New Way to Measure Calories Using Whole Almonds
Welcome

Stacey Humble
Almond Board of California
Today’s Speakers & Agenda

Dr. Karen Lapsley  
Chief Scientific Officer, Almond Board of California  
• Historic background on calorie calculation  
• Summary of the results of new research surrounding the calories in almonds

Stacey Humble  
Senior Director of Global Marketing, Almond Board of California  
• Report of ABC’s global education and marketing efforts around the research  
• Update on conversations ABC’s has had to date with USDA and FDA about the research

Bill Layden  
Partner, FoodMinds, LLC  
• Insight into what this research may mean for almond labeling  
• Perspective on FDA’s priorities and current food label initiative
Calorie Update

Karen Lapsley
Almond Board of California
Study Provides New Way to Measure Calories Using Whole Almonds

December 13, 2012
1:30-2:30 pm, Rooms 306 & 307
The Foods We Eat

I. **Nutrients**
Macronutrients – protein, fat, carbohydrates
   Micronutrients – vitamins, minerals, bioactives

II. **Energy**
Food as a Source of Energy

• The total or gross energy of a food is measured with a bomb calorimeter.
• This process is 100% efficient.
• When a food is eaten, it is broken down, digested, absorbed and metabolized.
• The digestion/absorption process is not 100% efficient (protein, fat, carbohydrate); unabsorbed energy is lost in the feces.
• Therefore, not all of the food’s energy is available to the body.
• For protein, the metabolism is not complete, and some metabolites are excreted into the urine; energy is lost via the excreted urine metabolites.
Food Energy Available to the Body – Metabolizable Energy

Gross Energy Intake (GEI)

↓

Fecal Energy

Digestible Energy

↓

Urinary Energy

Metabolizable Energy

\[ ME = GRI - GE_{\text{feces}} - GE_{\text{urine}} \]
In 1896 a graduate student was sealed into an airtight chamber in the basement at Wesleyan U. He ate measured amounts of food and labor output in units of thermal energy was recorded.

This was national news!! Then food rations for schools, armies, factories and all climates could be determined accurately!

“We live not upon what we eat, but upon what we digest.”
Merrill and Watt, USDA 1955

Updated the original Atwater data with new results including the limited nut data published by Jaffa.

Atwater used average values for protein, fat, and carbohydrate. Merrill and Watt emphasized there were ranges in the heats of combustion and the coefficients of digestibility.
One Weakness of Traditional Atwater Values –
A very small sample size

Merrill & Watt 1973 (cite Jaffa, 1901 data)

- Almonds: 2 men, CPH (62 yr old) and WSM (56 yr old), both accustomed to a fruitarian and vegetarian diet for many years. WSM complained of numbness in the feet and fingers…for several years.
- Brazil nuts: 2 men
- Pecans: 2 men
- Walnuts: 3 men
- Peanuts: 7 men

Merrill & Watt acknowledge nuts present problems regarding digestibility and have composition similar to the legume group.
In spite of advances in the nutrient analysis of foods, a better understanding of the digestion/absorption/metabolism process and improved design of clinical trials, the original Atwater Values for the energy content of foods are still used today!
How Does USDA Determine Metabolizable Energy Today?

1. Measure it

\[ ME = GEI - GE_{feces} - GE_{urine} \]

2. Calculate it

\[ \text{Atwater General Values} \]

\[
4 \text{ kcal/g protein} \times g \text{ protein} \\
9 \text{ kcal/g fat} \times g \text{ fat} \\
+ 4 \text{ kcal/g CHO} \times g \text{ CHO}
\]

\[ \text{= kcal of the food} \]

3. Use data for specific food factors as approved by FDA
New findings together with the original weaknesses of the Atwater method raise questions:

Are the energy values of foods accurate?

Does the energy value of almonds need to be restated?
Metabolizable Energy of Almonds: When Is a Calorie a Calorie?

Drs David Baer, Janet Novotny & Sarah Gebauer
Food Components & Health Laboratory
Beltsville Human Nutrition Research Center
USDA, Agricultural Research Service
Macronutrient absorption from almonds: the measured energy value of almonds in the human diet

• Objective:
  – To determine the metabolizable energy value of dry roasted almonds
  – To determine the effect of consuming almonds on macronutrient digestibility

• Hypothesis:
  – The metabolizable energy value of almonds will be lower than predicted from their nutrient composition because of reduced fat digestibility
Study design

- Randomized, crossover, controlled-feeding, weight-maintenance study in healthy adults (n = 18)
- Three 18-day diet periods, each separated by a 7-day compliance break

<table>
<thead>
<tr>
<th>DietPeriod 1</th>
<th>Break</th>
<th>DietPeriod 2</th>
<th>Break</th>
<th>DietPeriod 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptation + Collection 9 days</td>
<td>7 days</td>
<td>Adaptation + Collection 9 days</td>
<td>7 days</td>
<td>Adaptation + Collection 9 days</td>
</tr>
</tbody>
</table>

- Collection phase: all fecal and urine samples collected
- 3 different doses of dry roasted almonds
  - 0 g/d (control)
  - 1.5 oz/d (42 g/d)
  - 3.0 oz/d (84 g/d)
Controlled-feeding

- Participants were required to consume all foods provided during diet periods
- Not permitted to consume any outside foods
- Breakfast and dinner consumed at the Beltsville Human Nutrition Research Center, Mon-Fri
- Lunch and weekend meals were packed for offsite consumption
**Menu example**

- 7-day menu rotation
- Almonds were consumed at breakfast and dinner
- Typical American diet
- Isocaloric intake across all treatments
  - Base diet = 2600 kcal
  - Base + Almond diet = 2600 kcal

<table>
<thead>
<tr>
<th>Meal</th>
<th>Food Item</th>
<th>Base</th>
<th>Base + Almonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast</td>
<td>Almonds</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Egg Beaters</td>
<td>65</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Turkey sausage</td>
<td>52</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>English muffins</td>
<td>78</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Margarine</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Peaches, canned</td>
<td>156</td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>2% Milk</td>
<td>260</td>
<td>212</td>
</tr>
<tr>
<td>Lunch</td>
<td>Roast beef</td>
<td>65</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Swiss cheese</td>
<td>36</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Italian bread</td>
<td>72</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>Lettuce</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Mayonnaise</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Mustard</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Carrots</td>
<td>39</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Cranberry juice</td>
<td>234</td>
<td>190</td>
</tr>
<tr>
<td></td>
<td>Vanilla wafers</td>
<td>33</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Almonds</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Spaghetti</td>
<td>130</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Beef</td>
<td>78</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>Pasta sauce</td>
<td>104</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Lettuce</td>
<td>36</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Shitake sesame dressing</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Dinner roll</td>
<td>77</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>Margarine</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2% Milk</td>
<td>312</td>
<td>254</td>
</tr>
<tr>
<td></td>
<td>Fruit cocktail</td>
<td>78</td>
<td>63</td>
</tr>
<tr>
<td>Dinner</td>
<td>Strawberries</td>
<td>100</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>Low fat whipped topping</td>
<td>24</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Angel food cake</td>
<td>50</td>
<td>41</td>
</tr>
</tbody>
</table>
# Results

<table>
<thead>
<tr>
<th>Digestibility of the Whole Diet (%)</th>
<th>Control</th>
<th>1.5 oz/day (42 g/d)</th>
<th>3.0 oz/day (84 g/d)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat</td>
<td>97.8 ± 0.7&lt;sup&gt;a&lt;/sup&gt;</td>
<td>93.1 ± 0.9&lt;sup&gt;b&lt;/sup&gt;</td>
<td>89.9 ± 0.7&lt;sup&gt;c&lt;/sup&gt;</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Total carbohydrate</td>
<td>95.2 ± 0.3&lt;sup&gt;a&lt;/sup&gt;</td>
<td>93.3 ± 0.4&lt;sup&gt;b&lt;/sup&gt;</td>
<td>91.9 ± 0.3&lt;sup&gt;c&lt;/sup&gt;</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Total dietary fiber</td>
<td>80.8 ± 1.5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>75.4 ± 1.7&lt;sup&gt;b&lt;/sup&gt;</td>
<td>71.9 ± 1.5&lt;sup&gt;b&lt;/sup&gt;</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Protein</td>
<td>91.0 ± 0.6&lt;sup&gt;a&lt;/sup&gt;</td>
<td>89.0 ± 0.6&lt;sup&gt;b&lt;/sup&gt;</td>
<td>87.9 ± 0.6&lt;sup&gt;b&lt;/sup&gt;</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Energy</td>
<td>90.5 ± 0.5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>87.5 ± 0.6&lt;sup&gt;b&lt;/sup&gt;</td>
<td>85.5 ± 0.5&lt;sup&gt;c&lt;/sup&gt;</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

Values are expressed as mean ± SEM. Means within a row within unlike letters are significantly different (P ≤ 0.05).

Novotny et al., 2012
Measured energy value of almonds

- Predicted energy: 4.6 kcal/g
- Measured energy: 6.1 kcal/g

The difference is statistically significant with a p-value of less than 0.0001.

Energy (kcal/1 oz svg) vs. Predicted vs. Measured.
Dose effect?

Energy Density (kcal/g)

- 42 g/d
- 84 g/d

P ≥ 0.20
Study conclusions

- **Fat digestibility** of the total diet:
  - Decreased by 5% (1.5 oz/d) and nearly 10% (3 oz/d)

- **Energy digestibility** of the total diet:
  - Decreased by 3% (1.5 oz/d) and 6% (3.0 oz/d)

- Measured energy density of almonds was determined to be 4.6 kcal/g vs. 6.1 kcal/g as predicted by Atwater factors

- **20% fewer calories** in a 1 oz svg of almonds than listed on the nutrition label with new method for calculating calories
The energy content of different nuts is not the same, and may be less than appears in reference tables.

20% fewer calories than the label states

5% fewer calories than the label states

Energy (kcal/serving)

Current Label Value

Almond

Pistachio

USDA ARS Beltsville: Brit J Nutr 2012 107:120 (pistachios) and AJCN, August 2012 (almonds)
Other foods?

• Higher fat, higher fiber foods
  – Walnuts, peanuts
• Higher fat grains
  – Oatmeal
• Legumes
  – Garbanzo
Will the US food label ever change?

In summary, as a result of using the new method for calculating calories:

- Measured metabolizable energy value of almonds is $4.6 \pm 0.8$ kcal/g, equivalent to 130 kcal/serving
- 1 oz serving of almonds contains 20% fewer available calories than that listed on the nutrition label
- Rigorous evidence demonstrates inaccuracies of Atwater approach for calculating energy content, particularly for nuts
- Importance of accurate energy value of foods in nutrient databases and on food labels for food manufacturers, health professionals, and consumers
Calorie Update

Stacey Humble
Almond Board of California
Getting Rid of “the But…”

“Almonds are an excellent snack for a healthy diet, BUT they’re calorie dense so watch the portion size!”

• This caveat had become so consistent in media hits that we called it “the but”
  
  ▪ Consumers were continually rating almonds as heart healthy and the most nutritious nut, calories among the leading reasons they weren’t eating more

  ▪ However, we had seen numerous studies over the past decade suggesting that not all of the lipid from almonds is absorbed. In fact many of the subjects of our hearth health studies lost weight and had to be coached to maintain their weight.
Almonds actually provide 20% fewer calories than what’s reported on the nutrition label.

- Key messages:
  - The study’s take-away message is that “a calorie is not a calorie” and “all calories are not created equal.”
  - The Atwater factors, when applied to certain foods, may result in overestimation of their measured energy content. This is thought to be partly due to the fiber content and/or the rigidity of almond cell walls.
  - This discovery is the result of an entirely new, more specific way of counting calories. Your delicious, nutritious snack is the same natural product it’s always been.
Total Global Media Impact

• **Total Global Impressions to date: 1,181,400,763 (~1.2 billion)**
  - EU3 – 474,477,131
  - US – 139,361,867
  - India – 561,339,258
  - S. Korea – 6,222,507

• **Global Educational Outreach**
  - ABC has organized multiple scientific sessions and has participated in many conferences around the world to help explain and put the calorie research in context
    - US
    - S. Korea
    - Europe

Press releases were distributed in the US, Canada, European Union, India and S. Korea
Almond Joyful News: Fewer Calories, Quicker Cholesterol Benefits, and Wonderful New Snacks!

There have always been plenty of reasons to be nuts about almonds (the fiber, the protein, the energy-boosting advantage, etc.), and now a few new ones are popping up. For instance, recent research suggests that almonds may actually have fewer calories than we thought -- a new method of measurement found that the number might be closer to 130 calories per ounce, rather than 170. AMAZING! Next, our nutty buddy has been linked to speedier cholesterol improvements. A study found that almond consumption as part of a low-calorie diet helped overweight and obese individuals improve their cholesterol levels in less time than those on a low-cal diet without nuts. So eat those almonds (in moderation, of course)! And because we can never have enough options, here's some good news: The peeps behind Wonderful Pistachios have branched out and are now bringing us Wonderful Almonds.
Today is good news Tuesday. A delicious, versatile and healthy food that some have avoided because of fat/calorie concerns has lost some weight. The calorie count in almonds is 20 percent less than what is printed on the label.

New research from the USDA shows that almonds actually have less calories than what is listed on food package labels.

WASHINGTON, July 12 (UPI) -- Whole almonds provide about 20 percent fewer calories than originally thought, scientists from the U.S. Department of Agriculture said.

Get More Crunch in Your Lunch: Almonds Have Less Calories Than We Thought!
If Almonds bring you joy, enjoy more for fewer calories

Scientists are starting to discover that the standard way of measuring calories, established more than 100 years ago, may not be terribly accurate when it comes to higher fat, high-fiber foods like nuts. But when it comes to almonds, the count may be off by a whole lot.

20 percent
The amount by which the state's Almond Board decreased the calorie count of whole almonds. The move came after new USDA research showed that the fat in almonds is not completely absorbed during the human body's digestion. Researchers attribute this to almonds' unique cell structure and high fiber content.

Almonds And 10 Other Foods That Can Help You Maintain A Healthy Weight
Nuts may get a bad rap as being high in fat, but a new study suggests that people trying to maintain a healthy weight can still eat them without sacrificing poundage -- and get a cholesterol benefit, to boot, a small new study suggests.

Give almonds another look
Speaking of counting calories, here's an interesting bit of news about a healthy snack. A study that will be published in August in the American Journal of Clinical Nutrition provides a new understanding of the calorie count of almonds. Turns out, almonds might have 20 percent fewer calories than originally thought.
Almonds Less Calorie-Laden Than Previously Thought

Whole Almonds Have 20% Fewer Calories Than Previously Thought

Almond Calories Are Now 20% Lower. How Awesome is That !?!

The Hidden Truths about Calories
Just this month, a new study by Janet Novotny and colleagues at the USDA found that when the “average” person eats almonds she receives just 128 calories per serving rather than the 170 calories “on the label.”
NA Sample Tweets

**Men's Health**

Clint Carter @clintcarter

New study says almonds have 20% fewer calories than thought. Makes you wonder what other nutritional #s we have wrong. goo.gl/InJYz

Fresh Juice @FreshJuiceCA

Food news: A new study by USDA scientists says that #almonds have 20 percent fewer calories than we previously thought. bit.ly/NqND6d

**Eat Healthy Info** @EatHealthyInfo

And in good news... Almonds have fewer calories than thought ar.gy/1OFB

LHJ Health Editors @lhjHealthLadies

Good news: We love almonds for their taste and heart benefits; now a study shows they have fewer calories than thought! prn.to/NDcMiI

**delicious living magazine**

susan enfield @susan_enfield

Good news: Fat in almonds is harder for body to absorb, ergo 20% fewer calories than thought: new study! ow.ly/caHR2 @Engredeas...
American Society of Nutrition and Experimental Biology
ABC Satellite Session
April 20th – San Diego

American Dietetic Association
Food + Nutrition Conference + EXPO
October 6-9, Philadelphia
ABC Breakfast Session – The New Math: When a Calorie Isn’t a Calorie

**THE NEW MATH: WHEN A CALORIE ISN’T A CALORIE**

**WHEN:**
Sunday, October 7, 2012
6:20-7:30 a.m.
Breakfast: opens 6:10 a.m.

**WHERE:**
Marriott Liberty Ballrooms A/B

**FEATURED SPEAKERS:**
Sarah DeBauer, PhD
Research Physiologist, USDA, Agricultural Research Service
Richard D. Matteo, MPH, PhD, RD
Foods and Nutrition Professor, Purdue University
Bonnie Taul-Disi, MA, RD, CDN
BTD Nutrition Consultants

Although the nutrition community has generally agreed that the most important factor in weight control is energy balance, where calories in equal calories out. It also continues to debate whether or not all calories are created equal. Nutrition science continually sheds more light on the role of nutrient density, energy density, nutrient composition, fat absorption and other factors in providing advice for successful weight management.

This session will explore whether energy-dense foods are associated with increased weight and the impact that satiety-enhancing foods have on total caloric intake. It will also introduce new research indicating another factor to consider—metabolizable energy. How should you consider these points when counseling consumers on weight loss? We will also explore the consumer point of view on calories.

**BREAKFAST WILL BE SERVED. RSVP strongly recommended to reserve your seat. Contact amsn.qe@aps.com or nogerl@bauerfod.com.**

Pending approval, 1.5 CE credits with the Commission on Dietetic Registration.
And Now in the Midst of Phase 2: “Skinnygirl” Bethenny Frankel as Our NA Spokesperson
UK Coverage Highlights

“Try a handful of almonds”

“Packing in filling fibre and protein…a 30g portion has 129 calories rather than 160”

“Having accurate calorie information helps consumers make healthier food choices”
“And when you eat [30g] of almonds, you are likely to get just 128 calories rather than the 170 on the label”
UK Coverage Highlights

“Researchers discover almonds have 20% fewer calories than thought”

Researchers use a more precise method of measuring the calories in almonds and find they have about 20% fewer calories than originally thought.

“Almonds have 20% fewer calories than originally thought”

Almonds have 20% fewer calories than originally thought. A study, released in the August issue of the American Journal of Clinical Nutrition (AJCN), presents a new understanding of almonds’ calorie content, showing they have about 20% fewer calories than originally thought. The study was conducted by United States Department of Agriculture (USDA) scientists.

David Baer, PhD, and his team used an advanced method to determine more precisely the number of calories from almonds that are actually absorbed during digestion. Research data showed a 20% saving of almonds’ calories. 120 calories versus the 150 calories listed on the label.

The study’s discussion noted, “When an 80g serving of almonds was incorporated into the diet daily, the energy availability of the diet as a whole decreased by 5%. Therefore, for individuals with energy intakes between 2000 and 2000 kcal, incorporation of 86g almonds into the diet daily in exchange for highly palatable foods would result in a reduction of available energy of 150 to 150 kcal daily.”

The study, conducted by United States Department of Agriculture (USDA) scientists, proves yet another reason to choose almonds as an energy-packed snack.

At first glance, the study results beg the question: how can a food’s calories count suddenly change when the composition of the food hasn’t?

The answer is that David Baer, PhD, and his team used an advanced method, built on traditional methodology, to determine more precisely the number of calories from almonds that are actually absorbed during digestion. Thoroughly boiled 86g of almonds (about 230 almonds) has 120 calories versus the 150 calories listed on the label.

The study’s discussion notes, “When an 86g serving of almonds was incorporated into the diet daily, the energy availability of the diet as a whole decreased by 5%. Therefore, for individuals with energy intakes between 2000 and 2000 kcal, incorporation of 86g almonds into the diet daily in exchange for highly palatable foods would result in a reduction of available energy of 150 to 150 kcal daily.”

The results suggest previous research indicating that the macronutrients in almonds, including fat, are only partially absorbed during digestion. The incomplete absorption of macronutrients in almonds is thought to be due to the high fiber content and the nature of the nutrients.

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Researchers discover almonds have 20% fewer calories than thought. The study was conducted by United States Department of Agriculture (USDA) scientists, proving yet another reason to choose almonds as an energy-packed snack.
“New information indicates we get fewer calories than we thought from a handful of almonds”

Wellness Foods Europe

Surprising study provides a new understanding of almonds’ calorie count

Researchers use a more precise method of measuring the calories in almonds and find they have about 20% fewer calories than originally thought.

“Researchers discover almonds have 20% fewer calories”

“Almonds are nutrient-rich with fewer calories than originally thought”
“Almonds have 20% fewer calories than originally thought: 129 instead of 160 calories”
Germany Coverage Highlights

Almonds have 20% fewer calories than originally thought: 129 instead of 160 calories. A new study by the United States Department of Agriculture (USDA) suggests that almonds have fewer calories than previously thought. The study indicates that almonds contain fewer calories than previously estimated, with 129 calories per ounce instead of 160 calories per ounce.

Mandeln, die köstlichen Schlankmachner

Weniger Kalorien als gedacht

Energiegehalt von Mandeln geringer als mittels Atwater-Faktoren berechnet?

Mandeln gehören zu Hitparade und Werbekampagnen wie alle Nüsse, doch ohne vielerlei gesundheitsfördernder Eigenschaften. Neben dem mehr als 32% höheren Energiegehalt als gedacht, halten sie 129 Kalorien pro 127 Gramm als gedacht in 116 Gramm, wodurch der Energiegehalt um 32% höher als gedacht ist. Die Ergebnisse des neuen Studien zeigten auch, dass Mandeln eine höhere Proteingehalt als gedacht haben, was die gesundheitsfördernden Eigenschaften der Mandeln noch weiter erhöht.

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Medizin-Infos

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Medizin-Infos

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Mandeln gehören zu Hitparade und Werbekampagnen wie alle Nüsse, doch ohne vielerlei gesundheitsfördernder Eigenschaften. Neben dem mehr als 32% höheren Energiegehalt als gedacht, halten sie 129 Kalorien pro 127 Gramm als gedacht in 116 Gramm, wodurch der Energiegehalt um 32% höher als gedacht ist. Die Ergebnisse des neuen Studien zeigten auch, dass Mandeln eine höhere Proteingehalt als gedacht haben, was die gesundheitsfördernden Eigenschaften der Mandeln noch weiter erhöht.

Mandeln, die köstlichen Schlankmachner

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Medizin-Infos

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Researchers use a more precise method of measuring the calories in almonds

Nutrient dense foods, like almonds, has 20% fewer calories according to new research ...

28g serving of almonds (about 23 almonds) has 129 calories versus the 160 calories listed on labels
“Almonds are less caloric than thought”

“Almonds would be snacks low in calories and most importantly, healthy”

“Make it a healthy and slimming ally all year”
EU Food Professional Outreach:
ABC Symposium at **SIAL** – Global Food Industry Exhibition
Paris, October 19\textsuperscript{th}-23\textsuperscript{rd}

- During SIAL trade show in Paris, the Almond Board of California hosted an event discussing the Baer research and wider discussions on whether all calories are created equal
- The informal symposium was presented by guest speakers, Dr Geoffrey Livesey, Lu Ann Williams, Head of Research at Innova Market Insights and Leatherhead’s Head of Nutrition Prof Martin Wickham
- Following the event, coverage has appeared in publications Food News, Food Navigator and Food Ingredients First
India Consumer Press Highlights
Almonds a healthy snack substitute for dieters

Substituting almonds for less healthy foods could help dieters stick to a calorie-controlled diet, and lower their cholesterol at the same time, says a new study published in the American Journal of Clinical Nutrition. After six months, they found that the nut-free dieters had lost slightly more weight than the almond eaters: 16 pounds compared to 12 pounds. After a year, there was no difference in weight lost.

The Indian Express

An almond a day, keeps heart problems at bay

Historians generally agree that almonds were among the earliest cultivated foods. The varieties of almonds were first found in China and carried by the traders down the ancient silk road to Greece, Turkey, and the Middle East. Almond nuts are rich in dietary fiber, vitamins, minerals and packed with numerous health-promoting phytochemicals. This kind of well-balanced food offers protection against diabetes and cancers.

City Express

The almond diet

Almonds a day. The latest research shows that almonds may play a leading role in preventing colon and lung cancer. It's amazing but true that a few almonds go a long way towards healthy levels of blood pressure and cholesterol.

The Pioneer

Substituting almonds for less healthy foods could help dieters stick to a calorie-controlled diet, and lower their cholesterol at the same time, says a new study. “Nuts, and in this case almonds, shouldn’t be on the ‘do not eat’ list, they can be effectively incorporated in a weight loss plan, with the caveat that they have to be portion controlled,” said Dr Gary Foster, who led the study at Temple University in Philadelphia. Past research also suggests that nuts like almonds might play a role in reducing risk for heart disease.
A recent scientific study shows that a handful of almonds provides 20% fewer calories than originally calculated. “Calories of Almonds have been exaggerated,” Health Chosun (Health section of a predominant daily newspaper Chosun Ilbo)
A recent scientific study shows that a handful of almonds provides 20% fewer calories than originally calculated.

“Measuring digestibility, researchers find that almonds provide 20% fewer calories than originally calculated,” Yakup (Top-tier health trade medium)

“A handful of almonds offers 129kcal, which is 20% fewer than the calories listed on the U.S. Nutrition Facts Panel.”

“Study provides new way to measure calories using whole almonds,” KDA Web site (The most influential channel among dietitians)
Marketing: What Next?

ABC’s global marketing strategy for this research moving forward is to…

• Continue garnering scientific support for the methodology and results
  ▪ Participation in scientific conferences and symposia
  ▪ Involvement in health professional events and exhibits

• Continue putting the results in perspective for all audiences as we await more research to substantiate and expand on the findings
So, the Big Question:
Can Nutrition Labels Change?
In North America and Europe, where calories are required to be disclosed on pack the ultimate objective is to change the calorie count:

• **On the Label**
  - The ultimate consumer decision tool at point of purchase

• **In the Nutrient Database**
  - Important for consumers using calorie-counter apps
  - The go-to source for health professionals

• **On ABC Materials and Resources**
  - Allows for consistent reinforcement of this exciting and motivating news
What Next?

• ABC’s role moving forward:
  ▪ Continue to conduct nutrition research that increases the understanding of almonds’ nutrition and health benefits
    – E.g. research similar to this study on other, non-whole forms
  ▪ Promote ongoing study results to consumers, health professionals and food professionals.

• Partner with industry members pursuing label changes for their products
Almond Calories: Seize the Day!

Bill Layden
FoodMinds, LLC
3 Points

• It’s all about calories

• Changes in scientific knowledge and consensus take time

• Opportunity is knocking today for the almond industry on calories*

*A policy perspective, not legal advice or counsel. Consult your attorney.
Prevalence and public health burden

- **25.6 million** = number of people in the United States affected by diabetes, 2010
  - 11.3% of all people ≥ 20yrs
  - 26.9% of all people ≥ 65yrs
- **79 million** = number of people in the United States estimated to have pre-diabetes
- **$174 billion** = estimated total diabetes medical costs in the United States, 2007

Source – Centers for Disease Control and Prevention
ANNUAL EXPENDITURES FOR DIABETES (ID) VS PREVALENCE
25 COUNTRIES WITH THE LARGEST PREVALENCE IN 2007

Expenditures for diabetes
Persons with diabetes

Billion ID/Millions with diabetes

India
China
United States of America
Russian Federation
Germany
Japan
Pakistan
Brazil
Mexico
Egypt
Italy
Bangladesh
France
Ukraine
Turkey
Thailand
Korea, Republic of
Philippines
Indonesia
Poland
Iran, Islamic Republic of
Spain
Nigeria
Canada
United Kingdom
CALORIES

CALORIES

CALORIES

foodminds
A Focus on Calories

**Government**

**Industry**

**Facts Up Front**

**Clear On Calories**

For containers 20 fl oz or less

**Healthy Weight Commitment Foundation**

1.5 trillion calories by 2015

**Other Factors**

**Daily Values**

**Serving size information**

**Prominence of Calorie information**

Barbara O. Schneeman, Ph.D.
Office of Nutrition, Labeling, and Dietary Supplements
FDA-CFSAN

foodminds
“Scientists confirmed today that everything we know about the structure of the universe is wrongedy-wrong-wrong.”
FOR IMMEDIATE RELEASE

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STUDY PROVIDES NEW WAY TO MEASURE CALORIES USING WHOLE ALMONDS
Measuring digestibility, researchers find almonds provide 20% fewer calories than label states

Modesto, CA (July 11, 2012) – A study conducted by scientists from the United States Department of Agriculture (USDA) and released in the August issue of the American Journal of Clinical Nutrition (AJCN) provides a new understanding of almonds’ calorie count, showing that whole almonds provide about 20 percent fewer calories than originally thought.¹

At first glance, the study results beg the question, how can a food’s calorie count suddenly change when the composition of the food itself hasn’t?

The answer is that David Baer, PhD, and his team from USDA’s Agricultural Research Service (ARS) used a new method of measuring the calories in almonds, which built on traditional methods and allowed the researchers to determine the number of calories actually digested and absorbed from almonds. Resulting data showed a one-ounce serving of almonds (about 23 almonds) has 129 calories versus the 160 calories currently listed on the Nutrition Facts Panel. The results may have implications for certain other foods as well.
“or by other means, as appropriate”

(D) Using data for specific food factors for particular foods or ingredients approved by the Food and Drug Administration (FDA) and provided in parts 172 or 184 of this chapter, or by other means, as appropriate; or

(E) Using bomb calorimetry data subtracting 1.25 calories per gram protein to correct for incomplete digestibility, as described in USDA Handbook No. 74 (slightly revised 1973) p. 10, which is incorporated by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 (the availability of this incorporation by reference is given in paragraph (c)(1)(i)(A) of this section).
Is the Baer method “other means?”

You betcha
Does FDA require premarket approval to change nutrition facts?

Nope

Manufacturer’s obligation to ensure label information is truthful, accurate and not misleading.
How much variance does FDA allow now for calorie declaration on labels?

20%
Considerations

• Initially limited to the form of almond studied?
• How communicate to consumers consistent with FDA and FTC rules?
• Do you hear opportunity knocking?
Almond calories:

SEIZE THE DAY!
Questions