

Solace - Research

What this document is

The research for Solace was done side by side, as the extension was being developed.

Research Questions

It asks five questions about the product that was already coming to existence:

1. Is the problem Solace addresses real and measurable?
2. What does the interruption actually cost?
3. Does the evidence support a tiny break as a substitute for a feed session?
4. Is there a reason the break's content should be affirmations?
5. Does anything like Solace already exist - and where does the evidence argue **against** the current design?

Methodology

This is a targeted reading of the published research plus a hands-on survey of competing products - not a formal systematic review. Searches were run specifically to surface evidence **against** Solace's model, not just for it.

Honest caveats

Some papers were read from abstracts rather than full texts, the prevalence numbers come from surveys that used different methods, competitor data was captured in August 2026 and will go stale, and most importantly no study tests Solace's exact idea end-to-end. The research supports each link in the chain; the chain itself is untested. That gap is the product's central open question.

1. The problem is real

Doomscrolling is a measurable behaviour, not just a buzzword. Researchers built and validated a questionnaire for it (Sharma, Lee & Johnson, 2022) and showed it's a distinct pattern, related to, but separate from, general internet overuse or fear of missing out. It correlates with anxiety, poor self-control, and passive scrolling habits, and shows up most in younger adults. Separate work during COVID lockdowns found doomscrolling actively **driving** psychological distress, not just accompanying it (Anand et al., 2022).

How common: roughly 31% of US adults say they regularly doomscroll - 51% of Gen Z and 46% of millennials (Morning Consult, 2024). 38% of adults report worse sleep from pre-bed scrolling, rising to 46% among 18-24-year-olds (AASM, 2025). These surveys used different methods, so the exact numbers shouldn't be compared to each other, but they agree the behaviour is widespread and concentrated in exactly the people most likely to install a browser extension.

Measure	Figure	Source
US adults who regularly doomscroll	~31%	Morning Consult (2024)
Gen Z adults	51%	Morning Consult (2024)
Millennials	46%	Morning Consult (2024)
Adults reporting worse sleep from pre-bed news consumption	38%	AASM (2025)
Adults 18–24 reporting sleep problems attributed to the behaviour	46%	AASM (2025)

2. The interruption has a known cost

Breaking off a hard task to check a feed costs twice. Leroy (2009) showed that after a task switch, part of a person's attention stays stuck on the unfinished task, she calls it **attention residue**, and it drags down performance on whatever comes next. The effect is worst when the first task was left incomplete under pressure, which is precisely the moment people drift to social media. So the residue travels into the feed session, and the feed's content travels back into the work.

For context on how fragmented attention has become: Gloria Mark's observational studies found **average time on a single screen fell from about 2.5 minutes in 2004 to 47 seconds recently**.

The number most often attached to this problem, that it takes "23 minutes and 15 seconds" to recover from an interruption, appears in the marketing of half the products in this space. It traces back to a 2006 magazine interview, not a study, and an independent check of the papers usually cited as its source found the figure in none of them. So this report, and Solace's own communication, lean on Leroy's peer-reviewed mechanism instead.

3. A tiny break genuinely helps, if it ends

A meta-analysis of 22 studies found that **micro-breaks** (ten minutes or less) reliably reduce fatigue and restore energy (Albulescu et al., 2022). One caveat worth keeping: the wellbeing benefits were consistent across studies, but effects on actual task **performance** were more variable and depended on the type of task. One experiment found benefits from as little as **40 seconds** of looking at a green roof (Lee et al., 2015).

The explanation is **Attention Restoration Theory**: focused attention works like a battery. It drains through sustained concentration and recharges through things that hold attention **effortlessly**, the theory calls this "soft fascination."

The distinction Solace is built on: **an infinite feed is not soft fascination**. It's engineered to grip attention with unpredictable rewards, so it occupies the "break" slot of the working day while producing the opposite effect. The user's instinct to take a break is right; the destination is wrong.

The design consequence: a restorative break needs a built-in ending. A card that appears and dismisses itself has one. A feed does not.

4. Why the content is what it is

Two mechanisms support the specific content Solace serves:

Naming a feeling calms it. Putting an emotional state into words, "affect labeling", measurably dampens the brain's threat response, and it works without feeling like a coping technique (Lieberman et al., 2007). Torre & Lieberman (2018) characterise affect labeling as **implicit** emotion regulation: it produces effects comparable to explicit regulation strategies without being experienced by the individual as a regulatory act.

Solace organises content by **state** - Stuck, Overwhelmed, Uncertain, Wanting, Hopeful - rather than by topic. To pick a line, users first have to name how they feel. That act itself does regulatory work, before a single line is read. **No competitor reviewed does this.**

Values beat self-praise. Reflecting on personal values and the future engages the brain's self-relevance and reward systems, and that activity predicted real behaviour change in a follow-up study (Cascio et al., 2016). Solace's five registers - Action, Permission, Possibility, Faith, Affirmation - point at values and futures, not at claims about the self. Why that distinction matters becomes clear in the counter-evidence section below.

5. Nothing else occupies this spot

Four categories of existing product, each failing a different way.

(One caveat applies throughout: complaint themes come from public reviews, which are self-selected and skew negative - treat them as directional signal, not measurement.)

New-tab affirmation extensions

Products - Daily Affirmations and similar; Momentum at the top.

Mostly tiny and abandoned, the best-ranked has 119 users. Momentum has ~2M users but its reviews complain about paywalls, forced accounts, and default-on promos. The deeper flaw is structural: a new tab only appears **after** the user has already left their work. The intervention arrives too late by definition.

Mobile affirmation apps

Products - I Am, ThinkUp.

Highly rated, but reviews repeat the same themes: surprise charges, streak pressure, notification floods, repetitive content. One review line matters more than the rest: "the notifications become meaningless when there are so many." That's users describing, in their own words, the habituation problem the neuroscience predicts (see Section 6.2), two independent sources of evidence pointing at the same failure.

Theme	Product
Subscription practices: unexpected charges, disputed refunds	I Am
Notifications persisting after application deletion	I Am
Binary notification frequency; "the notifications become meaningless when there are so many"	I Am
Streak reminders auto-enabled on each launch, requiring manual disabling	I Am
Content repetition	I Am
Retroactive paywalling of prior lifetime purchases	ThinkUp
Audio playback continuing through calls and headphone disconnection	ThinkUp
Difficulty authoring content on mobile; poor sorting beyond ~50 items	ThinkUp

Friction tools

Products - one sec, Affirmation Lock.

These insert a deliberate pause before the user can open an app. The approach works, one sec's developer reports a study where a breathing exercise cut app-opens by 57% (developer-reported; the paper couldn't be located, so it's weighted accordingly). But it's a different philosophy: friction **gates** access.

Solace gates nothing, it offers an uninvited, dismissible moment. Affirmation Lock is Solace's exact inverse: it makes the user read an affirmation as the **price** of unlocking an app.

Screen-time blockers

Products - Freedom, Opal, Forest, OS controls.

Measured results are weak: in a 2025 study, nudges produced no significant effect on screen time, and a CHI 2025 study found these interventions work **worst** in low moods and at home - exactly the conditions that produce doomscrolling.

The landscape at a glance:

	Present at moment of drift	Non-restrictive	No measurement	No account required	Published efficacy evidence
New-tab extensions	✗	✓	✓	✗ (Momentum)	✗
Affirmation apps	✗	✓	✗ (Streaks)	✗	✗
Friction tools	✓	✗	partial	varies	✓ (one sec)
Screen-time blockers	✓	✗	✗	✗	✗
Solace	✓	✓	✓	✓	✗ - yet (See section 8)

Solace's position: present at the moment of drift, blocks nothing, measures nothing, stores nothing remotely, serves content the user chose themselves. The empty last cell is the cost of holding a spot nobody else holds: no published evidence yet that the spot works (see Section 8).

On permissions: Solace asks for access to all sites because being present **inside the page** is the only way to be there at the moment of drift. It reads no page content, has no server or account, and makes one (currently dormant) network request. Given that 287 Chrome extensions were recently caught harvesting browsing history from ~37 million users, this deserves prominent disclosure in the store listing, not just the privacy policy.

6. Where the evidence pushes back

Four findings work against the current build. Reporting them is the point of this review.

6.1 Positive statements can backfire

People with low self-esteem who repeated "I'm a lovable person" felt **worse** afterwards, not better (Wood et al., 2009), the statement invites internal argument, and they lose the argument.

The researchers' warning: affirmations "may benefit certain people but backfire for the very people who need them the most."

Where Solace stands: mostly protected, by design. The backfire effect comes from self-descriptive claims a person can dispute. Values-oriented content (the Cascio et al. mechanism) makes no claim to dispute, and Solace's served lines are written by the user - people don't argue with their own words.

The residual risk: the Affirmation register is the most self-descriptive of the five, and the bundled starter lines were written by the publisher, not the user. The starter set needs review against this finding.

6.2 Brains tune out repetition - the biggest open risk

fMRI studies of security warnings show the brain's response fading after as few as **two** exposures, with mind-wandering increasing as the fade progresses. The same wear-out pattern appears with cigarette warning labels and in advertising research. The consistent recommendation everywhere: vary the **form** of the message, not just its words.

Solace shows a card about six times a day, indefinitely. A 60-line no-repeat rotation varies the **text** - but the orb, the bloom animation, and the card itself look identical every time. And the Tier 2 app reviews ("meaningless when there are so many") show this failure mode happening in real products.

Where Solace stands: unresolved. This is the highest-priority risk, the main agenda item for version 0.8, and the first question in the testing plan.

6.3 The timing isn't aligned with natural breakpoints

Interruptions cost far less when they arrive at a natural pause, between subtasks, than mid-flow (Iqbal & Bailey, 2008). Solace's scheduler is time-based, spreading visits across the day with no idea what the user is doing.

Where Solace stands: partially rescued by the delivery layer, which is smarter than the scheduler. A scheduled visit isn't forced onto whatever tab is open - it waits, and is claimed by the next tab the user **switches to**. A tab switch is itself a breakpoint. Visits that go unclaimed for five minutes quietly lapse rather than arriving late, and tap-to-summon is a break the user declares themselves, the cheapest kind of interruption there is. Version 0.8 should make this alignment deliberate instead of incidental.

6.4 No efficacy evidence

Of everything reviewed, only the app one sec has any effectiveness result attached, and even that is developer-reported. Solace has none. Section 8 is the plan for getting one.

Also flagged but not yet reviewed: bossy wellbeing content can provoke pushback ("psychological reactance"), most relevant to imperative phrasing in the Action and Affirmation registers. A known gap for the next cycle.

7. Design scorecard

Eighteen shipped decisions were checked against the evidence: **13 supported, 1 partially supported, 1 complicated, 1 contradicted, 1 needing review, 1 resting on product values alone.**

The ones worth naming:

Decision	Verdict
Live inside the page, not on a new tab	Supported - new tabs arrive after the drift (Section 5)
Card dismisses itself; blocks nothing; no streaks, accounts, or tracking	Supported - micro-break evidence plus every recurring competitor complaint
Content organised by feeling, not topic; registers values-oriented; user writes their own lines	Supported - affect labeling + values-affirmation research; sidesteps the backfire effect
60-line no-repeat rotation	Partial - varies the words, not the form (Section 6.2)
Time-based scheduler	Complicated - no breakpoint awareness (Section 6.3); delivery layer compensates
Identical card and orb every appearance	Contradicted - habituation research; v0.8 agenda
Publisher-written starter lines	Needs review - backfire-effect exposure (Section 6.1)
Archive instead of delete, with Undo	No research bearing - a values call

8. What gets tested next

The full chain - a chosen line, delivered ambiently in the browser, working as a restorative micro-break, has never been studied. Solace has a small tester cohort; these four questions close the gap, in priority order:

1. **Does the card still register in week four the way it did in week one?** (habituation - critical)
2. **When a card arrived, what were you doing - and did you go back to it?** (breakpoint timing)
3. **Did a card arrive at a moment you'd otherwise have opened a feed?** (the core substitution claim - the only route to a number comparable to one sec's 57%)
4. **Did any line land badly - and was it yours or bundled?** (backfire residual)

9. Conclusion

The problem is real, measurable, and concentrated in the likeliest audience. The cost has a known mechanism. The intervention - a brief, self-ending restorative moment in place of a bottomless feed, matches the micro-break research, and the content has two supporting mechanisms of its own. No existing product occupies the position.

Against that: one risk is mostly designed away (backfire), one is half-covered by the delivery layer (timing), one is unresolved with two evidence streams pointing at it (habituation), and one is simply an absence (no efficacy data). The product's central claim remains untested as a whole. That's the next piece of work.

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