Wearable Technology and Weight Loss

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Does Wearable Technology contribute to long-term weight loss?

http://jamanetwork.com/learning/video-player/13477855
What is the issue?

- Obesity is a costly problem to individuals and society
- Interventions that focus on diet and physical activity can be effective for short-term weight loss
- Long-term weight loss is hard to sustain

Can Wearable Technologies help?

- Wearable technologies provide feedback on physical activity levels
- They produce modest, short-term improvement in weight, if combined with programs to change behavior
- But do they help us lose weight in the long-term?
- Very few rigorous studies
Study of 470 Young Adults, BMI 25-40

Months 0-6
Standard weight loss intervention: 
*Rx for diet, physical activity, weekly group sessions*

Followed for Months 7-24
Telephone counseling, Text prompts, access to online resources, monthly contact

Randomized

Enhanced Intervention
Standard Intervention

Wearable Device

• FIT Core, by BodyMedia
  – Delivers feedback through armband display
  – Sends alerts when moderate-vigorous activity has been accomplished for 10 minutes or more at a time
  – Web-based software for self-tracking of dietary intake
Outcomes

• Both groups lost weight, and improved
  – Fitness
  – Physical activity
  – Body composition
  – Dietary intake (calories, fat, carbohydrate, protein)

• After the first 6 months, the two groups had lost similar amounts of weight, but then...

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Standard</th>
<th>Enhanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting Weight</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Weight 24 Months</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Net Weight Lost</td>
<td>50</td>
<td>50</td>
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</tbody>
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Wearable Device Was *Less Effective* for 24 month Weight Loss

Average Body Weight (Kg)
Some Limitations of the Study

- Studied ages 18-35, from 2010-2012...2014
- Bias: Screened out many potential participants and lost 25% to follow-up
- No control group
- Use varied
- Technology was offered late in weight loss program
- “Old fashioned” technology by 2016!

Take Homes

- Interventions produce weight loss that can be sustained for 2 years
- Adding wearable device doesn’t seem to help in the long run
- Different devices, different studies, different approaches may produce different results