Technology-enabling tools and resources

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CEO
"self-monitoring is the cornerstone of behavioral treatment for weight loss"
diet and physical activity tracking declines

![Graph showing changes over time in proportion of mobile, mobile + feedback, and paper tracking methods over 24 weeks.](image)
the science
self-monitoring

:: tracking ➤ self-regulation ➤ weight loss

:: most fail with diet/exercise tracking

:: tracking weight is easy to make habitual

:: daily weighing ➤ largest weight losses
The Weigh Trial

-7
-3.5
0
0
3
6

Intervention
Control

~13 lb weight loss

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SCALE DOWN SOLUTION

- Cellular Connected Smart Scale
- Just-In-Time Daily Feedback
- Weekly Progress Report
- Skills Training Lessons
- Resource Dashboard
App Abandonment

% of users who abandon an app after one use

Source: Localytics 2016
Number of logins among MyFitnessPal users, by month. Boxes represent the median number of logins and interquartile range.

Date of download: 2/7/2015

You lost 0.7 lbs since yesterday. Nice job weighing everyday! To avoid high calorie lunches, bring a salad to work.
<table>
<thead>
<tr>
<th>Pairing Method</th>
<th>Sending Device</th>
<th>Receiving Device</th>
<th>Phase I: Setup</th>
<th>Phase II: Exchange</th>
<th>Phase III: Outcome</th>
<th>OOB Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resurrecting Duckling*</td>
<td>Hardware port (e.g., USB) on both and extra cable</td>
<td>Connect cable to both devices</td>
<td>NONE</td>
<td>NONE</td>
<td>Cable</td>
<td></td>
</tr>
<tr>
<td>Talking to Strangers*</td>
<td>IR port on both</td>
<td>Activate IR on both &amp; find (align IR ports)</td>
<td>NONE</td>
<td>NONE</td>
<td>IR</td>
<td></td>
</tr>
<tr>
<td>Visual Companion: Image, Number or Phrase</td>
<td>Display + user-input on both</td>
<td>NONE</td>
<td>Compare: two images, or two numbers, or two phrases</td>
<td>Abort or accept on both devices</td>
<td>Visual</td>
<td></td>
</tr>
<tr>
<td>Seeing is Believing (SB)*</td>
<td>Display + user-input</td>
<td>Photo camera + user-output</td>
<td>Activate photo mode on receiving device</td>
<td>Abort or accept on sending device based on receiving device decision</td>
<td>Visual</td>
<td></td>
</tr>
<tr>
<td>Blinking Lights*</td>
<td>LED + user-input</td>
<td>User-output + Light detector or video camera</td>
<td>Activate light detector or set video mode on receiving device</td>
<td>Abort or accept on sending device based on receiving device decision</td>
<td>Visual</td>
<td></td>
</tr>
<tr>
<td>Loud &amp; Clear</td>
<td>User-input on both + display</td>
<td>User-output on both + either, or “speaker on both”</td>
<td>NONE</td>
<td>Compare: two vocalizations, or display with vocalization</td>
<td>Abort or accept on both devices + Audio, or + Audio + visual</td>
<td></td>
</tr>
<tr>
<td>Button-Enabled (BEID)</td>
<td>User input + “vibration” or “LED”, or “keeper”</td>
<td>User output + One button +</td>
<td>Touch or hold both devices</td>
<td>For each signal (display, sound or vibration) by sending device, press a button on receiving device</td>
<td>Abort or accept on sending device based on receiving device decision + Tactile, or + Tactile + visual + Audio + tactile</td>
<td></td>
</tr>
<tr>
<td>Button-Enabled (BEID)</td>
<td>One button on both + user-output on one</td>
<td>Touch or hold both devices</td>
<td>Simultaneously press buttons on both devices: wait a short time, repeat, until output signal</td>
<td>NONE (unless synch. error)</td>
<td>Tactile</td>
<td></td>
</tr>
<tr>
<td>Copy-and-Confirm*</td>
<td>Display + user-input</td>
<td>Keypad + user-output</td>
<td>NONE</td>
<td>Enter value displayed by sending device into receiving device</td>
<td>Abort or accept on sending device based on receiving device decision + Visual</td>
<td></td>
</tr>
<tr>
<td>Choose-and-Enter*</td>
<td>User input on both devices</td>
<td>NONE</td>
<td>Select “random” value and enter it into each device</td>
<td>NONE (unless synch. error)</td>
<td>Tactile</td>
<td></td>
</tr>
<tr>
<td>Audio Pairing* (HAPADEP variant)</td>
<td>Speaker + user-input</td>
<td>Microphone + user-output</td>
<td>NONE</td>
<td>Wait for signal from receiving device</td>
<td>Abort or accept on sending device</td>
<td>Audio</td>
</tr>
<tr>
<td>Audio/Visual Synch.</td>
<td>User input on both + “keeper on each”, or, “LED on each”, or “keeper on one &amp; LED on other”</td>
<td>NONE</td>
<td>Monitor synchronized: “sleeping, or “blinking, or “sleeping &amp; blinking”</td>
<td>Abort on both devices if no synchrony</td>
<td>Visual, or + Audio, or + Audio + visual</td>
<td></td>
</tr>
<tr>
<td>Smart-to-Friends**, Shake-Well-Before-Use*</td>
<td>2-axis accelerometers on both + user-output on one</td>
<td>Hold both devices</td>
<td>Shake hard devices together, until output signal</td>
<td>NONE (unless synch. error)</td>
<td>Tactile + motion</td>
<td></td>
</tr>
</tbody>
</table>

*Resistant to a “rushing user” behavior

Kumar et al 2009 Pervasive and Mobile Computing

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ScaleDown

apps & wearables → data processing → prediction algorithm → actionable data → decision support → provider
Dunder-Mifflin

Weight Loss Group Breakdown

5 Users

- Weighed This Week: 4
- Inactive This Week: 1

62.0 LBS
Total Weight Lost

- 2.6 lbs Avg Weight Lost Per User
- 2.3% Avg Body % Lost Per User
- 1.14 K Total Weight Taps Sent

affiliate dashboard
affiliate dashboard: track users
OUR TEAM

Kate Wolin, ScD  
CEO/Co-Founder

- Wash U, Loyola Professor
- Exercise Science Leader
- Predictive Algorithm Expert
- Harvard & Northwestern Graduate

Gary Bennett, PhD  
Co-Founder

- Duke, Harvard Professor
- Leads Duke Digital Health
- Co-Founder of Crimson Health (acquired by Health Dialog)
- Duke & Harvard Graduate

Dori Steinberg, PhD, RD  
Co-Founder

- Duke Researcher
- Clinical Obesity Expert
- Leader in Self-Weighing Science
- Harvard & UNC Graduate

Ben Block  
VP Tech

- COO at WeDeliver
- Lead developer for a specialty healthcare center
- Lead Developer for SAAS government contractor
step 1: fill out a brief survey
step 2: marvel at your new scale
step 3: step on the scale
step 4: get a personalized program

Welcome to Scale Down. All you need to do is step on the scale everyday and check your phone for text messages and emails. Let’s get started!