FitFuel: AI-Enhanced Fitness App

Stakeholder Research Report · Discovery Phase · Draft for Review

JUNE 2026 DRAFT V1.0 TIM ST CLAIR, SENIOR UX LEAD

Source Basis: 5 User Interviews · 2 Trainer Interviews · Market Analysis · Personas v4 · Journey Maps v3

This report is based on primary qualitative research for the FitFuel UX course project. No PII included. Claims rated by confidence level — all validation detail in Appendix F and Source Validation Log v2. Internal use only.

Executive Summary

FitFuel enters a **$12–15B global fitness app market** (2025) growing at 13–14% CAGR — saturated at the surface, but structurally underserved at the level of adaptive, life-aware coaching.

Confirmed: The Gap Is Real

No competitor meets users after a lapse event, adapts to irregular schedules, or serves post-clinical return-to-exercise populations at scale.

Confirmed: Anti-Shame Is Non-Negotiable

Five users and two trainers independently named streaks and guilt notifications as deletion triggers with clinical backing.

Confirmed: AI Earns Trust Through Honesty

AI is trusted when it explains reasoning, acknowledges uncertainty, and stays within its competence.

Whitespace: Lapse Recovery

No competitor has built this.
Evidence: High.

Whitespace: Context-Aware Scheduling

Create reasoning from calendar and life signals, not biometrics alone.
Evidence: Medium-High.

Whitespace: Mental Wellness as Tone

Move towards reframing in mood and energy language — not a feature category.
Evidence: Medium-High.

⚠ ⚠ Sample (n=7) and selection bias limit generalizability. Design implications are hypotheses, not validated solutions. See Appendix F for full confidence ratings.

Project Context & Methodology

FitFuel is an AI-augmented fitness app for fitness newcomers, returning routine-builders, and users with accessibility and disability needs.
Core question: **Where does the market fail users who want more than passive tracking but less than full human coaching?**

Target Audiences

A: Time-Constrained Professional

Fitness wrapped around dense schedules and travel. Plan-life mismatch: every app assumes a week they never have.

B: Returning Routine Builder

Dropped off when the plan stopped fitting their life or body. Re-entry shame and absence of a 'return' state.

C: User with Access Needs

Disability, injury recovery, or fitness culture anxiety. Systematic exclusion by default product design.

Research Sources

Source	Detail	Weight
User Interviews (n=5)	INT-01–05, ~60 min each	Primary
Practitioner Interviews (n=2)	TRA-01: 12 yrs, Chicago; TRA-02: 18 yrs, Seattle	Informed
Market Landscape	8–10 app audit; Grand View, Polaris 2025	Directional
Source Validation Log v2	6 design assumptions rated	Authoritative
Personas v4 + Journey Maps v3	Derived from interview synthesis	Directional

Market & Competitive Context

$12–15B

Global Market 2025

App revenue · multiple analysts

13–14%

CAGR 2026–2033

Grand View Research · Polaris

3–8%

30-Day Retention Avg

Business of Apps 2025

25%

Revenue from Apps

Record share · up from prior years

Three Trends That Matter

AI Adaptation Is Now Baseline

Adapting to life context and lapse re-entry is the open design space — not biometrics alone.

Market Has Shifted to Retention

Platforms gaining ground extend relationships across lapse events, not feature volume.

Mental Wellness Has Converged

Opportunity is at the language level: framing exercise in mood and energy terms across the coaching voice.

Two Underserved Segments

Segment A — The Irregular Exerciser

UK Biobank (~90K participants, Circulation 2024): weekend-concentrated exercise produces comparable health outcomes — yet every major app treats it as a deviation. When a plan breaks, users abandon the app.

Segment B — User with Access Needs

Activity Alliance: **90% of users with impairments** report being underserved. Calorie deficits and step goals are clinically contraindicated for some conditions.

Competitive Gap Analysis

June 2026 audit of Fitbod, Freeletics, Future, Peloton IQ, and Ray reveals three whitespace opportunities where no competitor has built a credible solution.

Lapse Recovery Architecture

Evidence: High.
No competitor detects an engagement gap, estimates detraining, and rebuilds a re-entry plan without framing the gap as failure.
BJH Psychology 2025 (n=58,881) + competitor audit.

Context-Aware Scheduling

Evidence: Medium-High.
Current AI adapts to biometrics (HRV, sleep, load). None reason from schedule context: meeting overruns, travel days, compressed weeks.
UK Biobank validated; AI mechanism directional.

Mental Wellness as Coaching Tone

Evidence: Medium-High.
Wellness features are standard (Apple Fitness+, Peloton, Centr). None reframe exercise in mood/energy terms at the language level.
Exercise–mental health link validated; tone mechanism directional.

User Insights: Themes 1–4

Eight themes from five user interviews (INT-01–05), tested against practitioner testimony (TRA-01, TRA-02). Themes marked **[BOTH]** appeared independently across both data sets — the strongest signals.

BOTH · HIGHEST CONFIDENCE

Theme 1: Plan-Life Mismatch

The core friction is structural: fixed app logic vs. unpredictable real lives. For users with chronic conditions (TRA-02), a fixed plan is medically incorrect. ”

Static plan in a dynamic life. That's the actual problem." — INT-01

Implication: Calendar integration, energy signalling, graceful degradation.

BOTH · HIGHEST CONFIDENCE

Theme 2: Anti-Shame Design

Every participant raised, unprompted, emotional harm from streaks and guilt notifications. TRA-01: shame causes users to hide behavior, breaking the AI feedback loop. *"Be a friend who doesn't shame me." — INT-01*

Implication: Streaks off by default. Empty state shows tomorrow's session — never references the gap.

BOTH · HIGH CONFIDENCE

Theme 3: Decisive vs. Performative Personalization

Participants distinguish cosmetic AI (name insertion, custom labels) from AI demonstrating actual constraint knowledge. The former generates distrust and deletion. ”

Tell me the reasoning. 'Because you slept poorly, here's a lighter session.' That builds trust." — INT-03

Implication: Every AI adaptation carries a plain-language rationale.

USER · HIGH CONFIDENCE

Theme 4: Knowledge Is Not the Barrier

Most participants had prior athletic identities and strong fitness literacy. Barriers are structural: time, energy, fear of re-injury.

”The information isn't the issue. Walk more, lift some, eat less garbage. The issue is I'm tired and I'm carrying a lot." — INT-02

Implication: Onboarding asks "What did your fitness life look like before?" — the lapsed athlete is a distinct archetype.

User Insights: Themes 5–8 + AI Safety Boundary

BOTH · HIGHEST CONFIDENCE

Theme 5: Permission to Do Less

All five users value low-effort entry points on hard days — framed as "this is what today calls for," not a consolation prize. TRA-01: every workout should have a 5-min, 15-min, and 45-min version. ”
The permission-to-do-less is the killer feature." — INT-03

USER · HIGH CONFIDENCE

Theme 6: Accountability Requires Realness

Most effective accountability came from a real person. AI in a supporting role is valued if scoped appropriately.
”The app is not my friend. I have friends. Lean into being useful, not into being a buddy." — INT-02
Implication: AI scoped to logistics and scheduling. Human escalation path as a feature.

USER · HIGH CONFIDENCE

Theme 7: Nutrition as Minefield

No participant wants calorie-centered defaults. Two have disordered eating histories for which logging is a direct psychological risk. INT-05 adds accessibility: food databases are unusable at speed with VoiceOver.
"The absence of food tracking is a feature for me." — INT-03

USER · HIGH CONFIDENCE

Theme 8: Inclusion by Default

An app designed accessibly from the start, not one with an accessibility mode. Structural AI problem: models trained on data excluding disabled users produce wrong defaults.
"I want products where I'm the default for the parts of the experience that involve me." — INT-05
Implication: Design the audio experience first. WCAG 2.2 AA is necessary but not sufficient. Hire disabled users as designers from day one.

⚠ Practitioner-Only Finding: AI Safety Boundary

Both trainers drew the same line: AI can do programming, scheduling, and pattern recognition — but **cannot** do real-time interpretation, judgment under ambiguity, or clinical escalation.
TRA-02: *"AI doesn't know what it doesn't know. It speaks with confidence. The AI's mistakes are absorbed without question. That's a different kind of risk. It's more intimate."*
TRA-02's 8-point safe AI framework is in Appendix G. No evidence base exists for what AI fitness coaching does to users over 6–24 months.

Persona Summaries: INT-01 & INT-02

INT-01 · Calendar-Trapped Professional

32 · Sr. Product Marketing Mgr · Brooklyn, NY · ~$110K

"Static plan in a dynamic life. That's the actual problem."

- **Goals:** Get genuinely strong — one pull-up, fix back pain; manage stress through exercise
- **Pain Points:** Schedule disruption kills every plan — no graceful rebuild; AI feels generic; calorie features rarely offer a real opt-out
- **Needs:** Plan that survives travel; AI using calendar + sleep data; social accountability layer

INT-02 · Caregiver at the Edge

41 · Operations Manager (WFH) · Suburban Atlanta · ~$85K

"I'm not lazy. I'm tired. There's a difference."

- **Goals:** Lower pre-diabetic A1C and blood pressure; strong enough to lift his mother safely
- **Pain Points:** Time and energy never coexist; no Plan B — one-path apps fail immediately; food logging incompatible with family cooking
- **Needs:** Home-only workouts; one button to press — zero cognitive friction; progress in clinical language (A1C, BP)

Persona Summaries: INT-03, INT-04 & INT-05

INT-03 · All-or-Nothing Cycler

28 · Freelance Product Designer · East Austin, TX · ~$70K · ADHD, disordered eating history

"Choice is the enemy. Save me from myself, app."

- **Goals:** Be a consistent mover — never achieved this; use exercise to manage ADHD cognition; get pull-ups back from calisthenics era
- **Pain Points:** No middle gear — five sessions or zero; time blindness misses sessions; apps reinforce bad habits (streaks reward intensity sprints)
- **Needs:** One session surfaced immediately — no library; AI that reads Oura + calendar and decides; volume ceiling to protect against burnout; gender-neutral language throughout — non-negotiable

INT-04 · Lapsed Athlete Finding Her Footing

52 · Elementary School Administrator · Minneapolis, MN · ~$75K · Post-meniscus surgery, peri-menopausal

"The body I knew how to train is gone. Nobody handed me a manual for this one."

- **Goals:** Feel confident in her body again; walk-jog a 5K; reclaim athletic identity; push back on perimenopause actively
- **Pain Points:** Fear of re-injury freezes her at every twinge; no app category fits — too experienced for beginner, not ready for athlete; menopause invisible in mainstream fitness apps
- **Needs:** Clinical credibility — PT involvement before she trusts the AI; functional progress tracking: stairs, range of motion — not weight; human escalation option for pain signals

INT-05 · Adaptive Mover

36 · Sr. Customer Support Specialist (remote) · Portland, OR · ~$52K · Legally blind, Long COVID

"I want products where I'm the default for the parts of the experience that involve me."

- **Goals:** Figure out how to be active without crashing; rebuild muscle, carry groceries up four flights; keep tandem cycling — main social and joy anchor; reach a 30–40 mile tandem ride
- **Pain Points:** Every mainstream app built for sighted users; post-exertional malaise invisible to biometrics; accessibility settings reset on every update; streaks punish the medically correct decision to rest
- **Needs:** Audio-first workout instructions — no screen dependency; AI that treats self-reported fatigue as primary data; accessibility preferences that persist across updates; expressed AI uncertainty — confident wrong advice is a safety risk

Journey Map Highlights

Four journey maps were developed (Calendar-Trapped Professional, Caregiver at the Edge, Lapsed Athlete, All-or-Nothing Cycler). **Three signals cut across all four maps:**

The Plan Must Flex

Neither the professional nor the caregiver fails from low motivation. Both fail because a static plan meets a dynamic life. A rolling, adaptive plan is not a feature — **it is the product.**

Re-Entry Is the Critical Moment

The gap between a missed week and a deleted app is determined by what the product does when the user returns. An empty state showing tomorrow's session **without referencing the gap** is the minimum viable re-entry experience. No current competitor has built this systematically.

Progress in the User's Language

INT-01: back pain. INT-02: A1C. INT-03: pull-up. INT-04: stairs without thinking. None want streaks, body scores, or weight readouts. **Progress must speak the language the user brought in.**

SECTION 06 OPPORTUNITY 01

Lapse Recovery as a First-Class Product Feature

Evidence: HIGH

Every current fitness app is built for users who show up. None is built for users who stop and need to re-enter. A UCL and Loughborough University social listening study (**n=58,881 posts, British Journal of Health Psychology 2025**) documents that users abandon the app rather than adapt the plan when routines break — across all three target segments.

Design Implication

An AI that detects lapse, estimates detraining by elapsed time, rebuilds the plan from current fitness state, and frames re-entry without surfacing the absence. Empty state shows tomorrow's session with no reference to the gap. Serves all three target segments.

⚠ **Validation (VN-08):** Competitor gap confirmed by June 2026 feature audit. Re-entry AI mechanism is directional — requires prototype testing and clinical review before build.

SECTION 06 OPPORTUNITIES 02 & 03

Context-Aware Scheduling & Mental Wellness as Coaching Tone

Opportunity 02: Context-Aware Scheduling

Evidence: MEDIUM-HIGH — Current AI adapts to the body. No current product adapts to the calendar. UK Biobank data (**~90,000 participants, Circulation 2024**) confirms that weekend-concentrated exercise produces physiologically equivalent health outcomes to daily training — yet every major app treats it as a deviation to correct.

Design Implication: AI that reasons from scheduling signals in addition to biometric signals, redistributing weekly load across available windows. The weekend-concentrated exercise pattern is served as a first-class lifestyle, not corrected.

⚠ **Validation (VN-09):** Weekend warrior equivalence validated. AI calendar-reasoning mechanism is directional — requires interview validation and technical feasibility confirmation before specification.

Opportunity 03: Mental Wellness as Coaching Tone

Evidence: MEDIUM-HIGH — Adding a meditation library does not differentiate FitFuel — Apple Fitness+, Peloton, Centr, Aaptiv, and Noom already include wellness content. A **2024 BMJ meta-analysis** and a **2026 BJSM umbrella review** confirm that walking, jogging, yoga, and strength training reduce depression symptoms across populations. The opportunity is framing exercise in these terms — not adding a breathing tab.

Design Implication: AI microcopy and coaching tone that frames outcomes in mood and energy terms alongside physical metrics — across onboarding, plan summaries, re-entry moments, and achievement language. **Lowest build cost of the three opportunities; broadest cross-segment applicability.**

⚠ **Validation (VN-10):** Exercise–mental health link validated. Tone-as-mechanism is directional — requires microcopy testing and user interview validation before voice guidelines are finalized.

SECTION 07

Recommended Next Steps

Nine actions required before design decisions are finalized. **Items 1–3 are prerequisites for items 4–9.**

#	Action	Purpose
01	Broader user research sampling	Recruit satisfied users, streak-motivated users, users for whom current apps work. Addresses confirmation bias challenge from senior researcher review.
02	Access-needs primary research	Recruit 2+ participants beyond INT-05: chronic fatigue, mobility limitation, vision impairment. Single-source evidence for this segment must be expanded.
03	AI trust threshold test	Present mock AI recommendations to 8+ users across all three segments. Probe: act, modify, or ignore — and why? Tests the RQ3 disconfirming scenario.
04	AI scope audit	Map every planned AI output against the boundary both trainers drew: programming/scheduling (in scope) vs. interpretation, judgment, clinical escalation (out of scope).
05	Language audit against trainer taxonomy	Run every planned notification, empty state, missed-session message, and progress summary against the harmful language lists from TRA-01 and TRA-02.
06	Post-clinical scope decision	Determine whether the post-clinical population (discharged from PT, cardiac rehab, or oncology care) is within FitFuel's scope. If yes: define clinical advisory requirement. If no: document so the product does not inadvertently attract and fail them.
07	Persona compression test	Test whether INT-01 and INT-04 are better served by a single 'lapsed athlete' primary persona or two distinct ones. INT-02 diverges clearly on caregiving context.
08	Nutrition opt-out framing test	Test default-on tracking with opt-out vs. default-off with opt-in. Measure completion rate and 7-day retention. Hypothesis: default-off improves both.
09	Source validation log update	Promote all directional claims to Validated, Disconfirmed, or Retained-as-Hypothesis before broader distribution. FitFuel Source Validation Log v2 is the authoritative reference.