

V I O M E

Final Research Report

Jieqiong Ding, Abhay Sawhney, Maggie Zhang, Julie Wang

Executive summary	3
Research objectives	5
Methodology	6
Participant profiles	8
Findings	9
Criteria for understanding issue priority	9
#1 Understanding	10
#2 Actionability	14
#3 Ease of navigation	16
#4 Satisfaction and engagement	18
#5 Future enhancements	19
Additional analysis: Facebook Community Posts	25
#1 Understanding	25
#2 Actionability	25
#3 Ease of navigation	25
#4 Satisfaction and engagement	26
#5 Future enhancements	26
Recommendations	27
Short-term recommendations	27
Long-term recommendations	28
Research limitations and areas for improvement	29
Appendix	30
Appendix A: Task scenarios	30
Appendix B: Task lists	31
New Users	31
Returning Users	33
Appendix C: Survey data	36
Appendix D: Task Time	39
Appendix E: Issues list	40
Appendix F: Note-taking form	41
Appendix G: Affinity Mapping	42

Executive summary

This usability study aimed to evaluate the updated Viome app with a focus on **understanding, actionability, ease of navigation, and overall user satisfaction**.

Our goal was to assess how effectively users could interpret their **health scores** and **recommendations**, navigate the app's updated structure, and engage with features that support their health goals.

We conducted remote and in-person usability tests with 8 participants across four key user groups by categorizing the users across two different dimensions:

1. Objective
 - a. **Health Optimizers** – Users proactively managing their wellness.
 - b. **Health Problem Solvers** – Users seeking specific health solutions.
2. Experience
 - a. **New Users** – Users unfamiliar with Viome's platform.
 - b. **Returning Users** – Users who have experience with previous version of the app (have completed a Viome health test and used the app for at least 1 month).

Participants completed tasks related to understanding their health scores, exploring their nutrition recommendations, and interacting with new features. We measured their experiences through task success rates, Likert scale ratings, and qualitative feedback.

Overall Findings

Returning users found the new app significantly easier to understand than new users.

- Understanding scores were **6.46/7 for returning users** and **5.07/7 for new users**, a 27.48% difference.
- While existing users adapted well, new users struggled with terminology and health score explanations, impacting their confidence in the insights.
- We recognize that the difference in score is likely due to the fact that returning users already have experience with the language that Viome uses. However, even returning users raised concerns about confusing UI labels and health terminology used.

- Recommendation: Enhance onboarding and tooltips to better guide new users through health scores and recommendations.

Actionability was a key gap, with new users struggling more than returning users.

- Actionability scores were **6.67/7 for returning users** but **only 5.08/7 for new users**, a 31.22% difference.
- New users found it difficult to translate recommendations into concrete steps, limiting their ability to act on insights. We assume that this is likely because they have not had the opportunity to take action and find workaround solutions in their daily lives, whereas returning users shared examples of how they apply Viome's recommendations (i.e, using AI services to develop meal plans based on their list of superfoods).
- Recommendation: Add clearer next steps, habit-tracking tools, and explanations for suggested dietary changes to improve usability.

New users found the app's navigation more difficult than returning users.

- Ease of navigation scores were **6.00/7 for returning users** vs. **4.88/7 for new users**, a 22.19% difference.
- While the redesign improved clarity for returning users, new users struggled to find key insights due to complex layouts and hidden features.
- Recommendation: Improve menu hierarchy, feature discoverability, and guided walkthroughs for smoother first-time navigation.

Satisfaction levels were closer between user groups but still showed a gap.

- Satisfaction was **5.67/7 for returning users** and **5.25/7 for new users**, an 8.22% difference.
- Both user groups found value in the app's insights and overall trust in Viome's guidance.
- Returning users may be predisposed to having a higher satisfaction rating since they have already bought into the service.
- Recommendation: Focus on refining engagement features, interactive elements, and personalization to improve satisfaction further.

Overall, returning users rated the app 22.28% higher than new users.

- The overall average rating was **6.20/7 for returning users** vs. **5.07/7 for new users**, a 22.28% gap.

- While returning users recognized improvements, new users faced a steeper learning curve, indicating a need for better onboarding and clearer guidance. These improvements may help improve new user retention.
- Recommendation: Implement a structured first-time user experience with progressive disclosures and contextual tips to bridge the gap.

Research objectives

Evaluate user understanding:

- Assess how well users can interpret their health scores and recommendations.
- Determine if users understand the science behind Viome's results and trust the sources of information.

Assess actionability of Viome's health recommendations:

- Determine if users feel confident acting on their recommendations and making lifestyle changes.
- Identify barriers that prevent users from following the suggested health recommendations.

Measure ease of navigation:

- Test how intuitively users can navigate the app's updated structure.
- Identify any pain points in finding key health and nutrition insights.

Assess user satisfaction & engagement:

- Gauge overall user sentiment toward the new Viome app.
- Compare new vs. returning users to understand differences in experience.

Identify opportunities for future feature development:

- Gauge user expectations for future iterations of the app.
- Provide data-driven recommendations for defining the app's product roadmap in order to increase user retention.

Methodology

A total of **eight** participants participated in our study. New users were recruited through word of mouth, whereas returning users were recruited with the help of Viome's Community Director, who reached out to existing users who have previously expressed interest in being a part of research opportunities.

All users were screened through a survey via Google Forms, which ensured that participants met our baseline criteria of being **at least 25 years old** and **full-time employed**. This screening criteria helped us ensure that test participants are generally representative of Viome's target audience of working professionals with the disposable income to purchase their product.

Users were also asked about whether or not they have any existing health conditions so they could be categorized into the most realistic user objective based on their current experience. Due to HIPAA compliance policies and the fact that the new version of the app was not ready for users to test with their own health data, users received a tailored scenario based on their objective grouping to provide users with more context and motivation for task completion.

Since Viome's users are spread out all across the country, we decided to standardize testing with returning users using the Figma prototype of the app due to technical and physical limitations. Although the TestFlight version of the app was more similar to the final version that would be launched, we wanted to ensure that we still tested with returning users in a timely manner. For new users, we decided to use the TestFlight version of the app on an actual mobile device because we had more control and ability over finding participants in the Seattle area.

Below is the complete testing schedule:

User experience / ID	User objective	Date	Testing format	Prototype tested
Returning / R1	Optimizer	2/21/25	Online	Figma
Returning / R2	Optimizer	2/22/25	Online	Figma
Returning / R3	Problem solver	2/25/25	Online	Figma
Returning / R4	Optimizer	2/27/25	Online	Figma
New / N1	Optimizer	3/1/25	Online*	Figma
New / N2	Optimizer	3/1/25	In-person	TestFlight
New / N3	Problem solver	3/2/25	In-person	TestFlight
New / N4	Optimizer	3/3/25	In-person	TestFlight

**Planned to test in-person but needed to test online due to unforeseen circumstances*

The sessions were moderated and 60 minutes each in length, including a pre-test survey, post-task questions, and a post-test survey. New users also received an additional introduction with more background information on Viome and were asked a baseline understanding question to confirm their knowledge before beginning the tasks.

Participant profiles

After users passed the screener, we collected information on their demographics as well as their past experiences with using health apps/services. Below are the profiles of the users:

User ID	Age group	Gender	Experience with Viome	Previous health services used	Main health goals
R1	25–34	F	Intermediate (somewhat familiar with Viome)	Smartwatches & fitness trackers, Smart ECG & blood pressure monitors)	General wellness, Improving digestion
R2	55–64	F	Intermediate (somewhat familiar with Viome)	Genetic testing kits, Smartwatches & fitness trackers, Digital health services	General wellness, Improving digestion
R3	25–34	F	Intermediate (somewhat familiar with Viome)	None	General wellness, Improving digestion, Boosting immunity
R4	25–34	M	Intermediate (somewhat familiar with Viome)	Personalized vitamins, Genetic testing kits, Smartwatches & fitness trackers	General wellness, Managing a health condition
N1	25–34	F	None	None	General wellness, Improving digestion, Boosting immunity
N2	25–34	F	None	None	General wellness, Boosting immunity
N3	25–34	F	None	Smartwatches & fitness trackers, Digital health services	General wellness, Managing a health condition
N4	25–34	F	None	Smartwatches & fitness trackers	General wellness, Boosting immunity, Managing a health condition

Findings

Criteria for understanding issue priority

To develop an objective measure for evaluating issue priority, we primarily considered quantitative data such as task time to completion, number of user quotes, and number of users that provided feedback on the issue.

First, we calculated average task time to completion across all users for each task:

Average task time to completion* (in seconds)				
	New	Returning	% difference	Avg across all users
Find how to improve lowest score	29.33	16.00	-45.5%	22.67
Find factors that contribute to high score	9.00	46.00	411.1%	27.50
Find gut microbiome status	74.00	55.75	-24.7%	64.88
Find foods to eliminate	5.00	14.00	180.0%	9.50
Find foods to incorporate	10.00	6.25	-37.5%	8.13
Find info on specific food	5.00	8.25	65.0%	6.63

**incomplete measure; times missing for one new user due to technical limitations*

Next, we found the overall range of the task time (highest average task time minus lowest average task time) and divided this value by three to find the lower and upper limit for each category of issue priority (low, medium, or high). This resulted in the following ranges:

Issue priority key by time for tasks	
Low	<26.04s
Medium	26.05 – 45.46s
High	45.47 – 64.88s

For the core tasks, we primarily measured priority based on the ranges identified above. The number of user quotes was also taken into consideration.

For issues mentioned that were not a part of the core tasks, we used the number of user quotes as our primary metric for measuring issue priority, but we also considered the number of users who mentioned the issue:

Issue priority key by user mentions		
	# of user quotes	# of users mentioned
Low	<4	1-2
Medium	5-8	3-5
High	9+	6-8

#1 Understanding

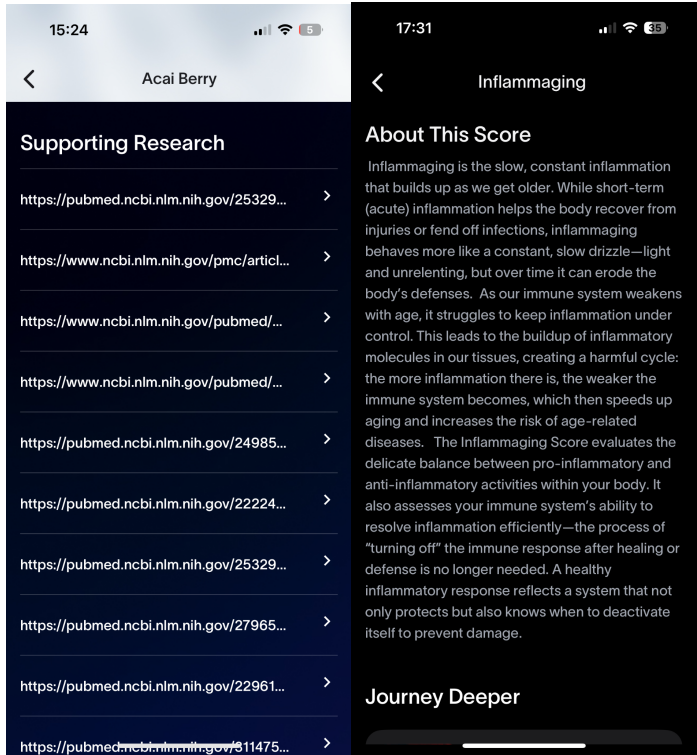
Generally, new users have greater trouble understanding the scores compared to returning users. On average, returning users gave a score of **6.46/7**, while new users gave a score of **5.07/7**. The understanding of returning users is 27.48% higher than new users. Their ease of understanding and trust of information was measured by the following questions:

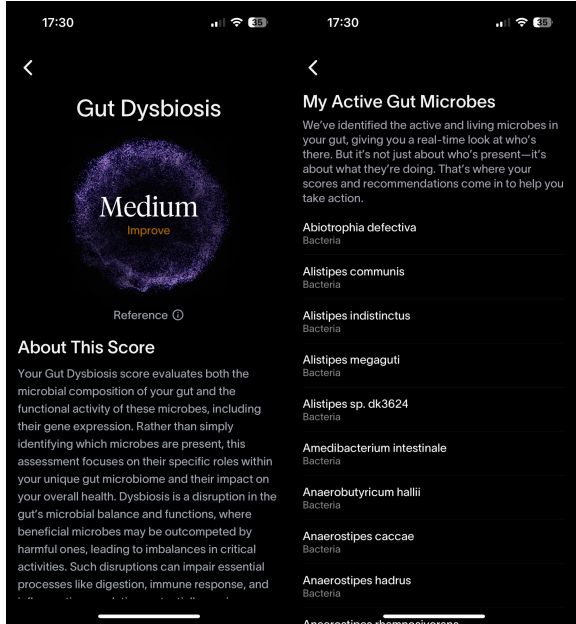
- (Post-task) On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand the health recommendations based on your test results?
- (Post-task) On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand this score?
- (Post-task) On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand the microbiome scores?
- (Post-task) On a scale of 1 to 7 (1 being not at all and 7 being a lot), how much do you trust this information?
- (Post-test) How understandable do you think the health recommendations are?
- (Post-test) How trustworthy do you think the health recommendations are?

Apart from questions above, returning users' understanding was also measured by an additional question in the pre-test questionnaire:

- (Pre-test) How confident are you in Viome's recommendations?

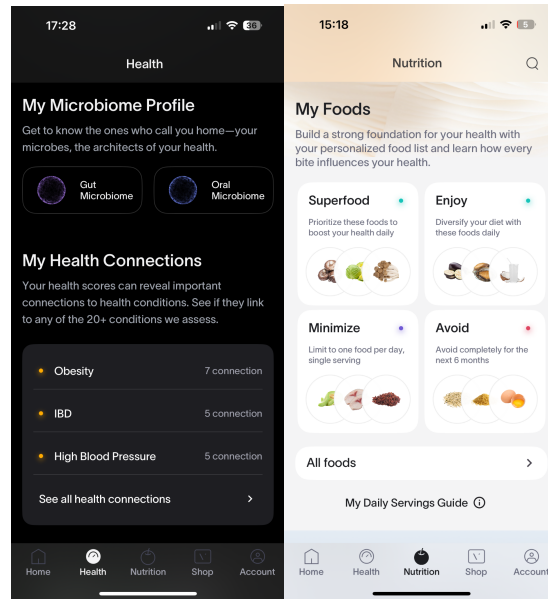
Below are the main issues that we found related to understanding:

Finding	Users were overwhelmed by the information overload.
Priority	High
Data	Overall, 9 user quotes from 7 users mentioned information overload.
Quotes	<p><i>"oh there's a lot i didn't expect there to be a lot...it's just like a continuous scroll" - N3</i></p> <p><i>"I don't need to see so much supporting research because I'm not a professional... I just want to see something intuitive" - N4</i></p> <p><i>"I think the information is a little overwhelming because I really want to find an overview here but instead I find a lot of cards and I have to scroll, scroll, scroll" - N4</i></p> <p><i>"It's a little bit confusing to consume all this information" - R2</i></p>
Recommendation	<ul style="list-style-type: none"> ● Avoid long paragraphs. Breaking up paragraphs into bullet points and lists. ● Prioritize more actionable recommendations than scientific reasoning.
Screenshots	

Finding	Users have difficulty understanding jargon and scientific terms.
Priority	High
Data	6 of 8 participants expressed difficulty understanding jargons and scientific terms, which made them confused about the scores and recommendations.
Quotes	<p><i>"The vocabulary in the last sentence was confusing. If the word was clickable that would help clarify things." – N1</i></p> <p><i>"I wish there were hyperlinks for the scientific terms, rather than having a long paragraph to read through." – N2</i></p> <p><i>"Vocabulary is hard to understand – there is a lot jargon" – N4</i></p> <p><i>"I wish I kinda... I wouldn't mind a little info tab right here next to the immune regulator to tell me what exactly is an immune regulator." – R4</i></p> <p><i>"I'm not sure what the digestion optimizer is, and it doesn't seem like it deserves space if supplements are already recommended." – R1</i></p>
Recommendation	<ul style="list-style-type: none"> • Avoid unnecessary jargon. Speak the user's language. • Add hyperlinks on important terms so that users can refer to them when necessary.
Screenshots	

Finding	Users have difficulty understanding Viome languages.
Priority	High
Data	7 of 8 users expressed confusion over Viome languages, including: superfood, attention vs maintain, contributing scores
Quotes	<p><i>"I'm caught between Superfoods and Enjoy category - Superfoods seemed like must haves and Enjoy foods seemed like suggested foods I normally wouldn't have." - N1</i></p> <p><i>"I wonder why there's 16 [contributing scores]... there's a lot of like, like overlaying factors, then they're all very interconnected. So I wonder like how do I keep track of everything and like what these scores" - N3</i></p> <p><i>"I'm confused about the contributing scores - what will that do? I already opened a page with a score [but now there are more contributing scores]" - N4</i></p> <p><i>"'Attention' language is confusing for me in terms of what to do next. I like the 'Journey Deeper' section especially if it includes something I can do." - R1</i></p> <p><i>"The 'see all health connections' button... I don't even know what 'connections' means—connections to what?" - R2</i></p>
Recommendation	<ul style="list-style-type: none"> • Keep the UI labels consistent in parts of speech (e.g. superfood, booster, blocker, or prioritize, enjoy, avoid) • Clearly explain the meaning of section titles like "health connection" or "contributing scores." Keep them simple and intuitive

Screenshots



#2 Actionability

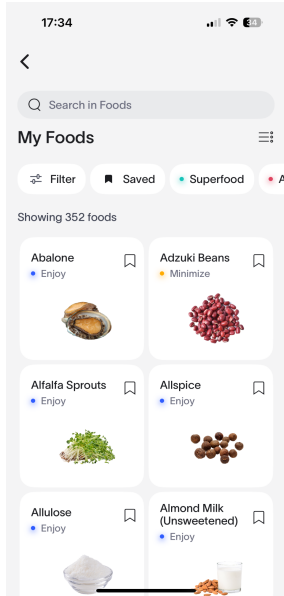
Overall, users' actionability of nutrition recommendations were affected by their personal preferences of foods and back-up evidence of recommendations. We found:

- **Food-related recommendations** were the most actionable, especially those with:
 - Clear explanations of why a food should be avoided or consumed.
 - Tips on incorporating foods into meals.
 - Bookmarking features to save foods for later reference.
- **Eliminating foods was more difficult than adding foods**, especially for items users enjoyed.

Generally, returning users have higher level of actionability compared to new users. On average, returning users gave a score of **6.67/7**, which is about 31.22% higher than the average score **5.08/7** of new users. Their actionability was measured by the following questions:

- (Post-task) On a scale from 1 to 7 (1 being not likely at all and 7 being very likely), how likely are you to cut out these foods from your diet?
- (Post-task) On a scale from 1 to 7 (1 being not likely at all and 7 being very likely), how likely are you to add these foods from your diet? Please explain the reasoning for your score.
- (Post-test) How likely are you to follow the suggested health recommendations?

Below is the main issue that we found related to actionability:

Finding	Users got lost in the whole list of recommendations.
Priority	High
Data	7 of 8 users mentioned it would be hard to follow all of the suggestions because of food access, personal preference, and health goal severity.
Quotes	<p><i>"I will take their advice, but if it's a food I really like, it's hard for me to just cut it from my diet" – N4</i></p> <p><i>"Coconut meat seemed interesting but didn't seem like something I would have ready access to." – N1</i></p> <p><i>"[I] wouldn't actively buy the [avoid] ingredients, but if offered I would still eat ingredients. Realistically speaking I love the food too much." – N1</i></p> <p><i>"If the avoid food is connected with my primary health goal like sleeping issues, I would cut it off even if it's my favorite food." – N2</i></p>
Recommendation	<ul style="list-style-type: none"> ● Highlight the connected health goals of each recommended food. ● Present users with prioritization of food instead of presenting a plain list.
Screenshots	 <p>The screenshot shows a mobile application interface for food recommendations. At the top, there's a status bar with the time 17:34 and signal indicators. Below is a search bar labeled 'Search in Foods'. The main section is titled 'My Foods' and includes a 'Filter' button, a 'Saved' status, and a 'Superfood' tag. It indicates 'Showing 352 foods'. A grid of food items is displayed, each with an icon, a name, and a recommendation level (e.g., 'Enjoy', 'Minimize'). The items shown are Abalone, Adzuki Beans, Alfalfa Sprouts, Allspice, Allulose, and Almond Milk (Unsweetened).</p>

#3 Ease of navigation

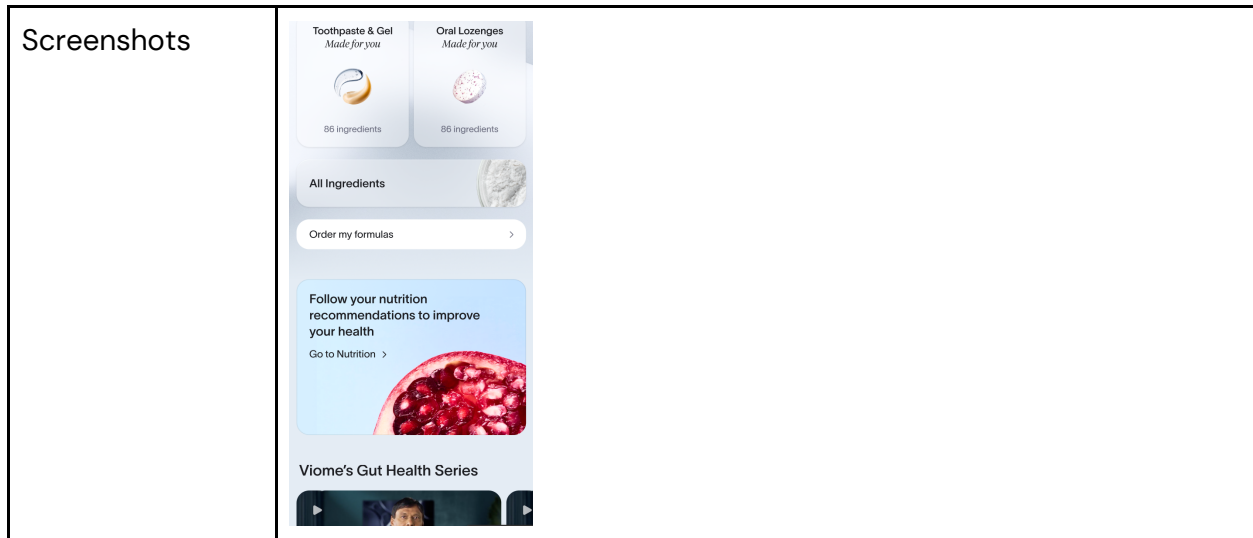
Overall, returning users appreciated the cleaner, more compact layout on the home page, but users across both new and returning groups found there was too much scrolling and too many clicks were required to find key information. Some of the overarching issues were:

- **Searchability Issues:** Two users mentioned that they wanted a search bar to find foods and health scores more easily.
- **Hierarchy & Organization:** Users appreciated the logical flow in some areas but found certain sections overwhelming (e.g., health overview cards).
- **Too Many Clicks to Find Information:** Finding gut microbiome scores and other test results required navigating through multiple layers, frustrating some users.

After the study, new and returning users rated the Viome app's ease of use an average of **5.5/7**, with individual ratings ranging from **4 to 7**.

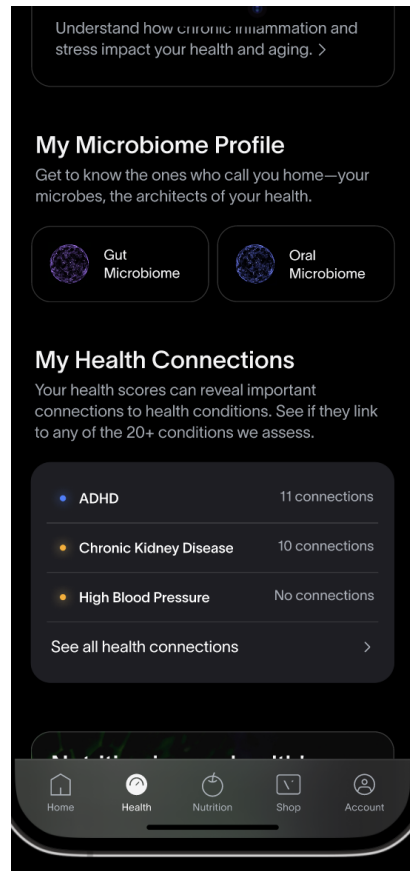
Below are more details about each navigation issue identified:

Finding	Users were overwhelmed by the length of the home page
Priority	Medium
Data	5 user quotes were mentioned across 4 distinct users
Quotes	<i>"There's just a lot happening on this page—I wasn't sure where to start or what was most important."</i> – N4
Recommendation	<ul style="list-style-type: none">● Clear starting point/onboarding flow for new users● Easier search experience



Finding	Users struggled to find gut microbiome test results.
Priority	High
Data	3 out of 8 users (37.5%) expressed confusion in finding their gut microbiome scores. Highest task time to completion out of all tasks (on average, 64.88 seconds)
Quotes	<i>"It took me a minute to find my gut health score, but once I saw the color-coded sections, it made sense."</i> – N4 <i>"I felt lost, [the gut microbiome information] was really hidden."</i> – R4
Recommendation	<ul style="list-style-type: none">• Easier navigation to gut microbiome information from home page for users who have lower gut health scores• Surface personal results sooner/more prominently in the app experience

Screenshots



#4 Satisfaction and engagement

Overall, satisfaction scores for the new Viome mobile app were high. On average, returning users gave a score of **5.67/7**. Their satisfaction was measured by the following questions:

- (Pre-test) Overall, how satisfied are you with the Viome app?
- (Post-test) How do you agree with the following statement?: Viome app's capabilities meet my requirements.
- (Post-test) Compared to the previous version, how would you rate the new Viome app?

On average, new users gave a score of **5.25/7**, which is about 8.2% lower than returning users. Their satisfaction was measured only after testing the app, using the following question:

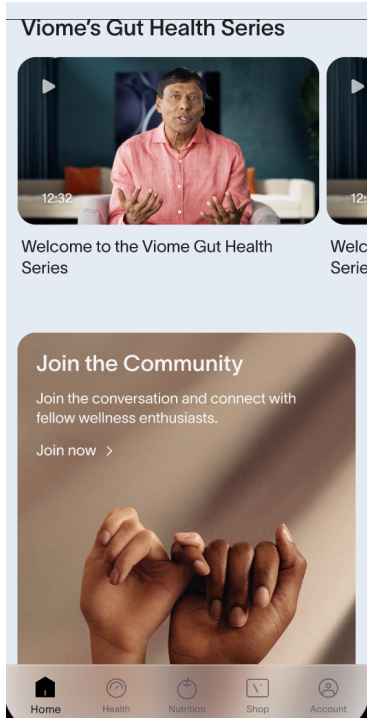
- (Post-test) How do you agree with the following statement?: Viome app's capabilities meet my requirements.

In measuring this area, we also found that many design choices contributed to user satisfaction. Some of these are:

- **Aesthetic improvements from the old version of the app are exciting for new users.** 3 out of 4 (75%) of new users mentioned that the new version of the app is more compelling and appealing to look at. These users specifically called out that they found visual aides, such as color-coding of text, to be helpful.
- **Professionalism builds trust.** We received 5 user quotes from 3 different users, both new and returning, who commented that they trust Viome. One new user commented, *"I trust this information because it's very specific data coming from my results and I think it's professionally organized too."*

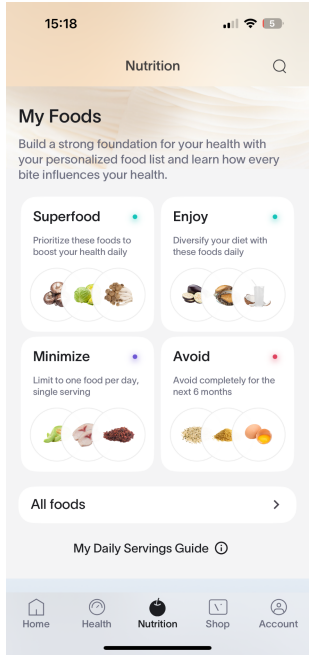
Below is the main issue that we found related to satisfaction and engagement:

Finding	Some educational content is perceived as "promotional," which deters new users from engagement
Priority	Low
Data	3 out of 4 new users (75%) mentioned that the videos embedded in the app would be the feature they expect to engage with least, and don't view them as key resources
Quotes	<i>"I would spend the least time watching the series of lectures/videos "because I'm buying this service to help me bridge the gap [...] I'm just too lazy to watch these"" - N4</i> <i>"I'm interested in the my health overview more than the advertisements." - N2</i> <i>"I wonder how the videos would be useful." -N3</i>

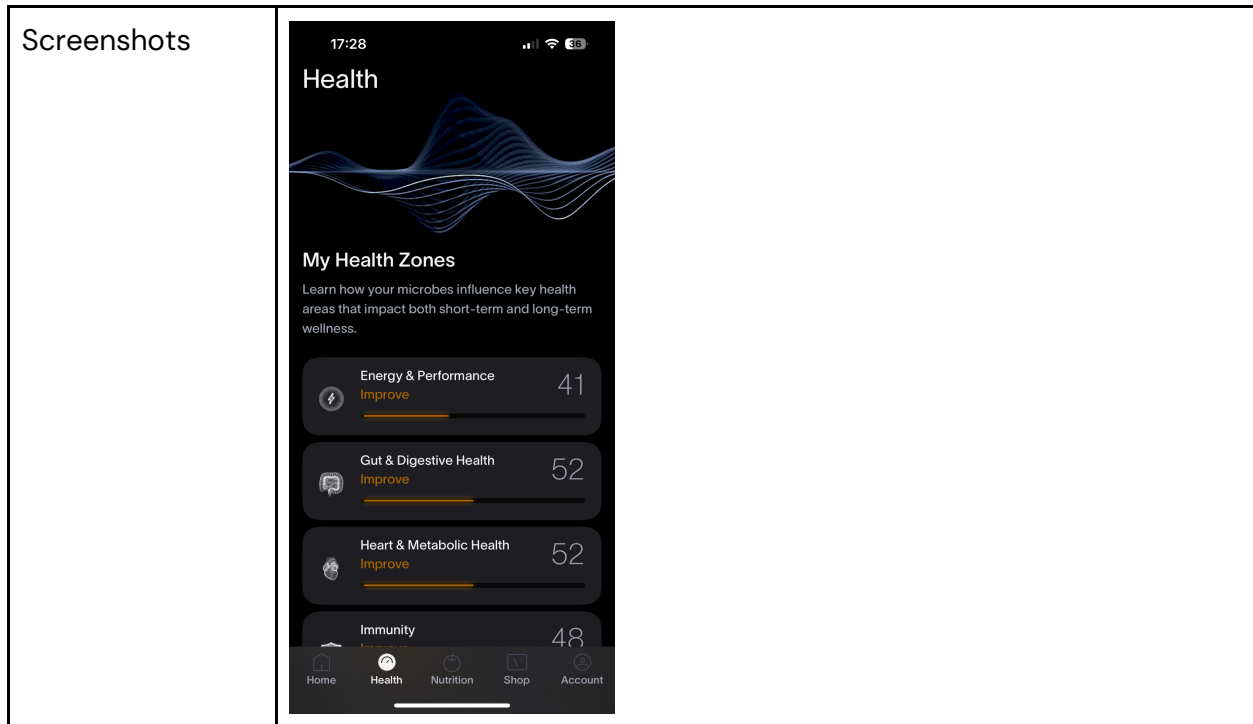
Recommendation	<ul style="list-style-type: none"> • Deprioritize video content from prime digital real estate on the home page, but continue to host videos in the “Health” page for those who want to dive deeper • Leverage more Subject Matter Experts (SMEs) in video content to establish scientific authority and develop trust among users; shift perception of video content from “promotional” to “resourceful”
Screenshots	

#5 Future enhancements

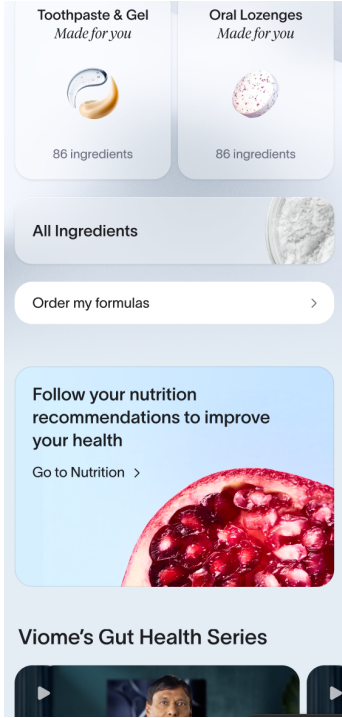
For feedback on future enhancements, users were asked to think aloud about what they could expect to see more from certain features in the app, including the “My Health Connections” and “My Daily Servings Guide”. Below are the suggestions we received:

Finding	Users need for better meal planning, recipe, and shopping support
Priority	High
Data	<p>11 user quotes were mentioned from 7 out of 8 users (87.5%) indicating a desire for a personalized meal guide or food plan based on user's recommended and saved foods</p> <p>3 Facebook comments requested the same feature</p>
Quotes	<p><i>"Would love to see sample recommendations, as it's a lot of math to figure out in planning our day without the help of ChatGPT" – R1</i></p> <p><i>"If Viome could add recommended brands for things like coconut yogurt or cocoa, that would take the guesswork out of grocery shopping." – R3</i></p>
Recommendation	<ul style="list-style-type: none"> ● Include specific details in the daily serving guide, such as amounts per food category, like a modernized food pyramid. ● Suggested meal plans based on test results. ● Smart meal generator based on available ingredients (Viome GPT idea). ● Auto-generated grocery lists or brand recommendations.
Screenshots	

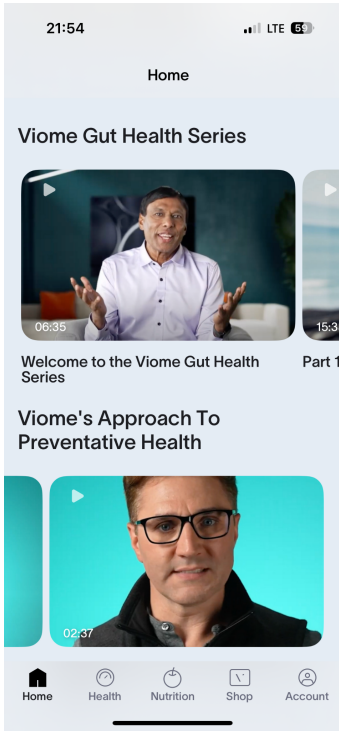
Finding	Users wanted to track their improvement over time
Priority	Medium
Data	<p>Overall, 11 user quotes were mentioned on the topic of tracking health over time.</p> <p>2 out of 8 (25%) participants commented on wanting to track their scores over time and make sense of the connections between the scores and lifestyle choices</p> <p>2 out of 4 returning users and 1 new user (37.5%) indicated a desire to see correlation or causation after taking advice for food recommendations or capsules</p>
Quotes	<p><i>"[I want to see] how my score improves after taking the advice from the app" - N4</i></p> <p><i>"For the capsules, because it's expensive, I would like to see if they really worked, based on the lab tests" - N4</i></p> <p><i>"I wonder why there's 16 [contributing scores]... there's a lot of like, like overlaying factors, then they're all very interconnected. So I wonder like how do I keep track of everything and like what these scores" - N3</i></p> <p><i>"Like if they're showing me the graph, I'm kind of curious, like as a data visualization, like what am I looking at exactly? The scale, the change over time? And that's something that was a little confusing to me..." - N3</i></p>
Recommendation	<ul style="list-style-type: none"> • Option to see crowd-sourced data on improvements after taking supplements or changing diet • Options to track self-reported health data after taking supplements or changing diet



Finding	Users wanted to customize their in-app experience or annotate their data
Priority	Low
Data	2 out of 8 (25%) participants and 1 Facebook post commented on the desire to annotate their data or customize their in-app experience.
Quotes	<p><i>"Is there a way to go in and edit my info after receiving results? I must have included that I'm gluten sensitive but results are showing me gluten foods to enjoy." - Facebook User</i></p> <p><i>"It'd be cool if the user could choose some things on their homepage—like take some of the extra information off if they don't really look at it." - R4</i></p>
Recommendation	<ul style="list-style-type: none">• Option to customize the homepage (hide sections users don't use).• Option to customize food recommendations based on lifestyle requirements.• More emphasis on progress tracking (showing health improvements over time).

Screenshots	
-------------	---

Finding	Users wanted to get more information at their own pace and in bite-sized chunks to develop trust in their results
Priority	Low
Data	2 out of 8 (25%) participants commented on wanting to track their scores over time and make sense of the connections between the scores and lifestyle choices
Quotes	<p><i>"So maybe they could be like something, a label there to show me that these are like recommendations or boosters and blockers." – N3</i></p> <p><i>"I suggest a "Health Tip of the Day" to bring users back to the app more often." – R1</i></p> <p><i>"I rely on real secondhand experience (i.e. recommendations from friends or social media) in my decision to take supplements" – N4</i></p> <p><i>"I'm not concerned about the scientific backup for vitamins and foods – I already trust Viome, I just want to know what I can do" – N2</i></p> <p><i>"I would look up on Google to confirm the accuracy of the</i></p>

	<i>information.” – N1</i>
Recommendation	<ul style="list-style-type: none">• Clickable glossary terms for scientific jargon instead of long paragraphs.• More engaging educational content, but in bite-sized formats (users didn’t want long videos).• Health Tip of the Day feature to bring users back into the app.
Screenshots	 A screenshot of a mobile application interface. At the top, the status bar shows the time 21:54, LTE signal, and battery level. Below the status bar is a 'Home' header. The main content area features a section titled 'Viome Gut Health Series'. Under this title, there are two video thumbnails. The first thumbnail shows a man in a white shirt with his hands raised, with a play button icon and a duration of 06:35. Below it, the text reads 'Welcome to the Viome Gut Health Series' and 'Part 1'. The second thumbnail is partially visible on the right. Below these, there is another section titled 'Viome's Approach To Preventative Health' with a video thumbnail showing a man with glasses, with a play button icon and a duration of 02:37. At the bottom, there is a navigation bar with five icons: Home (house icon), Health (heart icon), Nutrition (apple icon), Shop (shopping bag icon), and Account (person icon).

Additional analysis: Facebook Community Posts

In addition to user testing, we conducted an additional analysis of the Viome Facebook Community group. We looked at posts over the course of 30 days from February 6 to March 7, 2025 and collected 22 usability-related comments. These comments were then grouped by the same themes we used in our user testing, via an [affinity diagram](#), to help us understand the prevalence of issues mentioned.

The following data can be used to triangulate the findings from user testing and validate, where applicable, the issues that were mentioned by test participants. Additionally, because the Facebook community is intended to be more of a help forum, we recognize that there will be additional issues that surface which may not have been found during our testing:

#1 Understanding

Half (50%) of the comments from the past 30 days were related to requesting help understanding users' health recommendations:

- Confusion around **measurement** of supplements and **serving size recommendations** (7 comments)
 - Although this was not mentioned in user testing, this is the number one mentioned topic and should be addressed as a high priority issue to improve user understanding.
- Improper **labelling** and/or general difficulty understanding health scores (3 comments)

#2 Actionability

About 23% of the comments from the past 30 days were related to requesting help with taking action:

- Need help on **meal plans** based on food recommendations (3 comments)
 - This validates the comments we heard from test participants who also highlighted a need for meal plan guidance.
- Need help **taking action on more niche data/recommendations** (2 comments)

#3 Ease of navigation

About 9% of the comments from the past 30 days were related to requesting help with taking action:

- Need help **editing personal information** for tailored recommendations (1 comment)
- Need help on **finding food serving recommendations** (1 comment)

#4 Satisfaction and engagement

About 14% of the comments from the past 30 days were related to requesting a direct help contact:

- Trouble finding a direct number to **talk to “real person”** (3 comments)

#5 Future enhancements

Only one comment (4% of all comments) from the past 30 days was related to a future feature suggestion:

- Requesting to see **raw data** for optimal and non-optimal results (1 comment)

Recommendations

Short-term recommendations

1. Utilize progressive disclosure to reduce cognitive overload (**high** severity, **all** users)

- Break down long paragraphs into concise bullet points.
- Simplify scientific jargon and use simple and intuitive language.
- Add hyperlinks of popups on important terms so users can refer to tooltips or quick explanations as necessary.

2. Improve home page navigation (**medium** severity, **all** users)

- Reduce scrolling by reorganizing sections and introducing a clear starting point for new users.
- Improve hierarchy to prioritize key health scores and recommendations.
- Introduce a search bar to allow users to quickly find foods and health information.

3. Enhance actionability of recommendations (**medium** severity, **new** users)

- Highlight the connected health goals of each recommended food to improve prioritization.
- Present more important and accessible food options in the beginning of the list.

4. Adjust promotional content placement (**low** severity, **new** users)

- Deprioritize video content on the home page to prevent distractions from core health insights. Continue to host videos in the “Health” page for those who want to dive deeper.
- Leverage more Subject Matter Experts (SMEs) in video content to establish scientific authority and develop trust among users; shift perception of video content from “promotional” to “resourceful”
- Link to reputable third-party resources to boost trust.

Long-term recommendations

1. Integrated food planning (**high** severity, **all** users)

- Provide users with specific serving size recommendations tailored to their health goals.
- Introduce personalized food plans or meal recommendations based on test results.
- Introduce auto-generated grocery lists or brand recommendations.
- Allow users to track health score improvements over time.

2. Personalized home page experience (**medium** severity, **all** users)

- Adapt home page content based on customer experience level and engagement telemetry.
- Allow users to choose what they want to see first when they open the app.

3. Stronger connections between health scores & supplements (**medium** severity, **all** users)

- Show correlation or causation relationships between supplements and specific health fixes.
- Allow users to track the impact of supplements on their health over time.
- Show aggregated community insights on how dietary changes have affected others.
 - Examples:
 - [TummyTrials: A Feasibility Study of Using Self-Experimentation to Detect Individualized Food Triggers](#)
 - [Galileo: Citizen-led Experimentation Using a Social Computing System](#)
 - [Crowdsourcing health discoveries : from anecdotes to aggregated self-experiments](#)

Research limitations and areas for improvement

As with any study, there are limitations to the research conducted and areas of improvement for future iterations.

Recruitment Strategy. Due to time and logistical constraints with a team of 4 student researchers over a month-long period, we were able to dedicate time for 1-hour interviews for 8 total participants. Some limitations we identified were:

1. Only 2 participants in the “Health Problem Solver” compared to 4 participants in the “Health Optimizer” categories.
2. All returning users were “Intermediate” level familiarity with Viome.
3. All users except one were in the 25–34 years old age category.

To improve the statistical significance of our research, it would have been helpful to:

1. Recruit similar numbers of participants in each category.
2. Recruit for additional stratification of returning users into “Beginner”, “Intermediate”, and “Advanced” categories with screener questions explicitly asking for time using the Viome app.
3. Recruit additional participants in different age categories.
4. Depending on business goals, consider recruiting outside of specified dimensions for more exploratory research.

Testing Content. Due to the time limitation of 1 hour (sometimes with technical difficulties!) and lack of access to real customer health data due to HIPAA limitations, we lacked the ability to ask more probing questions and glean insight from real reactions to personal data. Some limitations we identified include:

1. We would have liked to understand why certain users didn’t follow the norm, i.e. the one user who thought the videos and “Stories” feature would be more useful.
2. It is unclear whether using real customer data would impact usability.
3. It is unclear whether the new version of the app improved upon key business metrics from the old app without comparing the two.

To improve the comprehensiveness of the results and for deeper insight, we recommend:

1. Ask additional follow up questions specifically for anomalous answers.
2. Align research goals with business objectives through tracking additional dimensions and/or performing an A/B test of the new vs. old version of the app.
3. If time allows, perform the study with participants’ actual health data.

Appendix

Appendix A: Task scenarios

Based on health motivations, participants were categorized and required to keep different scenarios in mind during the session:

- *Health Optimizer*

For the purpose of our study today, imagine you have no major health issues, and are interested in learning about the main factors that contribute to your health. Your goal is to understand more about maintaining your current immunity through actionable ways.

- *Health Problem Solver*

For the purpose of our study today, imagine you are an individual who suffers from chronic gut issues, and are interested in learning more about the main factors and foods that contribute to your symptoms. Your goal is to improve your symptoms through actionable ways.

Appendix B: Task lists

For familiarity with Viome, new users and returning users would receive slightly different tasks.

New Users

Home Page

Task 1: Browse the home page and select a section on this page that you're most interested in learning about. (*Usability & Navigation; Satisfaction & Engagement*)

- How do you feel about the home page layout overall?
- What made you want to select this particular section?
- What features, if any, do you find interesting and want to spend more time on?
- What features, if any, do you think you'd spend the least time using?
- On a scale of 1 to 7 (1 being very difficult and 7 being very easy), how easily were you able to navigate the information on the home page overall? Please explain the reasoning for your score.

Health Page

Task 2: Find information on how you can improve your lowest health score. (*Understanding & Actionability*)

Note: users are successful if they click on "Gut & Digestive Health" in the prototype.

- What information, if any, was confusing to you?
- What information, if any, was easy to understand?
- On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand the health recommendations based on your test results? Please explain the reasoning for your score.

Task 3: Find information on what factors contribute to your highest score. (*Understanding & Actionability*)

Note: users are successful if they click on "Immunity" in the prototype.

- What information, if any, was confusing to you?
- What information, if any, was easy to understand?
- On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand this score? Please explain the reasoning for your score.

- If participants gave a much higher or lower score than in the previous task, ask the following: I noticed you gave this page a different score than the Gut & Digestive Health page. Can you please explain the reasoning for the difference in your scoring?

Task 4: Find information on your gut microbiome status. (*Understanding & Actionability*)

Note: users are successful if they click on "Gut Microbiome" in the prototype.

- On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand the microbiome scores? Please explain the reasoning for your score.

Nutrition Page

Task 5: What foods, if any, should you eliminate from your diet?

Note: users are successful if they name foods from the "Avoid" section.

- On a scale from 1 to 7 (1 being not likely at all and 7 being very likely), how likely are you to cut out these foods from your diet? Please explain the reasoning for your score.

Task 6: What foods, if any, should you incorporate more in your diet? (*Understanding & Actionability*)

Note: users are successful if they name foods "Superfoods" or "Enjoy" sections.

- On a scale from 1 to 7 (1 being not likely at all and 7 being very likely), how likely are you to add these foods from your diet? Please explain the reasoning for your score.

Task 7: Get more information to learn about a specific food recommended. (*Understanding & Actionability*)

- On a scale of 1 to 7 (1 being not at all and 7 being a lot), how much do you trust this information?
 - What parts of the experience help you develop trust?
 - What parts of the experience make you trust the information less?

Task 8 (Modified Blank Page Technique): In the "My Foods" section of the Nutrition page, you'll notice that when you click on "My Daily Servings Guide," this pop-up is still under development. What more would you expect to see here? (*Future Enhancements*)

- Please describe what you expect to see on the page verbally or if you'd like, you can use the pen and paper provided here to illustrate your thoughts.

Returning Users

Home Page

Task 1: Spend a couple minutes browsing the home page and select a section that you're most interested in learning about. (*Usability & Navigation; Satisfaction & Engagement*)

- How do you feel about the home page layout?
- What made you want to select this particular section?
- What features do you find interesting and want to spend more time on?
- On a scale of 1 to 7 (1 being very difficult and 7 being very easy), how would you rate your experience of navigating the information on the home page overall? Please explain the reasoning for your score.

Task 2: Identify and interact with a feature of the app that is unfamiliar to you. (*Usability & Navigation*)

- How do you feel about this feature?
- Do you see yourself interacting with this feature more in the future? Why or why not?
- Thinking about the home page overall, how do you feel about this version compared to the old version of the app on your phone?

Health Page

Task 3: Find information on what factors contribute to your lowest score. (*Understanding & Actionability*)

Note: users are successful if they click on "Gut & Digestive Health" in the prototype.

- What information, if any, was confusing to you?
- What information, if any, was easy to understand?
- Compared to the old version of the app, do you feel that this information is now easier or more difficult to understand?
- On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand the health recommendations based on your test results? Please explain the reasoning for your score.

Task 4: Find information on what factors contribute to your highest score. (*Understanding & Actionability*)

Note: users are successful if they click on "Immunity" in the prototype.

- What information, if any, was confusing to you?

- What information, if any, was easy to understand?
- Compared to the old version of the app, do you feel that this information is now easier or more difficult to understand?
- On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand this score? Please explain the reasoning for your score.
- *If participants gave a much higher or lower score than in task 3, ask the following: I noticed you gave this page a different score than the Gut & Digestive Health page. Can you please explain the reasoning for the difference in your scoring?*

Task 5: Find information on your gut microbiome status. (*Understanding & Actionability*)

Note: users are successful if they click on "Gut Microbiome" in the prototype.

- On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand the microbiome scores? Please explain the reasoning for your score.

Task 6 (Modified Blank Page Technique): In the "My Health Connections" section of the Health Page, you'll notice that "See all health connections" is not clickable. What would you expect to see next if you could click on this button? (*Future Enhancements*)

- To the best of your ability, please describe what you expect to see on the page.

Nutrition Page

Task 7: What foods, if any, should you eliminate from your diet? (*Understanding & Actionability*)

Note: users are successful if they name foods from "Avoid" foods in the prototype.

Note: users are successful if they click on "Avoid" foods in the prototype.

- On a scale from 1 to 7 (1 being not likely at all and 7 being very likely), how likely are you to cut out these foods from your diet? Please explain the reasoning for your score.

Task 8: What foods, if any, should you incorporate more in your diet? (*Understanding & Actionability*)

Note: users are successful if they click on "Superfoods" or "Enjoy" in the prototype.

- On a scale from 1 to 7 (1 being not likely at all and 7 being very likely), how likely are you to add these foods from your diet? Please explain the reasoning for your score.

Task 9: Get more information to learn about a specific food recommended. (*Understanding & Actionability*)

Note: users are successful if they click on a food under "Superfoods" or "Enjoy" in the prototype.

- On a scale of 1 to 7 (1 being not at all and 7 being a lot), how much do you trust this information?
 - What parts of the experience help you develop trust, if any?
 - What parts of the experience make you trust the information less, if any?

Task 10 (Modified Blank Page Technique): In the "My Foods" section of the Nutrition page, you'll notice that "My Daily Servings Guide" is not clickable. What would you expect to see next if you could click on this button? (*Future Enhancements*)

- To the best of your ability, please describe what you expect to see on the page.

Appendix C: Survey data

**Note: All data was reported on a 1 to 7 scale.*

		R1	R2	R3	R4	N1	N2	N3	N4	Ave.
Pre-test questionnaire										
Overall, how satisfied are you with the Viome app?	Satisfaction	7	6	6	6	N/A	N/A	N/A	N/A	6.25
How confident are you in Viome's recommendations?	Understanding	6	6	7	7	N/A	N/A	N/A	N/A	6.5
Before this study, how familiar were you with microbiome health?	Others	N/A	N/A	N/A	N/A	4	1	2	1	2
Post-task questions										
On a scale of 1 to 7 (1 being very difficult and 7 being very easy), how easily were you able to navigate the information on the home page overall? Please explain the reasoning for your score.	Ease of Navigation	4	7	6	6	6	5	6	3	5.375
On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand the health recommendations based on your test results? Please explain the reasoning for your score.	Understanding	6	7	7	7	5	6	5	4	5.875
On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand this score? Please explain the reasoning for your score.	Understanding	5	7	7	5	5	7	5	5	5.75
On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand the microbiome scores? Please explain the reasoning for your score.	Understanding	2	7	7	7	6	4	3	2.5	4.8125

On a scale of 1 to 7 (1 being not at all and 7 being a lot), how much do you trust this information? What parts of the experience help you develop trust? What parts of the experience make you trust the information less?	Understanding	6	7	7	7		5	5	6	6.1428 57143
On a scale from 1 to 7 (1 being not likely at all and 7 being very likely), how likely are you to cut out these foods from your diet? Please explain the reasoning for your score.	Actionability	7	6	6	7	4	3	6	5	5.5
On a scale from 1 to 7 (1 being not likely at all and 7 being very likely), how likely are you to add these foods from your diet? Please explain the reasoning for your score.	Actionability	7	7	6	7	3	7	6	6	6.125
Post-test questionnaire										
Viome app's capabilities meet my requirements.	Satisfaction	6	7	6	6	5	6	5	5	5.75
The Viome app is easy to use.	Ease of Navigation	5	7	7	6	5	5	5	4	5.5
Compared to the previous version, how would you rate the new Viome app?	Satisfaction	4	5	6	6	N/A	N/A	N/A	N/A	5.25
How understandable do you think the health recommendations are?	Understanding	5	7	7	7	5	4	6	5	5.75
How trustworthy do you think the health recommendations are?	Understanding	7	7	7	7	5	7	5	6	6.375
How likely are you to follow the suggested health recommendations?	Actionability	6	7	7	7	5	6	4	6	6
Average score for:	Understanding	5.29	6.86	7.00	6.71	5.20	5.50	4.83	4.75	
	Actionability	6.67	6.67	6.33	7.00	4.00	5.33	5.33	5.67	
	Ease of Navigation	4.50	7.00	6.50	6.00	5.50	5.00	5.50	3.50	
	Satisfaction	5.67	6.00	6.00	6.00	5.00	6.00	5.00	5.00	

Average scores per area*			
	<i>New</i>	<i>Returning</i>	<i>% difference</i>
Understanding ▼	5.07	6.46	27.48%
Actionability ▼	5.08	6.67	31.22%
Ease of Navigation ▼	4.88	6.00	22.19%
Satisfaction ▼	5.25	5.67	8.22%
Overall average	5.07	6.20	22.28%

* all scores inclusive of pre-test, post-task, and post-test questionnaires

Appendix D: Task Time

Task time (in seconds)	N1	N2	N3	N4	R1	R2	R3	R4
Find how to improve lowest score	35	N/A	26	27	11	20	30	3
Find factors that contribute to high score	7	N/A	6	14	53	120	6	5
Find gut microbiome status	35	N/A	158	29	46	90	77	10
Find foods to eliminate	2	N/A	10	3	19	30	5	2
Find foods to incorporate	22	N/A	4	4	14	3	6	2
Find info on specific food		N/A	7	3	3	4	24	2

Average task time to completion* (in seconds)				
	New	Returning	% difference	Avg across all users
Find how to improve lowest score	29.33	16.00	-45.5%	22.67
Find factors that contribute to high score	9.00	46.00	411.1%	27.50
Find gut microbiome status	74.00	55.75	-24.7%	64.88
Find foods to eliminate	5.00	14.00	180.0%	9.50
Find foods to incorporate	10.00	6.25	-37.5%	8.13
Find info on specific food	5.00	8.25	65.0%	6.63

*incomplete measure; times missing for one new user due to technical limitations

Priority classification based on additional tasks/comments			
	# of user quotes	# of users mentioned	Issue priority
Information overload	9	7	High
Information clarity (difficulty understanding jargon and UI labels)	15	5	High
Desire for meal/recipe guidance	11	7	High
Need to track improvement over time	6	4	Medi...
Lack of interest in promotional content	4	3	Low
Lack of searchability	2	2	Low
Confusion around contributing scores	2	2	Low
Home page length	5	4	Medi...

Appendix E: Issues list

1. Understanding
 - Users were overwhelmed by the information overload. (High priority)
 - Users have difficulty understanding jargon and scientific terms. (High priority)
 - Users have difficulty understanding Viome languages. (High priority)
2. Actionability
 - Users got lost in the whole list of recommendations. (High priority)
3. Ease of navigation
 - Users were overwhelmed by the length of the home page. (Mid priority)
 - Users struggled to find gut microbiome test results. (High priority)
4. Satisfaction and engagement
 - Some educational content is perceived as “promotional,” which deters new users from engagement. (Low priority)
5. Future enhancements
 - Users need for better meal planning, recipe, and shopping support. (High priority)
 - Users wanted to track their improvement over time. (Mid priority)
 - Users wanted to customize their in-app experience or annotate their data. (Low priority)
 - Users wanted to get more information at their own pace and in bite-sized chunks to develop trust in their results. (Low priority)

Priority classification based on additional tasks/comments			
	# of user quotes	# of users mentioned	Issue priority
Information overload	9	7	High
Information clarity (difficulty understanding jargon and UI labels)	15		High
Desire for meal/recipe guidance	11	7	High
Need to track improvement over time	6	4	Medi...
Lack of interest in promotional content	4		Low
Lack of searchability	2		Low
Confusion around contributing scores	2		Low
Home page length	5	4	Medi...

Appendix F: Note-taking form

Viome Note-taking Form & Task List

Schedules	<input checked="" type="checkbox"/> Interview Schedule and Tracki...								
Screening Survey	<input checked="" type="checkbox"/> Viome Usability Test - Particip...								
Pre-test & Post-test Questionnaire Script	<input checked="" type="checkbox"/> Pre-test / Post-test Questionn...								
Session Info									
Time & Place	Moderator	Note taker	Signed consent form?	Emailed for Swag?	Pre-test Questionnaire	Post-test Questionnaire			
	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>			
Participant Info									
Name	Type	Scenario	Do they have chronic health conditions?	Age	Occupation	App Familiarity	Other Apps Used	Additional Comments	
	<div></div>	<div></div>	<div></div>						
Viome Home Page									
Code	Task	Notes	Post-Task Questions				Additional notes		
<div></div>	Spend a couple minutes browsing the home page and select a section that you're most interested in learning about.		How do you feel about the home page layout?	What made you want to select this particular section?	What features do you find interesting and want to spend more time on?	On a scale of 1 to 7, how easily were you able to navigate the information on the home page overall? Please explain the reasoning for your score.			
<div></div>	Identify and interact with a feature of the app that is unfamiliar to you.		How do you feel about this feature?	Do you see yourself interacting with this feature more in the future? Why or why not?	Thinking about the home page overall, how do you feel about this version compared to the old version of the app?				
Viome Health Page									
Code	Task	Notes	Post-Task Questions				Additional notes		
<div></div>	Find information on what factors contribute to your lowest score.		What information, if any, was confusing to you?	What information, if any, was easy to understand?	Compared to the old version of the app, do you feel that this information is now easier or more difficult to understand?	On a scale from 1 to 7, how easily were you able to understand the health recommendations based on your test results? Please explain the reasoning for your score.			
<div></div>	Find information on what factors contribute to your highest score.		What information, if any, was confusing to you?	What information, if any, was easy to understand?	Compared to the old version of the app, do you feel that this information is now easier or more difficult to understand?	On a scale from 1 to 7, how easily were you able to understand the health recommendations based on your test results? Please explain the reasoning for your score.	If participants gave a much higher or lower score than in task 3, ask the following: I noticed you gave this page a different score than the Gut & Digestive Health page. Can you please explain the reasoning for the difference in your scoring?		
<div></div>	Find information on your gut microbiome status.		On a scale from 1 to 7 (1 being very difficult to understand and 7 being very easy to understand), how easily were you able to understand the microbiome scores? Please explain the reasoning for your score.						
<div></div>	In the "My Health Connections" section of the Health Page, you'll notice that "See all health connections" is not clickable. What would you expect to see next if you could click on this button?								
Viome Nutrition Page									
Code	Task	Notes	Post-Task Questions				Additional notes		
<div></div>	What foods, if any, should you eliminate from your diet?		On a scale from 1 to 7, how likely are you to cut out these foods from your diet? Please explain the reasoning for your score.						
<div></div>	What foods, if any, should you incorporate more in your diet?		On a scale from 1 to 7, how likely are you to add these foods from your diet? Please explain the reasoning for your score.						
<div></div>	Get more information to learn about a specific food recommended.		On a scale of 1 to 7 (1 being not at all and 7 being a lot), how much do you trust this information?	What parts of the experience help you develop trust?	What parts of the experience make you trust the information less?				
<div></div>	In the "My Foods" section of the Nutrition page, you'll notice that "My Daily Servings Guide" is not clickable. What would you expect to see next if you could click on this button?								

Appendix G: Affinity Mapping

View at [link](#)

