resource-limited living conditions. Topical antibiotics combined with aural toilet is the first-hand treatment for CSOM but antimicrobial resistance and limited availability to antibiotics are obstacles in many areas.

CONCLUSION

Local treatment of ears with chronic suppurative otitis media (CSOM) with vinegar and a specially designed pipette proved to be an effective method to end the ear discharge. Whether the effect is permanent, we have not shown. Further research is needed to assess whether the use of the pipette and 2% vinegar, if implemented in primary health care, could reduce the incidence of severe complications from chronic ear infections.

AI-supported health economic assessments suggest that early, low-cost intervention using EarClean may substantially reduce the long-term burden of disease. Untreated conditions such

as chronic ear infections can lead to hearing loss, impaired language development, reduced educational outcomes, and long-term socioeconomic impact.

In contrast, providing basic ear care at an early stage may:

- Reduce the need for advanced medical treatment
- Lower the prevalence of preventable hearing impairment
- Improve school performance and social participation
- Decrease long-term healthcare and societal costs

Cost considerations

EarClean is designed as a low-cost, scalable solution. The device requires no electricity and utilizes locally available antiseptics, such as diluted vinegar, minimizing dependency on expensive consumables and infrastructure.

GLOBAL HEALTH IMPACT

HEALTH ECONOMIC IMPACT AND IMPLEMENTATION PERSPECTIVE

Preliminary modeling indicates that the cost per treated child may be only a fraction of the cost associated with untreated hearing loss over time—both for the healthcare system and society at large.

Treatment vs. no treatment

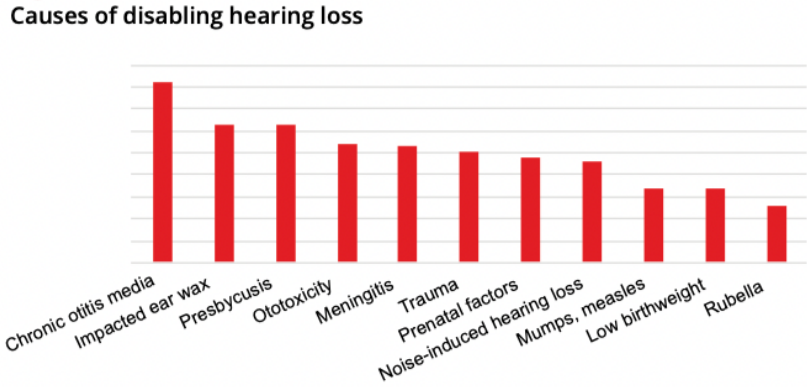
- NO TREATMENT: High risk of chronic infection, hearing loss, and long-term disability
- WITH EARCLEAN: Early intervention, reduced complications, and improved outcomes

Funding and scalability

Given its alignment with global health priorities—particularly in child health, hearing, and access to basic care—EarClean represents a strong candidate for support from international funding bodies.

Organizations such as the Bill & Melinda Gates Foundation prioritize scalable, cost-effective interventions with measurable impact. EarClean's simplicity, low cost, and potential for large-scale deployment make it well suited for such funding frameworks.

"Chronic suppurative otitis media (CSOM) is the leading cause of hearing impairment in children in most African countries."



COLLABORATION & CONTACT

Partnership Opportunities.

"We invite Rotary clubs worldwide to join us in implementing the EarClean vinegar method in communities where ear care is limited or unavailable. Together, we can reduce preventable hearing loss and improve the lives of children. Contact us to explore partnership opportunities."

We are actively seeking strategic partners to support the global implementation of EarClean. We welcome collaboration with:

- **Distributors** with access to medical and low-resource markets
- **Clinical partners** interested in evaluation, validation, and research
- **Non-governmental organizations (NGOs)** engaged in community-based healthcare
- **Public health programs** focused on child health, hearing care, and preventive

  interventions

  Through these partnerships, we aim to expand access to safe, effective, and scalable ear care solutions—particularly in underserved regions.If you share our commitment to improving global ear health, we invite you to connect with us.

  We are looking for distributors, clinical partners, NGOs and public health programs. Contact: akereimer@gmail.com