Wallace Douglas, Ruth Foster, Olivia Langley, Gianna Uson

ITERATIVE DESIGN & EVALUATION: CureSkin

//STARTUP

CureSkin – AI dermatologist on smartphone

"India is facing a massive shortage of dermatologists. There simply are not enough doctors to address the existing needs of the massive Indian market. CureSkin is using computer vision to recommend treatment to patients who don't have access to trained professionals. With just a photo, CureSkin can diagnose approximately 80 percent of skin conditions and recommend treatment regimens. 7,000 patients are using CureSkin each week and half of those users come back for issues later on."

//INTERFACE IDEA

We developed a mobile interface that would help users manage their skin concerns in three ways:

1) Using a computer vision diagnosis system
2) Storing information from previous diagnoses made through the app
3) Providing a glossary of common skin concerns for users to browse through

//SKETCHES

SKETCH 1 — Wallace

Idea: The idea behind this prototype is to go directly into taking a photograph of the skin concern and having it analyzed and diagnosed immediately. Users could then choose to learn more or look at treatments before saving it to their account, looking for dermatologists nearby, or taking a new photo (Figures 1 & 2).

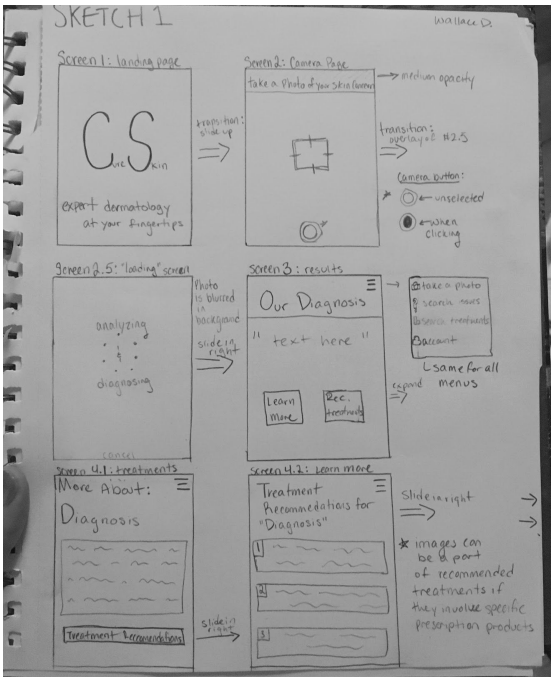


Figure 1.

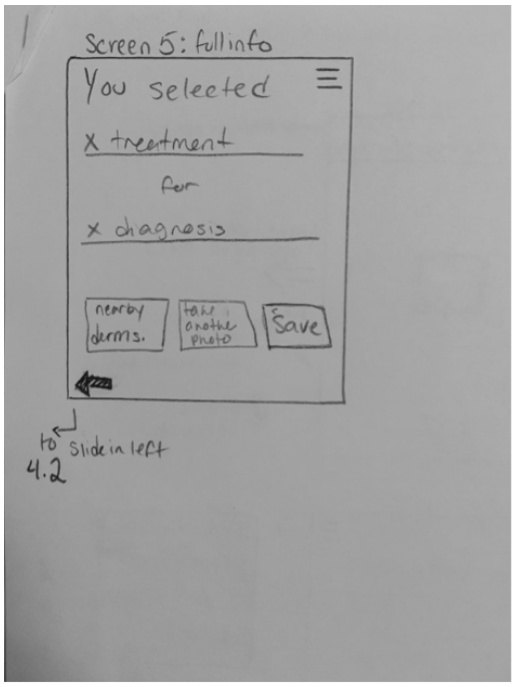


Figure 2.

SKETCH 2 — Ruth

Idea: This prototype shows the process of undergoing a new diagnosis. Using a bar with numbered bubbled, users are shown what step they're on through each part of the process to help them feel in control. There is also a screen title at the top of every page. First they select their area of concern, then choose a few keywords that might help the computer (or a doctor) make a diagnosis. Then they take and upload a picture, and the computer recommends a treatment based on all the information that has been provided. The Homepage/Menu shows previous diagnoses, and gives the option of receiving a new diagnosis (Figures 3 & 4).

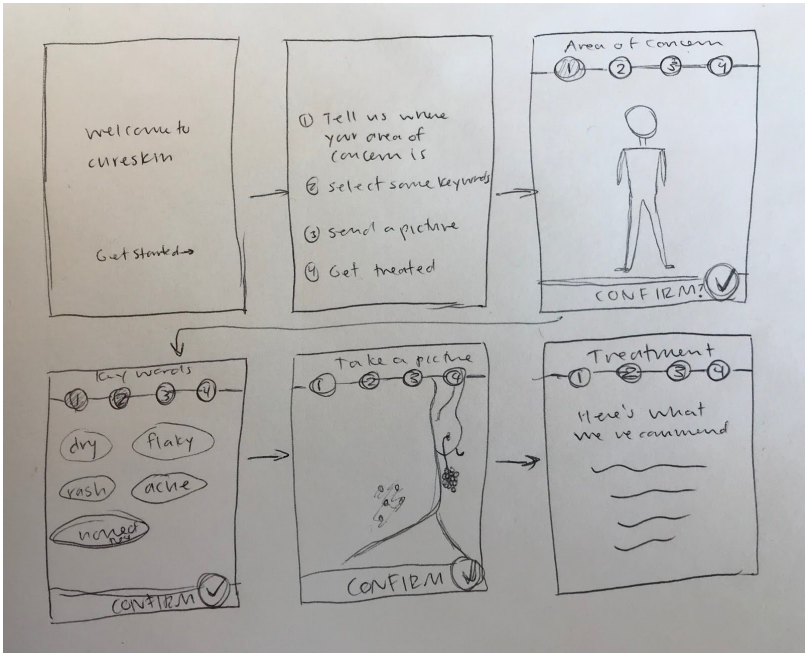


Figure 3.

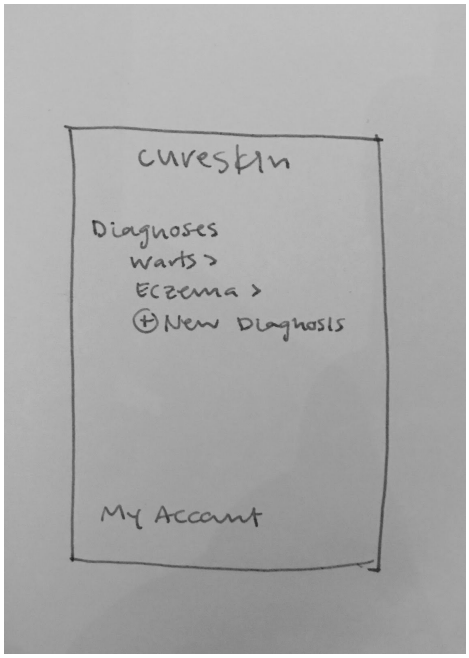


Figure 4.

SKETCH 3 — Olivia

Idea: The idea is an account-based interface that starts by prompting users to sign in/sign up. Main menu with options to analyze a picture, check personal info and previous diagnoses, browse common conditions and products, and learn about the CureSkin team. Also includes a bottom bar with account info, messages, a notification popup, and a popup menu that includes settings and the option to sign out (similar to Facebook). Tapping “analyze a photo” would lead directly to the camera page where the user can either take a photo directly or upload one from their phone’s camera roll. Once a photo is chosen, an AI-based diagnosis would be made, and the user would be prompted to either save this information to their account (which would allow them to reference it in the “my info” page) or take a new photo. Ideally, other screens would include the option to consult/chat with a dermatologist about any concerns or treatments, as well as browse a glossary of potential conditions and common treatments/products. The notification popup would be useful when waiting for a dermatologist to respond to a consultation request, while the bottom right-hand corner menu would allow the user to change their app settings and have the option to sign out while not in use (Figures 5, 6, & 7).

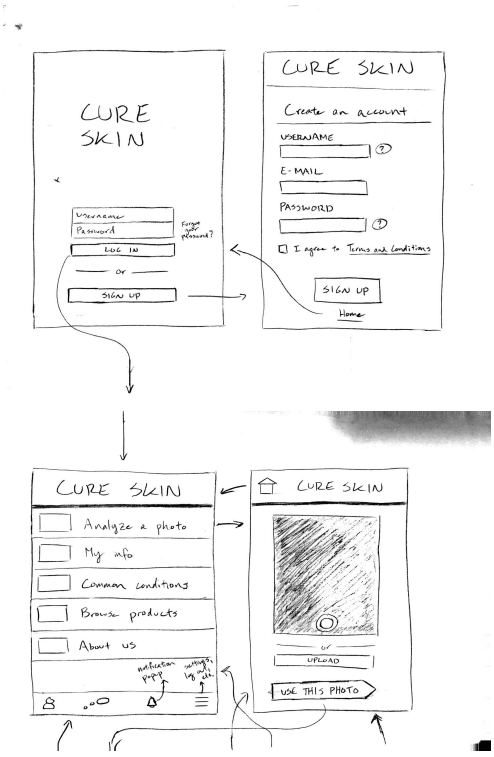


Figure 5.

Figure 6.

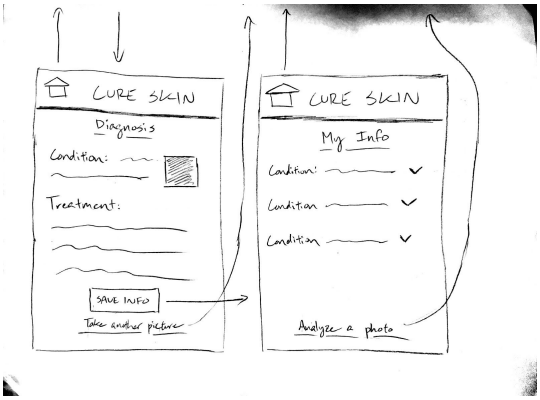


Figure 7.

SKETCH 4 — Gianna

Idea: The idea is to allow users to immediately experience the app by directly going into taking a photograph and getting results, then getting the option of talking to a bot consultant or submitting more specific information to submit to a dermatologist to analyze. I thought it was valuable for users to experience the app and see what it can accomplish before asking them to create an account (Figures 8-15).

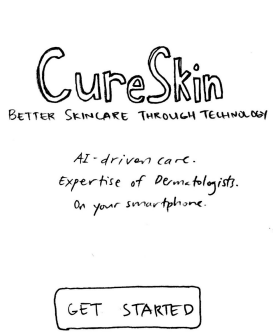


Figure 8.

Figure 9.

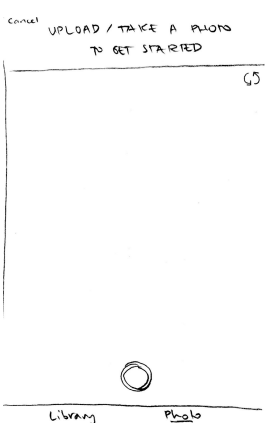


Figure 10.

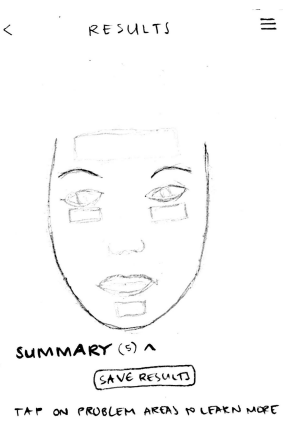


Figure 11.

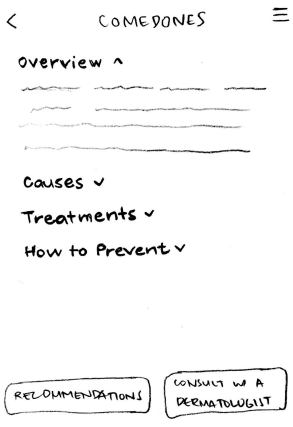


Figure 12.

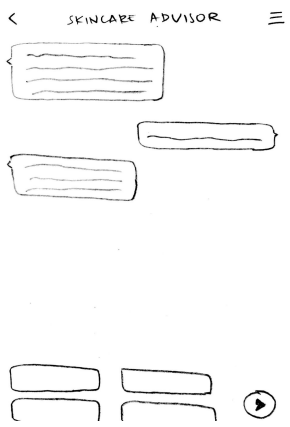


Figure 13.

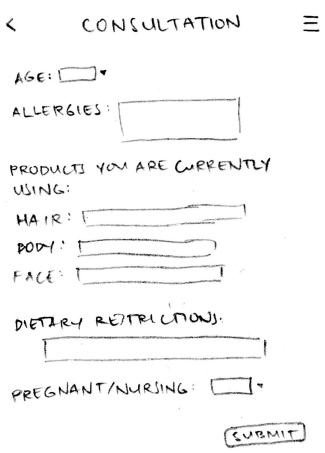


Figure 14.

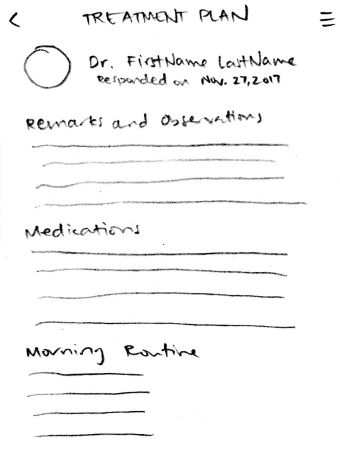


Figure 15.

//HI-FI PROTOTYPE

Link to Interactive Prototype:

https://www.quant-ux.com/test.html?h=a2aa10ae74MLSUBs5zvkinw115faOIEMfwIZ1n5nz76HdtQlipSxvTSEFzo6

General Design Notes —

Our goal for the redesign was to produce a mobile app that was easy to use and appeared both stylish and reliable. We chose a simple, sans serif font that was modern and readable. Our background color was a light grey, which was chosen to help the app appear reliable and trustworthy, while still having a professional, medical aesthetic. To keep the app from looking stale or plain, we used a bright red-orange accent color base off of the startup's own home page. Each page is clearly labeled to help make the design as easy to use as possible. Arrows allow users to go back if they've made a mistake on a previous page and want to go fix it and/or return to the main menu.

Menu Page —

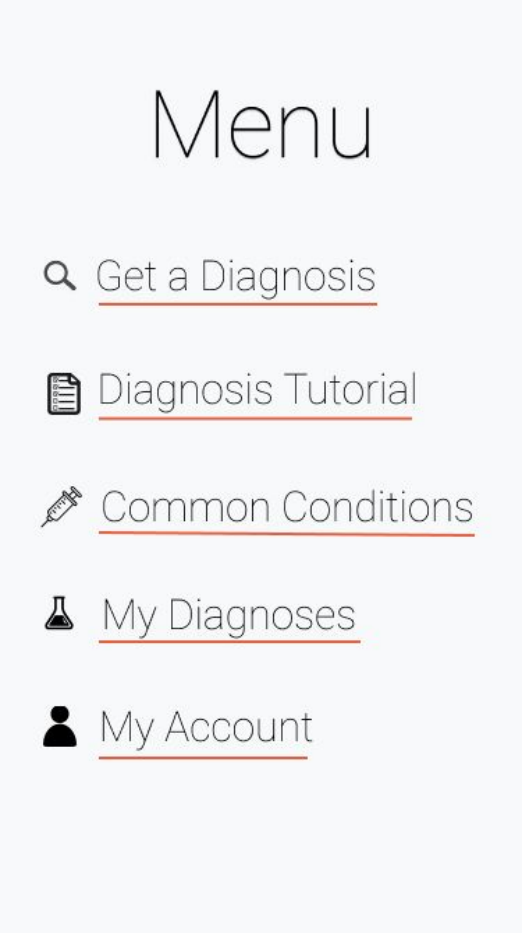


Figure 16.

The menu (Figure 16) of the prototype shows the three key functions of the app: diagnosing conditions (Get a Diagnosis), providing basic information about a variety of skin conditions (Common Conditions), storing diagnosis information (My Diagnoses). The menu page also contains a link to a tutorial page to help users effectively use the diagnosis tool, and a page for the user's account.
"Get a Diagnosis" is first on the menu list because it is the most important feature of the app, the rest

follow in a hierarchy that we decided on using heuristic principles. “My Diagnoses” is outside the account because the app itself can store the individual’s diagnoses outside of the account, for quick access. We used icons next to the menu items as a way of being visually grabbing, allow for quick-selection by return users, and provide subliminal recognition/explanation of each option.

Tutorial Page —

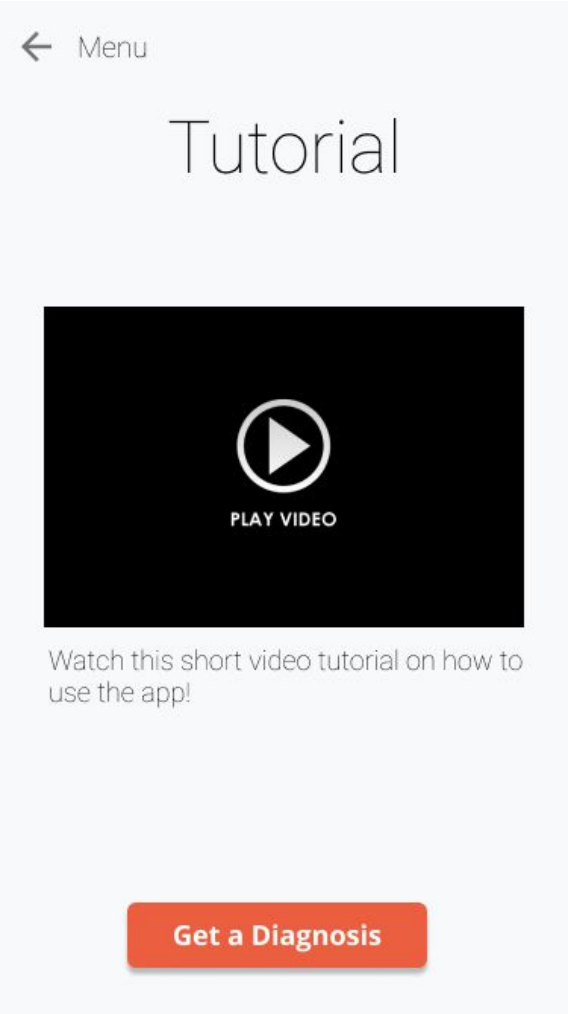


Figure 17.

The tutorial page (Figure 17) helps users learn how to take a photo that is good enough for the computer vision algorithm to process. We separated the tutorial page from the diagnosis tool so that repeat users wouldn’t have to go through the same tutorial information every time they wanted to use the program. We decided it was important to make the tutorial information accessible beyond the first use of the program, just in case users wanted to review it.

Diagnosing a Condition —

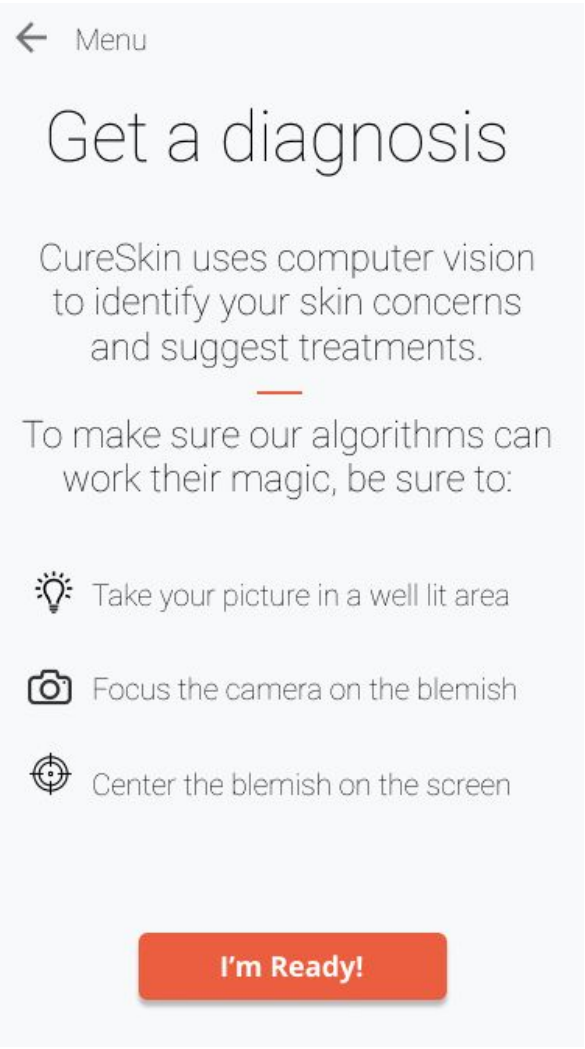


Figure 18.

When users click “Get a Diagnosis”, they reach this screen first (Figure 18), which describes how the processes work. It also gives the user a brief reminder on how to take a picture that is usable, then they are allowed to proceed. We used icons in addition to test to be both visually grabbing, and also help visually explain the instructions.

Diagnosing a Condition —

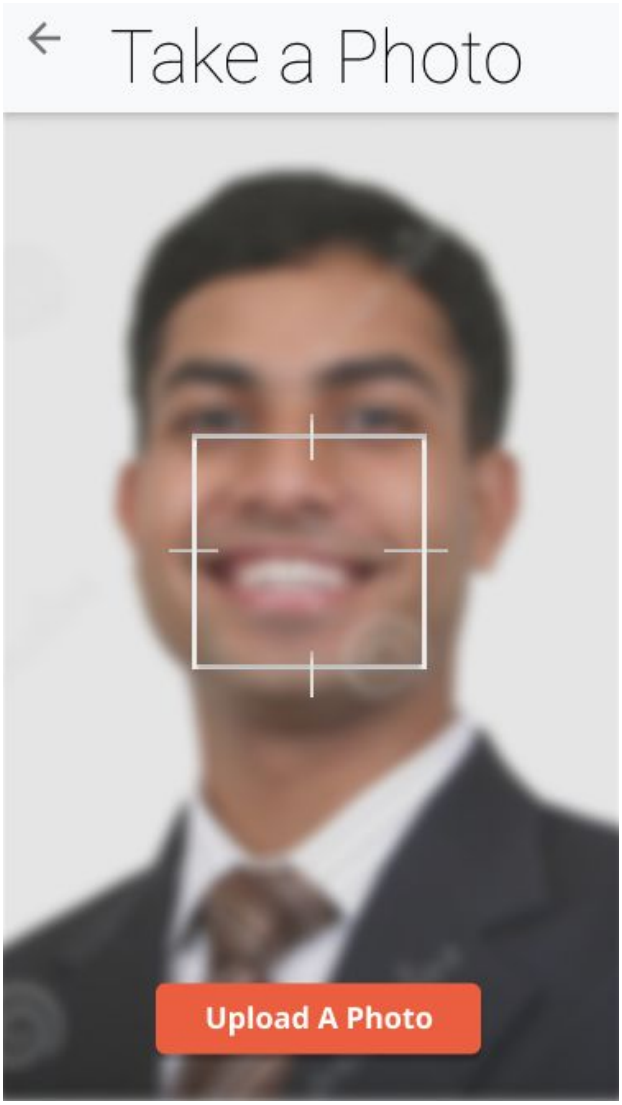


Figure 19.

On this screen (Figure 19). Users can take a photo, or use a photo from their Camera Roll, then upload it for processing.

Diagnosing a Condition —

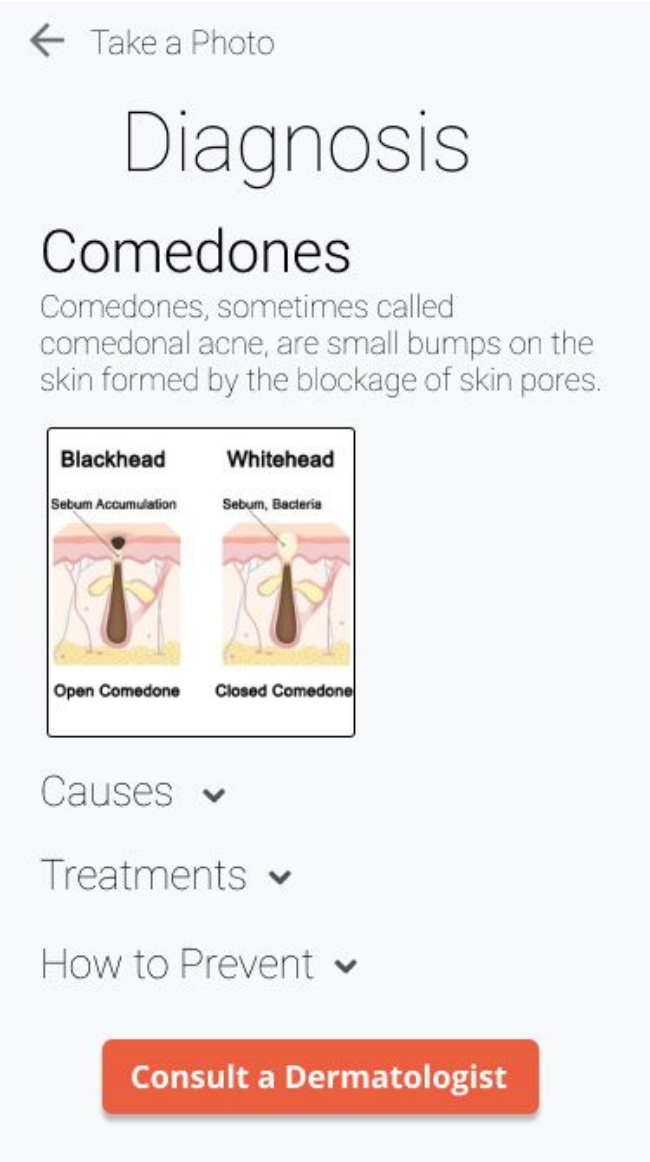


Figure 20.

After the photo processes, the app displays a diagnosis page (Figure 20). that provides basic information about the condition that has been identified. The user can expand information panels about causes, treatments, and prevention using drop-down arrows. The user can then choose to communicate with a dermatologist, who can gather more information if needed, then prescribe a treatment.

Diagnosing a Condition —

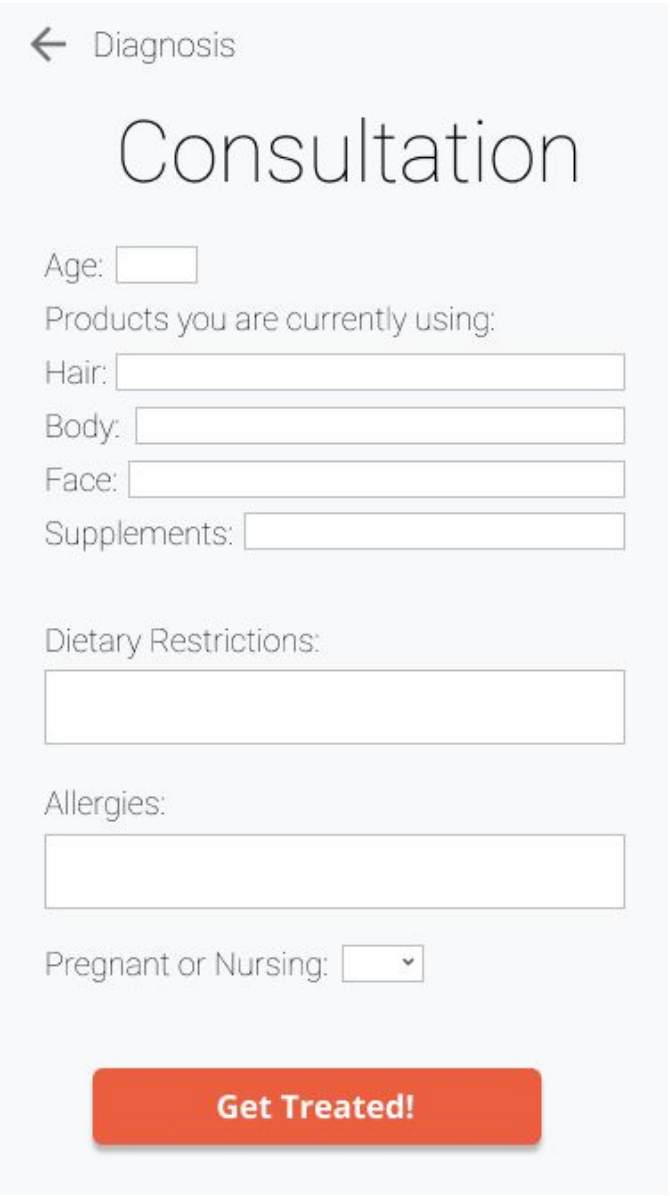


Figure 21.

The consultation page (Figure 21) collects basic information the dermatologist may need to know to provide treatment. To keep from annoying or overwhelming the user with too many questions, we included only important basic questions. If needed, providers can ask follow up questions to users separately.

Learning About Common Conditions —

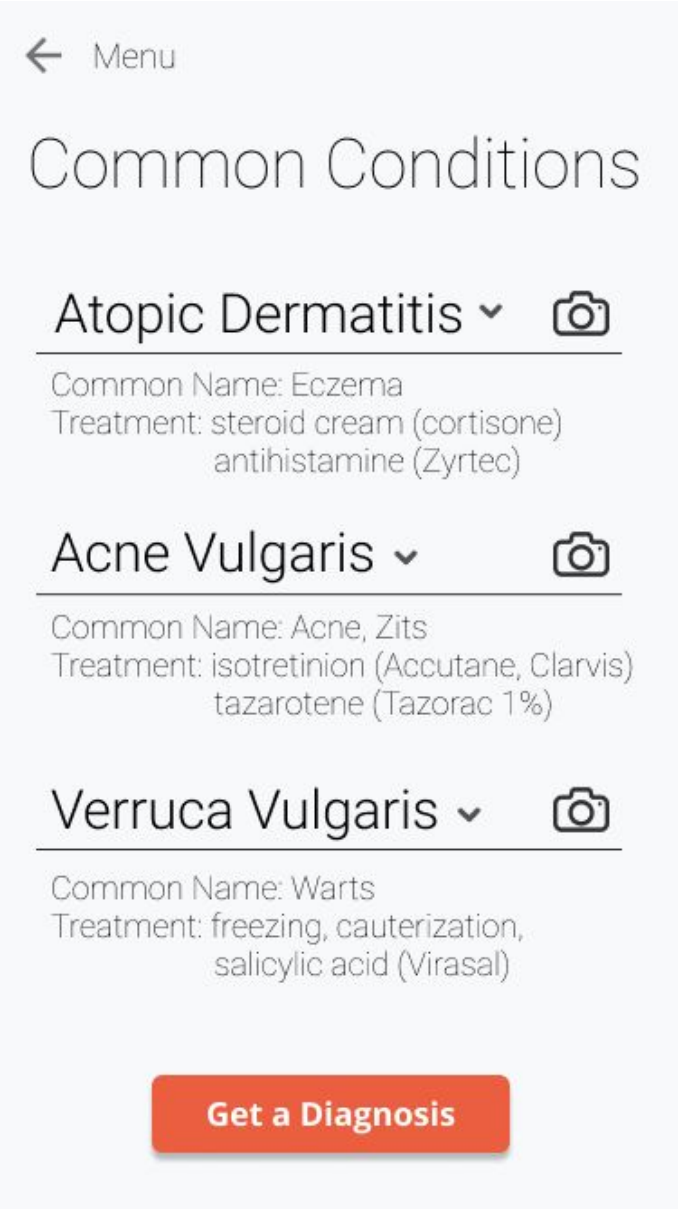


Figure 22.

On the “Common Conditions” page, users can learn more about common skin conditions and their treatments (Figure 22). Skin conditions can sometimes be unpleasant to look at, so we didn’t include them directly on the page. Instead, users can tap on the camera icon to see a picture. Users then have the option to get a diagnosis, which we assumed they would want to do once they have looked a possible conditions they may have.

Storing Previous Diagnoses —

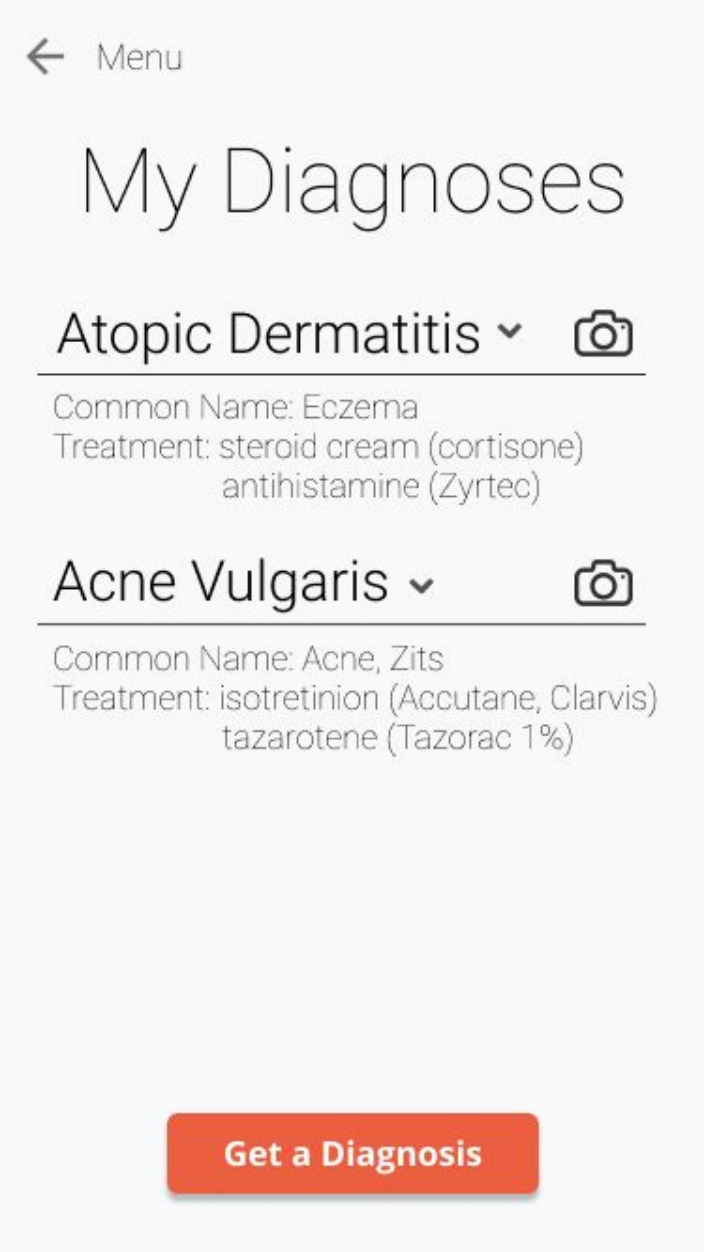


Figure 23.

The “My Diagnoses” page stores information about conditions users have diagnosed with the app, as well as their treatments (Figure 23). When users select the camera button on this page, it displays the photo they took rather than a stock photo.

//TESTING

User Testing —

We uploaded our prototype to the user testing site and asked users to imagine that they had a skin condition they wanted to receive a diagnosis for, and where on the app they would go to look for information on common conditions.

Our Hypotheses —

Our hypothesis was that our users would have a fairly easy time going through the direct task of taking a photo and submitting information to get a diagnosis, but that because we did not have the standard 'hamburger' menu bar, they would probably spend a longer time navigating/have issues with navigation on the app. We also hypothesized that the second task of having the user look for common conditions would be easy and quick, as that information is on the main menu screen.

UserTesting.com Experiment —

Introduction

"You have a skin condition that you want to get diagnosed and want to learn about common skin conditions."

Tasks

1. Go through the steps to get a diagnosis as a first time user and consult with a dermatologist.
2. Explore common skin conditions.
3. View your past diagnoses.
4. Without leaving this page, in your own words, describe what do you think you can do on this page? Be specific.

Questions

1. What frustrated you most about this app?
2. If you had a magic wand, how would you improve this app?
3. What did you like about the app?
4. How likely are you to recommend this app to a friend or colleague (0 = Not at all likely, and 10 = Very Likely)?

See last two pages of this document for screenshots of UserTesting.com emails

Wallace Douglas, Ruth Foster, Olivia Langley, Gianna Uson

Our Feedback —

Answers for #2307194A by jjyoon723

1. What frustrated you most about this app?

   > That it wasn't the full featured app.

2. If you had a magic wand, how would you improve this app?

   > Everything was simple and straight forward, however if there were any additions. I would make it so that you can login or have information auto populated through google or facebook.

3. What did you like about the app?

   > Simple and easy to follow, there wasn't any question as to where you needed to go.

4. How likely are you to recommend this app to a friend or colleague (0=Not at all likely, and 10=Very Likely)?

   > 10

Answers for #2307194C by blueck

1. What frustrated you most about this app?

   > broken links but website not finished

2. If you had a magic wand, how would you improve this app?

   > i would make the windows abit bigger so you can fit more information in them

3. What did you like about the app?

   > helps with conditions most people have

4. How likely are you to recommend this app to a friend or colleague (0=Not at all likely, and 10=Very Likely)?

   > 8

Answers for #2307194B by Kissaun98

1. What frustrated you most about this app?

   > Nothing, it was a very easy to use app

2. If you had a magic wand, how would you improve this app?

   > Consistency between diagnosis pages.

3. What did you like about the app?

   > UI, nice and clean

4. How likely are you to recommend this app to a friend or colleague (0=Not at all likely, and 10=Very Likely)?

   > 9

Reflecting on the Results —

Based on our feedback, we learned that users overall liked the aesthetic of our interface and generally found it easy to use. Aside from frustrations that our app wasn't "full-featured" or had "broken links" (because we hadn't built all of our screens/made all of our links working), users really enjoyed their experience and didn't suggest any specific changes. One even complimented our UI! This feedback aligns and positively reflects on our hypothesis, as aside from the minor technical issues, users found the app simple and easy to use, and had a pleasant experience.

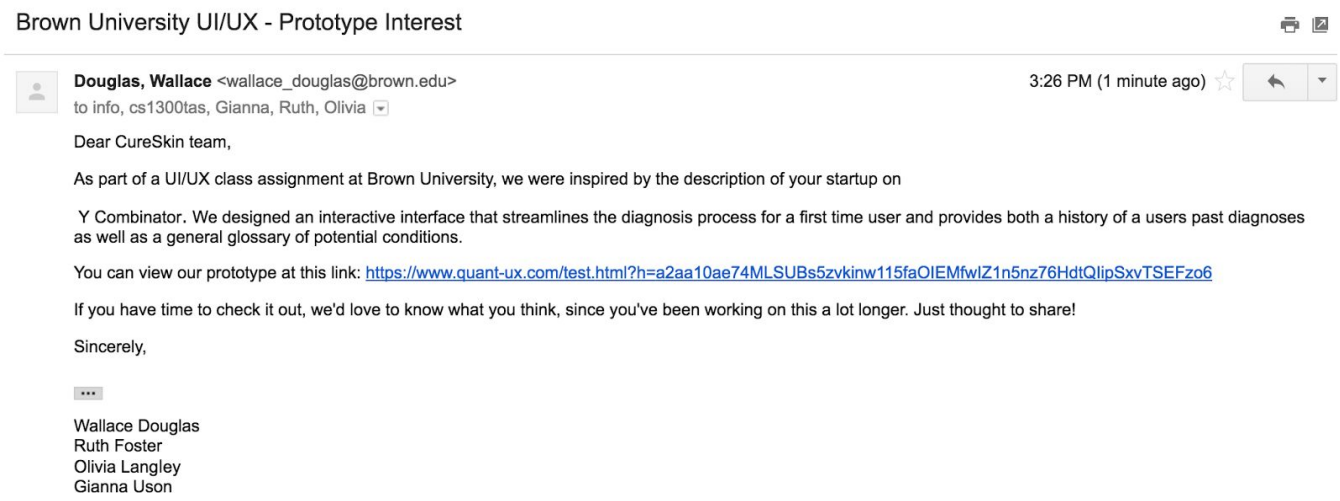
Possible Design Changes & Testing Experience—

Based on the feedback and results, we saw that in terms of visuals, we didn't have to make many, if any changes, But, we believe that we could improve our app further by adding a feature for users to connect or log in to their accounts users Facebook or Google. We would change our 'boxes' for inputting information by making them larger and likely making that screen a scrolling one in order to do so (as described in the Onboarding lecture yesterday, making inputting information more pleasant for the user makes it more likely that they'll return to the app). We would probably add in the 'hamburger' menu that was suggested in our critique to make navigation even that much more flexible. We also would add a 'save diagnosis' option to the Diagnosis page (Figure 20), in case a user does not wish to continue to communicating with a dermatologist; it would just be saved to 'My Diagnosis' (Figure 23).

Overall the usability testing experience ran smoothly and there weren't really any challenges except for the sign up portion. Otherwise, UserTesting.com is a fairly intuitive website. The suggestions for tasks and questions were especially helpful as a first timer in conducting a user testing experiment. Creating simple tasks for the users proved successful, as seen in the videos, because it was easy for them to follow and complete the tasks. We learned the value of user testing and feedback because the users brought up things we had not thought about which helped us rethink our design/possible changes we could make.

Email to Startup (CureSkin)—

Here is our email to the startup, CureSkin.



Brown University UI/UX - Prototype Interest

Douglas, Wallace <wallace_douglas@brown.edu> 3:26 PM (1 minute ago)

to info, cs1300tas, Gianna, Ruth, Olivia

Dear CureSkin team,

As part of a UI/UX class assignment at Brown University, we were inspired by the description of your startup on

Y Combinator. We designed an interactive interface that streamlines the diagnosis process for a first time user and provides both a history of a users past diagnoses as well as a general glossary of potential conditions.

You can view our prototype at this link: https://www.quant-ux.com/test.html?h=a2aa10ae74MLSUBs5zvkinw115faOIEMfwlZ1n5nz76HdtQlipSxvTSEFzo6

If you have time to check it out, we'd love to know what you think, since you've been working on this a lot longer. Just thought to share!

Sincerely,

...

Wallace Douglas
Ruth Foster
Olivia Langley
Gianna Uson