



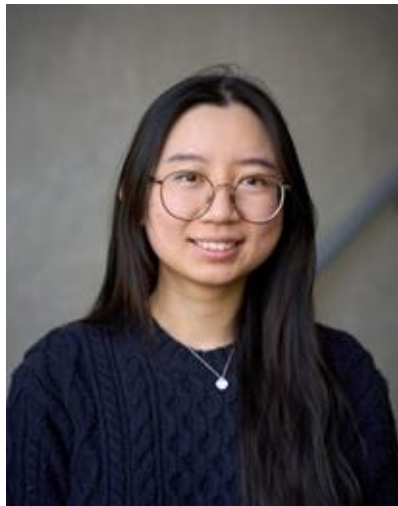
Planning a Patient Education Program

Monica Lin



Introduction

- Musculoskeletal Innovation Factory (MSK-IF) is an innovation hub that supports and enable solutions to challenging problems in MSK health

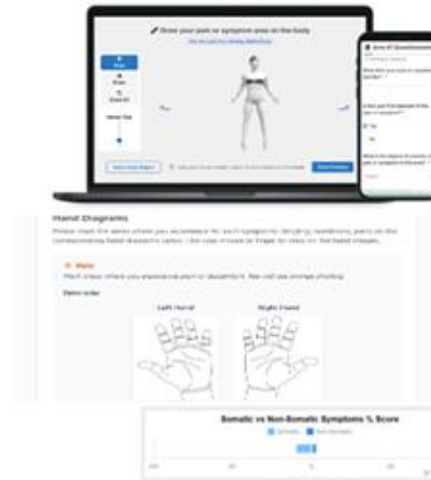


Monica Lin
Patient Interface
Specialist
MSK-IF

Design and Creation of
Education Modules



Full Stack Development of
Web Applications



Development & Assembly
of Wearable Devices



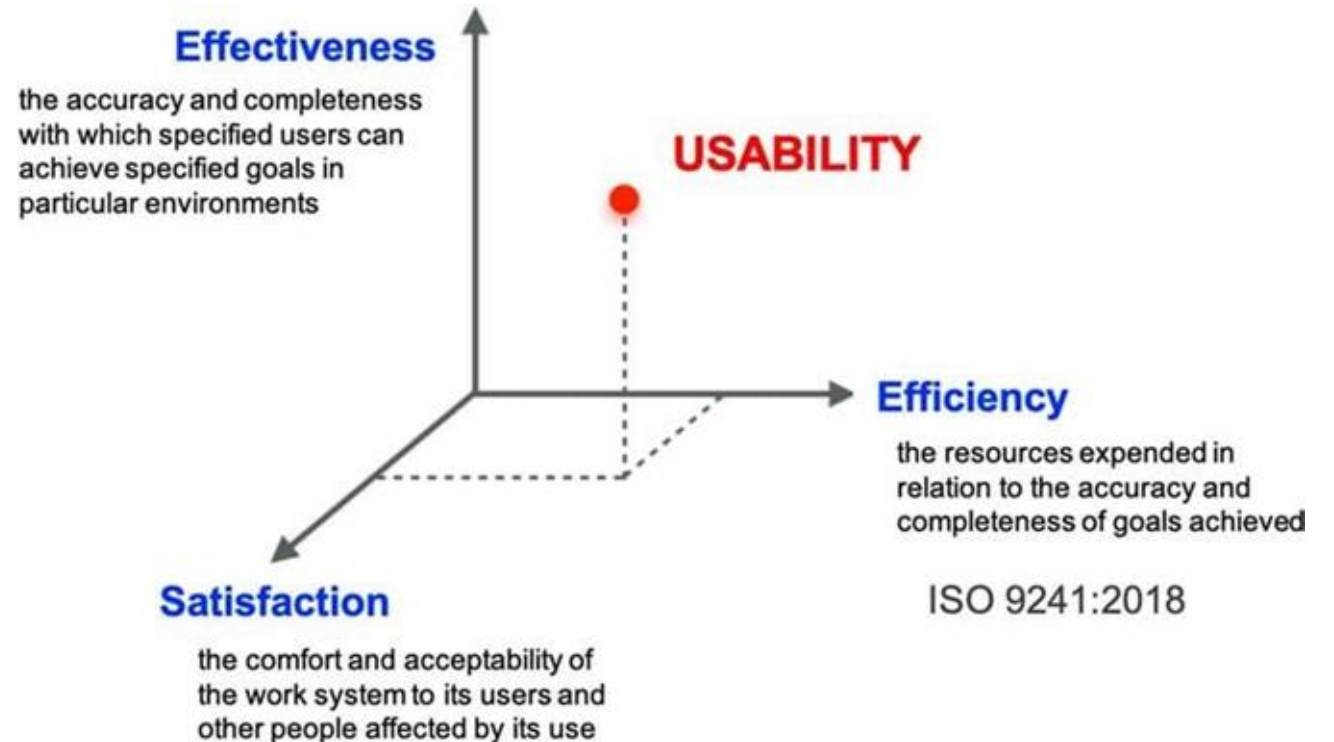
Learning Objectives



1. Introduction to User Experience
2. Building the Patient Education Program
3. User testing & refinement

What is User Experience (UX)?

- Understanding your users to create experiences that are meaningful, intuitive, and easy to use
- Includes aspects of branding, user interface (UI) design, psychology, usability



Why user experience (UX) matters in patient education

- Digital programs improve accessibility of education but success can depend on usability
- Good UX improves the likelihood that patients will:
 - Complete the program
 - Understand the information
 - Feel confident applying it to manage their health



Design Goals in Digital Patient Education Programs



Enhance understanding and learning with clear organization, plain language, intuitive navigation, engaging visuals



Support behaviour change by encouraging healthy, sustainable lifestyle habits



Build trust and confidence in patients' ability to manage their health & make informed care decisions



Reduce cognitive burden so patients can focus on learning rather than figuring out how to use the program

General principles (to do more with less pain)	☐
Shoulder positioning	☐
Dressing	☐
Grooming	☐
Kitchen-related activities	☐
Cleaning and Laundry	☐
Driving Tips for Shoulder Discomfort	☐
Sleeping Comfortably with a Painful Shoulder	☐
Office set up	☐
Using smartphone	☐

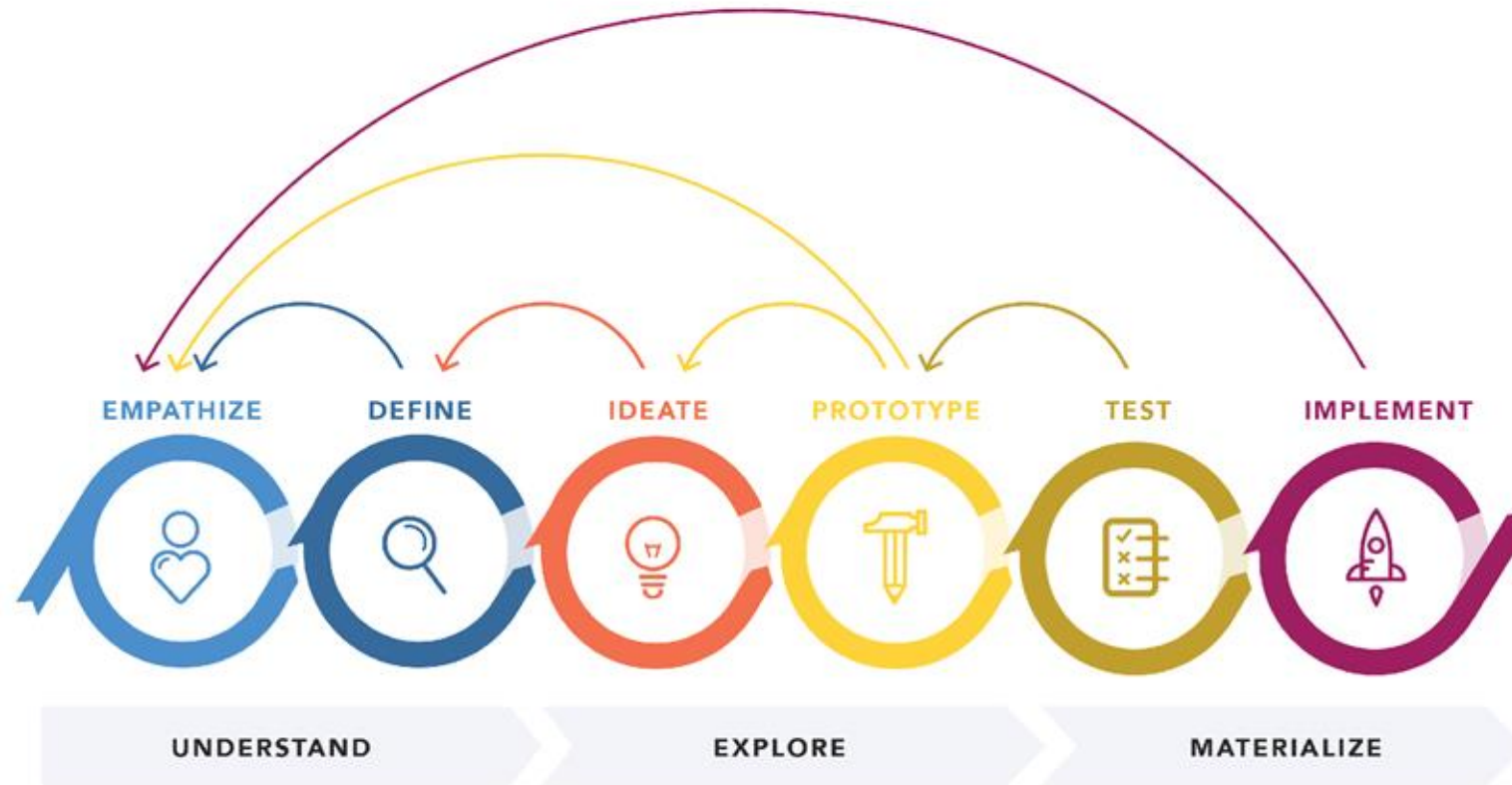


- Use your good arm to support the weight of the laundry.
- Use your bad arm on top to stabilize.
- Pick up dirty clothes and put them in the laundry basket, which is placed close to the washing machine. Take them from there until laundry time.

- While sweeping the floor, keep the broom close to your body and keep your elbow tucked in.
- Use your good arm to handle the dustpan as you move around. Avoid heavy vacuum machines, or ask somebody else to do that.



Design Thinking Process

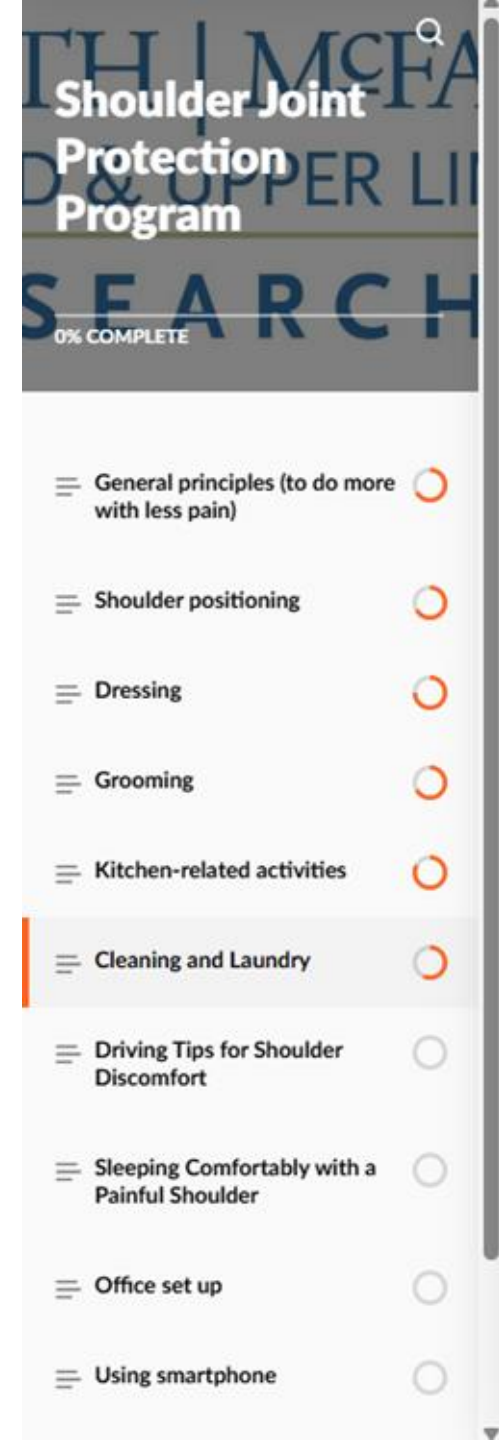


Ensures solutions are **human-centered, effective, and responsive to user needs** rather than designed based on assumptions



Understanding the User

- Who is the target user, what is their context, challenges they face
- Types of activities
 - **Exploratory Interview:** understand how a user thinks about a problem, their experiences, attitudes or barriers
 - **Survey:** identify patterns across a population, including preferences for content, learning needs, and delivery preferences
 - **Card sorting:** how people naturally organize information





User Interface Design

Usability Heuristics:
general design principles
that help make a system
easy to use

Visual Design: how
information is presented
on the screen

Accessible Design:
ensures interface is
usable by people with a
wide range of abilities
and needs

Usability Heuristics (1/3)

The system should communicate with users in a natural and familiar way

- Use specific and familiar language for users
- User research can uncover familiar terminology, and mental models

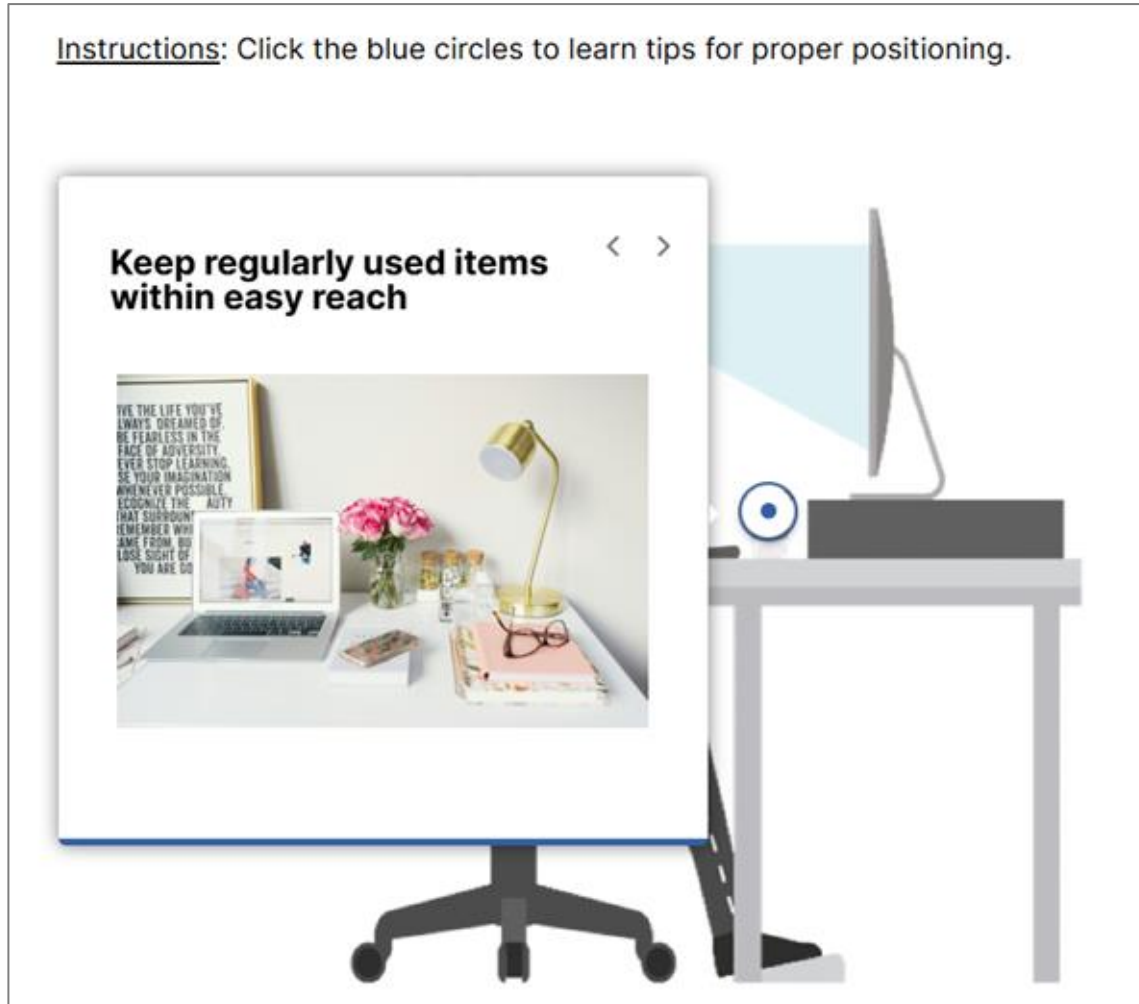
✓ Clear headlines, plain language, concise explanations

✗ Technical language, jargon, acronyms

The screenshot shows the BlueCross BlueShield of North Carolina website. The header includes the logo and navigation links for Preventive Care, For Men, For Women, and For Children. The main content area features a large headline: "PREVENTIVE CARE IS IMPORTANT TO YOUR HEALTH" with a sub-headline "Health Benefits & Coverage". Below this, there are two columns of text explaining preventive care and its benefits, accompanied by a photo of a doctor and a patient. A button labeled "SUMMARY OF PREVENTIVE CARE SERVICES" is visible. At the bottom, there is a section titled "WHICH TYPES OF SERVICES ARE COVERED AT 100%?" with a note about the completeness of the list.

The screenshot shows the AbacusNext website. The header includes the logo, navigation links for Private Cloud, Business Software, Accounting Solutions, Legal Solutions, Success Stories, Partners, and More, along with a search bar and a "Get a Free Demo" button. The main content area is titled "Abacus Private Cloud Quick Facts" and lists various features and benefits in a grid format. The features include: 8 Data Centers, 100% Renewable Data Center Power, SOC1/SOC2/SOC3/SSAE16 Certifications, 256-bit AES Data Encryption, 99.999% Uptime Service Level Agreement, Unlimited Cloud Platform Support, No Fee for After Hours Support, No Fee for Client Data Export, No Fee for Device Reconfiguration, Accessible Anywhere, Anytime, and Up to 60 Months Price Guarantee. Below the grid, there are four sections with icons and titles: Law Firm Business Continuity Management, Full-Spectrum Security, Zero Capital Investment, and Complete Ownership of Data. Each section has a brief description and a "Learn More" link.

Usability Heuristics (2/3)



Promote recognition in interfaces rather than recall

- **Contextual guidance** – provide short prompts, tooltips, instructions where they're needed
- **Consistency** - of buttons, icons and interactions working the same way throughout the program

Usability Heuristics (3/3)

Help and Documentation

- Support should be easy to find and available at the moment it's needed
- Two types of help:
 - **Proactive help** introduces users to the interface before they use it
 - **Reactive help** is provided when users are completing a task



Visual Design

- **Aesthetic-usability effect:** users perceive aesthetic products as easier to use
- A strong visual system builds user trust in the credibility of product and brand

5 Visual-Design Principles in UX

Visual-design principles inform us how design elements go together to create well-rounded and thoughtful visuals. Graphics that take advantage of the principles of good visual design can drive engagement and increase usability.

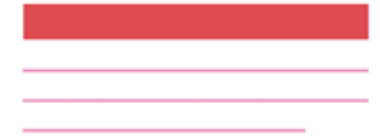
SCALE

The principle of scale refers to using relative size to signal importance and rank in a composition.



VISUAL HIERARCHY

The principle of visual hierarchy refers to guiding the eye on the page so that it attends to design elements in the order of their importance.



BALANCE

Balance occurs when there is an equally distributed amount of visual signal on both sides of an imaginary axis.



CONTRAST

The principle of contrast refers to the juxtaposition of visually dissimilar elements in order to convey the fact that these elements are different.



GESTALT PRINCIPLES

Gestalt principles capture our tendency to perceive the whole as opposed to the individual elements.



NNGROUP.COM NN/g

Accessible Design



- **What is accessible design?**
 - Creating digital experiences that can be used by as many people as possible
- World Wide Web Consortium's Web Content Accessibility Guidelines (WCAG)
 - Best practices for making digital content more accessible
- Many accessibility features improve user experience for everyone

Redesigned Joint Protection Program

Shoulder Joint Protection Program

0% COMPLETE

- WELCOME
- Introduction to the Program
- MODULE 1: INTRODUCTION TO SHOULDER JOINT PROTECTION
 - Daily Living with Shoulder Pain
 - Shoulder Positioning
- MODULE 2: DAILY ACTIVITIES AND TASKS
 - Dressing
 - Personal Hygiene
 - Sleeping Comfortably with a Painful Shoulder
 - Kitchen Activities

Dressing Video

This video shows dressing tips to reduce shoulder strain, such as wearing loose-fitting clothing and dressing your painful arm first. These strategies can make getting dressed more comfortable.

1 MIN

Dressing

Making dressing less challenging with shoulder discomfort

CONTINUE: PERSONAL HYGIENE

Shoulder Joint Protection Program

0% COMPLETE

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Lesson 2 of 14

Daily Living with Shoulder Pain

Module 1: Introduction to Shoulder Joint Protection

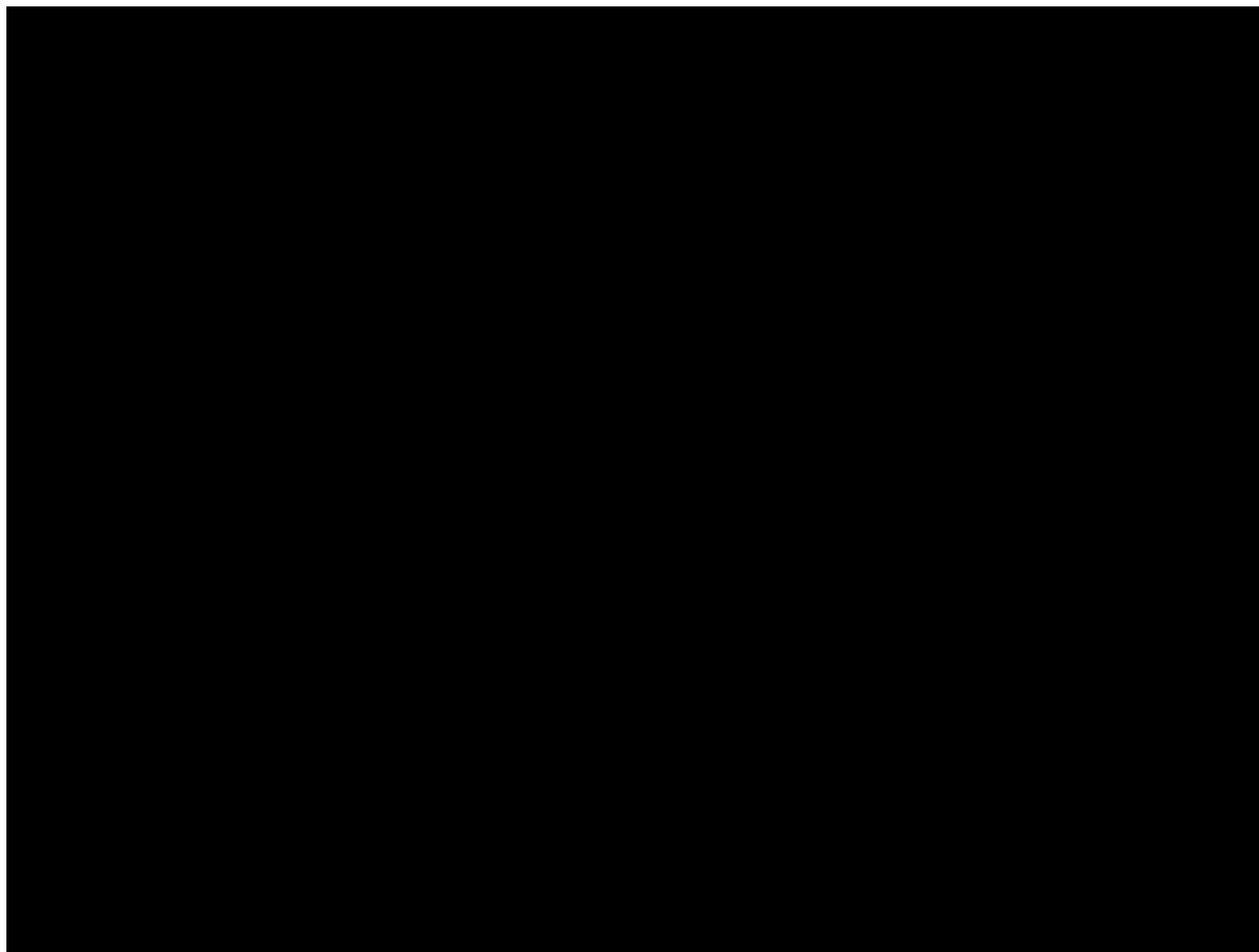
Learn general principles to follow while performing everyday activities to have less shoulder pain, including how to position your shoulders and head to reduce strain.

Introduction to Joint Protection Video

Please watch the video below.



<https://app.vyond.com/videos/9c4b42c9-d179-4259-944d-bb1a25c39513>



Interactive Activities



Interactive house:

- Features practical tips on applying joint protection to everyday tasks
- Valued by participants for self-paced exploration of different rooms and tasks

Interactive Activities

Recommended Daily Protein Calculator

Convert Weight
From lbs to kg

lbs

Your weight is 0 kg

Your Weight

kg

Your Recommended Daily Protein Intake

0 g - 0 g

Daily Recommended Protein Calculator

- Practical takeaway for supporting behaviour change



Usability Testing

- Participants complete tasks while the researcher observes their behaviour and listens for feedback
- **“Think a-loud” method:** participant narrates their actions and thoughts as they perform tasks

Why Usability Test?



Uncover Problems
in the design

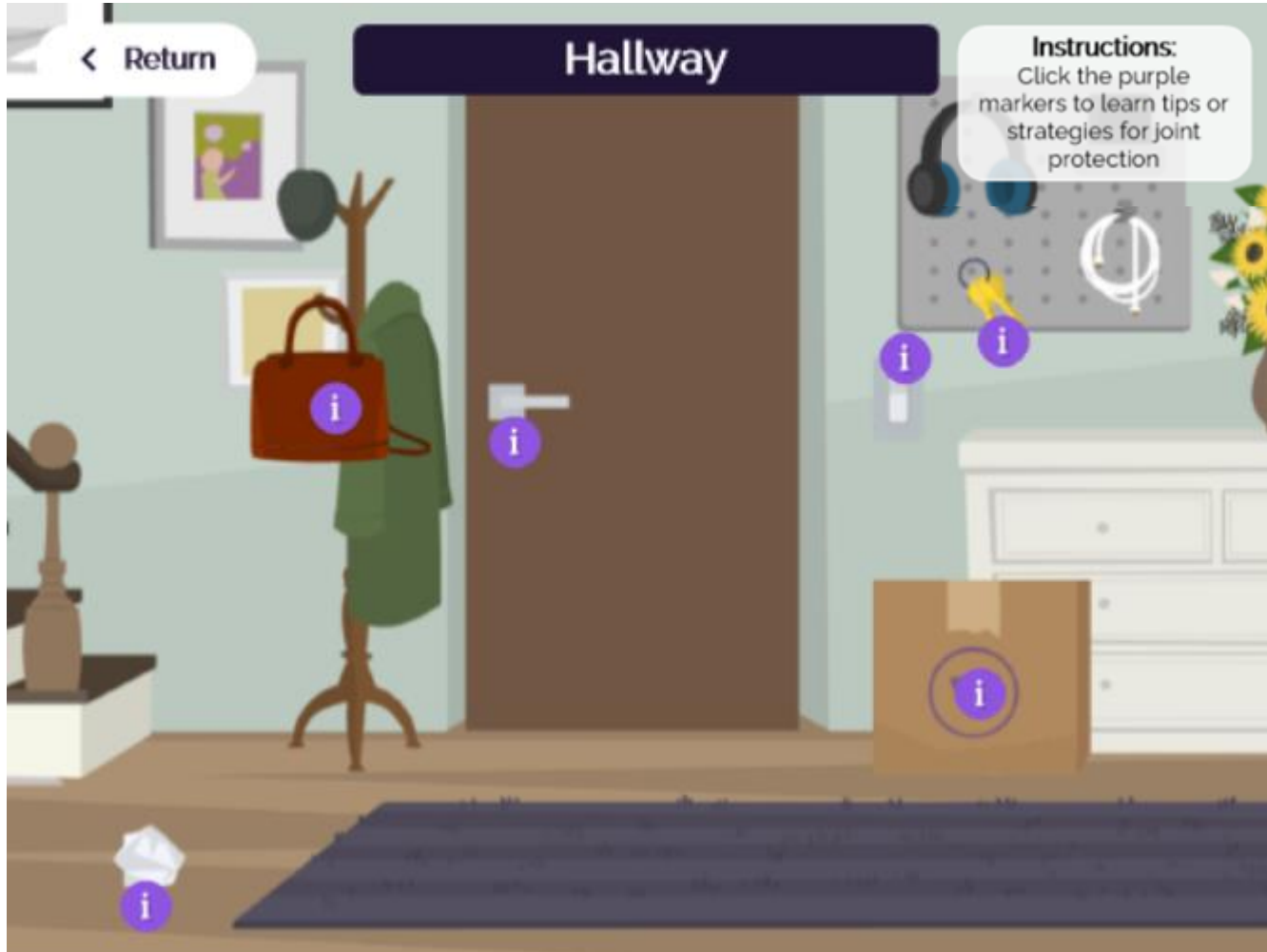


Discover Opportunities
to improve the design



Learn About Users
behavior and preferences

Are there usability issues you see here?



- **Observation:** The help icon added extra steps and made instructions less visible
- 💡 **Replacing icon with plain text reduced unnecessary clicks and made the instructions easier to find**

Takeaways from Usability Testing for Hand Joint Protection Program

Users valued:

- ✓ Clear language and presentation of content in videos
- ✓ Interactivity – effective for reinforcing key points
- ✓ Self-paced exploration and intuitive navigation aligned with expectations from other platforms

Users concerns:

- ✗ Excessive clicking can cause strain for individuals with hand pain
- ✗ Technological literacy

UX Metrics

Behavioural	Attitudinal
Time per task	System usability scale (SUS)
Task success	Customer satisfaction (CSAT)
Error or navigation issues	Net promoter scale (NPS)

Key Takeaways

Reach and effectiveness of digital health education depends on usability

Involve the user when developing the program

Thank you!

E-Learning Platform

Articulate Rise

- Rapid development of e-learning courses
 - Uses pre-built, block-based layouts
 - Limited design flexibility

Articulate Storyline

- Highly customized and interactive e-learning
- Slideshow-based lesson pages
- Can be used to create interactive activities

