

WORKSHOP 1

Ideation & Design Thinking

Functional Capacity Assessment Framework (FCAF)

A Practitioner-Led Assessment and Intervention System for Functional Capacity in Adults Aged 45–75

Objective: Apply design thinking principles to empathize with patients, identify core health challenges, and generate innovative solutions that address cardiometabolic health, musculoskeletal decline, and functional capacity preservation across the adult lifespan.

Section 1: Empathy Mapping

Design thinking begins with empathy — a deep, structured understanding of the people whose lives the solution must improve. The following empathy map synthesizes the lived experience of the primary persona to ground subsequent ideation in human reality.

1.1 Primary Persona: David Thompson

Age: 58	Occupation: Project Manager
Health Challenges:	Prediabetes, Knee osteoarthritis, Weight gain, Hypertension, Reduced physical activity

1.2 Empathy Map

■ THINKS	♥ FEELS
• “I know I need to exercise.” • “My knee limits what I can do.” • “I don’t know what information to trust.” • “I don’t want to become dependent as I age.”	• Frustrated • Overwhelmed • Concerned about future disability • Motivated to improve health
■ SAYS	■ DOES

- “I don’t recover like I used to.”
- “I need a plan that works for me.”
- “I want measurable progress.”

- Tries exercise intermittently
- Uses wearable technology occasionally
- Seeks advice from healthcare providers
- Searches online for solutions

1.3 Pain Point Analysis

Metabolic	Musculoskeletal	Healthcare
• Weight gain • Fatigue • Poor cardiovascular fitness	• Joint pain • Stiffness • Fear of movement	• Fragmented care • Inconsistent recommendations • Lack of measurable outcomes

Motivations: Maintain independence • Stay active with family • Reduce pain • Improve health • Age well

Section 2: Problem Definition

The World Health Organization (WHO) defines healthy ageing as the process of developing and maintaining the functional ability that enables well-being in older age. Functional ability is shaped by an individual's intrinsic physical and mental capacities, the environments they inhabit, and the social determinants that govern their access to care (WHO, 2020).

Core Problem Statement

Adults aged 45–75 experiencing metabolic syndrome and musculoskeletal decline often receive fragmented care that focuses on isolated diagnoses rather than overall functional capacity. Despite strong evidence supporting exercise, rehabilitation, and lifestyle interventions, practitioners frequently lack a simple, standardized framework for measuring, tracking, and communicating meaningful changes in function over time (WHO, 2020; WHO, 2023).

As a result, patients struggle to understand their progress, maintain motivation, and sustain behaviour change. There is a need for an evidence-based Functional Capacity Assessment Framework that enables practitioners to assess, monitor, and improve functional health using standardized measures that are practical, affordable, and applicable across multiple healthcare disciplines.

Section 3: Ideation Exercise

3.1 Mind Mapping

Central Question: How might practitioners better measure and improve functional capacity?

Key Branches: Assessment • Mobility • Pain • Behaviour Change • Healthy Aging • Metabolic Health • Patient Adherence • Practitioner Communication • Outcome Tracking

3.2 SCAMPER Analysis & Solution Candidates

Lens	Insight / Solution
COMBINE	Kinesiology + Rehabilitation Science + Lifestyle Medicine + Behaviour Change → Standardized Practitioner Assessment System (Selected)
Other Ideas	• Direct-to-consumer coaching program (high founder time dependency) • Functional Health Reporting Software (high capital & technical resources required)

Selection Rationale: Lowest startup cost, leverages founder expertise (Registered Kinesiologist & Pilates Instructor), can be piloted immediately with existing clients, supports future technology development, and is scalable through practitioner education.

Section 4: Selected Solution — FCAF

The Functional Capacity Assessment Framework (FCAF) is a practitioner-led assessment and intervention framework designed to help adults aged 45–75 preserve functional capacity by addressing the interconnected challenges of metabolic syndrome, osteoarthritis, chronic pain, reduced mobility, and declining physical function.

The framework provides a structured method for healthcare practitioners to assess, monitor, and improve functional capacity using evidence-based rehabilitation, exercise, and behaviour-change principles.

Section 5: Low-Fidelity Prototype

The sketch below represents the primary patient-facing deliverable: the Functional Capacity Assessment Report.

FUNCTIONAL CAPACITY ASSESSMENT REPORT — Patient View

Functional Capacity Score: 72 / 100

Mobility: Hip Mobility — Moderate Restriction | Shoulder Mobility — Good

Movement Capacity: Squat — Fair | Balance — Moderate

Pain Profile: Knee Pain — 4/10

Metabolic Indicators: Activity — 5,800 steps/day

Recommendations:

- Walking Program (start with 20 min daily)
- Mobility Training (hip & thoracic focus)
- Strength Program (lower body emphasis)

Practitioner Follow-Up: 4 Weeks

(Visual: Clean one-page Canva/PDF layout with score gauge, domain bars, pain map, and actionable next steps — professional, motivating, and free of clinical jargon.)

Section 6: Reflection

The design thinking process revealed that the most valuable opportunity is not creating new technology but creating a practical framework that helps practitioners assess and communicate functional health. The empathy mapping exercise demonstrated that adults experiencing metabolic and musculoskeletal decline are less concerned about diagnoses and more concerned about maintaining independence, mobility, and quality of life.

The ideation process identified several possible business models. However, coaching services were highly dependent on founder time, while software development required significant capital investment. The Functional Capacity Assessment Framework emerged as the strongest solution because it leverages existing professional expertise, addresses a clearly defined practitioner need, and can be tested with minimal financial investment.

This insight significantly influences the business model. Rather than building a technology company immediately, the venture will focus on developing an evidence-based practitioner framework that generates measurable outcomes. Over time, the framework may support practitioner training, certification, licensing, and software development opportunities. This staged approach reduces risk while allowing the venture to grow through validation, evidence generation, and professional adoption.

References

World Health Organization. (2020, October 26). *Healthy ageing and functional ability*.

<https://www.who.int/news-room/questions-and-answers/item/healthy-ageing-and-functional-ability>

World Health Organization. (2023, July 14). *Osteoarthritis*. <https://www.who.int/news-room/fact-sheets/detail/osteoarthritis>

Ries, E. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. Crown Business.