

**Toolkit Title\***

CHI App Guidelines and Examples

**Purpose of Toolkit\***

To ensure that digital solutions are accessible and usable by a wide range of users, enhancing overall user experience and effectiveness.

**Toolkit Attachment**

See attached.

**Toolkit Methodology and Application**

See attached.

**Case Study or Example**

See attached.

**Acknowledgements and Sources**

See attached.

**Toolkit Category\***

Technology – Design Guidelines

**Keywords\***

Technology, Digitalisation, UX Design, Application

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An illustration of a person with grey hair and a white shirt, holding a blue mobile phone. The person's face is partially obscured by the text boxes. The background is a light grey color.

# Centre for Healthcare Innovation (CHI) App Guidelines and Examples

Consolidated app considerations that included  
the needs of senior users (age 65 and older)

*Last edited 23 Oct 2022*

# An idea is only as good as its execution.

**Ideas cannot be converted to results, if staff, patients, caregivers and the public:**

- Cannot read and understand the words
- Cannot navigate the app/service
- Do not like to use certain devices
- Uninstall/abandon it due to certain issues

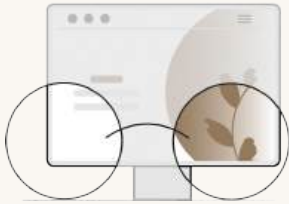


- ↓ Lower goal completion rate
- ↓ Lower customer satisfaction
- ↓ Lower adoption rate
- ↑ Higher drop-off rate

**Which this document is trying to prevent.**

The document contains recommended digital UX guidelines for apps, meant **to maximise accessibility and usability for users of all ages**, including senior users aged 65 and older.

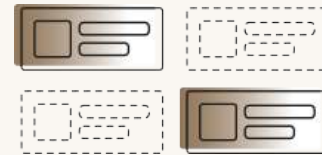
It also addresses users with:



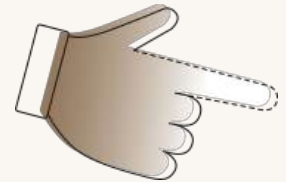
Declined vision



Failing memory



Slower information processing



Dexterity issues

**The Tan Tock Seng Digital UX guidelines** aligns with the Digital Service Standards<sup>1</sup> released by GovTech<sup>2</sup> Singapore and is referenced from Nielsen Norman Group<sup>3</sup>: UX Design for Seniors (Ages 65 and older), 3rd Edition<sup>4</sup>.

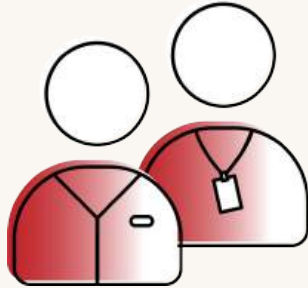
<sup>1</sup>The Digital Service Standards (DSS) is a set of standards for agencies to implement their digital services with the goal of delivering digital services that are easy, seamless and relevant for citizens and businesses.

<sup>2</sup>GovTech, or Government Technology Agency of Singapore is a statutory board of the Government of Singapore, aiming to empower the nation with possibilities through Infocomm Technology and related Engineering Technology.

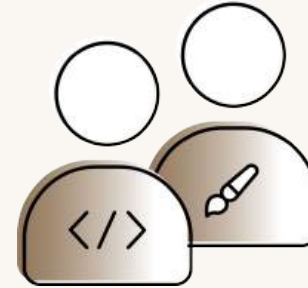
<sup>3</sup>Nielsen Norman Group is a UX research and consulting firm trusted by leading organizations worldwide to provide reliable guidance on user experience.

<sup>4</sup>The guidelines are based on research studies; in-person usability tests, focus groups and contextual inquiry sessions, with 123 seniors from the United States, Canada, Australia, Germany, Japan and the United Kingdom.





**All staff** is advised to be at least familiar with the [5 general considerations \(page 7 - 18\)](#)



**All vendors/developers/designers** are advised to begin their project with all the listed guidelines as a foundation, on top of the other considerations they may have.

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**General**

**Considerations**



## Consideration 01

# Prioritise content accessibility.

### Do consider:

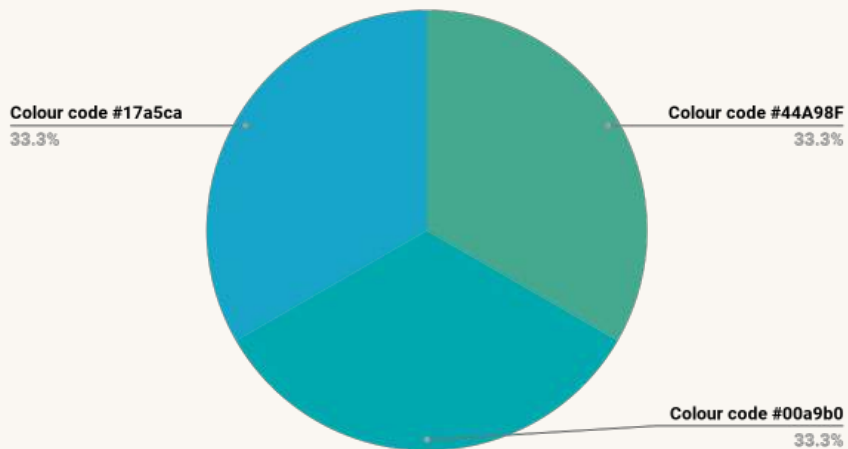
- Displaying important content in large fonts for users (minimum 16pt for mobile devices).
- Maximising content contrast against the background, using [widely available tools](#).

### Else:

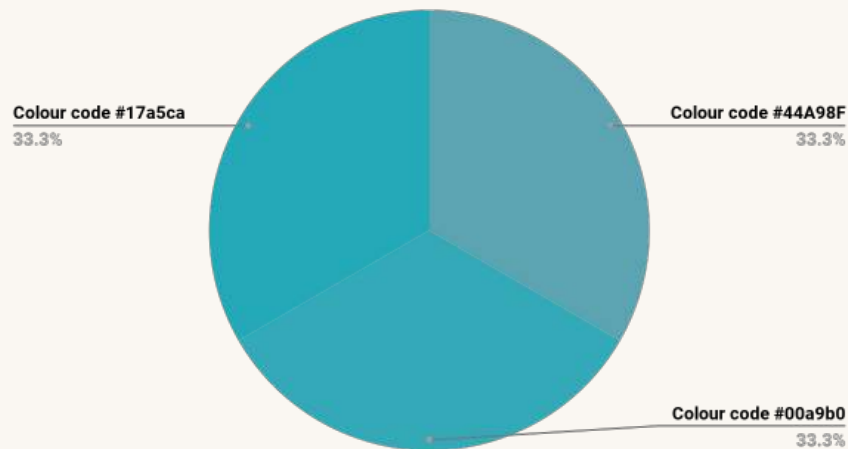
- Expect users to take up an extensive amount of time or simply give up, when consuming content or service.



## View without colour blindness

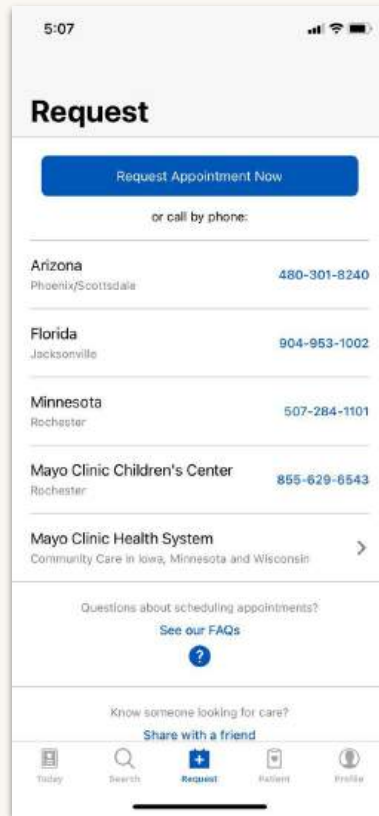


## View with Tritanopia (Blue-blind)



**Do consider checking** Checking if the materials are [colourblind-friendly](#).

**Avoid** visual elements that only contains blue and green components, especially the combination of #44A98F, #00A9B0 and #17A5CA.



**Do provide content in a spaced-out layout with large and readable text.**

It makes it easier for users with a declined vision to scan and decide which information to consume.

## Consideration 02

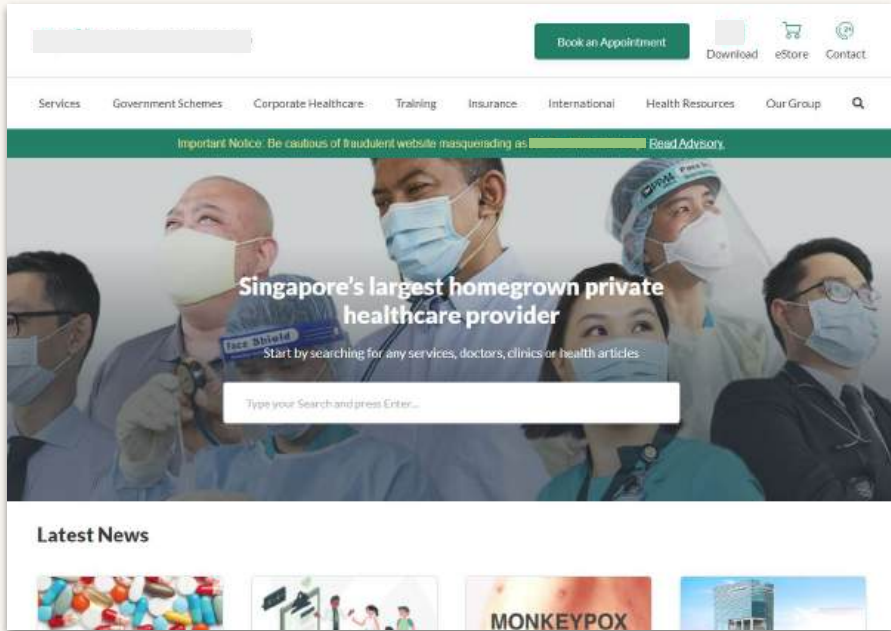
# Design layouts that adapts to users' app habits.

### Do consider:

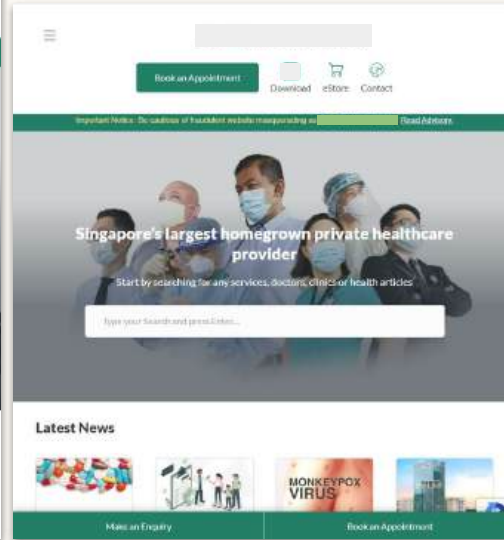
- Designing layouts that adapt to the user's app habits rather than a one-size-fits-all approach. Users have different priorities on an app compared to a website.

### Else:

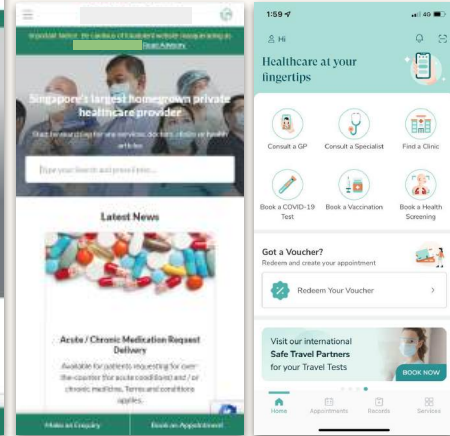
- Expect a drop in user activity or an extended time taken to complete a task, or as far as **uninstalling the app** entirely.



**Do research and design layouts according to the users' device habits.** Notice that the tablet and mobile website view (2nd and 3rd image) have additional functions at the bottom; "Make an Enquiry" and "Book an Appointment".



as compared to the desktop website view (far left image), while the app (far right image) has reduced functions as compared to the website view.



## Consideration 03

# Provide multiple ways to input information.

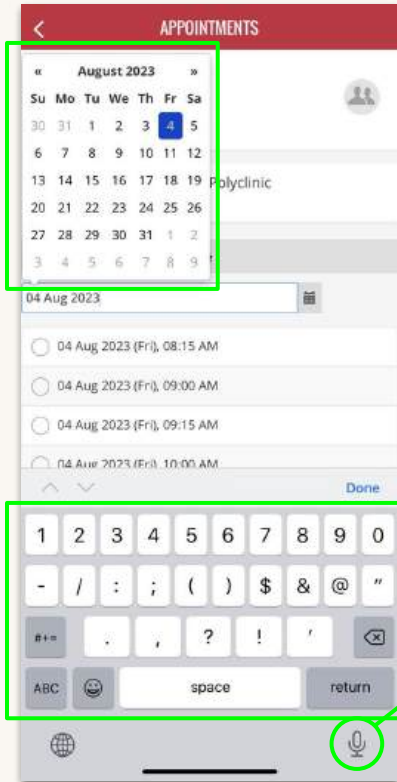
### Do consider:

- Providing more than one way for users to submit information to cater to the various user habits.
- Providing voice input as one of the methods when requesting for user input.

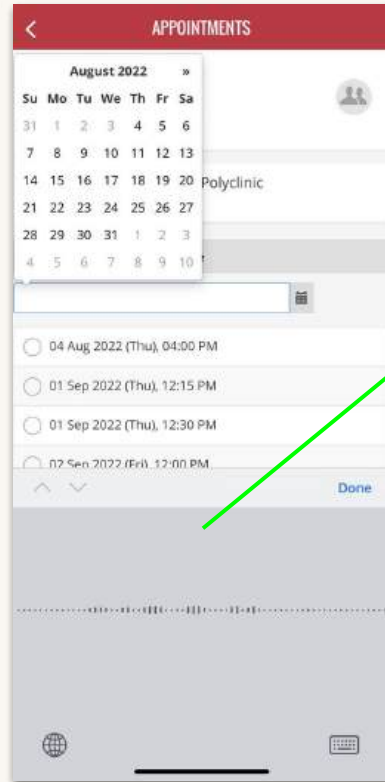
### Else:

- Expect a drop in user activity or an extended time taken, in pages where information input is required. Time taken would be longer for users with dexterity issues.

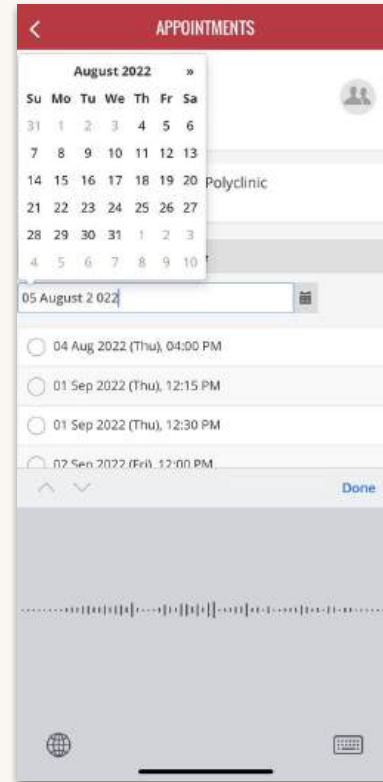
**Do provide multiple ways of inputting information** like the date selection below. It allows users to type in their answers or select from a date selector.



**Do consider alternative input methods like voice input** when applicable.



**Do display the words that users were saying as they speak** to let users verify their request.



**Do provide voice assistance to read out the results of voice queries** to benefit users with low eyesight.

## Consideration 04

# Maximise data visibility, comprehension and control.

### Do consider:

- Providing quick and easy access to the data the users are sharing to or app.
- Giving users the ability to control all the information they are sharing on a single page.
- Explaining each data in simple, clear and concise terms and why each piece of information is required.

### Else:


- Expect a drop in user activity as they would go as far as **uninstalling the app** entirely.





Home Personal info **Data & privacy** Security People & sharing Payments >

## Info you can share with others

Personal info you've saved in your account, like your birthday or email address, and options to manage it. This info is private to you, but you can make some of it visible to others on Google services.





 Profile	Your info and who can see it	>
 Location Sharing	Not sharing with anyone	>

Other relevant options


[Payment methods](#) [Subscriptions](#) [Your devices](#) [Contacts](#)

### Interested in learning more?

-  Who can see your data >
-  How your data improves your experience >

## Data from apps and services you use


Your content and preferences related to the Google services you use and third-party apps with



Personal info **Data & privacy** Security People & sharing Payments >




## Things you've done and places you've been

Your options for history, ads, and personalization. Rediscover the things you've searched for, read, and watched, and see the places you've visited.



### History settings

Choose whether to save the things you do and places you go to get more relevant results, personalized maps, recommendations, and more

-  Web & App Activity  On >
-  Location History  On >
-  YouTube History  On >

See and delete your history anytime

[My Activity](#) [Maps Timeline](#) [YouTube](#)

### Ad settings

You can choose whether the ads you see are personalized based on things like interests and brand prefer-



**Do** provide descriptions/ explanations in clear, short and easy to understand language as privacy settings tend to be confusing.

**Do** allow all available privacy settings to be editable on the same page. Intuitive privacy settings help build trust with users.

**Do** allow users clear and distinctive options to stop sharing information that is sensitive to senior users, like location, income, address.etc

## Consideration 05

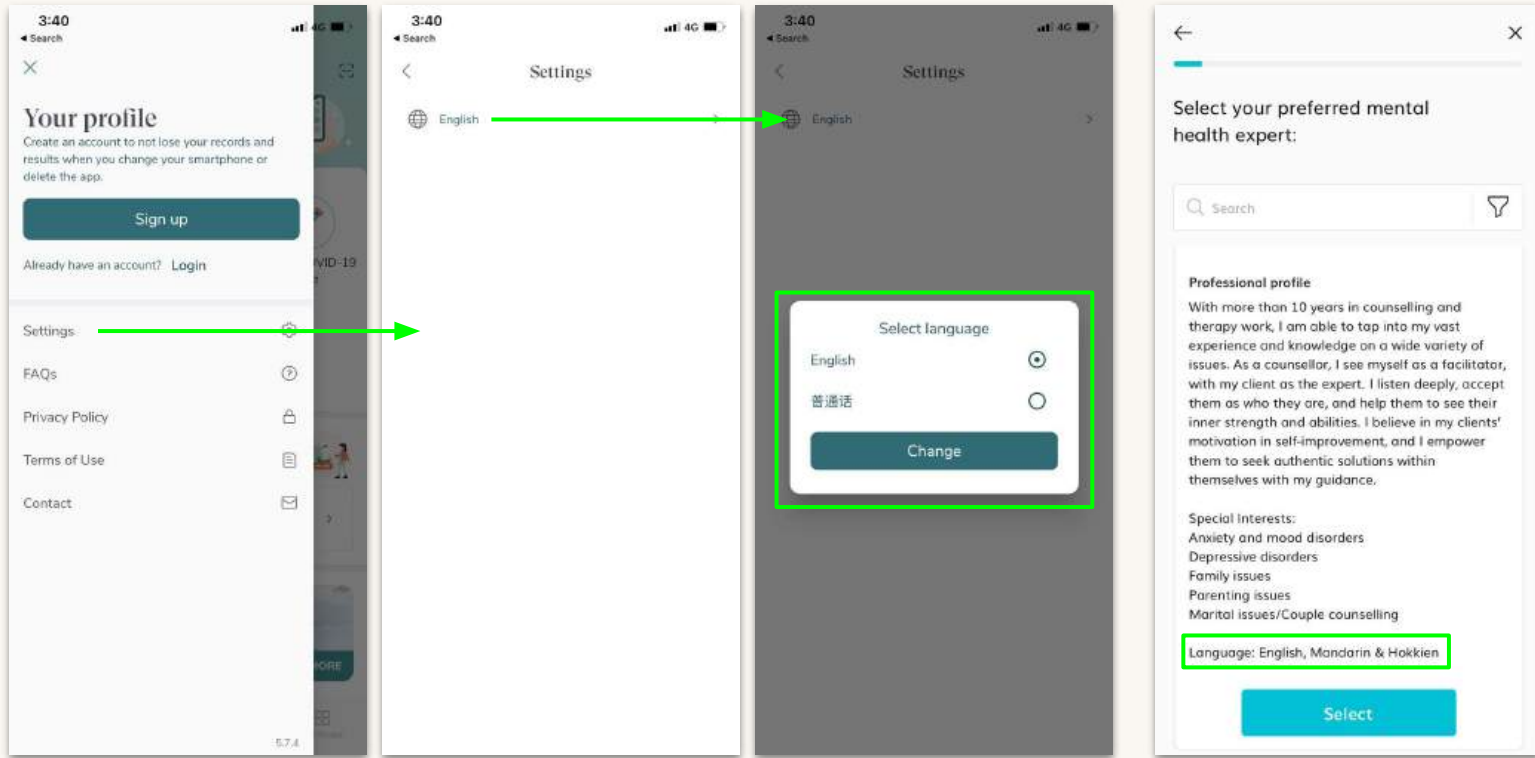
# Provide language alternatives.

### Do consider:

- Providing the option to view digital content in different languages.
- Allowing users to select their preferred language before purchasing/engaging in a digital service; e.g. Teleconsult, chatbot enquiry or online purchase.

### Else:

- Expect users to take up an extensive amount of time or simply give up, when consuming content or service.



**Do** allow users the option to view content in their preferred language.

**Do** inform users of the languages available for the service and allow them the option to filter by languages for services like Teleconsulting.

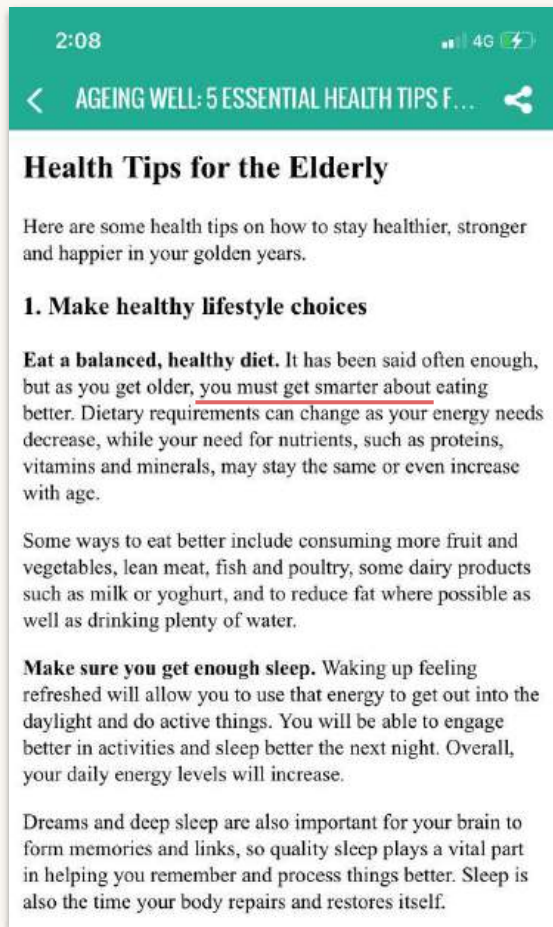
**Content Writing**

**and Segregation**

# 06

**Do** provide content in a neutral tone when writing content for users of all ages.

- **Avoid** writing content that stereotypes or makes fun of your users or anyone they care for as it reduces the credibility of your content.

A screenshot of a mobile application interface. At the top, there is a green header bar with the time '2:08', signal strength, '4G', and a battery icon. Below the header, there is a navigation bar with a back arrow, the text 'AGEING WELL: 5 ESSENTIAL HEALTH TIPS F...', and a share icon. The main content area has a white background with a title 'Health Tips for the Elderly' in bold. Below the title is a paragraph: 'Here are some health tips on how to stay healthier, stronger and happier in your golden years.' This is followed by a section header '1. Make healthy lifestyle choices'. Under this section, there are three paragraphs. The first paragraph starts with 'Eat a **balanced, healthy diet**. It has been said often enough, but as you get older, **you must get smarter** about eating better. Dietary requirements can change as your energy needs decrease, while your need for nutrients, such as proteins, vitamins and minerals, may stay the same or even increase with age.' The second paragraph starts with 'Some ways to eat better include consuming more fruit and vegetables, lean meat, fish and poultry, some dairy products such as milk or yoghurt, and to reduce fat where possible as well as drinking plenty of water.' The third paragraph starts with 'Make sure you get enough sleep. Waking up feeling refreshed will allow you to use that energy to get out into the daylight and do active things. You will be able to engage better in activities and sleep better the next night. Overall, your daily energy levels will increase.' The final paragraph starts with 'Dreams and deep sleep are also important for your brain to form memories and links, so quality sleep plays a vital part in helping you remember and process things better. Sleep is also the time your body repairs and restores itself.' A large red 'X' is superimposed over the right side of the screenshot.

**Avoid** words like “you must get smarter” when writing for users. It suggests that users are currently not smart and it dissuades them from reading further.

# 07

## **Do write content in that is concise, objective and facts-driven.**

- **Do provide facts and statistics in an objective manner when it comes to sensitive topics** such as health concerns and end-of-life care.

### **Sense-less death risk**

Hearing loss and vision loss have also been linked, not only to reduced quality of life, but an increased risk of death in older adults.

A Purdue University study found that a person's death risk jumped by 16 percent each time their eyesight declined enough to obscure an additional letter on the traditional eye exam chart.

Study author and assistant professor at Purdue, Sharon Christ, says the elevated danger was likely due to the fact that fading eyesight prevented people from performing instrumental activities of daily living (IADLs) including shopping, using the telephone, paying bills and cooking meals. "When individuals were no longer able to engage in these activities because of visual impairments, their life expectancy was reduced," says Christ.

In 2010, a group of Australian scientists discovered that aging adults with hearing loss were more likely to die



**Avoid titles and choice of words that instill fear in your users**, such as "Sense-less death risk".

There are two kinds of AMD, dry and wet. More common is the dry, which can cause loss of central vision — essential for reading and driving — but so gradually that many people have it for decades with no obvious effect. Wet, or neovascular, is more dangerous. Abnormal blood vessels grow into the retina, in some cases leading to bleeding or leaking of fluid. Wet AMD is frightening, Pluznik says, because it may alter vision suddenly: "Patients can wake up one day and just see a central black spot."

Don Albrecht, 85, of Great Falls, Va., was recently diagnosed with dry AMD in his left eye and wet AMD in his right eye. The warning sign came last fall, when he was watching a baseball game on TV and couldn't see certain details on the players' uniforms. He became alarmed and eventually was referred to a retina specialist, who treated his wet AMD with injections that eliminated the intruding blood vessels, a relatively new procedure. "If it had been 10 years ago," he says, "I may have lost my sight."



**Do provide concise and fact-driven content** to make it more receptive for users to consume and understand.

# 08

## Do curate different sets of information meant for the different intended audiences.

- Do simplify complex topics to help the general staff and patients digest information with ease.
- Do separate and provide clear labels for information meant for clinicians, from information meant for patients.
- Avoid providing the same complex information to both the general users and the expert users.

SEARCH RESULTS

DISPLAYING 1 - 10 OF ABOUT 263 RESULTS

alecensa

1 2 3 4 5 6 7 8 9 10 11 >

**Alecensa® (alectinib) - Information for Patients**

<https://www.gene.com/patients/medicines/alecensa>

Actemra; Actemra; Activase; Alecensa; Avastin; Boniva Tablets; Cathflo Activase; CellCept; Cotellic ... Report side effects for your Alecensa prescription.

**Alecensa® (alectinib) - Information for Healthcare Providers**

<https://www.gene.com/medical-professionals/medicines/alecensa>

Actemra; Actemra; Activase; Alecensa; Avastin; Boniva

Patients / Our Medicines

PATIENT MEDICAL PROFESSIONAL

**ALECENSA®**  
ALECTINIB

FULL PRESCRIBING INFORMATION

PATIENT INFORMATION  
Last updated September 9th, 2021

Support & Resources

REPORT SIDE EFFECTS FOR YOUR ALECENSA PRESCRIPTION

GET HELP PAYING FOR YOUR ALECENSA PRESCRIPTION

GET ANSWERS TO YOUR QUESTIONS ABOUT YOUR ALECENSA PRESCRIPTION

What it Treats

Who is ALECENSA for?

ALECENSA is a prescription medicine used to treat people

**What it Treats**

Who is ALECENSA for?

ALECENSA is a prescription medicine used to treat people with non-small cell lung cancer that has spread to other parts of the body (mNSCLC) and is caused by an abnormal anaplastic lymphoma kinase (ALK) gene. Your healthcare provider will perform a test to make sure that ALECENSA is right for you.

It is not known if ALECENSA is safe and effective in children.

**Important Safety Information**

What is the most important information I should know about ALECENSA?

Everyone reacts differently to treatment with ALECENSA. It's important to know the most serious and most common side effects with ALECENSA.

Your doctor may lower the dose or stop treatment with ALECENSA if any side effects occur. Contact your doctor right away if you have any of the following side effects.

**ALECENSA may cause serious side effects, including:**

Liver problems (hepatotoxicity). ALECENSA may cause liver injury. Your doctor will do blood tests at least every 2 weeks for the first 3 months, and then 1 time each month and as needed during treatment with ALECENSA. Tell your doctor



Do label the information according to the intended audience, when they are presented on the same page.

# 09

**Avoid using jargons  
as much as possible.**

- **Avoid terminology and language** that may not be easily understood by users who are new to technology.
- **Do define the technology-related terms immediately** if the usage is necessary.

**Avoid terms like :**

- RSS
- Web
- Cloud
- URL
- Lan
- Wifi

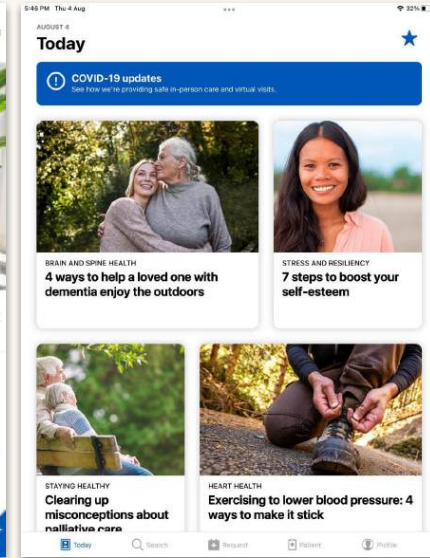
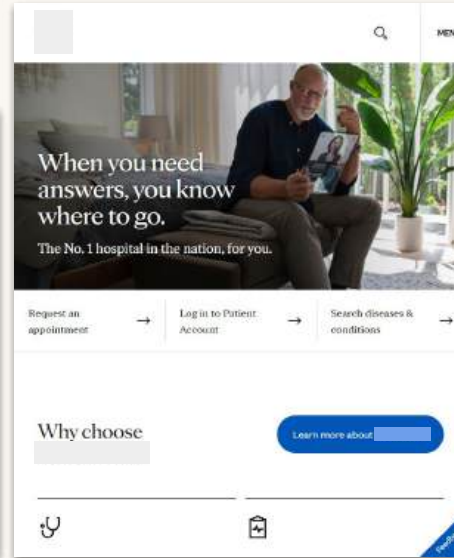


# Page Layout

# 10

**Do** prioritise information and features based on the users' needs.

- **Do** identify the key users and place the most accessed features and information in the most noticeable areas.
- **Avoid** cluttering the screens with content and features that are not the user's priority.
- **Avoid** hiding the frequently accessed features and information.



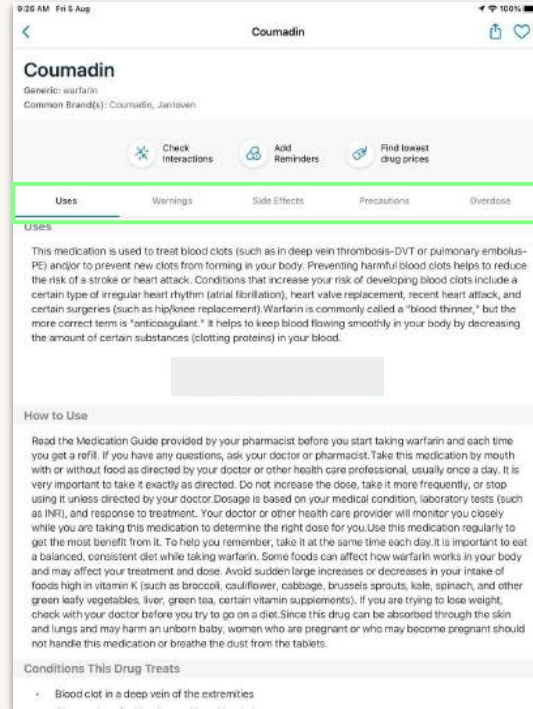
**Do** identify the key user needs and behaviour for each platform. In the example above, similar appointment booking features can be found on the website (left) and app (right), but the website prioritises transactions while the app focuses more on health information.



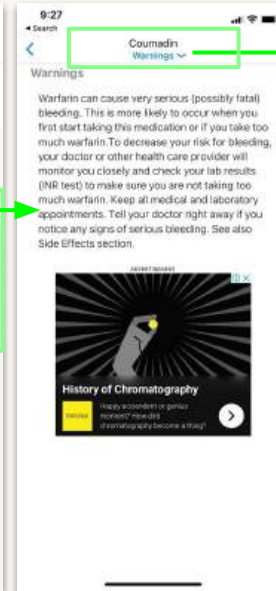
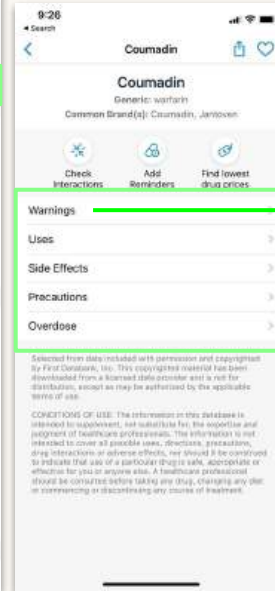
# 11

**Do** display content links up front, to help users navigate to the information they need.

- **Do** identify what is the information your users need before deciding on the page layout.
- **Do** use informative and intuitive terms to help users navigate with ease.



**Do** bring forward the content links to help users identify the information they need before committing their time to consume them.

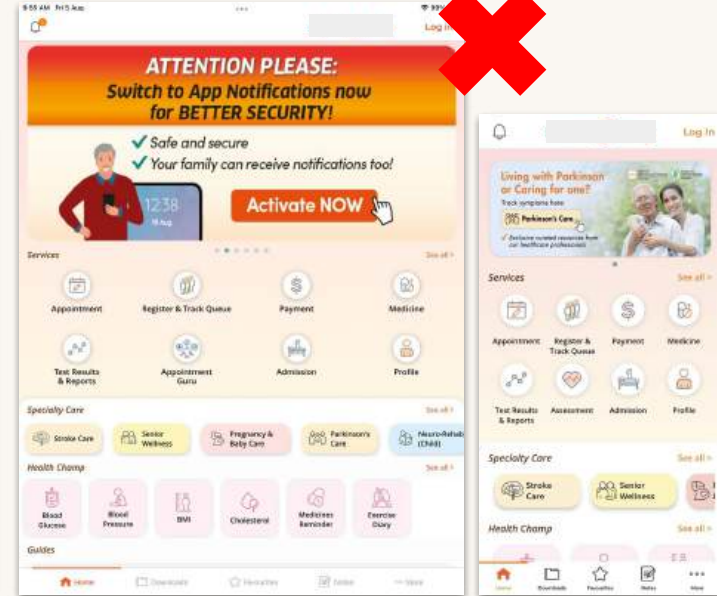
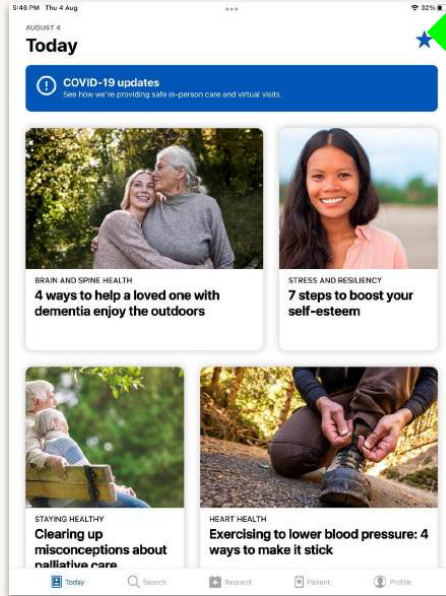


**Do** provide the option for users to switch between the content links with ease.

# 12

**Do** reduce the number of actions available on each viewable area.

- **Avoid** having multiple actions on a single screen as it may overwhelm users new to technology.



**Do** reduce the number of items on a given screen. Lesser items help users with concentration issues or new to technology, focus better. More items could mean a longer processing time before they attempt to complete their goals.

# 13

## Do break down large chunks of information with the help of text formatting elements.

- Avoid presenting information in one large chunk as it requires users to read each line before finding out if it contains any information they need.
- Do make information easy to scan by using text formatting elements like:
  - Headings
  - Subheadings,
  - Bolded keywords
  - Bulleted lists .etc

### Risk factors

Factors that may make you more susceptible to interstitial lung disease include:

- **Age.** Interstitial lung disease is much more likely to affect adults, although infants and children sometimes develop the disorder.
- **Exposure to occupational and environmental toxins.** If you work in mining, farming or construction or for any reason are exposed to pollutants known to damage your lungs, your risk of interstitial lung disease is increased.
- **Gastroesophageal reflux disease.** If you have uncontrolled acid reflux or indigestion, you may be at increased risk of interstitial lung disease.
- **Smoking.** Some forms of interstitial lung disease are more likely to occur in people with a history of smoking, and active smoking may make the condition worse, especially if there is associated emphysema.
- **Radiation and chemotherapy.** Having radiation treatments to your chest or using some chemotherapy drugs makes it more likely that you'll develop lung disease.

### Complications

Interstitial lung disease can lead to a series of life-threatening complications, including:

- **High blood pressure in your lungs (pulmonary hypertension).** Unlike systemic high blood pressure, this condition affects only the arteries in your lungs. It begins when scar tissue or low oxygen levels restrict the smallest blood vessels, limiting blood flow in your lungs. This in turn raises pressure within the pulmonary arteries. Pulmonary



Do use subheadings and short paragraphs to make content easy to consume.

Do use bullet points to break the content down and reduce unnecessary words.

Do bold keywords or phrases to help users jump to the different points.

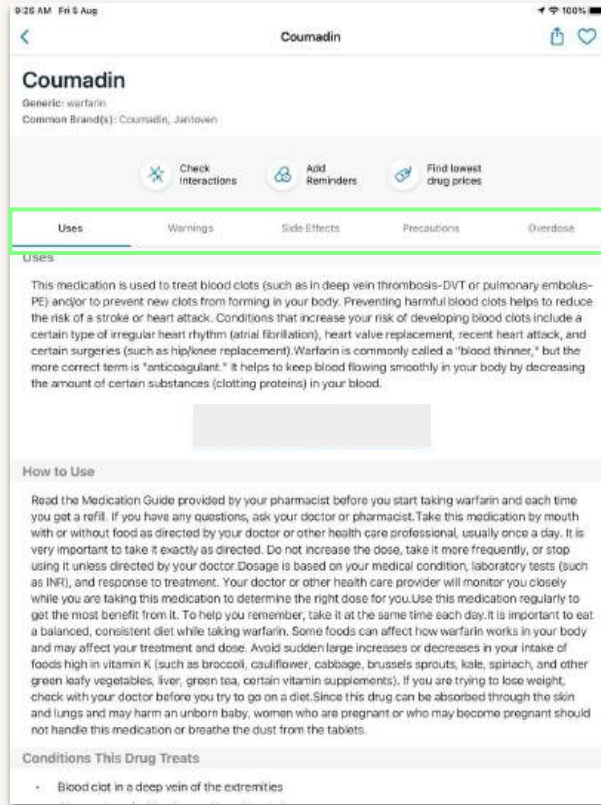
Do begin each sentence or bullet point with informative and distinctive words to help users find the information they need.

# 14

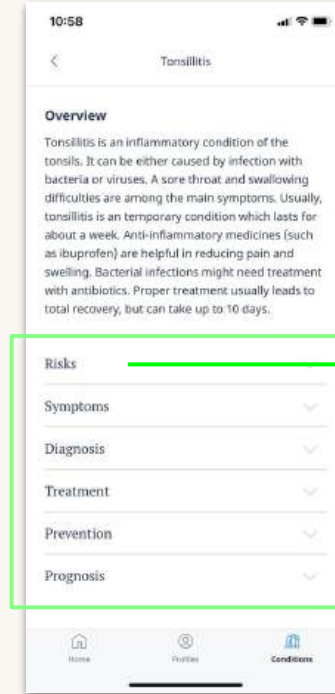
**Do** use tabs or accordions .etc, to present long pieces of content.

- **Avoid** presenting information that requires the users to scroll continuously to prevent building up fatigue in users.
- **Do** use information-layering techniques to avoid the need for endless scrolling:

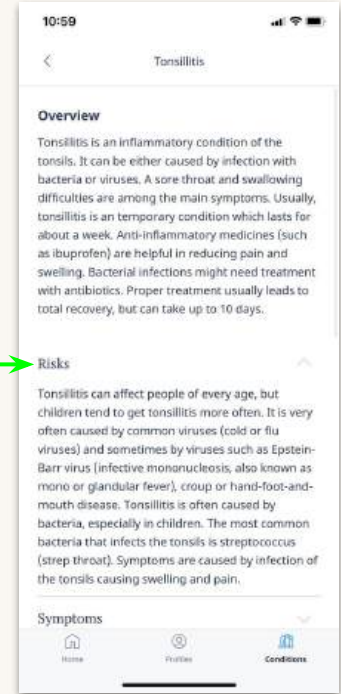
- Tabs
- Anchor links
- Divide content into multiple pages
- Accordions



**Do** use tabs or accordions with descriptive names to split up content into different sections for easier consumption.



**Do** consider the devices your content would be displayed before deciding on the information-layering technique.



# 15

**Do** provide the option to compare products or information.

**Do** allow users to:

- Select the items they are interested in
- And/or do a side-by-side comparison

**In** the event when

- There are multiple items
- There are multiple lines of details
- Users are required to constantly scroll up and down to compare products

### Comparing Dupixent vs Fasenna

Dupixent (dupilumab)	Fasenna (benralizumab)	Q Add a drug to compare
<p>Prescription only</p> <p>Dupixent is an injection that is usually given under the skin every other week for the treatment of asthma, eczema, and some other inflammatory conditions. Injection site reactions and eye conditions... <a href="#">more</a></p> <p><a href="#">More about Dupixent (dupilumab)</a></p>	<p>Prescription only</p> <p>Fasenna is a biologic that works by blocking the action of IL-5 which is the main cytokine responsible for the survival and production of eosinophils. Fasenna may be used to treat severe eosinophilic... <a href="#">more</a></p> <p><a href="#">More about Fasenna (benralizumab)</a></p>	
<b>Generic Status</b>		
No lower-cost generic available		No lower-cost generic available
<b>Ratings &amp; Reviews</b>		
Dupixent has an average rating of 6.8 out of 10 from a total of 329 ratings on Drugs.com. 56% of reviewers reported a positive effect, while 26% reported a negative effect. <a href="#">View all 329 reviews</a>	Fasenna has an average rating of 7.1 out of 10 from a total of 41 ratings on Drugs.com. 59% of reviewers reported a positive effect, while 23% reported a negative effect. <a href="#">View all 41 reviews</a>	
<b>Drug Class</b>		
• Interleukin inhibitors		• Interleukin inhibitors
<b>Side Effects</b>		

### Comparing Dupixent vs Xolair

Dupixent (dupilumab)	Xolair (omalizumab)
<p>Prescription only</p> <p>Dupixent is an injection that is usually given under the skin every other week for the treatment of asthma, eczema, and some other inflammatory conditions. Injection site reactions and eye conditions... <a href="#">more</a></p> <p><a href="#">More about Dupixent (dupilumab)</a></p>	<p>Prescription only</p> <p>Xolair is an injectable preparation that works by preventing IgE from binding to IgE receptors on mast cells and basophils and may be used to treat allergic asthma, nasal polyps, and chronic... <a href="#">more</a></p> <p><a href="#">More about Xolair (omalizumab)</a></p>
<b>Generic Status</b>	
No lower-cost generic available	
<b>Ratings &amp; Reviews</b>	
Dupixent has an average rating of 6.8 out of 10 from a total of 329 ratings on Drugs.com.	Xolair has an average rating of 7.5 out of 10 from a total of 41 ratings on Drugs.com.

### Comparing Dupixent vs Xolair

Dupixent (dupilumab)	Xolair (omalizumab)	Q Add a drug to compare
<p>Prescription only</p> <p>Dupixent is an injection that is usually given under the skin every other week for the treatment of asthma, eczema, and some other inflammatory conditions. Injection site reactions and eye conditions... <a href="#">more</a></p>	<p>Prescription only</p> <p>Xolair is an injectable preparation that works by preventing IgE from binding to IgE receptors on mast cells and basophils and may be used to treat allergic asthma, nasal polyps, and chronic... <a href="#">more</a></p>	<b>Related suggestions</b> <ul style="list-style-type: none"><li>Asthma, Maintenance Advair Diskus</li><li>Symbicort</li><li>Albuterol</li><li>Singulair</li><li>Ventolin</li></ul>

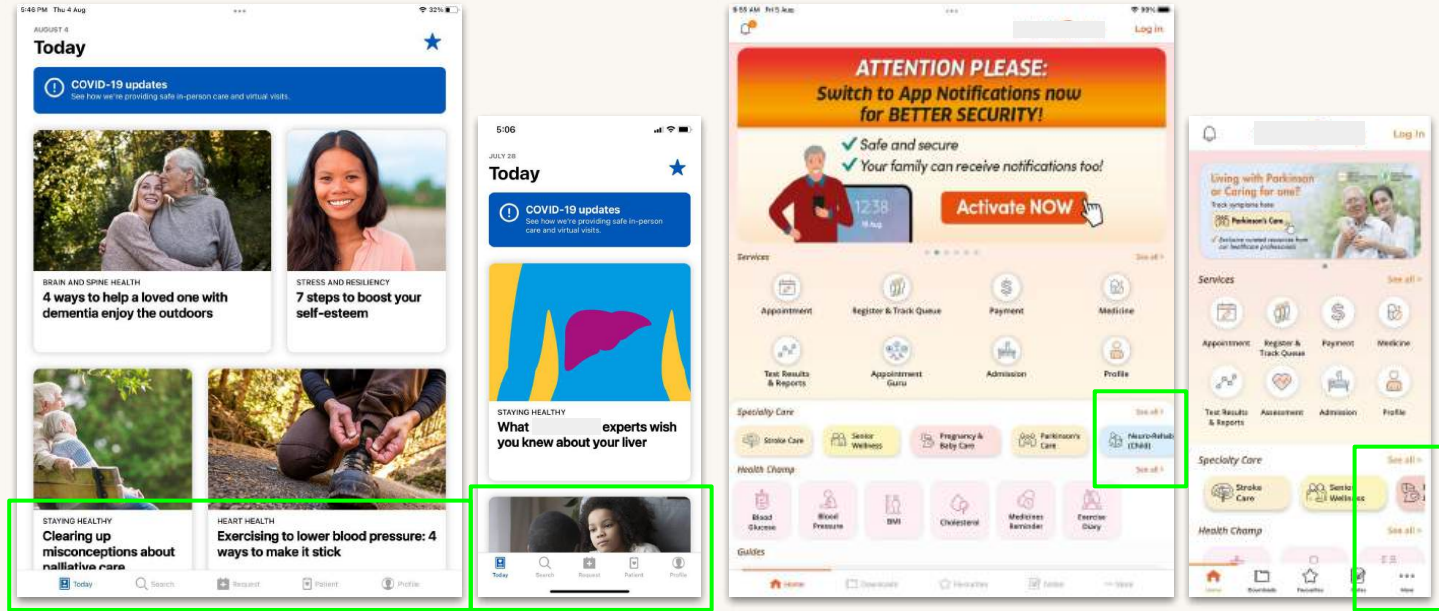


**Do** allow users to conduct a detailed side-by-side comparison of similar products when there are multiple items with many lines of details.

# 16

**Do** design layouts that allow some elements to peek out to invite scrolling.

- **Avoid** presenting content that appears to be 'complete' within the viewable area. Users may assume that there is nothing more beyond and decided not to scroll further.



**Do** ensure that content peeks out or gets cut off at the end of the screen whenever there is a need to scroll in that direction.



# 17

**Do** use tables whenever possible to help users scan and consume information.

- **Do** present information that involves numbers and the need for comparison in a simple table for easy scanning.

2:10 PM Fri 5 Aug 91%

Search

Customers who viewed this item also viewed Page 1 of 8

Fresh New Zealand Pink Lady Apples, 1kg  
\$36.14 (316.34/Count)

Global Seasons Premium Mixed Flat Apples, 4 Count  
\$54.00 (13.50/Item)

Amae Pink Lady Apples, 4 Count  
\$55.00 (13.75/Item)

Amae Red Small Fuji Apples, 200g  
\$53.81 (269.00/Count)

**Product description**  
The distinctive rosy-red blush makes this apple too pretty to resist. It is refreshing, sweet and crisp. Country of Origin - New Zealand.

**Product information**

Technical Details	
Weight	500 Grams
Brand	Amae
Item Package Quantity	1
Manufacturer	fresh produce
Package dimensions	19 x 19 x 11 cm; 500 Grams
Ingredients	Apple

Additional Information	
ASIN	B07DJQNWPS
Customer Reviews	4.1 out of 5 stars 6 ratings
Date First Available	23 July 2020

**Feedback**  
Would you like to tell us about a lower price?

**Product details**  
Package dimensions : 19 x 19 x 11 cm; 500 Grams  
Manufacturer : fresh produce  
ASIN : B07DJQNWPS  
Country/Region Produced in : New Zealand  
Customer reviews:  
4.1 out of 5 stars 6 ratings

**Important information**  
**Ingredients:**  
Apple  
**Legal Disclaimer**

2:10

Search in

Shop Aisle

**Product information**

Weight	500 Grams
Brand	Amae
Item Package Quantity	1
Manufacturer	fresh produce
Package dimensions	19 x 19 x 11 cm; 500 Grams
Ingredients	Apple

**Additional information**  
ASIN: B07DJQNWPS  
Customer Reviews: 4.1 out of 5 stars 6 Reviews  
Date First Available: 23 July 2020

**Important information**  
**Ingredients:**  
Apple  
**Legal Disclaimer:**

Home Cart

**Do** create tables with the following criteria:

- Keep it simple with minimal columns
- Intuitive and distinctive headings
- Only include relevant information without overloading the users



# 18

**Do** ensure that information in the table is easy to scan and consume.

- **Do** include the following when presenting information in a table:

- Provide ample white spaces between each piece of information.
- Use legible font size.
- Consider having different alignment between the column and row headers, from the information in each cell.
- Consider having alternate row colours.

Customers who viewed this item also viewed

Page 1 of 8

Product description

The distinctive rosy-red blush makes this apple too pretty to resist. It is refreshing, sweet and crisp. Country of Origin - New Zealand.

Product information

Technical Details	
Weight	500 Grams
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Package dimensions	19 x 19 x 11 cm; 500 Grams
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ASIN	B07DJQNWPS
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Date First Available	23 July 2020

Feedback

Would you like to tell us about a lower price?

Product details

Package dimensions : 19 x 19 x 11 cm; 500 Grams  
Manufacturer : fresh produce  
ASIN : B07DJQNWPS  
Country/Region Produced in : New Zealand  
Customer reviews: 4.1 out of 5 stars 6 ratings

Important information

Ingredients:  
Apple

Legal Disclaimer

2:10

Search in

Shop Ailac

Product information

Weight	500 Grams
Brand	Amac
Item Package Quantity	1
Manufacturer	fresh produce
Package dimensions	19 x 19 x 11 cm; 500 Grams
Ingredients	Apple

Additional information

ASIN: B07DJQNWPS  
Customer Reviews: 4.1 out of 5 stars 6 Reviews  
Date First Available: 23 July 2020

Important information

Ingredients:  
Apple

Legal Disclaimer:


**Do** ensure that there is a comfortable amount of white space between each table/cell value to help users glance through the information with ease.




# 19


**Avoid distracting or leading users away from the content they came for.**

- **Avoid placing non-related content links (like content recommendations) in between the content.** Users may assume that the content has ended.

The study authors also found that reading on a smartphone for at least one hour at one sitting, or for two hours throughout the day, for six months, also elevated a person's risk for developing premature presbyopia. 


EDITOR'S PICKS

 **6 Eye Conditions to Watch Out For as You Age**

 **Talking to Your Eye Doctor About Wet**

**How Is Presbyopia Diagnosed?**


Presbyopia is diagnosed during routine, comprehensive eye exams that test your ability to see both near and distant objects.

 During the exam, your ophthalmologist (eye doctor) may also dilate your pupils to make it easier to see the insides of your eyes. Your eyes may stay a bit sensitive to light for several hours after the exam.

**Avoid placing recommendations in the middle of the content that your users are consuming.**

4:11 PM Fri 5 Aug 90%

**Tonsillitis**

you start antibiotics. Antibiotics won't help with viruses, which actually cause most cases of tonsillitis. Treatment with painkillers, extra fluids, and rest will help relieve the symptoms. Children and teenagers should not take aspirin, which is associated with a rare but serious illness called Reye's syndrome. Symptoms from viral tonsillitis should go away within 7 to 10 days. Sometimes, children or adults with recurring tonsillitis, breathing problems, or difficulty swallowing need surgery to remove the tonsils. 

**Did You Know?**

- If your doctor prescribes antibiotics, take all the pills on schedule, even after you're feeling better.
- Some historians believe that George Washington died from a complication of untreated tonsillitis.
- One symptom of a tonsillitis complication is called "hot potato" voice — a person speaks as if he has a mouthful of hot potatoes.

**Fact**

Some studies show that about 1 in 10 children have recurrent tonsillitis.

[Check the WebMD Ear, Nose & Throat Message Board](#)


[Sources](#)


Reviewed by [Carol DeSarkissian](#) on February 01, 2020


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**RECOMMENDED**

**Children's Tonsillitis Often Returns**  
Kids' tonsillitis often returns despite antibiotic therapy, a new study shows.

**Guide to Strep Throat**  
Strep throat is an infection of your throat, and sometimes tonsils, that's caused by bacteria. Find out how you get a diagnosis, ways to treat it, and home remedies that can make you feel better. 

**Doctors' Group: Antibiotics Can Be Taken for Shorter Periods**  
Some of the most common bacterial infections can now be treated with shorter courses of the drugs. 

**Bacterial vs. Viral Infections**  
Bacterial and viral infections are spread through coughing, sneezing, kissing, pets, contaminated water, food, and many other ways. 

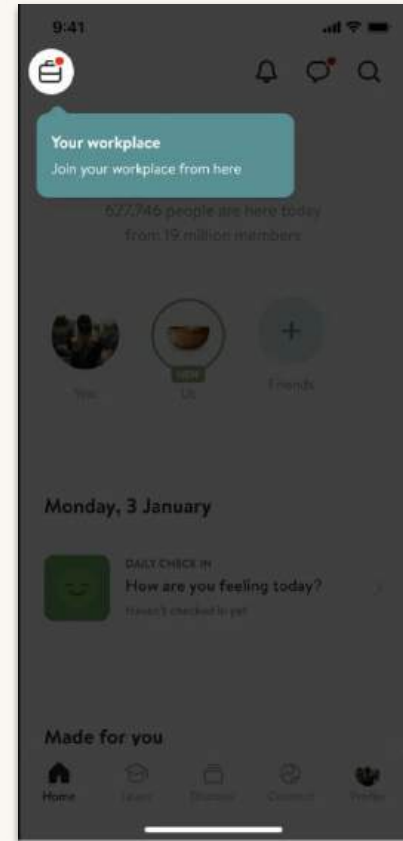
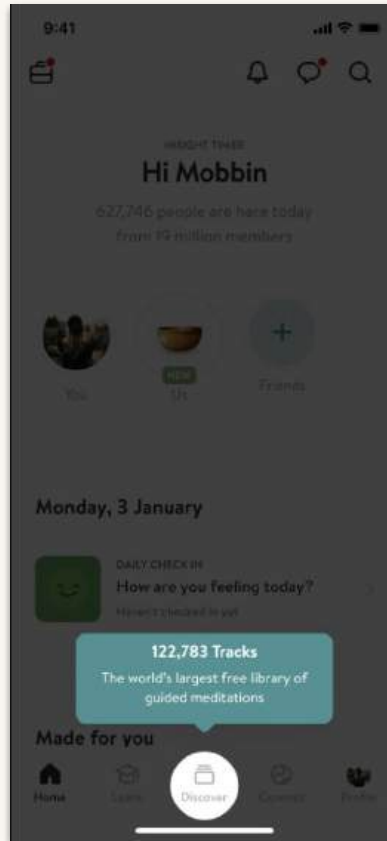
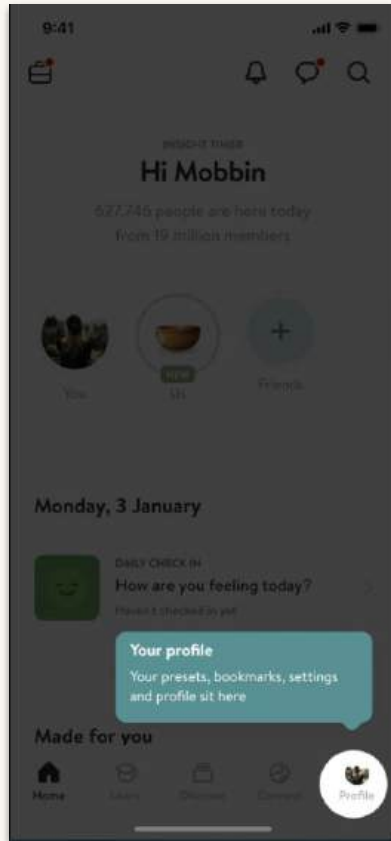
**ESBL-Producing Bacteria**  
Find out what you need to know about ESBL-producing bacteria, the infections they cause, and how you can treat them.

**Do present recommendations at the end of the content, within the viewable area.**

# 20

**Do** provide easy and clear instructions for any new app features.

- **Do** ensure that each onboarding instruction is short and concise to cater to users of all ages.



**Do** provide clear instructions to help users ease into the functions of a new app.

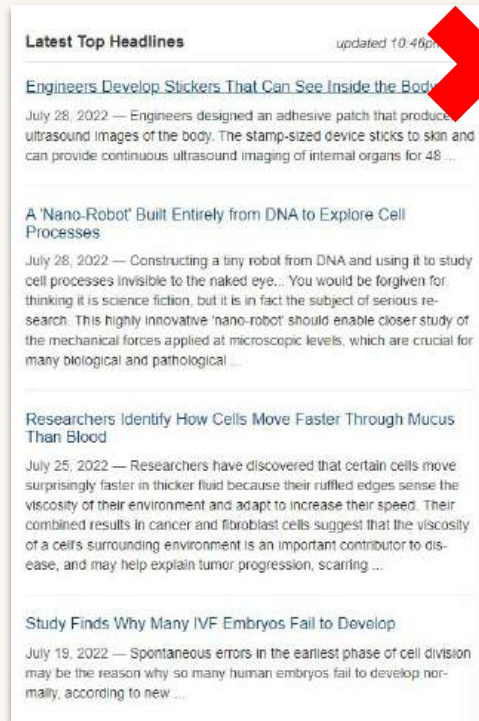
**Information**

**Presentation**

# 21

**Do** ensure adequate font sizes and contrast for minimal readability.

- **Do** ensure that the body copy is at least 16 points(pt) for mobile devices.



**Latest Top Headlines** updated 10:46pm

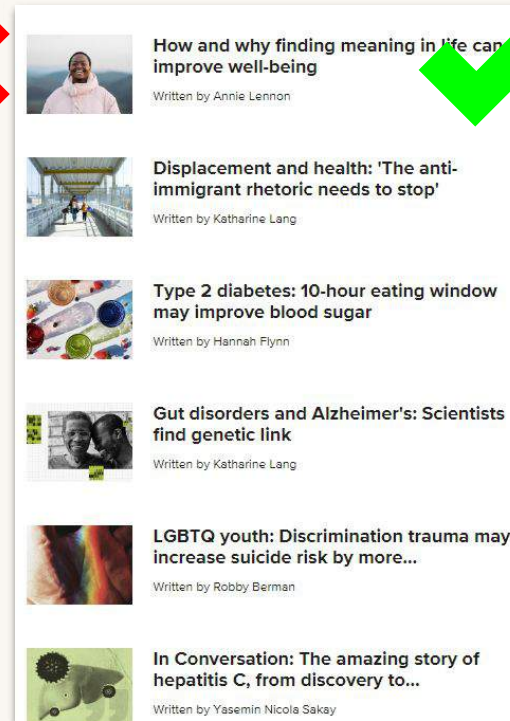
**Engineers Develop Stickers That Can See Inside the Body**  
July 28, 2022 — Engineers designed an adhesive patch that produces ultrasound images of the body. The stamp-sized device sticks to skin and can provide continuous ultrasound imaging of internal organs for 48 ...

**A 'Nano-Robot' Built Entirely from DNA to Explore Cell Processes**  
July 28, 2022 — Constructing a tiny robot from DNA and using it to study cell processes invisible to the naked eye... You would be forgiven for thinking it is science fiction, but it is in fact the subject of serious research. This highly innovative 'nano-robot' should enable closer study of the mechanical forces applied at microscopic levels, which are crucial for many biological and pathological ...

**Researchers Identify How Cells Move Faster Through Mucus Than Blood**  
July 25, 2022 — Researchers have discovered that certain cells move surprisingly faster in thicker fluid because their ruffled edges sense the viscosity of their environment and adapt to increase their speed. Their combined results in cancer and fibroblast cells suggest that the viscosity of a cell's surrounding environment is an important contributor to disease, and may help explain tumor progression, scarring ...

**Study Finds Why Many IVF Embryos Fail to Develop**  
July 19, 2022 — Spontaneous errors in the earliest phase of cell division may be the reason why so many human embryos fail to develop normally, according to new ...

**Avoid** having small text in dense layouts as it would require users to put in effort when scanning and finding the information they need.



**How and why finding meaning in life can improve well-being**  
Written by Annie Lennon

**Displacement and health: 'The anti-immigrant rhetoric needs to stop'**  
Written by Katharine Lang

**Type 2 diabetes: 10-hour eating window may improve blood sugar**  
Written by Hannah Flynn

**Gut disorders and Alzheimer's: Scientists find genetic link**  
Written by Katharine Lang

**LGBTQ youth: Discrimination trauma may increase suicide risk by more...**  
Written by Robby Berman

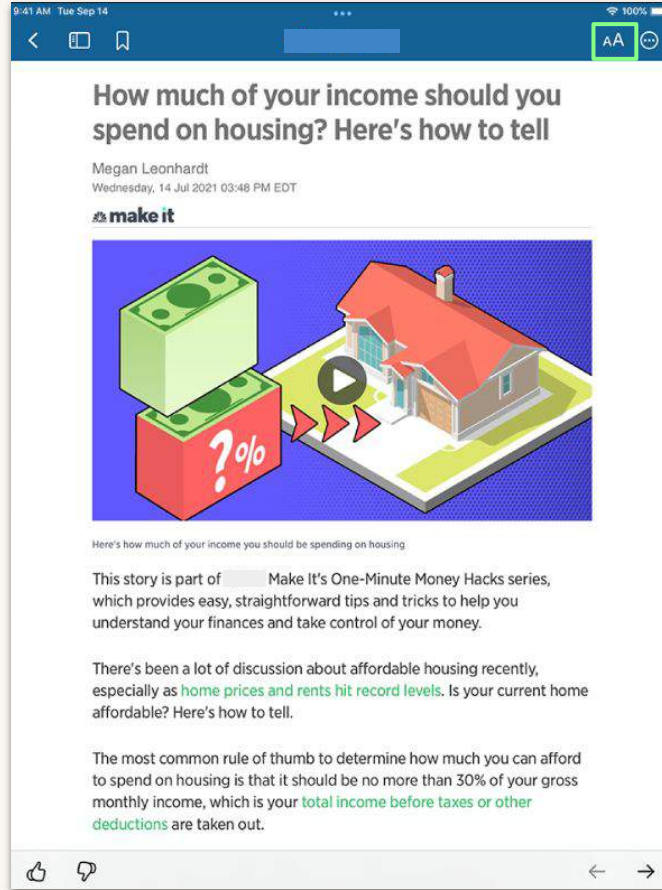
**In Conversation: The amazing story of hepatitis C, from discovery to...**  
Written by Yasemin Nicola Sakay

**Do** present content with ample spacing and contrasting headers. It makes it easier for users with visual issues to scan and consume large amounts of information.

# 22

**Do** allow your user to increase the content font sizes with ease.

- **Do** ensure that the responsive pages maintain consistency when the option to change font sizes is available.



**Do** provide the option to increase font size in a prominent position for articles.

# 23

## **Do ensure each line of text is easy to scan.**

- **Do ensure that any paragraph of text (or body copy) has a line-height of at least 1.5x of the font size;** If the font size is 12pt, the recommended line-height is  $12 \times 1.5 = 18\text{pt}$ .
- **Avoid justifying text** as it creates uneven pockets of spaces, distracting users from connecting one word to another.



This body of text has a line height of 1x of the font size. Although it seemed negligible, compounding discomfort when reading information can lead to user frustrations and skipping of crucial information. This body of text has a line height of 1x of the font size. Although it seemed negligible, compounding discomfort when reading information could lead to user frustrations and skipping of crucial information.



This body of text has a line height of 1.5x of the font size. Although it seemed negligible, relieving discomfort when consuming information can reduce user frustrations and the chances of them skipping crucial information. This body of text has a line height of 1.5x of the font size. Although it seemed negligible, relieving discomfort when consuming information could reduce user frustrations and the chances of them skipping crucial information.



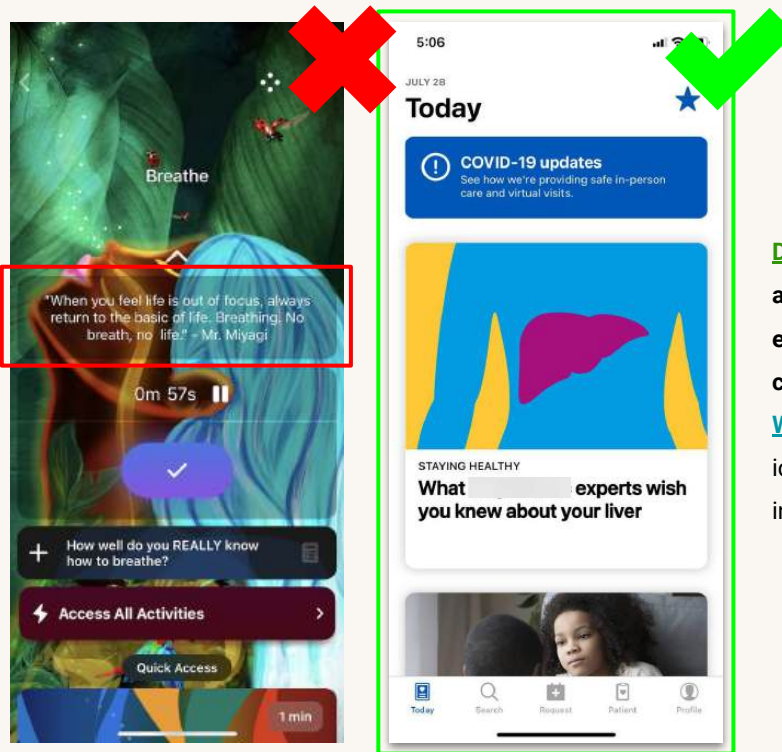
# 24

**Do** ensure that all page elements have a clear contrast between the text and background colour.

- **Do** use colours schemes like
  - Black text on a white or off-white background,
  - White text on a black or dark background or,
  - Any that passes the [WCAG AAA](#); a global benchmark for website accessibility.

**Avoid** overlapping text on images, especially for images that move automatically.

Varying contrast between the text and the background makes it hard for users with visual issues to read.

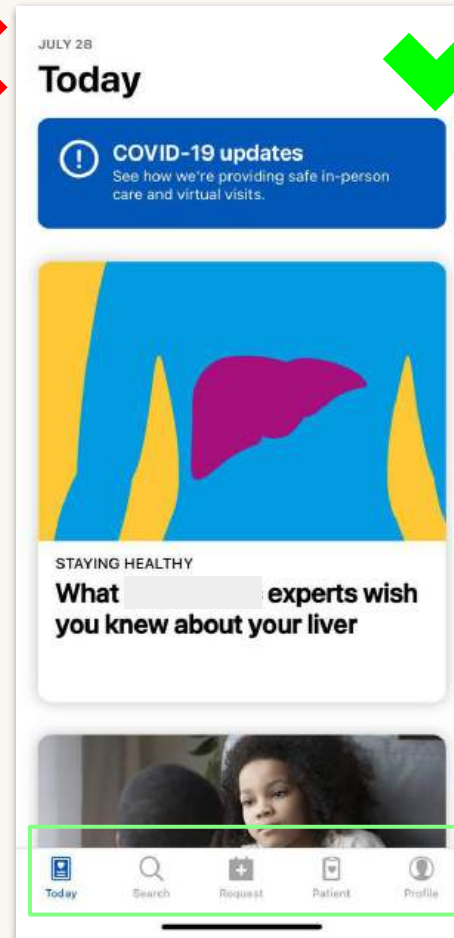
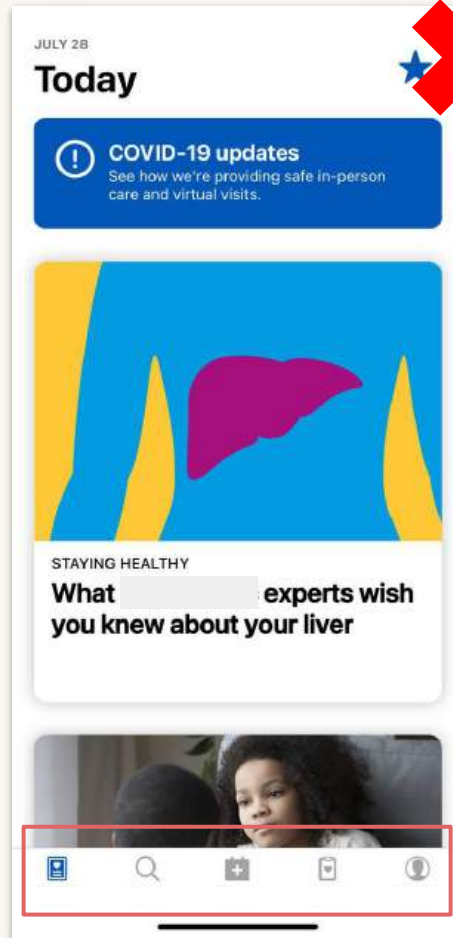


**Do** ensure that the text and background presented elements are of a certain contrast; passing the [WCAG AAA](#), to help users identify or perform the intended actions with ease.

# 25

**Do** use visual elements to help users understand better.

- **Do** use simple and relevant visual elements.
- **Avoid** using visual elements purely for decorative purposes or as a replacement for text.



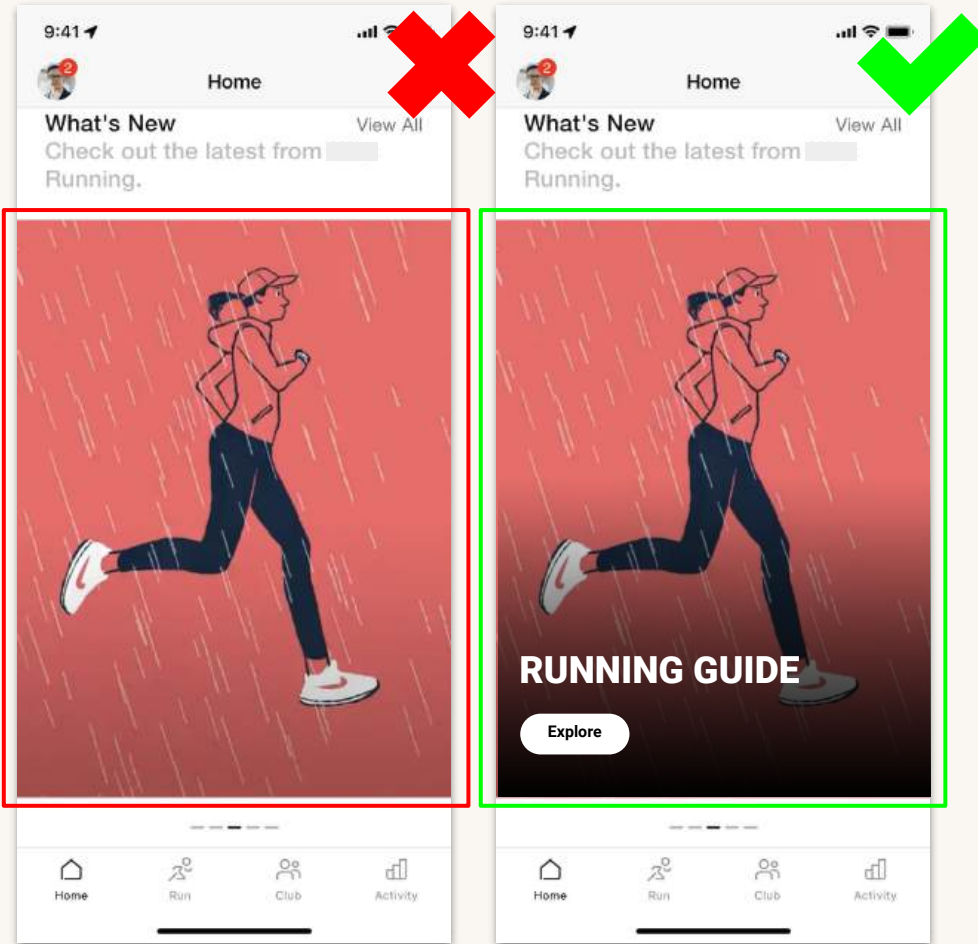
**Do** provide graphical elements with text labels to provide easier comprehension.

Removal of the text labels would cause confusion to users of all ages, especially for icons that are shaped differently or aren't commonly used.

# 26

## **Avoid replacing text links with image-only links.**

- **Do prioritise presenting links as text** as it helps users:
  - Intuitively register what are the clickable elements.
  - Scan for the information they need.
  - Improve accessibility for anyone using a screen-reader or voice assistant



**Do ensure that all clickable images are accompanied by descriptive text links.** Without the descriptive text links, users that could not connect the images to the headers or website would presume the images to be purely decorative.

# 27

**Do provide PDF files for documents that are meant to be printed.**

- **Do label the PDF documents** by indicating 'PDF' after the document name or show the Adobe Reader icon.
- **Avoid using PDF files as a replacement for website content.** PDF files are usually not designed to adapt to users' device habits, resulting in potential frustrations.

## Diet and Exercise: Choices Today for a Healthier Tomorrow

Download a printable PDF version of the [Diet and Exercise: Choices Today for a Healthier Tomorrow infographic](#) (PDF, 259K). [En español](#) (PDF, 240K).

Lifestyle choices you make today can lead to a healthier future. Learn how eating a healthy diet and exercising can help control or delay age-related health problems.

Share this infographic and help spread the word about healthy diet and exercise. Click on the social media icons above, or copy and paste the URL and post it to your account (Twitter, Facebook, etc.).

### DIET AND EXERCISE:

#### Choices Today for a Healthier Tomorrow

Eating a healthy diet and exercising often can help control or delay health issues associated with aging, like high blood pressure and diabetes.



**Do label the PDF documents** to let the users know what to expect before they click on a link.

# 28

## Avoid using colours as the only indicator to convey information.

- Do check every screen against a [colourblind simulator](#) or [software plugins](#), to ensure that users with visual issues would be able to comprehend the designs.

### Normal View Colour only

Enter your email

Create a password

 [Show](#)

### Red-blind view Colour only

Enter your email

Create a password

 [Show](#)

Avoid using colours as the only indicator when presenting detected errors. Users with visual issues will not be able to register the error and would be stuck, not understanding how to proceed.

### Normal View Colour + Icon

Enter your email

Create a password

  [Show](#)

### Red-blind view Colour + Icon

Enter your email

Create a password

  [Show](#)

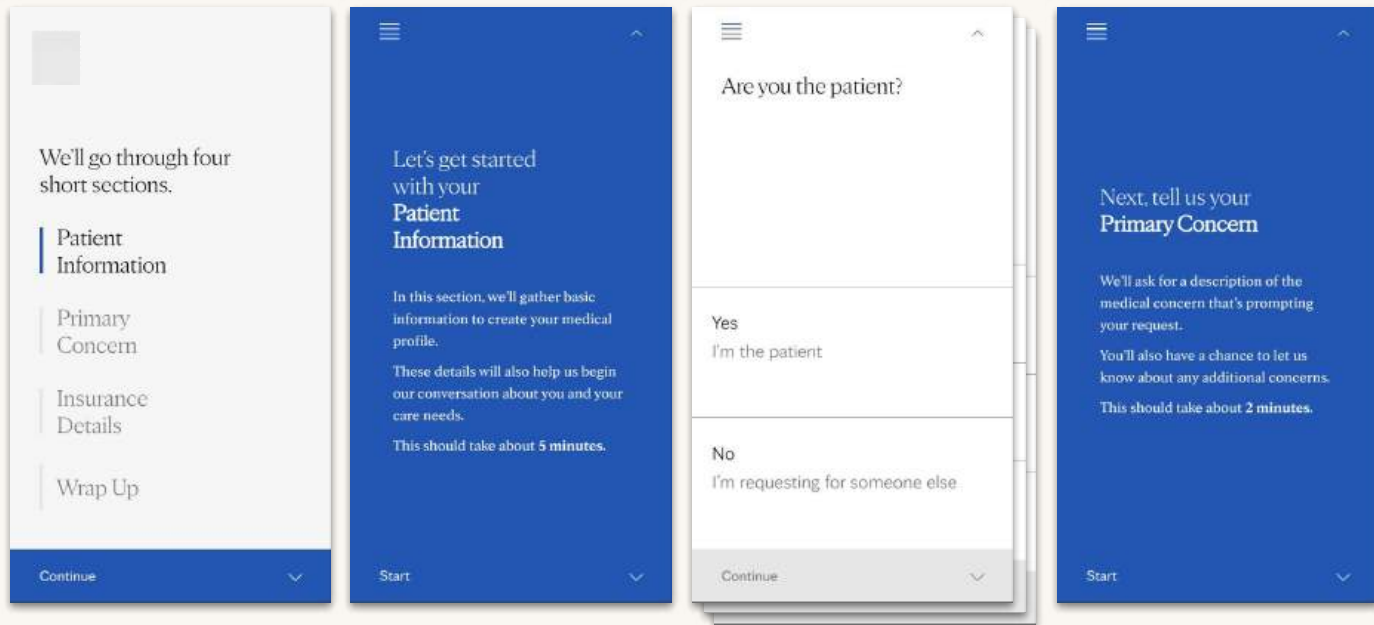
Do ensure that icons are included when presenting detected errors.

It allows users to register and resolve the error despite having visual issues.

# 29

## **Do** provide clear indications for progress and completion.

- **Do** display progress markers at each step of the process to inform users of their progress in relation to the entire process.
- **Do** ensure that the indications are consistent for all processes. Users would be confused if progress indicators change for each process.



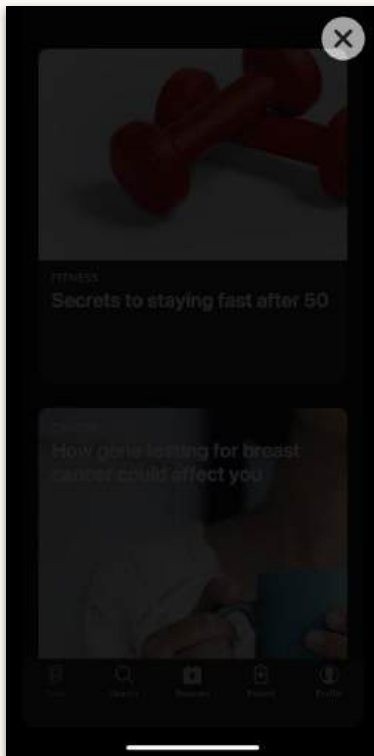
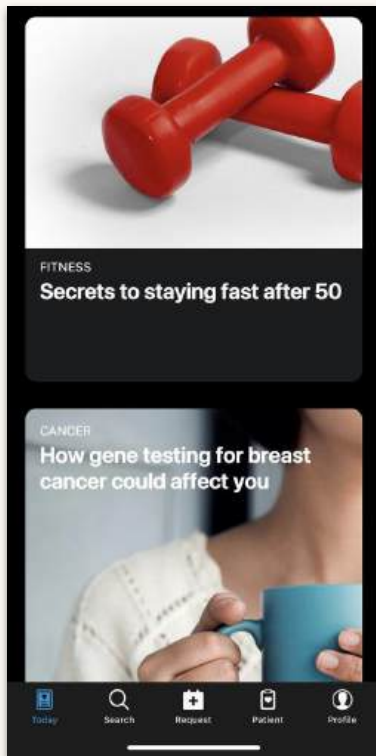
## **Do** provide distinctive visual aids to remind users of their progress and successful applications.

A full blue page is used to represent the completion of a section instead of a page in white, to avoid being mistaken as a question that needed to be answered.

# 30

**Avoid using excessive and complicated animations.**

- **Avoid the use of flashing, blinking and displacement animations** as it could create discomfort for some users.

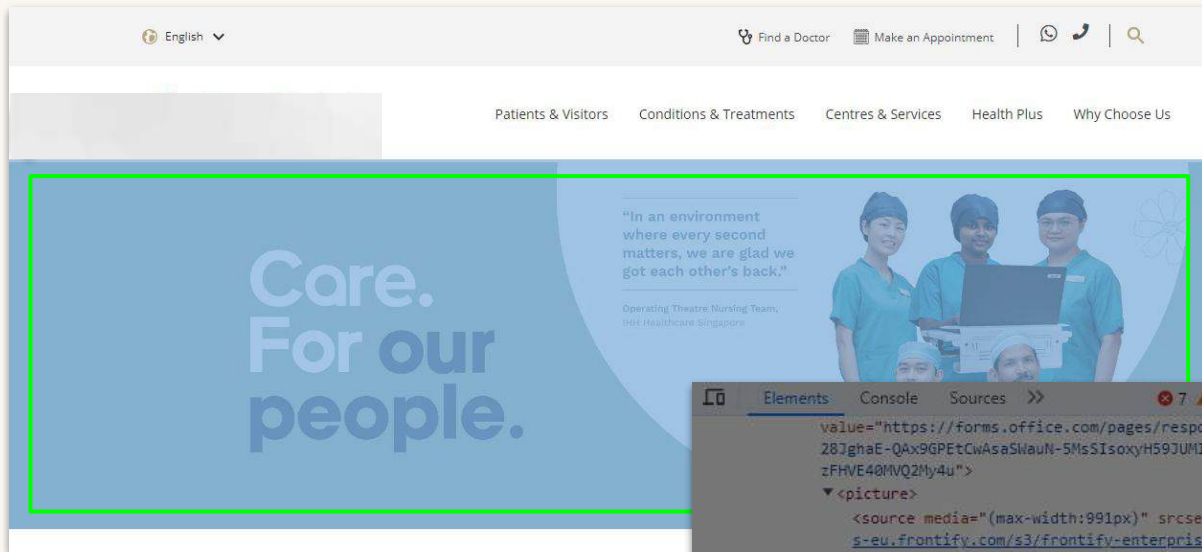


**Do keep transitions and animations simple and minimal**, like a quick and mild fade in or out, to reduce potential frustrations for the users.

# 31

**Do** add alt text for meaningful or actionable non-text content.

- **Do** provide precise and concise content descriptions in alt text. Alt text is typically found under labels like "description," "alt," or "alt text."



```
Elements Console Sources >> 7 2 3 ⚙️ ⋮ ✕
value="https://forms.office.com/pages/responsepage.aspx?id=xGm287ghaE-QAx9GPETCwAsa5WauN-5Ms5IsoxyH59JUM1I1T1VQTD44NEo3Qk9KQzFHVE40MVQ2My4u">
  <picture>
    <source media="(max-width:991px)" srcset="https://cdn-asset-s-eu.frontify.com/s3/frontify-enterprise-files-eu/ey...berhad:ym0gZM2-h1TMRyDQC7te1x2rXIQtW8kL7DHowvWkaM?width=990&format=webp" class="swiper-lazy swiper-lazy-loaded">
     == $0
  </picture>
  <!-- Preloader image -->
</a>
</div>
<div class="container"> </div>
</div>
<div class="swiper-slide swiper-slide-next" data-swiper-slide-index="3" style="width: 1348px; margin-right: 30px;" roles="group">
```



Low-to-no vision users depend on screen readers that can't read text within images, making alt text essential for app accessibility.

Web banners, like the ones shown, allow screen readers to vocalise the actionable content: "Join Our Nursing Team."



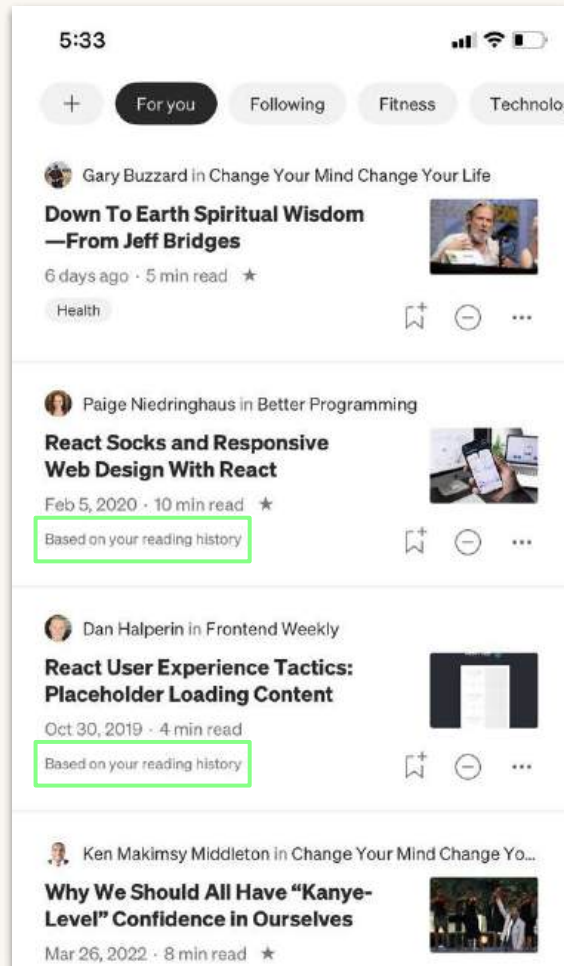
**Personalisation &**

**Customisation**

# 32

**Do** ensure that personalisation is consistent in all areas of the service or product.

- **Avoid** personalising only some of the services. Inconsistent levels of personalisation discourage users from services that lack personalisation.



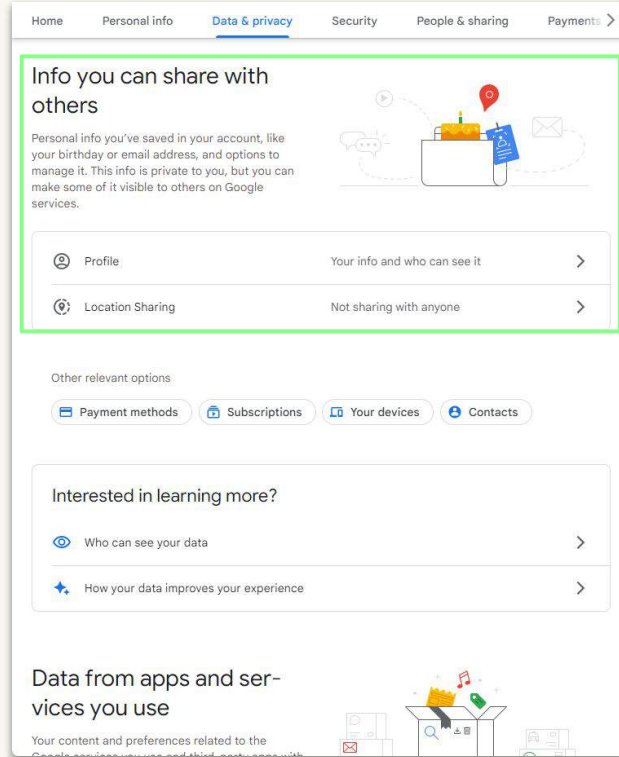
**Do** provide an explanation for each suggestion to build trust with users.

Knowing how and why a suggestion is presented gives users the impression that the service only tries to personalise the user's experience based on their browsing history and indicated interest.

# 33

## **Do** provide users full control of their data.

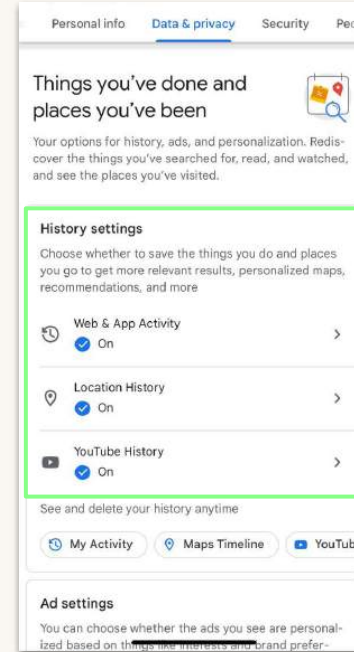
- **Do** provide quick and intuitive access to the data and privacy settings.
- **Do** allow users full control over the information they can share, on a single page.
- **Do** explain each data point, and how they would be used during personalisation, in simple, clear and concise terms.



The screenshot shows the 'Data & privacy' settings page. The 'Info you can share with others' section is highlighted with a green border. It includes a table with the following items:

Item	Current Setting	Action
Profile	Your info and who can see it	>
Location Sharing	Not sharing with anyone	>

Below this section, there are 'Other relevant options' (Payment methods, Subscriptions, Your devices, Contacts) and a section titled 'Interested in learning more?' with two links: 'Who can see your data' and 'How your data improves your experience'. At the bottom, there is a section for 'Data from apps and services you use'.



The screenshot shows the 'History settings' page. The 'History settings' section is highlighted with a green border. It includes the following settings:

Setting	Status	Action
Web & App Activity	On	>
Location History	On	>
YouTube History	On	>

Below the settings, there are buttons for 'My Activity', 'Maps Timeline', and 'YouTube'. At the bottom, there is a section for 'Ad settings'.

- Do** describe the data and their usage, in simple terms.
- Do** modularise the personalisation algorithms to ensure that personalisation can still happen even if some data points are turned off.

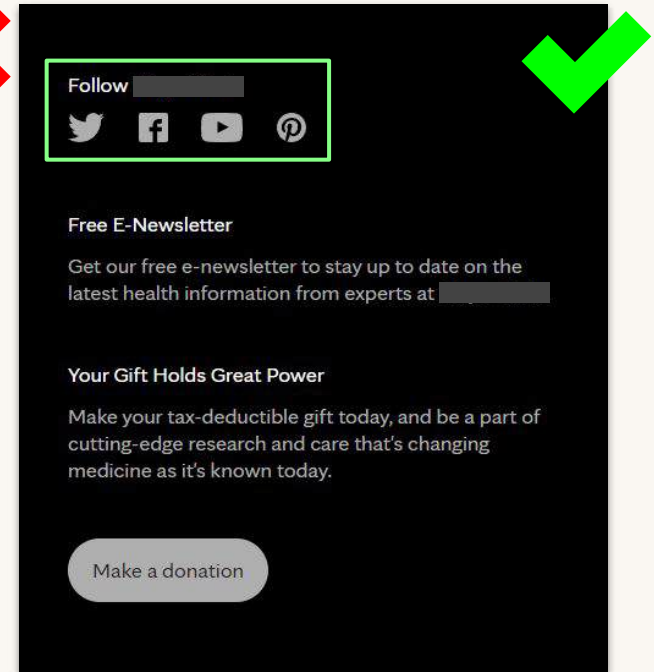
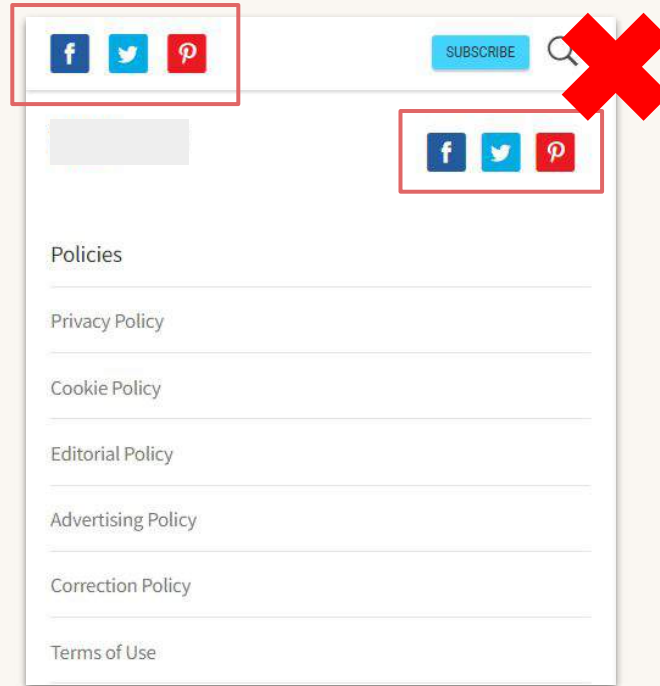


**Social Media**

# 34

## Do label the actions that would be taken for social media icons.

- Do indicate the actions taken around the icons, to help users understand if it would lead to following or sharing on the different platforms.

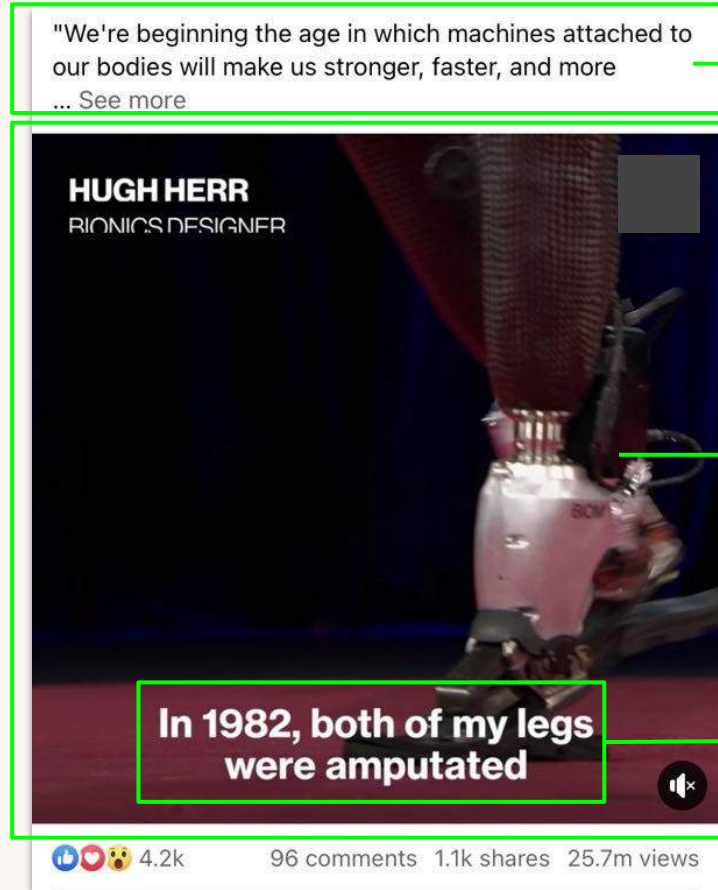


**Avoid placing social media icons without indicating the actions it would lead to** as they may cause uncertainty for users new to technology.

# 35

## **Do** post content that is engaging, bite-sized and easy to understand.

- **Avoid** posting just anything and everything. Bombarding content that your users do not care about would dissuade them from coming back for more.
- **Do** conduct research on your target audience before generating content.



**Do** introduce the content with clear and brief descriptions; the who, the what, where is and when is it. (when applicable)

**Do** use images or videos would stop your target audience in their tracks as they are scrolling through their feed.

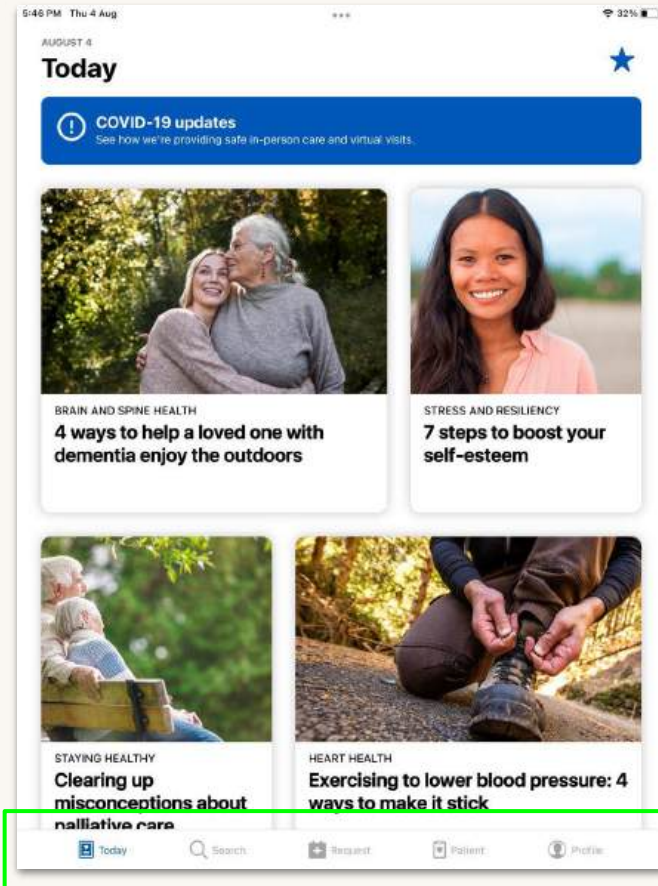
**Do** provide large and easy to read captions for video content as they often play automatically and without audio, when they appear on the screen.

**Navigation**

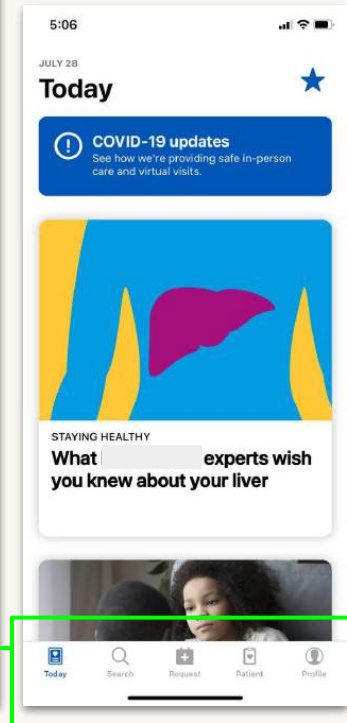
# 36

**Do** present navigation menus in commonly placed and visible areas, for each device.

- **Do** ensure that the navigation menu is consistently located in the same spot, usable and visible throughout the app.



**Do** ensure that navigation menus appears in a tab bar at the bottom of the screen.

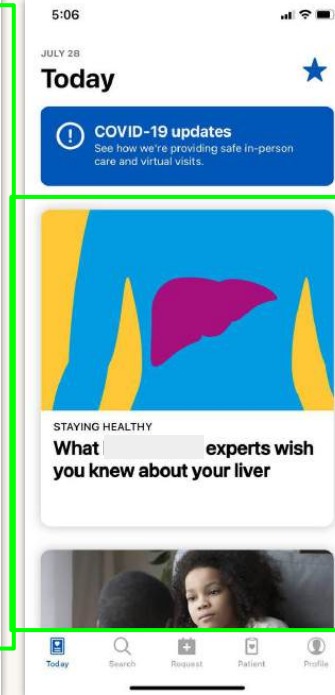




# 37

## **Do** simplify navigation methods; clicks and gestures.

- **Do** keep clicking to a minimum; preferably a single click.
- **Avoid** including navigation that requires multiple gestures and quick movements; swiping or zooming in and out.



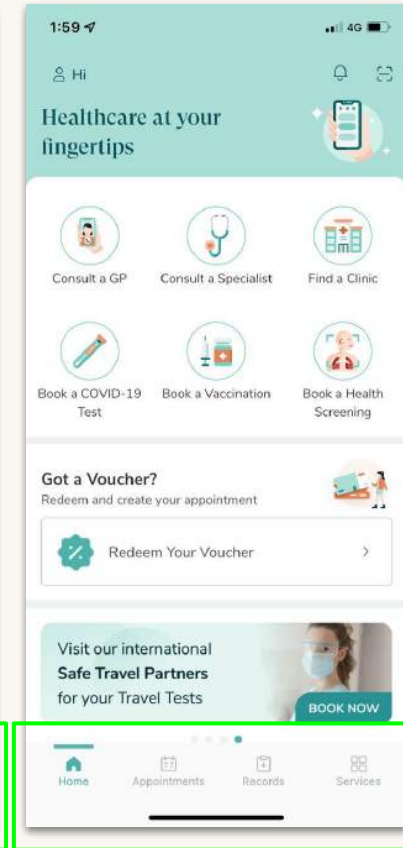
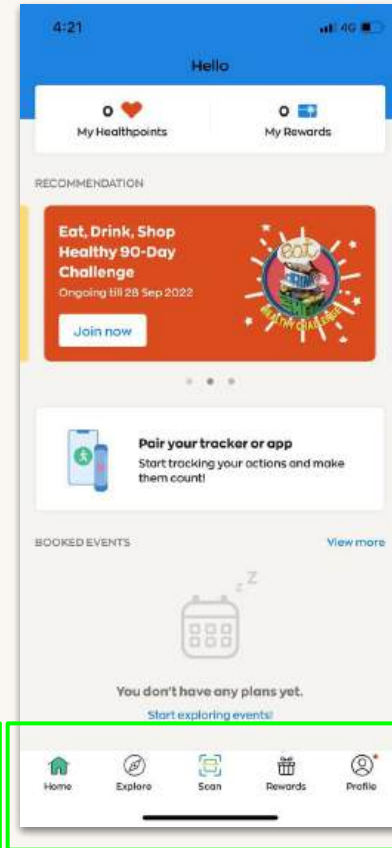
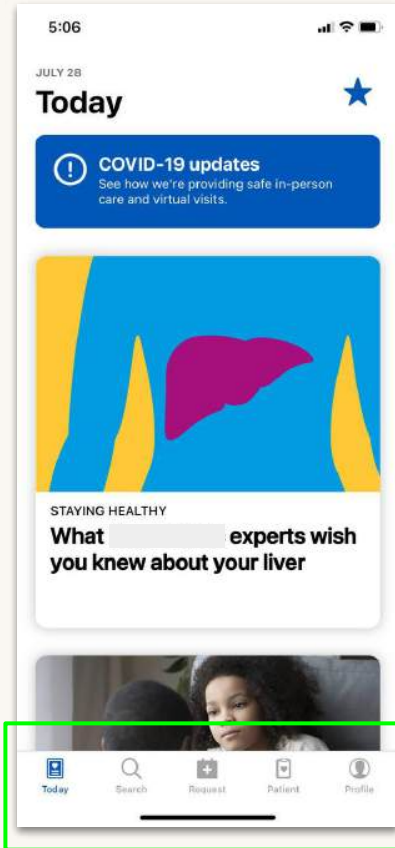
**Do** keep scrolling simple, to accommodate users with limited dexterity and varying tech experience.

This app kept it simple by only allowing users to navigate hidden content through up and down scrolling.

# 38

**Do** ensure that each navigation option is distinctively different from the other.

- **Do** match the navigation menu structure according to the user's view of the organisation, information and/or services.
- **Do** use language that is easy to understand from the user's perspective. Navigation menus that contain brand language or jargon could confuse users who are new to the platform.



**Do** ensure that each navigation category is distinctively different, visible and easy to understand, to reduce the need for users to 'test' each option to find what they need.

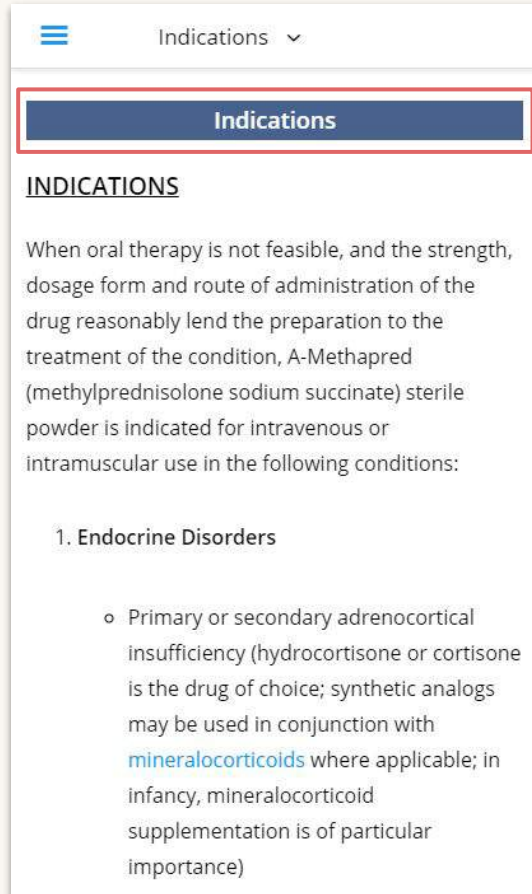
**Links &**

**Interactive Elements**

# 39

## **Do** provide clear visual differences between clickable and non-clickable elements.

- **Do** style clickable elements with clear distinctions by:
  - Bolding the words
  - Underlining the words
  - Changing the colour
  - Creating a pill or box shape around it .etc
- **Do** also provide an obvious visual change when hovering above a clickable element.

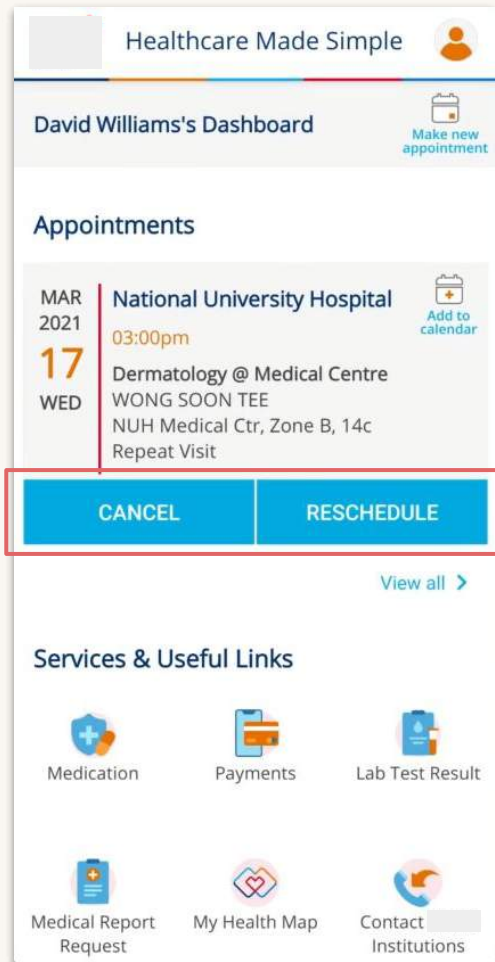


**Avoid** designing non-clickable elements to look like common button designs like the “Indications” panel above. It invites users to click only to be at a loss when nothing happens.

# 40

**Do ensure that constructive actions are visually different from destructive actions.**

- **Do distinguish clearly between action buttons that confirm, cancel and delete** to prevent unintended actions and errors.
- **Do ensure that each button type has a consistent visual style** for the entire service or app.



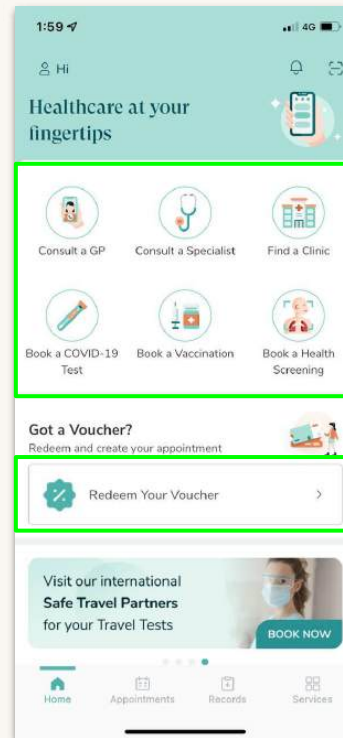
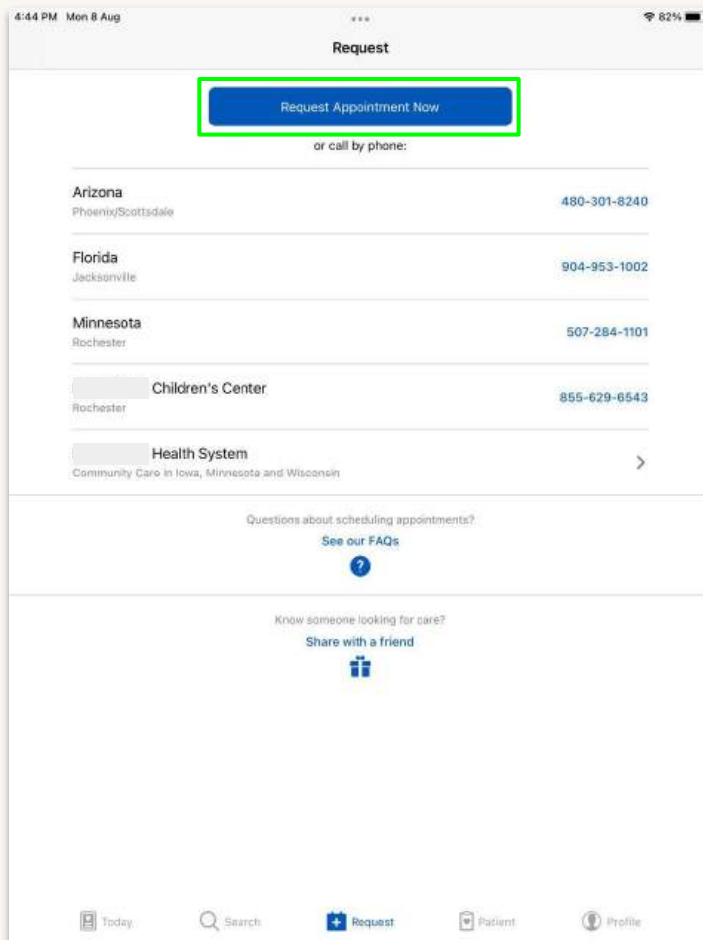
**Avoid having identical visual styles for progressive and cancellation actions** presented on the left; 'Cancel' and 'Reschedule'. Users are used to having a design that has a lesser visual priority for 'Cancel' buttons.

**Do request for user confirmation before carrying out a 'destructive' request;** 'Cancel' or 'Delete' an appointment .etc, especially when the request is not easily reversible.

# 41

**Do** use descriptive button labels.

- **Avoid** using a generic 'Submit' for all progressive or 'Cancel' for all destructive actions.

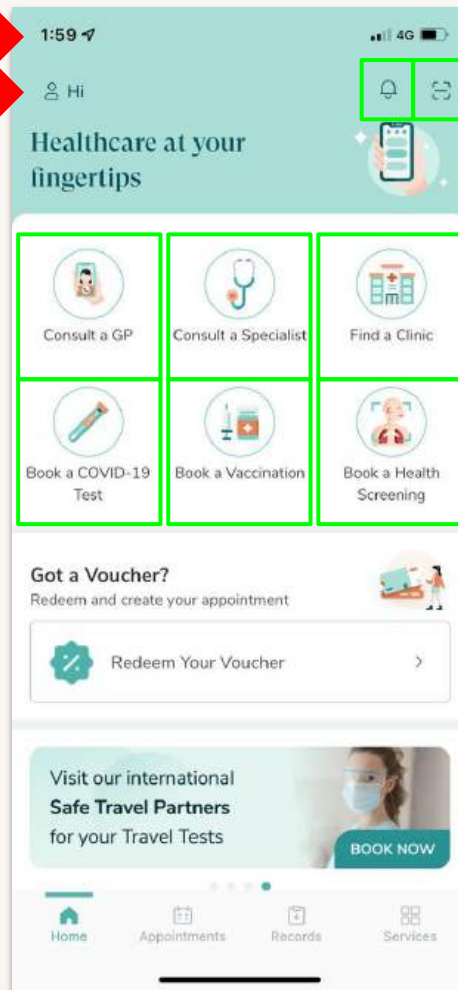
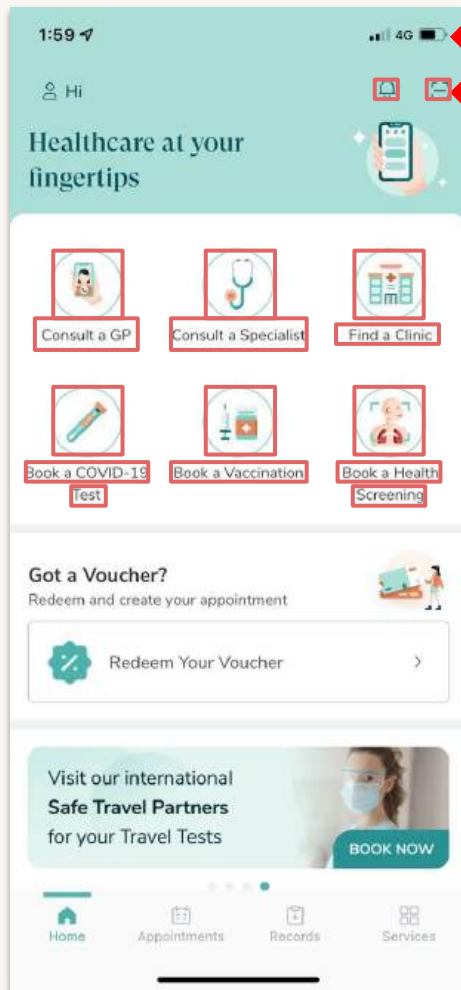


**Do** use descriptive button labels to remind users of the objective they are attempting to complete.

# 42

**Do** ensure that there is a minimum clickable area for interactive elements.

- **Do** provide a minimum touch area of 1cm x 1cm (48dp x 48dp) for each interactive element.
- **Do** provide adequate spacing between each interactive element to reduce unintended selections; The smaller the target, the larger the space.



**Avoid** limiting the clickable area to the size of the icons or words as marked in red. Include both the icon and word in one large clickable area.

**Do** allow for a bigger clickable area when possible, to maximise navigational ease.

**Images**



# 43

**Do** use informative images that aid users in understanding the content.

- **Avoid** images that are only meant for decoration. They tend to 'distract' users from achieving their goals.
- **Do** test the images on the intended device(s), to check the image visibility.
- **Do** perform a squint test; squinting your eyes, to roughly determine the recognisability of the image.

## Arm Curl with Resistance Band

**WHAT YOU NEED:** Resistance band and sturdy, armless chair

This variation of the Arm Curl uses a resistance band instead of weights.

1. Sit in a sturdy, armless chair with your feet flat on the floor, shoulder-width apart.
2. Place the center of the resistance band under both feet. Hold each end of the band with palms facing inward. Keep elbows at your sides. Breathe in slowly.
3. Keep wrists straight and slowly breathe out as you bend your elbows and bring your hands toward your shoulders.
4. Hold the position for 1 second.
5. Breathe in as you slowly lower your arms.
6. Repeat 10-15 times.
7. Rest; then repeat 10-15 more times.

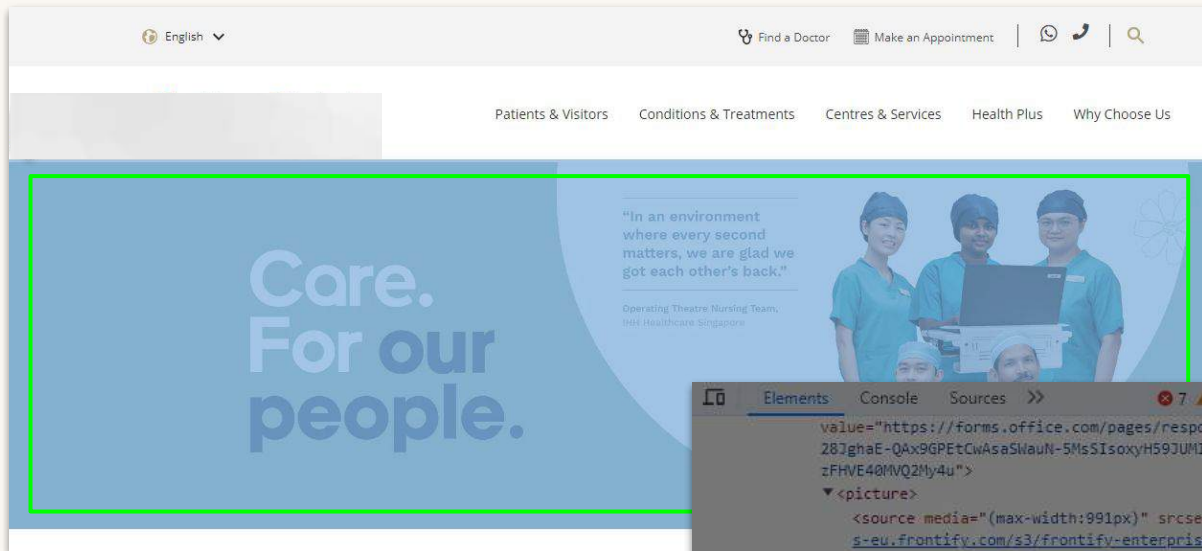


**Do** use informative images that are relevant or representative of the content you have written, to aid users in their understanding.

# 44

## Do add alt text for meaningful or actionable non-text content

- Do provide precise and concise content descriptions in alt text. Alt text is typically found under labels like "description," "alt," or "alt text."



```
Elements Console Sources >> 7 2 3 ⚙️ ⋮ ✕  
value="https://forms.office.com/pages/responsepage.aspx?id=xGm287ghaE-QAx9GPETCwAsa5WauN-5Ms5IsoxyH59JUM1I1T1VQTD44Ne03Qk9KQzFHVE40MVQ2My4u">  
  <picture>  
    <source media="(max-width:991px)" srcset="https://cdn-asset-s-eu.frontify.com/s3/frontify-enterprise-files-eu/ey...berhad:ym0g2M2-h1TMRyDQC7te1x2rXIQtW8kL7DHowvWkaM?width=990&format=webp" class="swiper-lazy swiper-lazy-loaded">  
      
  <!-- Preloader image -->  
</a>  
</div>  
<div class="container"> </div>  
</div>  
<div class="swiper-slide swiper-slide-next" data-swiper-slide-index="3" style="width: 1348px; margin-right: 30px;" roles="group"
```

Low-to-no vision users depend on screen readers that can't read text within images, making alt text essential for app accessibility.

Web banners, like the ones shown, allow screen readers to vocalise the actionable content: "Join Our Nursing Team."

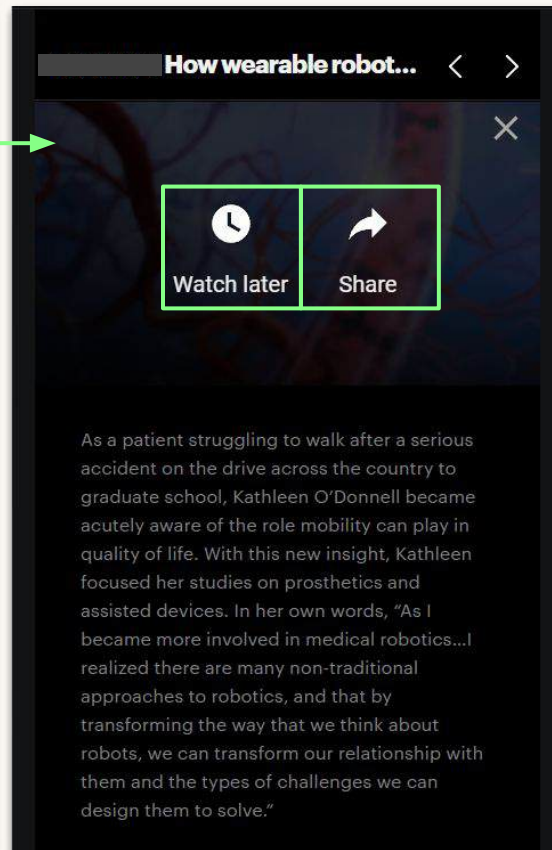
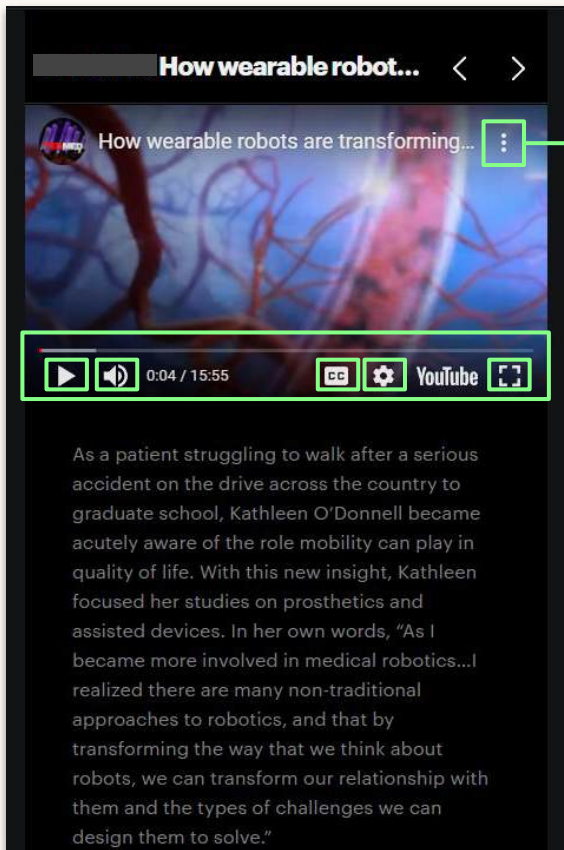


**Videos**

# 45

**Do** allow all control options to be available for the video content.

- **Avoid** allowing video content to auto-play. Users would get annoyed if they have to pause each video they scroll past.



**Do** activate and present all available controls clearly, within the video. The embedded video above allow users to pause, play, maximise, skip, playback etc.

# 46

**Do** allow the option to 'read' the video.

- **Do** allow users to turn captions on and off, and if possible, provide a transcript of the video. It enables users with hearing or sound device issues to consume the video content.

2,174,295 views | Bill Gates •

We can make COVID-19 the last pandemic

Like (65K) Share Add

UNDERSTANDING ANXIETY  
A members-only event with Lisa Damour

JOIN NOW

Read transcript

Transcript (17 Languages)

English

00:01

In the year 6 CE, a fire devastated Rome. In response, Emperor Augustus did something that had never been done before in the history of the Empire. He created a permanent team of firefighters who used buckets just like this one. Augustus understood that individuals alone can't protect themselves from fires. They need help from the community. When one person's house is on fire, that creates a risk for everyone else's homes.

00:38

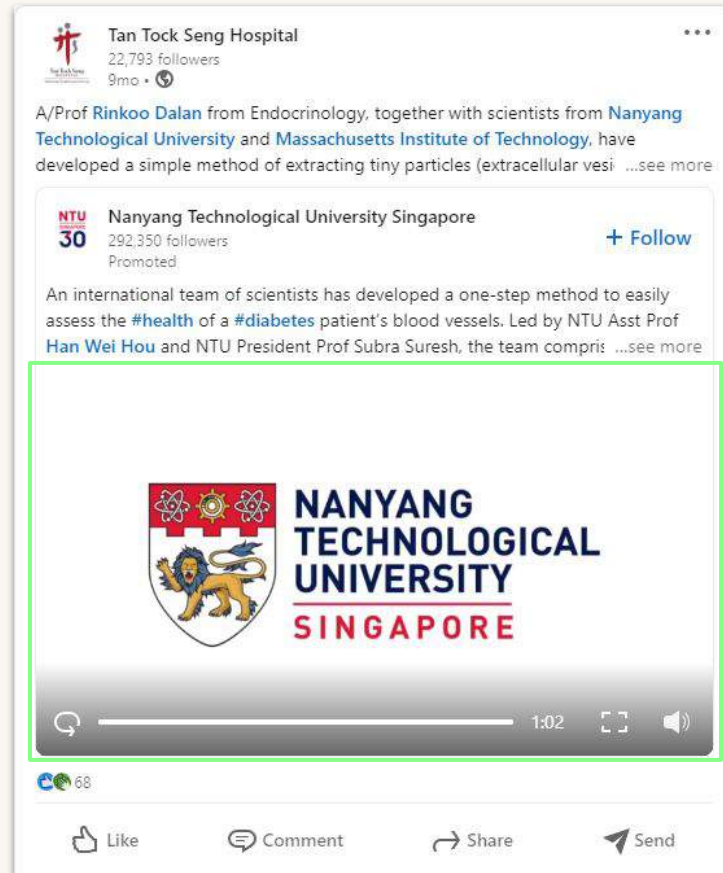
And so what we've had these last few years is like a horrific global fire. The COVID pandemic has killed millions and upended economies, and we want to stop that from happening again. COVID, it's hard to overstate how awful it's been. It's increased the health inequities between the rich and the poor. Survival depended partly on your income, your race, the neighborhood

**Do** allow users to 'read' the video content. Consider providing users the option to watch the video with captions and/or to read the entire video through the transcripts.

# 47

**Avoid having the autoplay feature when video content comes to an end.**

- **Do provide recommended video options instead**, to allow users to decide if the suggested content is relevant to their needs before consuming them.




Tan Tock Seng Hospital  
22,793 followers  
9mo · 🌐

A/Prof [Rinkoo Dalan](#) from Endocrinology, together with scientists from [Nanyang Technological University](#) and [Massachusetts Institute of Technology](#), have developed a simple method of extracting tiny particles (extracellular vesicles) from blood. ...see more

**NTU**  
30  
292,350 followers  
Promoted

[+ Follow](#)

An international team of scientists has developed a one-step method to easily assess the [#health](#) of a [#diabetes](#) patient's blood vessels. Led by NTU Asst Prof [Han Wei Hou](#) and NTU President Prof Subra Suresh, the team comprises ...see more

 **NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE**

1:02

68

Like Comment Share Send



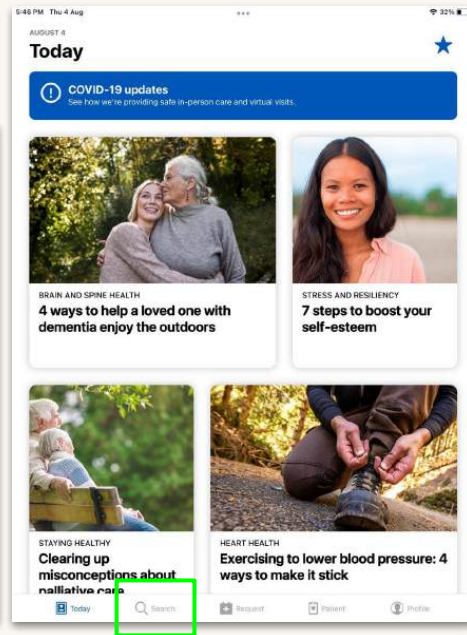
**Do allow video content to simply end without any video suggestions** if there isn't relevant content available.

# Search Function

# 48

**Do** ensure that the search function is placed in a common location.

- **Do** use the magnifying glass icon when representing the search feature and accompany it with a search field (18 to 27 characters wide) when possible.
- **Do** ensure that the search icon is clearly visible and labelled when it is presented without a search field.



**Do** present the search feature in common locations at the upper right corner or...

...at the bottom with the menu bar.

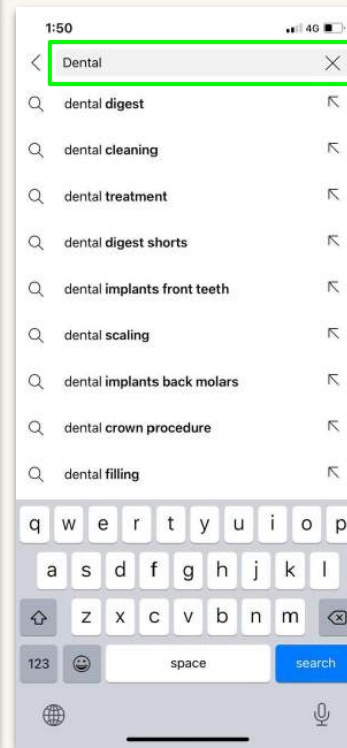
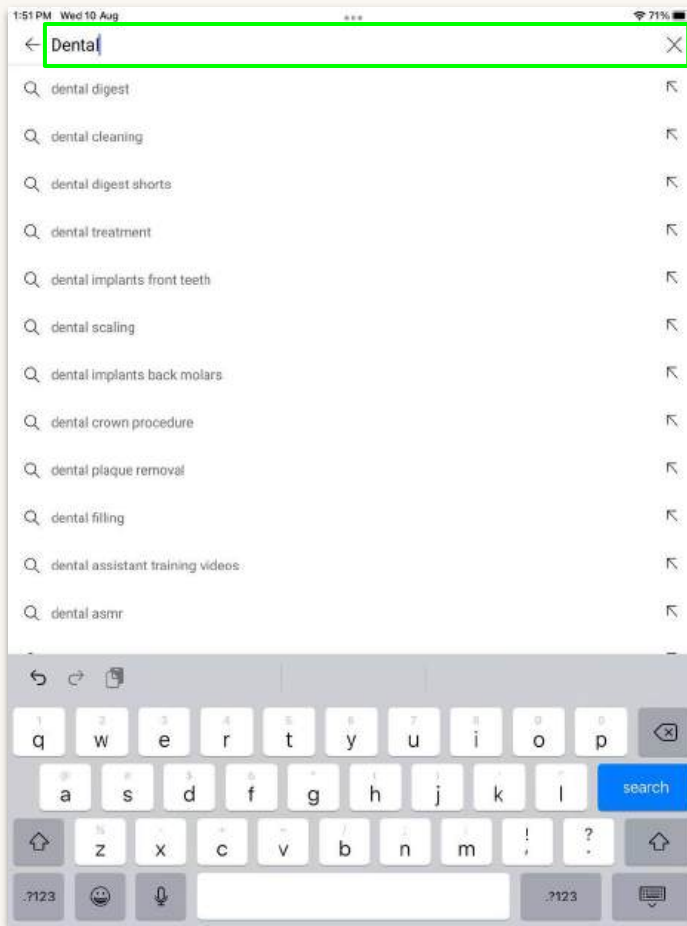




# 49

**Do** ensure that the text in the search field is legible.

- **Do** use large font sizes for the text within the search field.  
The font sizes should be at least 16 points (pt) for mobile devices.
- **Do** ensure there is a contrast between the font colour and the colour of the search field.
  - Pass the [WCAG AAA](#) for normal text; a benchmark for website.



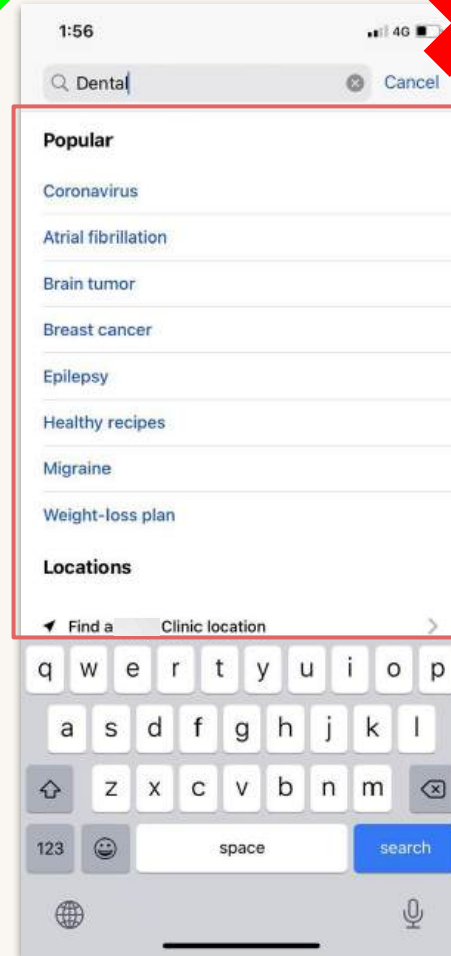
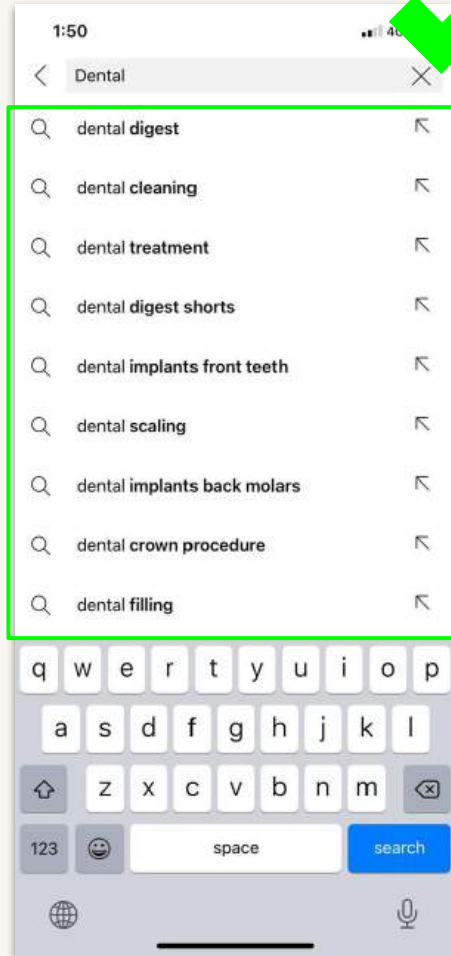
**Do** ensure that the text in the search field can be seen with ease to help users verify their search request before they proceed.



# 50

**Do** provide relevant search suggestions when the user is entering their query.

- **Do** provide search suggestions based on:
  - Common searched terms
  - Most visited content
- **Do** enable the search feature to provide suggestions based on correct spellings of misspelt words.

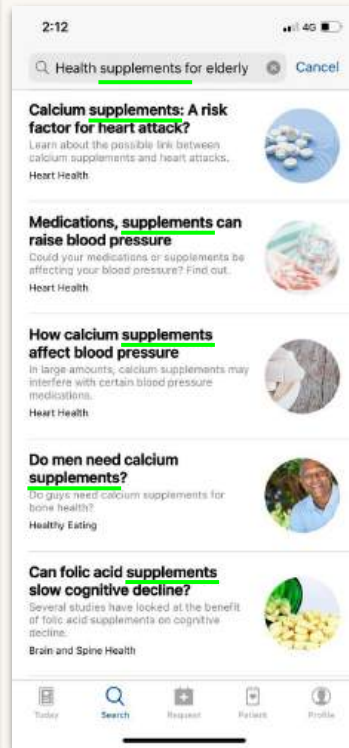
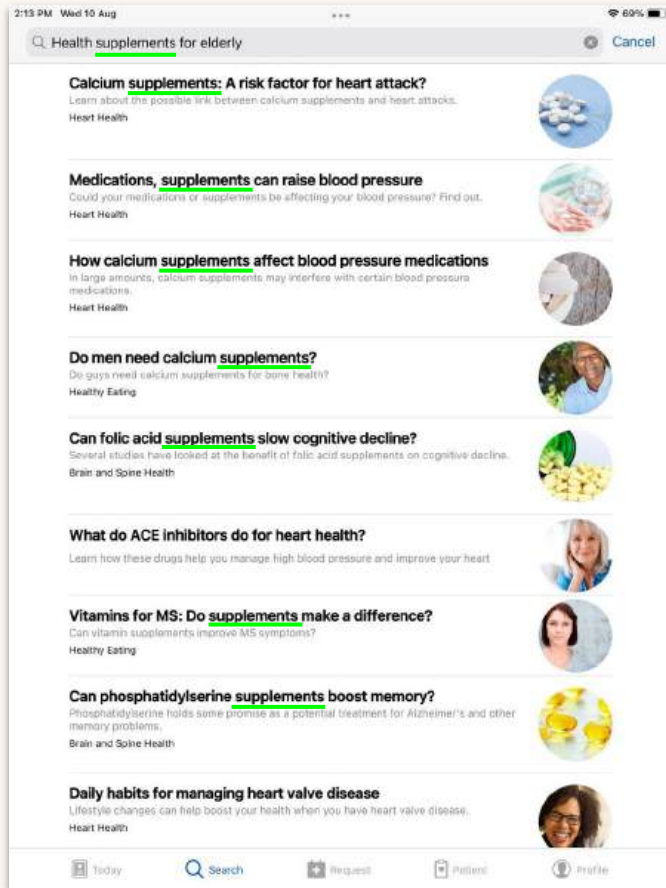


**Avoid** suggesting anything and everything without any prioritisation of users' needs, in the search bar. It does not help users find what they need in a shorter amount of time.

# 51

**Avoid** implementing a search feature that requires the exact words to match the site content.

- **Do** create and grow a list of terms that references each of the keywords so users who have submitted similar terms, could be directed to the information they need.



**Do** provide results based on some or all of the submitted key terms, rather than the exact searched terms, to help users get one step closer to the information they need.



# Search Results

# 52



**Do** ensure that results are relevant and within the immediate viewable area of the device.

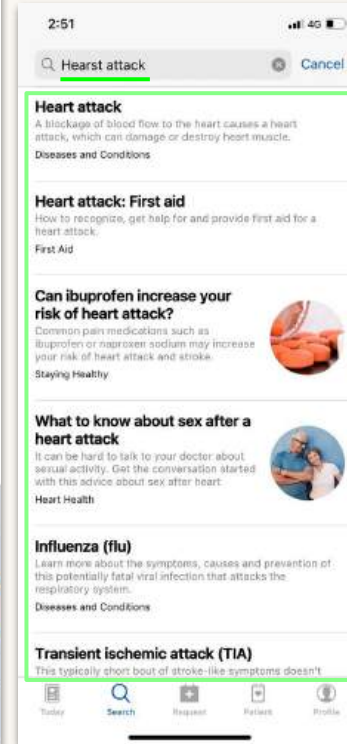
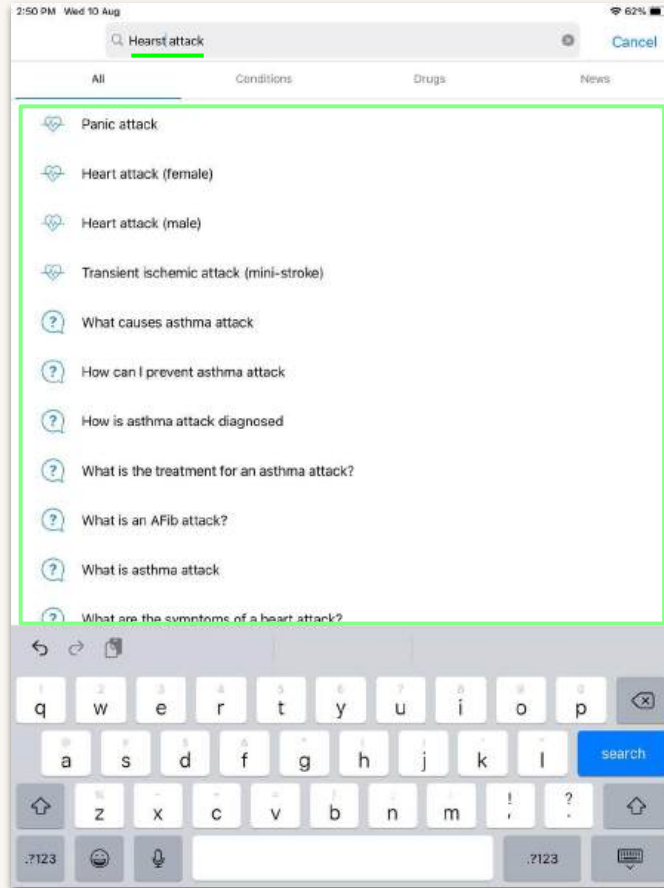
- **Do** include some if not all of the listed practices when creating a new search feature.
- **Do** allocate resources to refine the search feature. It takes time to tailor the search accuracy to the users.

<b>If an exact match is not available</b>	<ul style="list-style-type: none"><li>- Present findings based on the search terms and present the results in the order of:<ol style="list-style-type: none"><li>a. Number of search terms found</li><li>b. Content relevance</li><li>c. Content popularity</li></ol></li></ul>
<b>If none of the search terms provide any results</b>	<ul style="list-style-type: none"><li>- Inform the user that no results can be found.</li><li>- Suggest popular search queries as alternatives to help users refine their search.</li></ul>
<b>If the search terms is deemed invalid</b>	<ul style="list-style-type: none"><li>- Inform the user on the steps that could be taken to provide a valid query.</li></ul>

# 53

## Do provide relevant results and suggestions despite spelling mistakes

- Do opt for a search feature that is tolerant of misspelt words to help users search for information with ease.
- Do provide a clear recap of the query to remind users with memory issues.



- Do provide users with the option to query based on their initial search term even if it is deemed to be a spelling mistake.



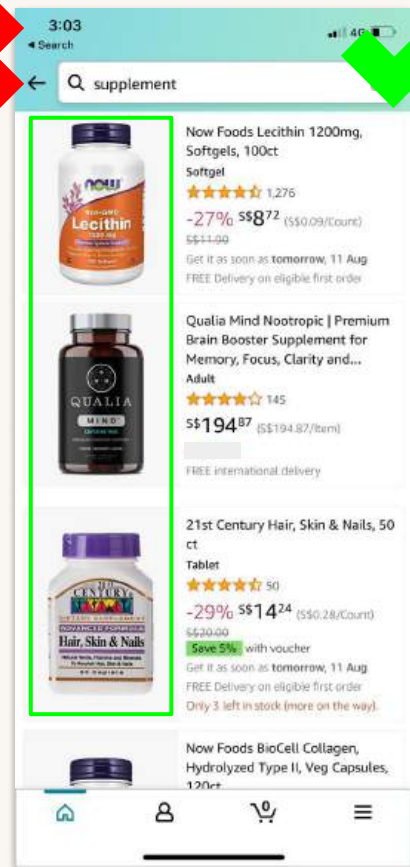
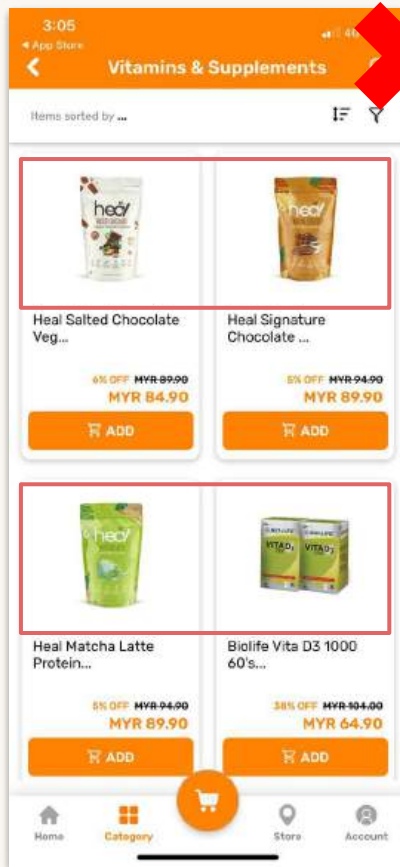
**E-Commerce**

# 54

**Do** display product image results that are large, clear and recognisable at a glance.

- **Do** allow product images, on e-commerce platforms, to be zoomable in the product details page. Users would be able to zoom in on the details regardless of the device.

**Avoid** displaying small product images, requiring the users to physically move in to identify the product.



**Do** fill up the display space with a clear image of the product so it could be recognised with ease at a distance.



# 55

**Do** allow users to verify and edit the details before completing a transaction.

- **Do** provide a details verification page when:
  - A submission is not easily cancelled or edited.
  - Money is involved.
  - There is extensive user information being requested.

4:25 PM Wed 10 Aug 56%

← Search

By placing your order, you agree to Amazon's privacy notice and conditions of use.

**Place your order**

Deliver to: **John Doe, 123 Alpha Plains, 01-23, Singapore, 888123, Singapore**

Items:	\$25.00
Delivery:	\$1.49
<b>Order Total:</b>	<b>\$26.49</b>

**Delivery address**

**John Doe**  
123 Alpha Plains, 01-23, Singapore, 888123, Singapore >

Delivery instructions >

**Payment information**

**Payment method**  
Visa ending in 6944 >

**Billing address**  
Same as delivery address >

Promotional codes

Enter Code

**Delivery details**

**\$1.49 Priority Delivery** : get it Tomorrow, 11 Aug

**Delivery date:**  
11 Aug 2022 If you order in the next 7 hours and 34 minutes (See details and conditions)

Supplizen Melatonin Gummies | 60 gummies | Vegan | Halal Certified | Fall asleep | Restful sleep | Jet lag | Contains 5 mg melatonin | Made in USA in

4:22 4G

← Checkout

**Delivery Address**  
John Doe | (+65) 9764 2133  
BLOCK 123, Alpha Plains, #01-23,  
SG 888123 >

**Straits Wellness SG**

Melatonin+ - sleeping pill replacement, natural...  
\$21.45 x1

**Shipping Option**

Standard Delivery (Local) **\$1.49** >  
Receive by 11 Aug - 18 Aug  
[\*Note: Small items may be delivered to your letterbox.]

**Message:**

**Order Total (1 Item):** **\$22.94**

**Platform Voucher**

**Coins cannot be redeemed**

**Payment Option**  Credit Card/Debit Card\*1234

**Payment Details**

Merchandise Subtotal \$21.45

Total Payment **\$22.94**

CENTRE FOR HEALTHCARE INNOVATION

**Forms**

# 56

**Do** label each form field with descriptive and easy to understand terms.

- **Do** position the field labels to:

- The left of the field or
- Above the field, to the left

**Account details**

Your account allows you to setup personal drug lists (with detailed interaction data), rate and review medications, join support groups, ask questions, and subscribe to newsletters.

Email address

Username

Password

Password must be at least 6 characters. Very weak

Age

-- Select --

Healthcare Professionals

I am a Healthcare Professional

Send me News Updates

FDA Safety Alerts

Daily MedNews

Monthly Newsletter

I accept [Terms of Use and Privacy Policy](#)

Create your account

9:18 4G

Cancel Sign up

You must be 18 or older to create a Patient Online Services account using the app. If you're between 13 and 17, you must go to a Health System location with a parent or guardian to create your account. Parents must create caregiver accounts for patients under 12.

Tan

Legal last name

Birthdate

Email

Password SHOW

Minimum of 8 characters, including at least 3 of the 4 following: lowercase characters, uppercase characters, numbers (0-9) or symbols. Case sensitive. No spaces.

**Avoid** positioning the field labels in the field itself. Information have to be deleted to view the field label.

**Do** position the labels close to the respective fields. Labels that are far from the fields would create uncertainty for users.

# 57

**Avoid requesting information that would not enhance the user's experience.**

- **Do provide immediate explanations when requesting uncommon information;**  
location .etc

### Account details

Your  account allows you to setup personal drug lists (with detailed interaction data), rate and review medications, join support groups, ask questions, and subscribe to newsletters.

Email address

Username

Password

Password must be at least 6 characters. Very weak

Age  
-- Select --

Healthcare Professionals  
 I am a Healthcare Professional

Send me News Updates  
 FDA Safety Alerts  
 Daily MedNews  
 Monthly Newsletter

I accept Drugs.com's Terms of Use and Privacy Policy

[Create your account](#)

[Privacy](#) [Terms](#)

9:18 4G

Cancel Sign up

You must be 18 or older to create a Patient Online Services account using the  app. If you're between 13 and 17, go to a  Health System location with a parent or guardian to create your account. Parents must create caregiver accounts for patients under 12.

Tan

Legal last name

Birthdate

Email

Password [SHOW](#)

Minimum of 8 characters. Including at least 3 of the 4 following: lowercase characters, uppercase characters, numbers (0-9) or symbols. Case sensitive. No spaces.

Use of this app signifies your agreement to the [Terms of Service](#) and [Privacy Policy](#).

[Agree & Create Account](#)



**Do request information necessary to complete the user's goal and nothing more.**  
Users get wary if they do not understand why certain information is required.

# 58

## Do use descriptive button labels.

- **Avoid** using a generic 'Submit' for all progressive or 'Cancel' for all destructive actions.

### Account details

Your  account allows you to setup personal drug lists (with detailed interaction data), rate and review medications, join support groups, ask questions, and subscribe to newsletters.

Email address

Username

Password

Very weak  
Password must be at least 6 characters.

Age  
-- Select --

Healthcare Professionals  
 I am a Healthcare Professional

Send me News Updates  
 FDA Safety Alerts  
 Daily MedNews  
 Monthly Newsletter

I accept Drugs.com's Terms of Use and Privacy Policy

[Create your account](#)

[Privacy - Terms](#)

9:18 4G

Cancel Sign up

You must be 18 or older to create a Patient Online Services account using the  app. If you're between 13 and 17, go to a  Health System location with a parent or guardian to create your account. Parents must create caregiver accounts for patients under 12.

Tan

Legal last name

Birthdate

Email

Password [SHOW](#)

Minimum of 8 characters. Including at least 3 of the 4 following: lowercase characters, uppercase characters, numbers (0-9) or symbols. Case sensitive. No spaces.

Use of this app signifies your agreement to the [Terms of Service and Privacy Policy](#).

[Agree & Create Account](#)

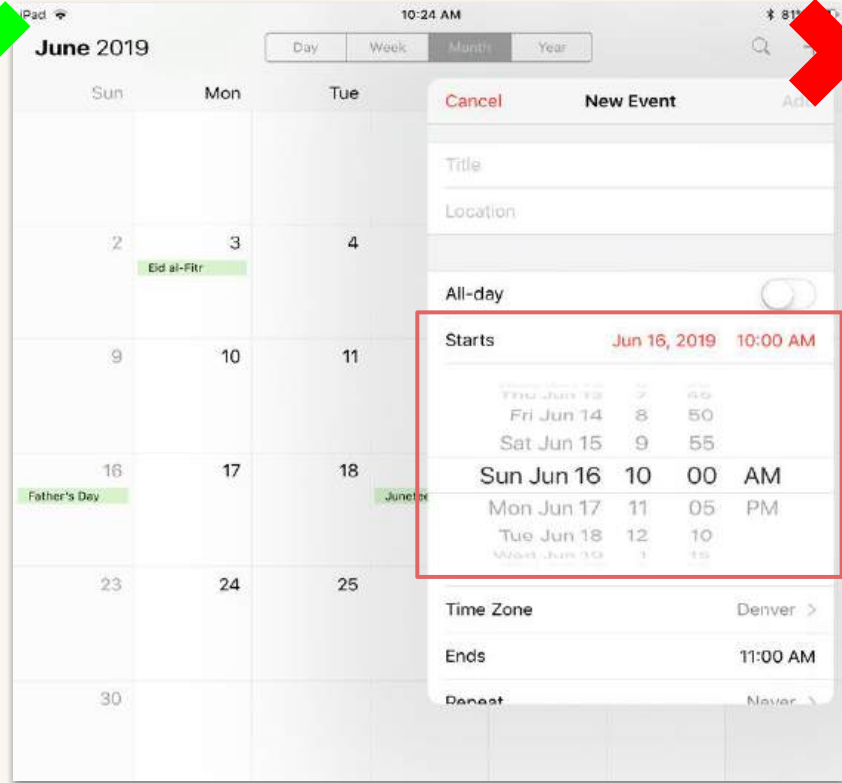
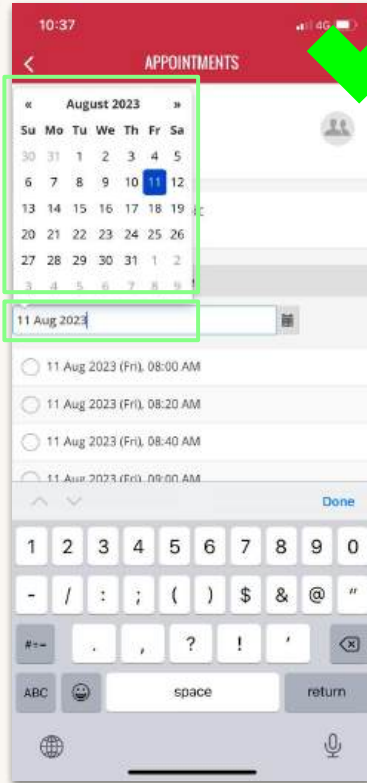
- Do use descriptive button labels to remind users of the objective they are attempting to complete.



# 59

**Avoid using scrolling lists to input information.**

- **Do provide more than one way to submit the same information;** allowing the user to type the information .etc



The date field above allows users to type in their preferred date or select from a date selector.

**Avoid using scrolling lists to be the only option to input information,** users with dexterity issues would tend to 'miss' their intended selections.

# 60

**Do** place error messages close to the element that triggered it.

- **Do** provide visual signals to help users locate and recognise interface elements.
- **Do** explain the cause of the error in a direct and easy to understand language.
- **Do** provide live feedback if an error has occurred or if the requirements are not met.

The screenshot shows a 'Sign up' form with fields for 'First name', 'Last name', 'November 12, 1988', 'Wrong@email', and 'password that doesnt fit criteria'. A modal dialog titled 'Account Creation Failed' is displayed in the center, stating 'The email address you supplied is not a valid email address.' with an 'OK' button. A large red 'X' is overlaid on the top right of the form. A red box highlights the modal dialog.

**Avoid** consolidating all the errors away from the cause of the error. In the example above, it requires users to remember which information to change.

The screenshot shows a 'Create Your Account' form. The 'Email address' field contains 'wrong@email' and has a pink error message: 'Please enter a valid email address. sign in here.' A green checkmark is overlaid on the top right of the form. A green box highlights the email field and its error message. Below the field is a 'Continue with email' button and a link 'Already have an account? Sign in'.

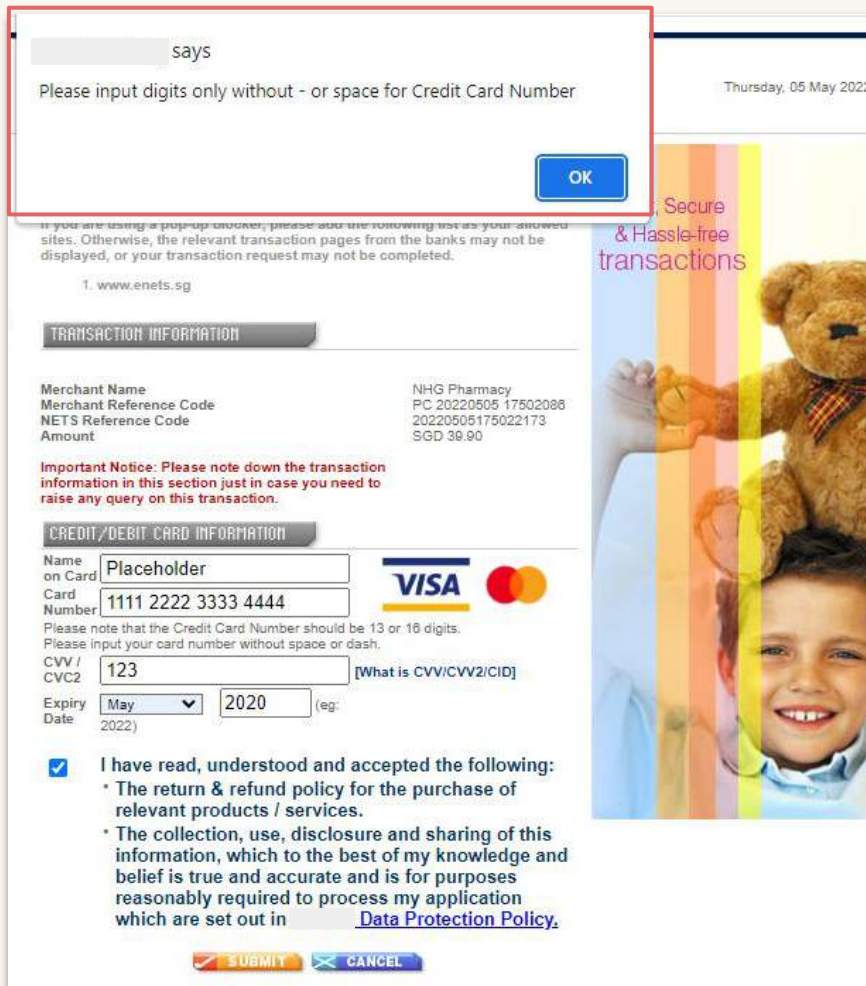
**Do** provide clear and descriptive directions to resolve the errors.

# 61

## **Do** allow spaces or hyphens in credit or debit card entries.

If it is not applicable,

- **Do** detect and notify users of invalid entries, before a submission is made.



The screenshot shows a payment form with a red-bordered error message box at the top. The error message says "says Please input digits only without - or space for Credit Card Number" and has an "OK" button. The form itself is for a transaction at NHG Pharmacy. It includes fields for Name on Card (placeholder), Card Number (1111 2222 3333 4444), CVV / CVC2 (123), and Expiry Date (May 2020). There are logos for VISA and Mastercard. A "SUBMIT" button is highlighted in orange. The background of the form features a child holding a teddy bear and the text "Secure & Hassle-free transactions".

says

Please input digits only without - or space for Credit Card Number

OK

Thursday, 05 May 2022

If you are using a pop-up blocker, please stop the following text as your browser sites. Otherwise, the relevant transaction pages from the banks may not be displayed, or your transaction request may not be completed.

1. www.enets.sg

**TRANSACTION INFORMATION**

Merchant Name NHG Pharmacy  
Merchant Reference Code PC 20220505 17502088  
NETS Reference Code 20220505175022173  
Amount SGD 39.90

**Important Notice: Please note down the transaction information in this section just in case you need to raise any query on this transaction.**

**CREDIT / DEBIT CARD INFORMATION**

Name on Card Placeholder  
Card Number 1111 2222 3333 4444  
CVV / CVC2 123 [What is CVV/CVV2/CID]  
Expiry Date May 2020 (eg: 2022)

I have read, understood and accepted the following:

- The return & refund policy for the purchase of relevant products / services.
- The collection, use, disclosure and sharing of this information, which to the best of my knowledge and belief is true and accurate and is for purposes reasonably required to process my application which are set out in [Data Protection Policy](#).

SUBMIT CANCEL



**Avoid** notifying users of their invalid entries after the submission.

Either accept entries with spaces/ hyphens or notify users upon detection.



# 62

## Avoid implementing time limitations.

- Do allocate more time than what is needed to complete the process, if there is a need for a countdown.
- Do notify your users if there is a need to time them out, preferably 20-30 minutes before the timeout, with additional notifications when the time is almost up.

← Appointment Request

**Appointment Details**  
Please fill our online form and we will contact you within 3 working days.  
This service is strictly for non-emergency, non-urgent cases and not applicable for Same Day Appointment requests.  
For medical emergency, please call 995.

**I wish to**

Make Appointment     Change Appointment     Cancel Appointment

**Make an Appointment**  
Please provide a brief description of your medical condition or symptoms. \*

Preferred Institution \*

Geylang Polyclinic

Please select a service (Optional)

Please recommend

Preferred Doctor (Optional)

Please Recommend

↑ Top

**Patient's Particulars**

2:43 4G

← Book Appointment

Basic Health Screening  
In-Person Appointment

Full Name  
Yufei Huang  
Enter your name as it appears on your passport in ENGLISH

Date of Birth  
31 Dec 1990

Gender  
Male Female

Nationality

Country of Residence  
Choose country of residence

Passport Number  
Enter Passport Number

Contact Info  
Email

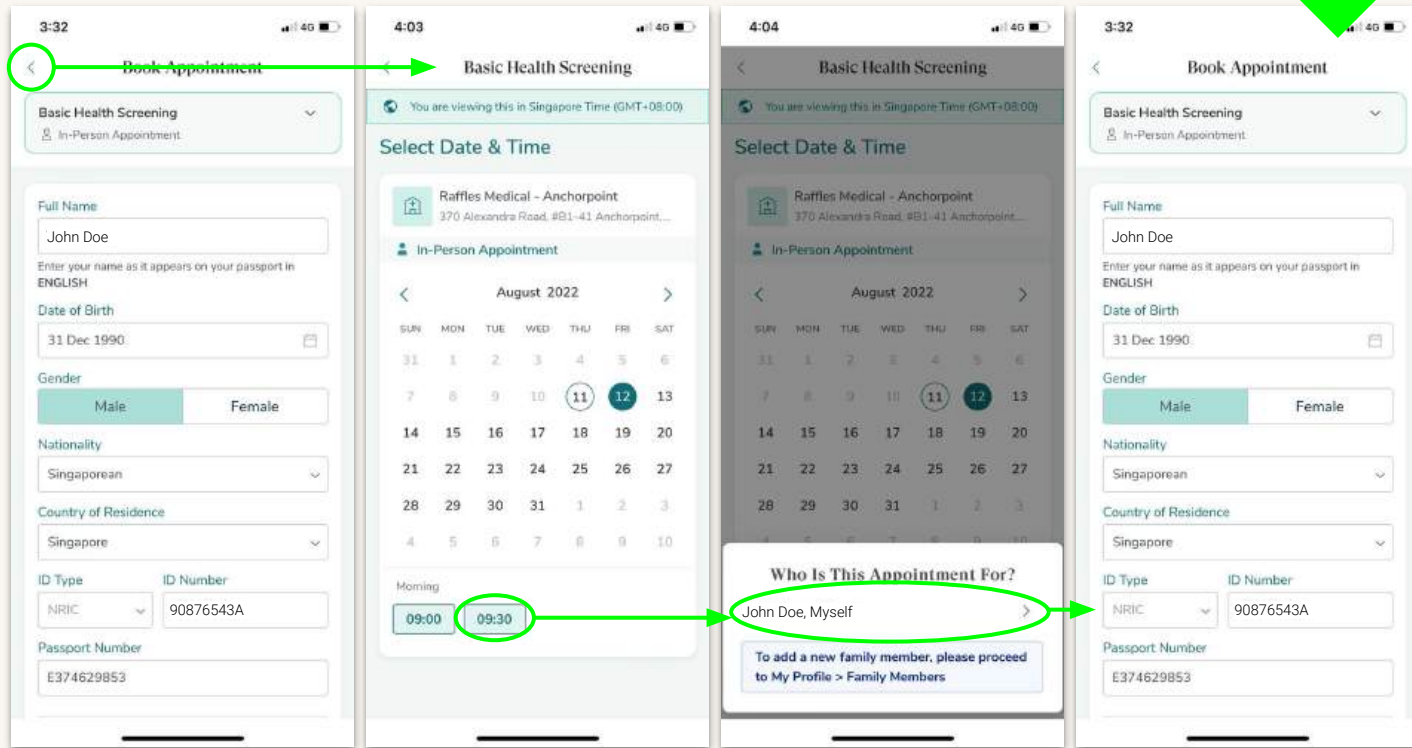


Do opt for forms that do not time users out. When there is a need to book a time slot, hold the selected time slot for an extended amount of time.

# 63

**Do** provide the option to “Save as draft” or enable the auto-save function.

- **Do** autosave the information provided and allow users to continue where they left off, in the event they dropped unintentionally.



When an extensive amount of information is required, there is a chance that users may:

1. Not have all the information on hand
2. Accidentally exit the submission

# 64

**Do** allow users to verify and edit the details before making an appointment.

- **Do** provide a details verification page when:
  - A submission is not easily cancelled or edited.
  - Money is involved.
  - There is extensive user information being requested.

Pre-Boarding Antigen Rapid Test for China-Bound Travellers  
Changi Airport Terminal 3 ART Center  
28 May 2021, 10:00  
Recipient: Jane Doe

Payment Summary  
Pre-Boarding Antigen Rapid Test for China-Bound Travellers S\$38  
Total

Payment Method  
Credit/Debit Card

Promo Code  
Save more with our promo!

Cancellation fees may apply Learn More

S\$38 Pay Now

COVID-19 Test  
Upcoming

Pre-Boarding Antigen Rapid Test for China-Bound Travellers  
Order ID: 3671128  
Changi Airport Terminal 3 ART Center  
28 May 2021, 10:00  
Recipient: Jane Doe

Reschedule Appointment

Registration QR Code  
Booking ID: RC0013  
Please show this QR code at the clinic/hospital for registration.

**Do** provide a summary page of the successful appointment request, that allows users to edit the details.

1. RMG is not responsible if you fail to turn up for your appointment, missed your appointment or have made the wrong appointment based on the country's pre-arrival test requirement timeline.  
2. Results memo will be emailed to you within 24 to 36 hours from each date. Please ensure you have made the appointment with ample time for the results to reach you before your flight.  
3. Please ensure that this pre-departure appointment is within the testing window that is in line with your country's destination requirement. Raffles Medical is not liable for any additional costs incurred should there be any rejections from the airlines, embassy and authorities. Should you need to confirm if the date you have booked is correct, please check with the respective embassy for assistance.  
4. For travellers travelling to Japan, please ensure you print and bring along the Certificate for COVID-19 tests as required by Japan Government. Please pass the printed certificate to the counter upon registration. You may print the Certificate [here](#).

If you are unwell, kindly reschedule your appointment. The clinic may reschedule your appointment if you are found to be unwell at the clinic.

Should you need to change your appointment, please call us at our COVID-19 hotline 9311 1165 (24 Hours).  
To Cancel your appointment, please click [here](#).

Thank you and have a nice day.

What you need to do before your COVID-19 test appointment:

- 1 Download Raffles Connect App and launch the COVID-19 Test feature.
- 2 Enter the respective referral code:  
RMGPCR (for PCR test only)  
RMGICM (for ICM test only)

**Do** provide clear and simple instructions on how to cancel or change the appointment details if an appointment confirmation email is sent.

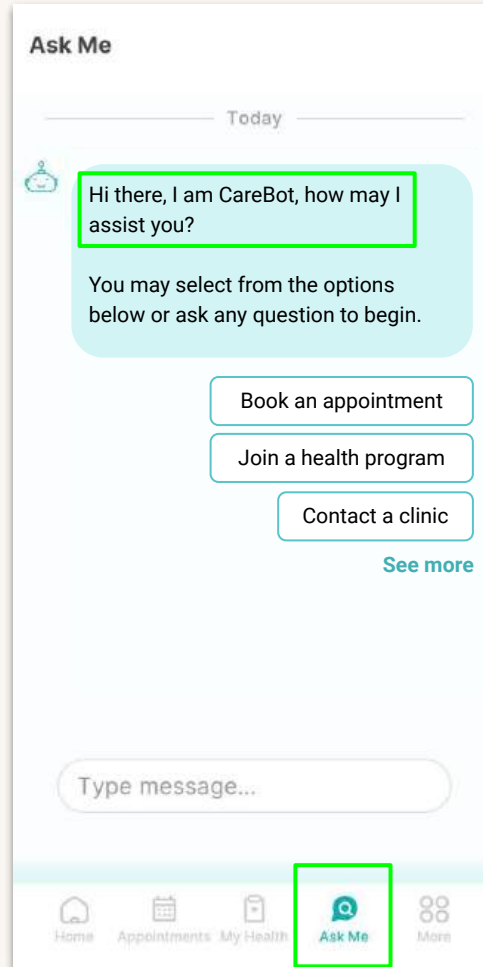
**Customer**

**Support**

# 65

## **Do provide an online chat option when applicable.**

- **Do display the online chat option in an easy-to-spot location and style;** usually at the bottom right or top right of the screen.



**Do inform the users at the beginning, who would be handling their requests.**

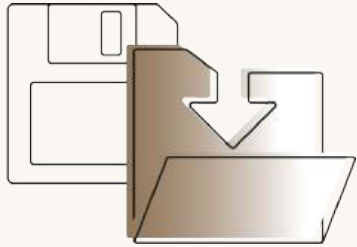
**Do ensure that the online chat option can be accessed on any page and does not automatically open unless selected by the users.**

# Reference

The UX Guidelines have been compiled with inputs from:

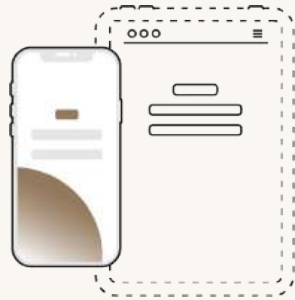
1. [Accessibility in Design](#), by Singapore Government Design System
2. [Age-friendly: UI UX design thinking for senior citizens, 2019](#), by Roman Bereznoi
3. [Designing Apps and Digital Interfaces for Elderly](#), 1st edition, 2018, by CIBP Sprint
4. [Designing User Interfaces for the Elderly: A Systematic Literature Review, 2017](#), by Connor Dodd, Rukshan Athauda and Marc T. P. Adam
5. [Digital Service Standard, Public Release, 2020](#), by GovTech Singapore
6. [Nielsen Norman Group: Usability for Senior Citizens: Improved, But Still Lacking, 2013](#), by Jakob Nielsen
7. **Nielsen Norman Group: UX Design for Seniors (Ages 65 and older), 3rd Edition**, by Lexie Kane and Kara Pernice
8. UI Guidelines and Best Practices, V1.02, 2017, by Ang Eng Kiat
9. [UX accessibility for elderly – 12 principles, 2019](#), by Szymon Trzepla
10. [UX Design Thinking From A Senior Citizen's Perspective](#), by Emily Grace Adiseshiah

# The guidelines may be revised over time, it includes but is not limited to:



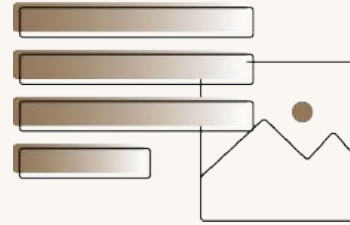
## Iconography

As the new generation age, the icons they understand (or grow up with) changes.



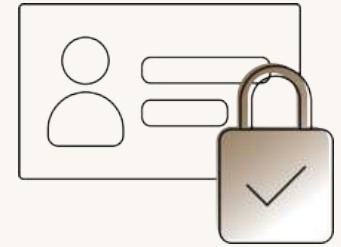
## New devices

Devices come and go. New devices could mean a new set of responsive designs and user habits.



## Content preference

The current preference for text, over symbols and colours, would change over time as a medium for information.



## Data privacy

The amount of information that users are willing to share about themselves would change over time.