

# Bellabeat Case Study

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## Overview

This analysis explores how Bellabeat users engage with daily activity, intensity levels, and energy expenditure. Using cleaned Fitbit-style data, three visuals were created to understand user behavior patterns and identify opportunities for Bellabeat's Leaf product to better support women's wellness.

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## Insight 1 — Daily Steps Trend

Users show clear fluctuations in daily step counts, with noticeable dips every seven days. When aligned with the calendar, these dips correspond to weekends, suggesting lower activity on Saturdays and Sundays. The 7-day moving average smooths out noise and highlights this consistent cycle, pointing to an opportunity for Bellabeat to encourage gentle weekend movement habits.

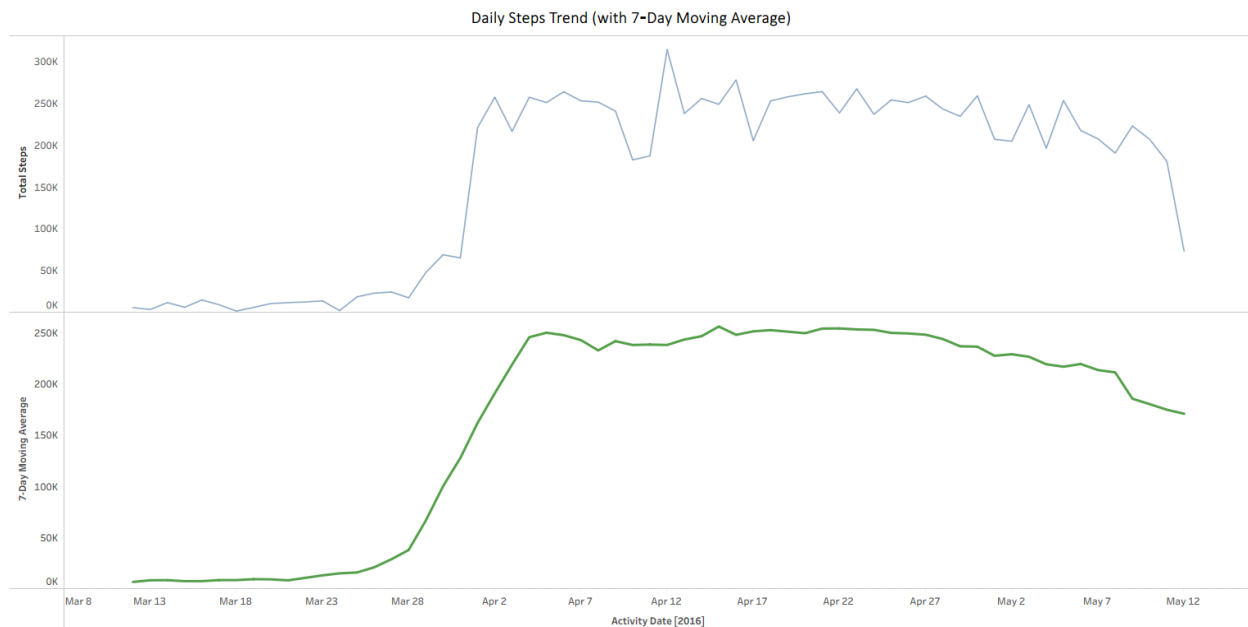


Figure 1. Daily Steps Trend (with 7-Day Moving Average)

- The line chart shows daily steps rising and falling throughout the month, with a repeating dip every seven days
  - The 7-day moving average smooths these fluctuations and makes this weekly pattern more apparent
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## Insight 2 — Activity Intensity Breakdown

Most activity time is spent in sedentary intensity, with very little time in higher-intensities across all days. Weekdays show slightly more moderate activity than weekends, reinforcing the trend seen in the steps data. This indicates that Bellabeat users may benefit from targeted nudges to incorporate short bursts of higher-intensity movement, especially on weekends when activity levels drop.

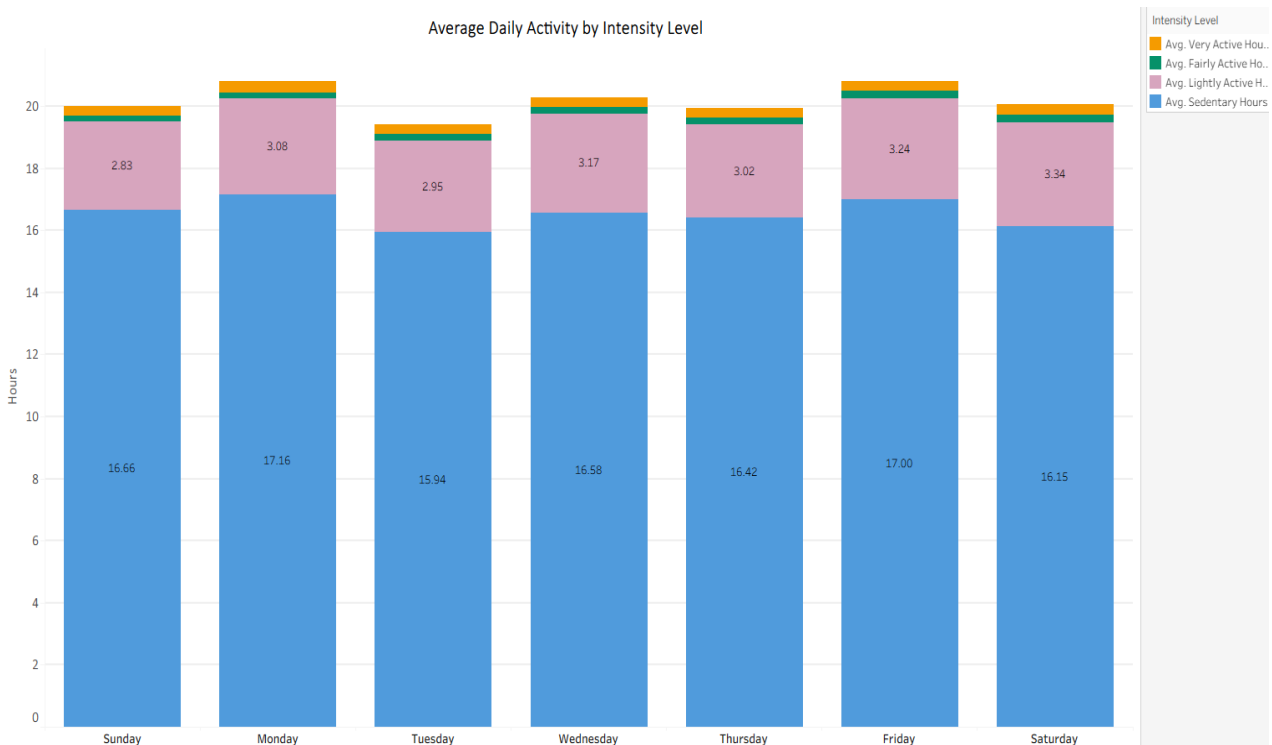


Figure 2. Average Daily Activity by Intensity Level

- The stacked bar shows that sedentary and lightly active hours make up the largest portions of the day, while fairly and very active hours represent only small segments
- Weekdays have slightly more moderate activity than weekends, but the overall pattern remains consistent

## Insight 3 — Calories vs. Steps

Daily calorie burn rises consistently as step count increases, showing a clear positive relationship between movement and energy expenditure. Days with higher step totals reliably correspond to higher calories burned, indicating that even moderate increases in daily activity can meaningfully impact overall energy burn. This supports Bellabeat's goal of encouraging users to increase daily movement as a simple, effective way to improve wellness.

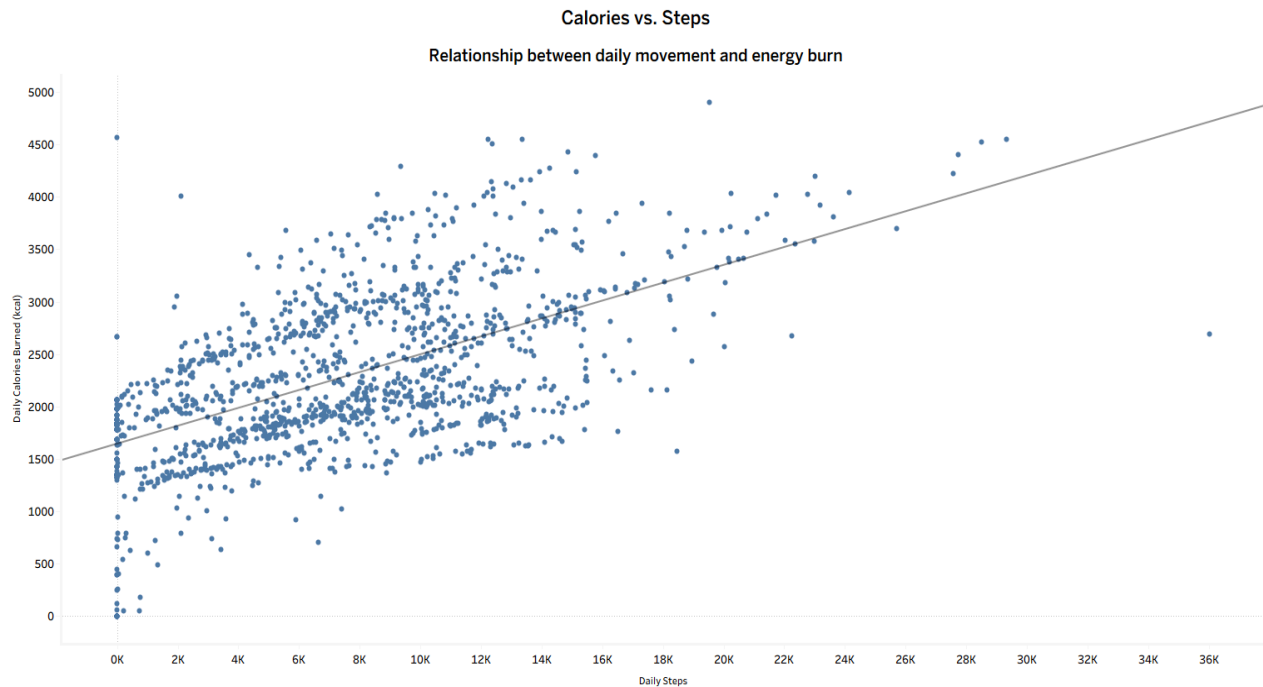


Figure 3. Relationship Between Daily Steps and Calories Burned

- The scatter plot shows that days with higher step counts also have higher calories burned, forming a clear upward trend
- The fitted trend line highlights this positive relationship between steps and energy expenditure

## Recommendation for Leaf

Based on user activity patterns, Bellabeat should position Leaf as a tool that helps women build consistent daily movement habits, especially on weekends when activity drops. Encouraging small increases in steps and offering gentle prompts for moderate-intensity activity can help users improve energy expenditure and overall wellness. The Leaf's tracking and reminder features make it well-suited to support these behavior changes.

The Leaf's inactivity alerts, daily activity tracking, and calorie-burn estimation directly support the behavior changes highlighted in the data. Weekend inactivity and low moderate-intensity movement can be addressed through Leaf's gentle movement reminders, while its activity and calorie tracking help users understand how small increases in steps improve energy expenditure. These features make the Leaf well-suited to help users build consistent daily movement habits.