

Female Aging Tech

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Diverse and energetic team driven to make a change!



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Problem

Menopause is critically understudied and overlooked

Women have higher life span but lower health span

How medical research is failing women



Kate Womersley was a medical student at Cambridge university, nervously dissecting her first cadaver, when she noticed an odd lacuna in her anatomy course handbook: there was no mention of breasts.

Frustration swelled to anger. Not until 2016, a year after she and a female classmate first raised concerns, were their enquiries heeded and the curriculum adjusted.

Womersley, now a doctor in psychiatry, remains shocked that a biologically significant organ for women's health — after the lung, the second most common site of fatal cancer in females — had been disregarded until so recently at one of the world's most prestigious medical schools. "Having breasts seemed not to be an experience that was reflected in the teaching at all," she says.

The episode changed the trajectory of her career. In 2022, she co-founded the Medical Science Sex and Gender Equity (MSSGE) project at the George Institute for Global Health, which has major centres around the world. The initiative campaigns for policies to ensure sex and gender are accounted for across every stage of the research cycle, from study design and recruitment of participants to data analysis and the reporting of findings.

Womersley is among a band of scientists and clinicians who believe the biological and societal factors that shape women's health have long failed to receive adequate attention from researchers, educators and clinicians.

It has started to creep in at the development stage, years before drug reach patients. Scientists say that pre-clinical testing has sometimes focused disproportionately on male animals and male cells. Then, when the medicines reach trials, women are persistently misrepresented.

It reflects concerns about the health of those of child-bearing age of that cohort, says Fabio Conforti, chief of the breast oncology unit at Humanitas Gavarrone Hospital in Bergamo, Italy. In 2019, he analysed the combined findings of all randomised clinical trials testing immunotherapy in the past 10 years, spanning 11,000 patients. In 19

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What is being taught in medical schools is a decade behind what is being discovered in the laboratory and in research "that we can't really afford to wait that long for sex and gender disaggregated findings to change the way we practice. In almost every field of medicine, the white male body has been the default." — Dr. Rebecca T. Jackson, MD, PhD, Director of the Center for Women's Health, Johns Hopkins University

The amount that remains unknown about female biology should be a massive barrier for scientists, she argues. "It's a sudden you have the opportunity to study things that nobody has before in the immune system health, in inflammation

<3% of UK's health research budget awarded to menopause related studies - MREF

How Gaps in Research Lead to Gaps in Care for Aging Women

Why 99 percent of preclinical aging studies ignore menopause — and what that means for women's health

By JENNIFER WALSH | Spaulding Communications | January 10, 2024 | Research
4 min read



99% of preclinical aging studies ignore menopause - HMS

Women feel lost in the multitude of midlife challenges



Appearance

- Hair thinning / loss
- Skin pigmentation / acne
- Facial hair



Musculoskeletal

- Bone density loss
- Loss of muscle mass
- Joint pain



Cognitive

- Brain fog
- Memory loss
- Poor concentration



Emotional

- Mood swings
- Anxiety
- Irritability



Others

- Hot flashes
- Migraines
- Insomnia

Enormous knowledge gap is calling for menopause education

3.9B women spend 25 years struggling to find support



Scarcity of qualified doctors



Access to accurate information is hard



Stigma, embarrassment, lack of public awareness and miscommunication



Women are suffering needlessly through menopause transition, physicians say

'Who prepares women for this?'

Physicians say lack of information and poor access to doctors who have received specialized training on menopause have left most women without the tools they need to manage what can sometimes amount to debilitating symptoms.

It's a systemic problem that needs a solution, starting with a whole lot more conversation about it, said Dr. Iris Gorfinkel, who helps patients with perimenopause symptoms at her Toronto family medical practice.

"Who talks about it? Who prepares women for this? For most of us, it comes on as a big surprise," said Gorfinkel, who counts herself among those who have found the menopause transition unexpectedly difficult, despite being a female physician.



Women are asking for **accessible, trusted** and **personalized** support

Looking for **preventative** and **proactive** management rather than reactive

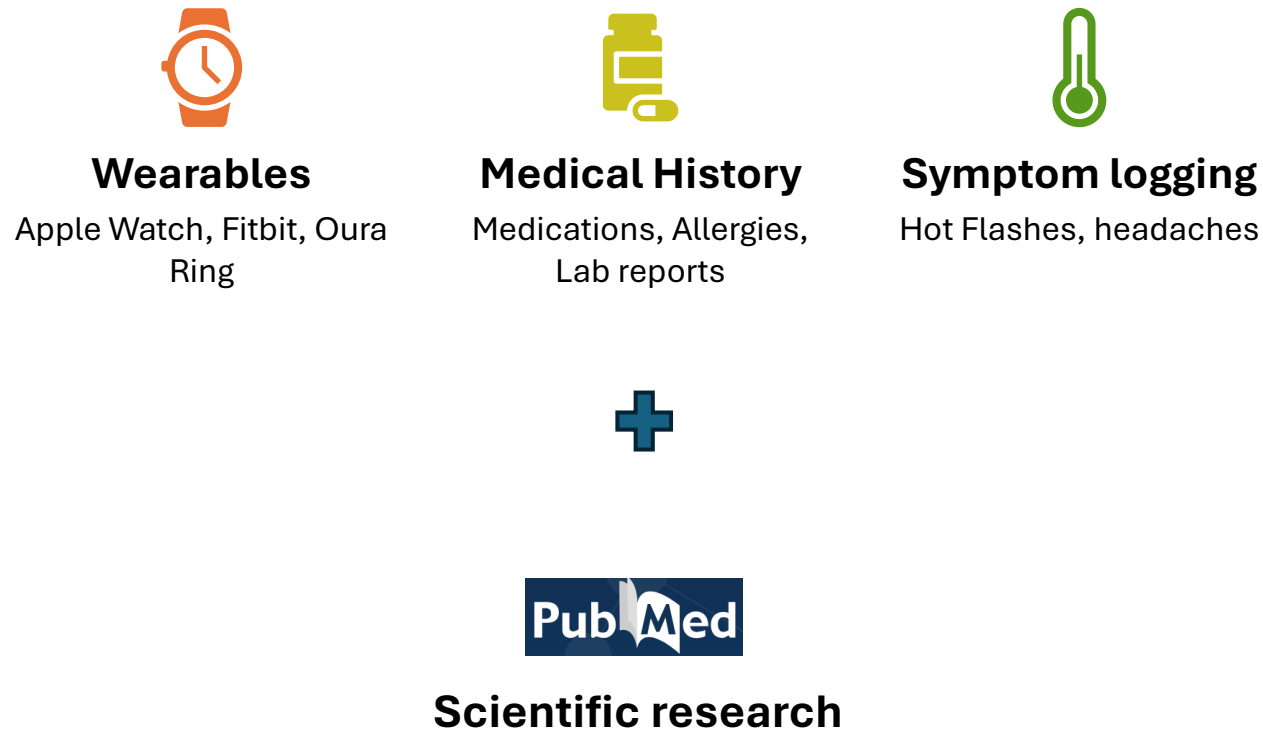
Need consolidated info from **reliable, trusted source** other than going to a doctor

Want content aligned with **latest scientific findings** on female aging

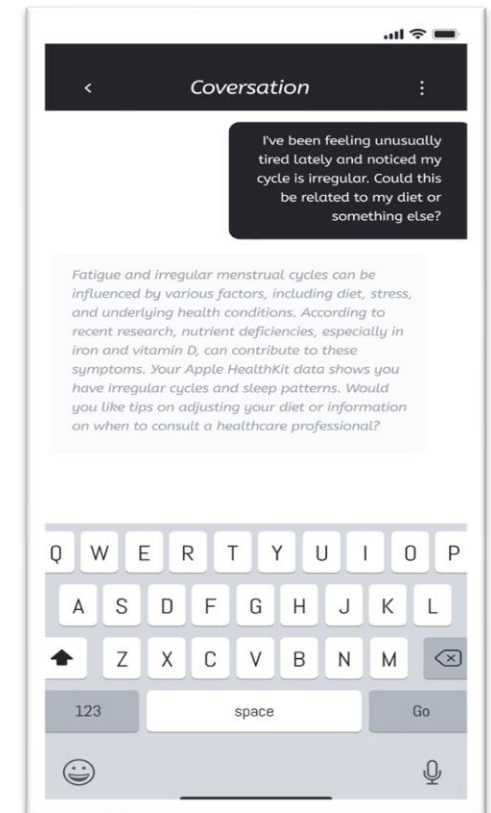
Would be helpful to be **prepared in advance** of the changes, and be able to **learn in a more interactive** way than just being handed a menopause guide

Lot of generic advice exists, need **data driven, evidence based** specific information that is **tailored to ME!**

Meno.ai – personalized wellness advisor integrating health data with scientific research using AI

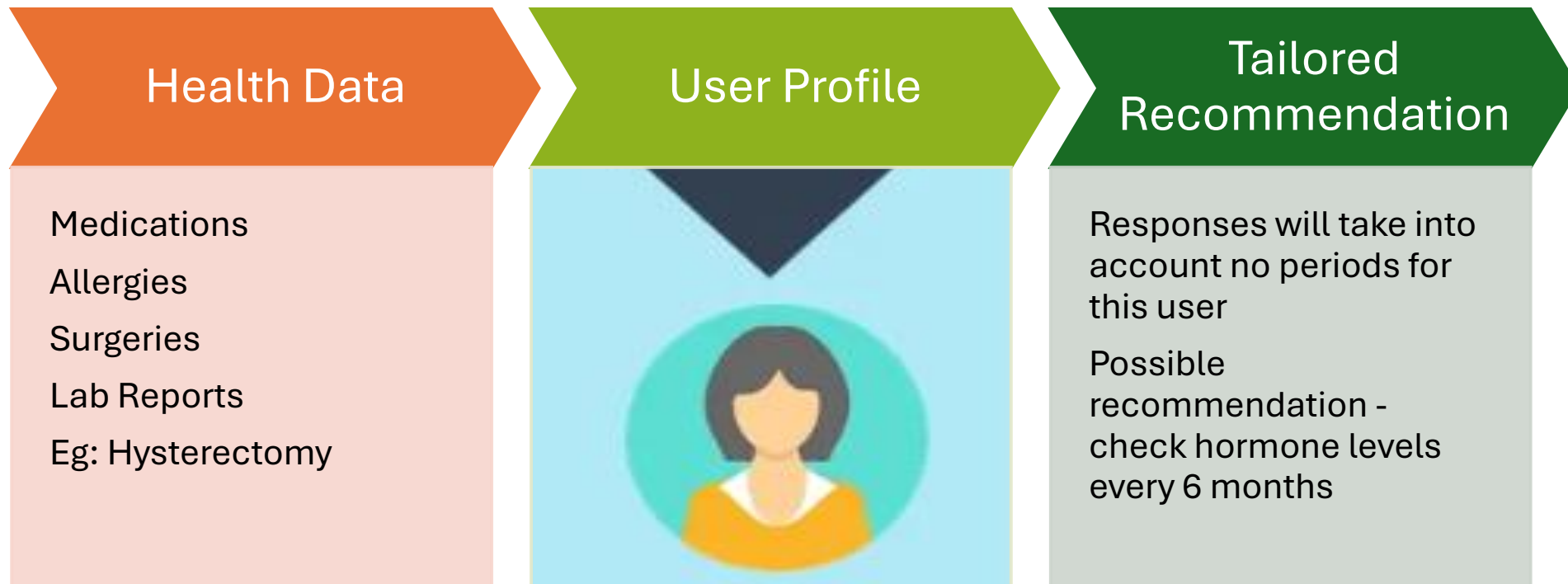


Meno.ai chatbot

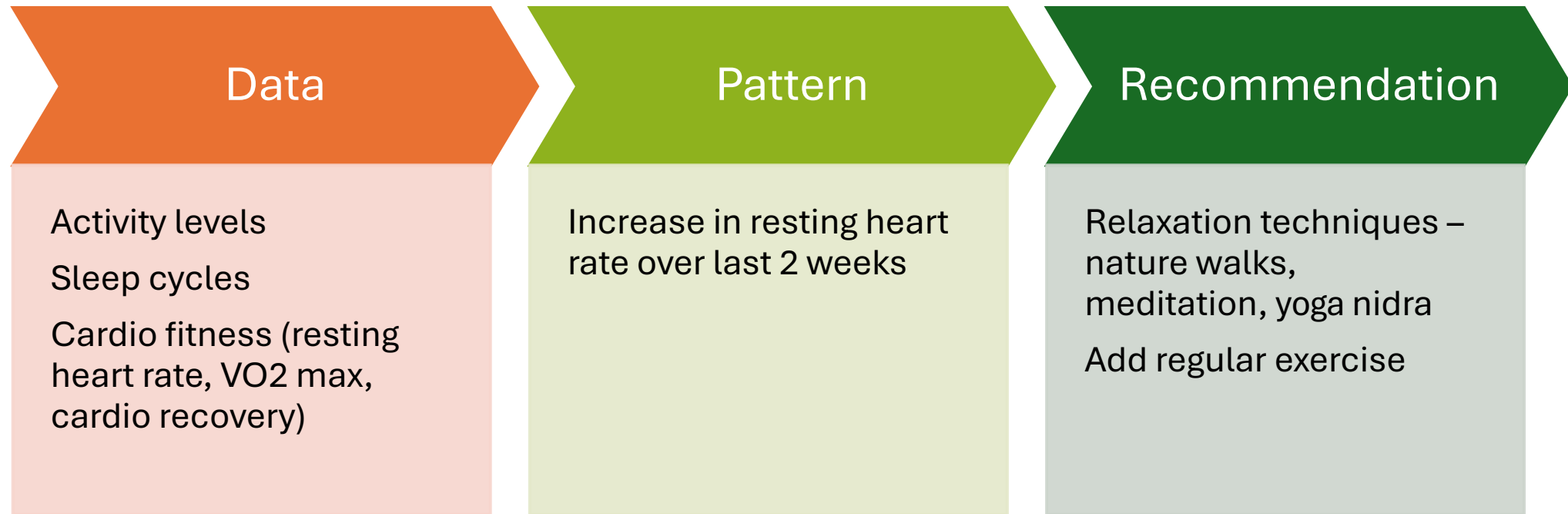


Key Features

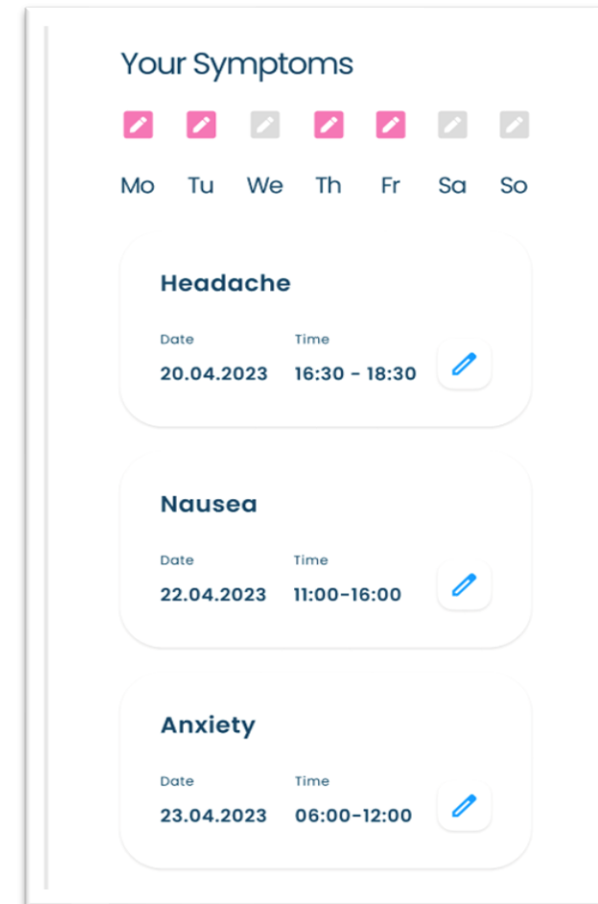
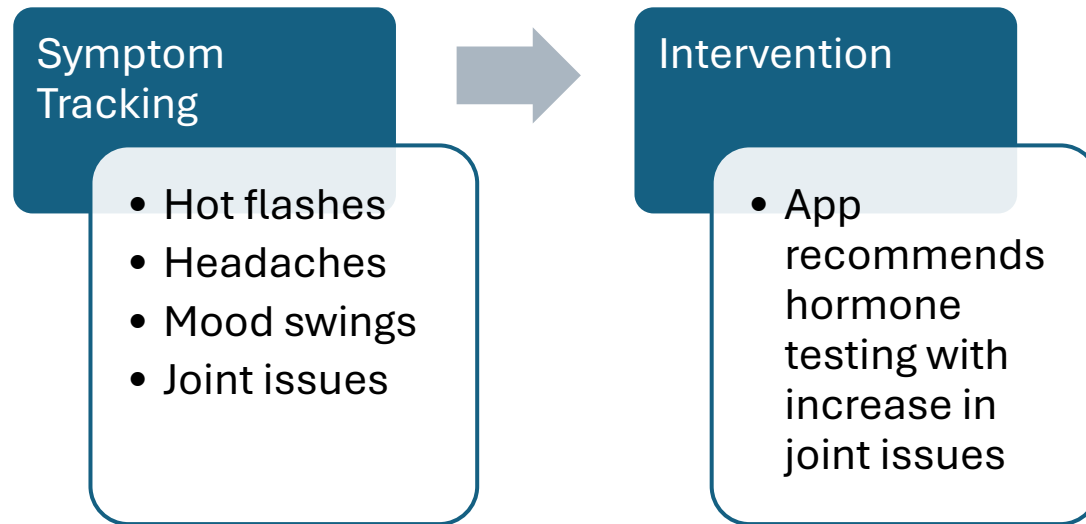
Health history data & AI enable individually tailored recommendations



Meno.ai provides suggestions based on data patterns from wearables

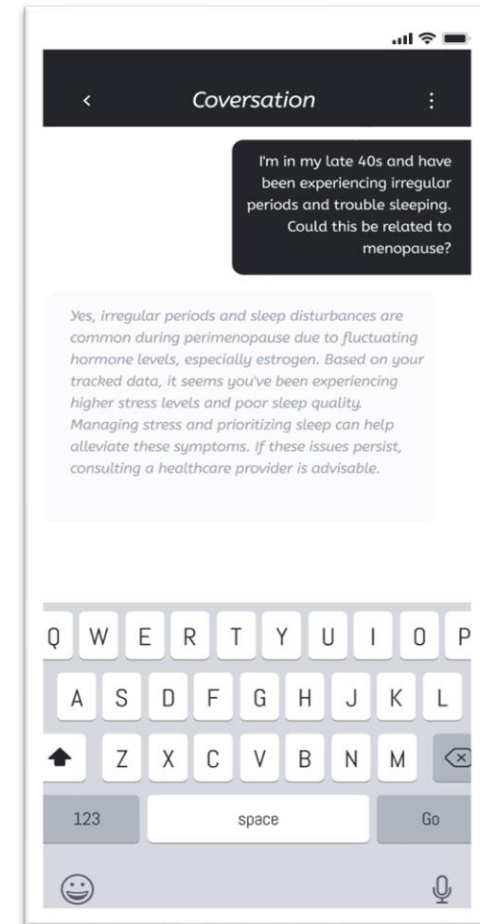
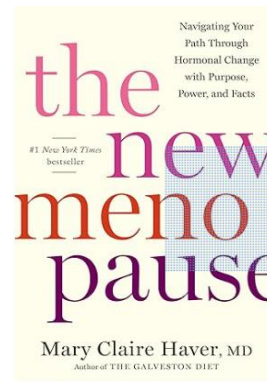
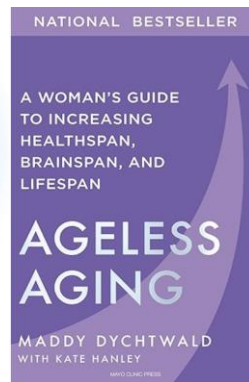
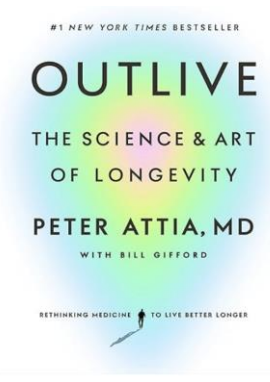
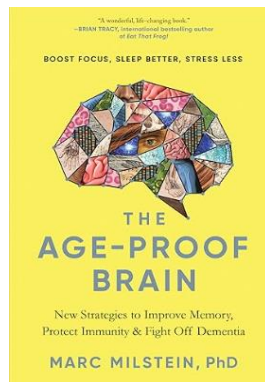


Symptom logging and tracking enables early intervention



Meno.ai incorporates latest scientific research and longevity advice

- Scientific advice from WebMD, Cleveland Clinic, Pubmed
- Books & podcasts from experts on healthy aging
- GENE 223: Aging – Science and technology of longevity



Meno.ai Prototype Demo

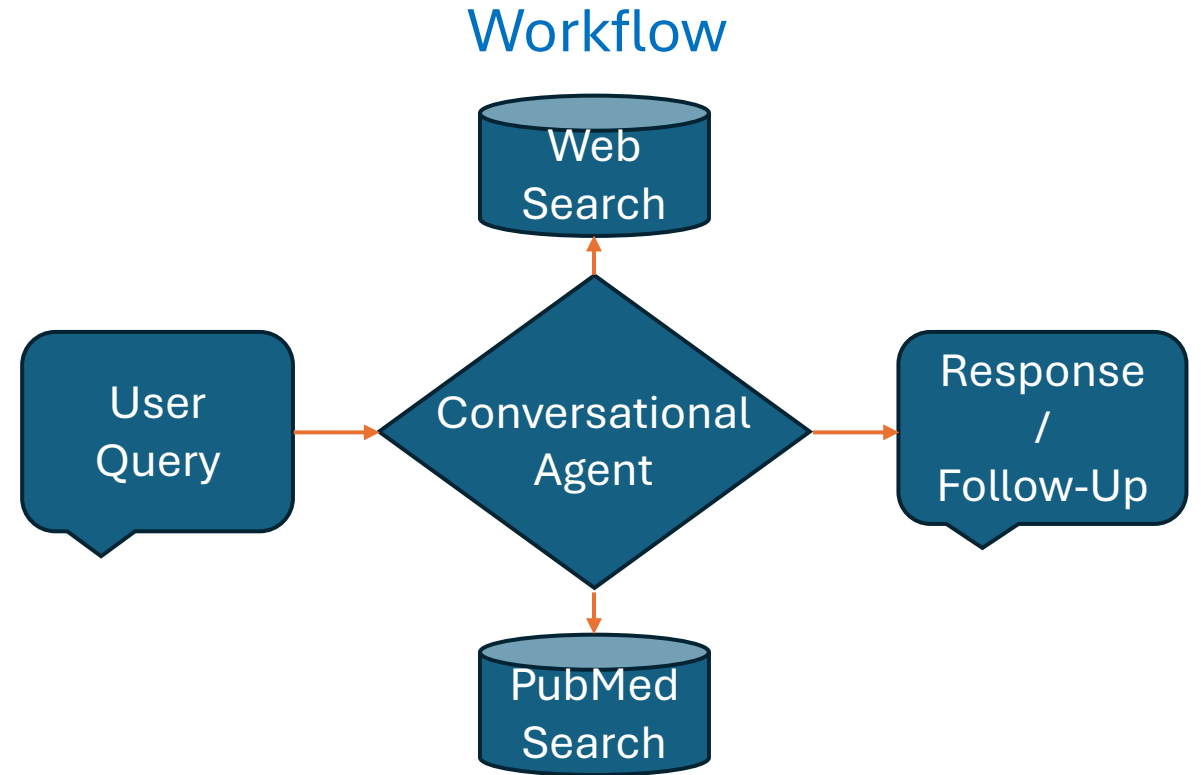
Meno.ai – Conversational AI built with standard tools

Key Components

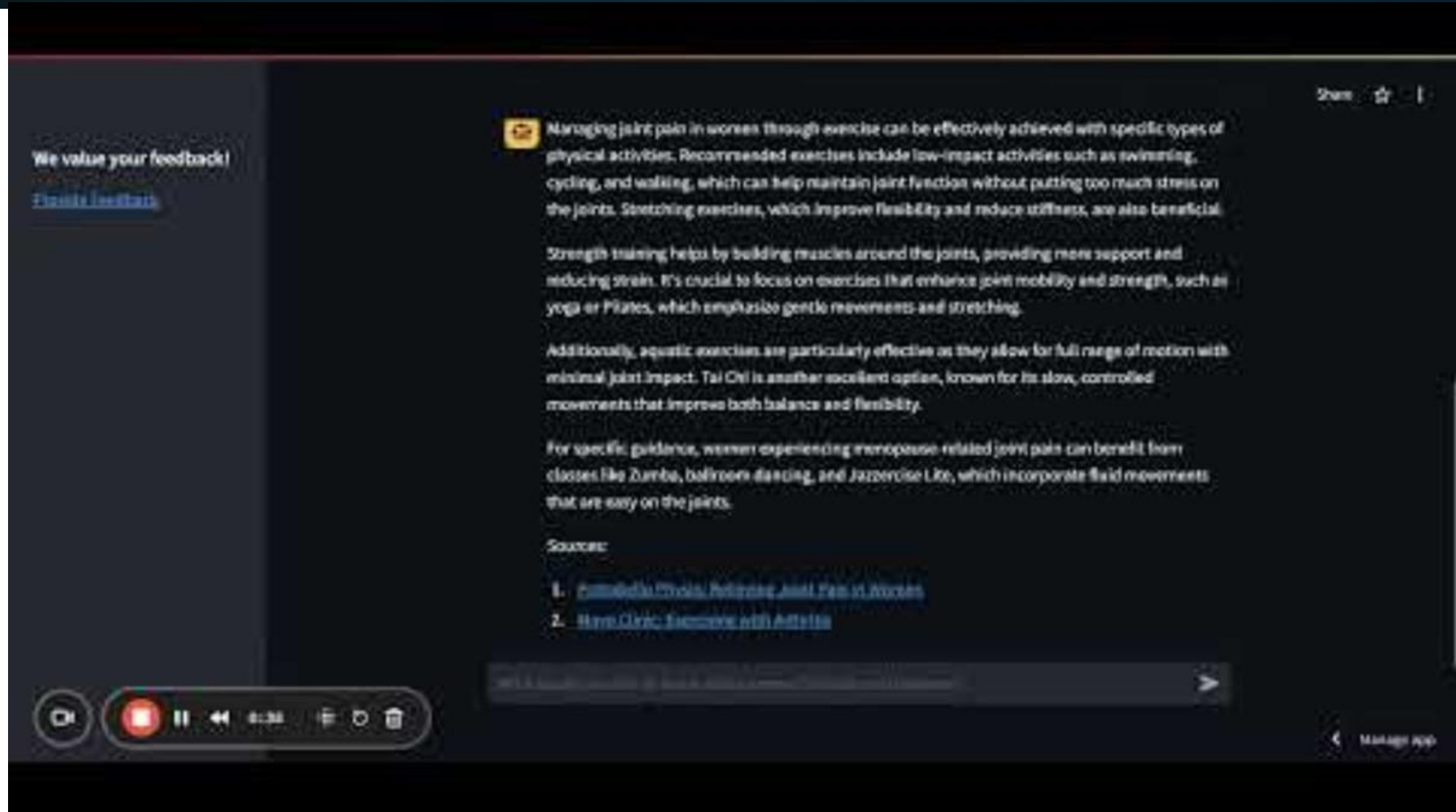
- Streamlit for frontend
- LangChain for AI agent setup
- OpenAI's GPT model
- Web Search API
- PubMed Search API

Key Features

- Source citation for generated responses
- Dynamic generation of follow-up questions
- Feedback mechanism via Google Forms



Meno.ai Prototype Demo



Meno.ai has several advantages over ChatGPT

Transparency & Trust

- Provides references of scientific literature used by the model for the response

Continuous Learning

- Feedback provided by users can be analysed to uncover areas that need further improvement

Convenience & Completeness

- Predicting and prompting follow up questions makes it easy for users to continue conversation and get complete information



Does ingesting collagen help to improve hair and skin? Are there any side effects of ingesting collagen?




Ingesting collagen may contribute to the health of your skin and hair. Some studies suggest that it can improve the appearance of your skin and potentially prevent age-related hair loss and thinning. There is also a study that found taking specific collagen peptides increased hair cell growth and hair thickness significantly. As for side effects, studies so far have shown no side effects, but more research is needed to confirm the benefits and potential side effects of collagen supplements.


Sources:

1. <https://www.webmd.com/diet/collagen-health-benefits>
2. <https://www.healthline.com/nutrition/collagen-benefits>
3. <https://www.healthline.com/nutrition/collagen>
4. <https://www.healthline.com/nutrition/collagen-for-hair>
5. <https://www.medicalnewstoday.com/articles/liquid-collagen>

Meno.ai provides more concise answers compared to ChatGPT

Meno.ai App

 I am having a lot of hair fall/hair thinning. What can be the possible causes and what can I do about it?

 Hair thinning and hair loss in women can be caused by a variety of factors. Common causes include hormonal changes (such as those related to pregnancy, menopause, or thyroid issues), stress, nutritional deficiencies, and certain medical conditions or medications. Additionally, genetic factors can play a role, leading to conditions like female pattern baldness.


To address hair thinning, it is important to identify the underlying cause. Here are some general steps and treatments that may help:


1. **Nutrition:** Ensure a balanced diet rich in essential vitamins and minerals, particularly iron, vitamin D, and biotin, which are crucial for hair health.
2. **Stress Management:** Techniques such as yoga, meditation, and regular physical activity can help reduce stress, which in turn may reduce hair loss.
3. **Medical Treatment:** Consult a healthcare provider to check for any underlying medical conditions. Treatments may include topical solutions like minoxidil, hormone therapy, or other medications as prescribed by a doctor.
4. **Gentle Hair Care:** Avoid harsh hair treatments, minimize heat styling, and use gentle hair care products to reduce additional stress on your hair.

For more detailed information on causes and solutions, you can refer to these resources:

1. [WebMD on Women's Hair Loss](#)

ChatGPT

 I am having a lot of hair fall/hair thinning. What can be the possible causes and what can I do about it?

 Hair fall and thinning can be concerning, but it's a common issue with various potential causes. Understanding the underlying reasons can help you take the appropriate steps to manage or treat the problem. Here are some common causes and what you can do about them:

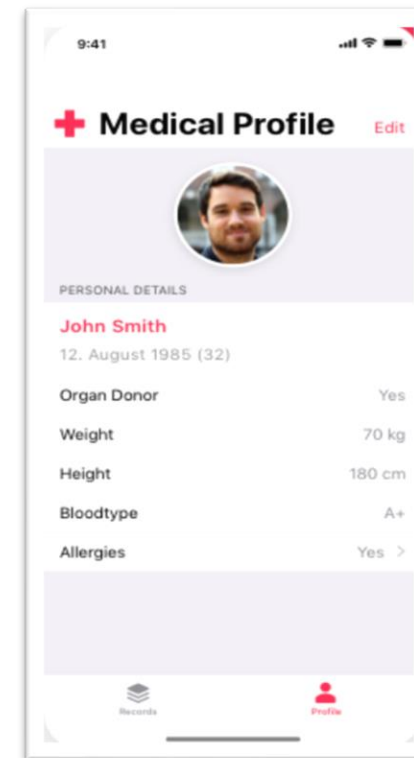
1. **Genetics (Androgenetic Alopecia)**
 - **Cause:** Hereditary hair thinning or baldness, often known as male or female pattern baldness.
 - **What to Do:**
 - **Consult a dermatologist:** Early intervention can slow down the process.
 - **Medications:** Finasteride (for men) and minoxidil are common treatments.
 - **Hair Transplant:** In advanced cases, surgical options might be considered.
2. **Hormonal Changes**
 - **Cause:** Pregnancy, menopause, thyroid problems, and hormonal imbalances can lead to hair loss.
 - **What to Do:**
 - **Hormonal Therapy:** If due to menopause or thyroid issues, hormone replacement or regulation might help.
 - **Diet and Lifestyle:** Maintain a balanced diet rich in essential vitamins and minerals.
 - **Consult a doctor:** Blood tests can help diagnose any underlying hormonal issues.
3. **Nutritional Deficiencies**
 - **Cause:** Lack of essential nutrients like iron, zinc, vitamin D, or proteins can lead to hair thinning.
 - **What to Do:**
 - **Balanced Diet:** Incorporate leafy greens, nuts, seeds, eggs, and lean meats into your diet.
 - **Supplements:** Consider taking supplements for ↓ deficiencies, but only after consulting a healthcare

Both Meno.ai and ChatGPT provide relevant and consistent answers

Metric	Performance
Relevancy	Both provide relevant answers
Completeness	Both complete; ChatGPT verbose
Consistency	Both consistent
Accuracy	Both could improve

Exciting features coming up in the future

- User profile/authentication and incorporate history
- Health data integration from devices such as wearables and biosensors
- Symptom logging & management
- Voice support in addition to text



Conclusion

Meno.ai – age with pride and joy!

- It is time to bridge the knowledge gap
- Meno.ai – AI enabled wellness advisor offering science backed answers on healthy aging
- Empower women with proactive identification, early intervention and personalized advice



Happy to talk more and answer questions

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Appendix