

Living with a Bodybugg: Lessons in calories, metabolism, and weight loss

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What is a Bodybugg?

- Determines calorie burn through body temperature, movement, sweat sensor and other variables
 - 90% accuracy claimed
- Made by BodyMedia, two versions
 - As featured on “Biggest Loser”

- Subscription model, must use their website with the device
 - Display watch is available for real-time burn information – *approximate only!*

Jeffrey Eberhard
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Update my:

Calories Burned 

Calories Consumed 

Body Measurements 

Share My Results  

[Today](#) [Yesterday](#) [Specific Day](#) [>](#)

OR 

Specific Day > Sunday, May 8, 2011

Calories Burned
this day

3030

144%

TARGET 2100



Calories Consumed
this day

3118

173%

TARGET 1800

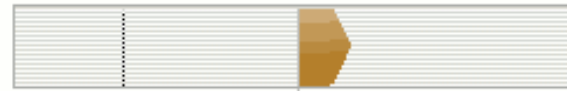


Calorie Balance 
this day

88

SURPLUS

TARGET DEFICIT 300



← Calorie Deficit | Calorie Surplus →

On this day...

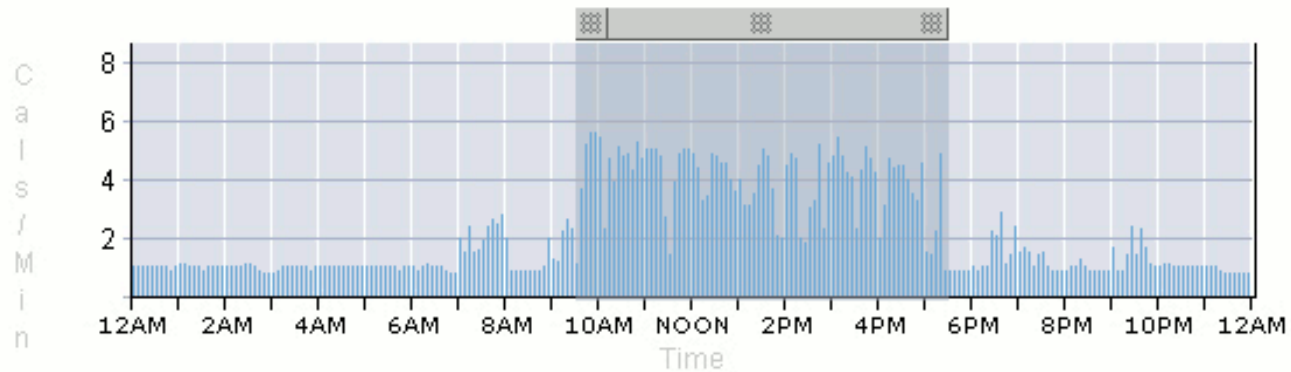
You exceeded your target.

You exceeded your target.



Calories Burned > Specific Day > Sun, May 8

[Edit Activity Log](#)



Time Selector

From:

9:30

AM

To:


5:30

PM



Total Calories Burned:

1909

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Weight Loss 101

- Calories matter
- To lose weight, need calories in < calories out
 - Must track calories in

Tip: use weight rather than volume for food measurement

- Calories out = basal metabolic rate (BMR) + additional activity
- Two popular formulas to determine BMR are Harris-Benedict and Katch-McKardle

Harris-Benedict

Men: $BMR = 66 + (13.7 \times \text{wt in kg}) + (5 \times \text{ht in cm}) - (6.8 \times \text{age in years})$

Women: $BMR = 655 + (9.6 \times \text{wt in kg}) + (1.8 \times \text{ht in cm}) - (4.7 \times \text{age in years})$

Katch-McKardle (more accurate)

$BMR \text{ (men and women)} = 370 + (21.6 \times \text{lean mass in kg})$

How do we calculate total calories burned?

- Multiply BMR by “activity factor”
 - Add in formal exercise manually (approximations or with heart-rate monitor) – but must be careful not to double count
 - Can also use pedometer for informal movement
- ...or, directly measure with a Bodybugg.

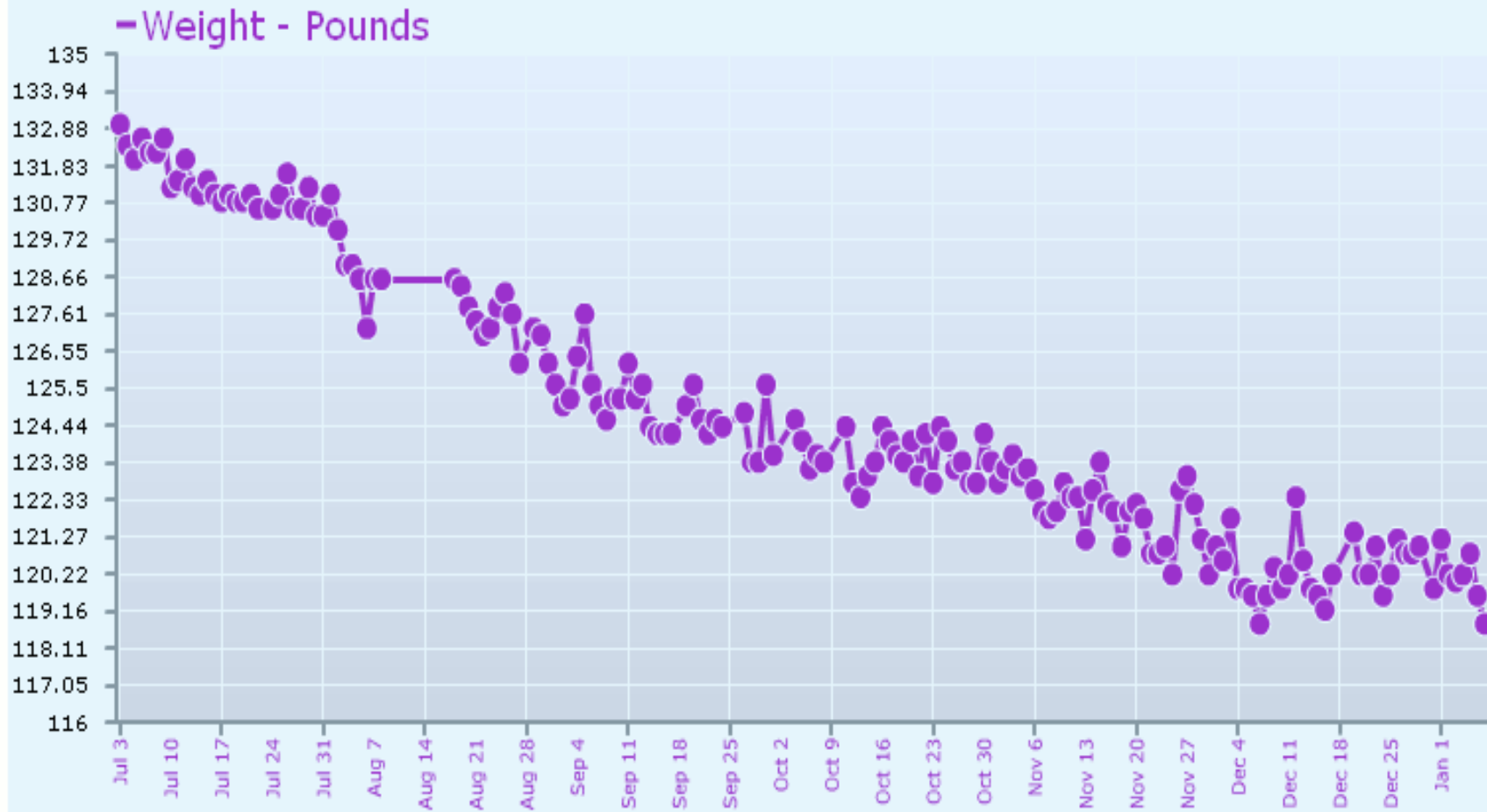
Non-Exercise Activity Time (N.E.A.T)

- Hard to measure, though pedometer comes close
- Can vary tremendously from person to person
- Studies have increasingly shown importance of N.E.A.T to weight loss and health
- Cleaning the house, cooking, and similar items burned far more than expected
 - Working at a desk, very little!

My experience

- Accuracy: Matched well with calories predicted by power meter while cycling
- When not exercising, measured calorie deficit matched weight loss – I undercounted intake by 100 cals per day

My Weight History



Show from: to:



Testing Weight Loss Beliefs

- Does high-intensity exercise create afterburn?
 - Which burns more, weights or cardio?
 - Does exercising in the morning help?
 - Does eating 6 meals a day rev up your metabolism?
- Does dieting slow down your metabolism?

Testing Weight Loss Beliefs

- Does high-intensity exercise create afterburn?

No. Extending exercise time is better.

- Which burns more, weights or cardio?

Slow weights have negligible burn BUT it's important for other fat-loss reasons

- Does exercising in the morning help?

Yes. Try do something in the morning that gets you out of your chair, even just errands.

- Does eating 6 meals a day rev up your metabolism?

No, although food prep burns calories, so more helps.

- Does dieting slow down your metabolism?

Yes, primarily by cutting back your desire to move, but it seems to go beyond this as well

Resources

Burn the Fat Blog –

<http://www.burnthefatblog.com>

Leigh Peele – <http://www.leighpeele.com>

Slides will be posted at <http://www.thekanes.org>