

## Special Report:

### *The evidence behind soup as a weight management strategy*



**Can eating soup be an effective and nourishing part of a weight management strategy?** Current scientific evidence suggests that it can, thanks to soup's low energy-density. With rising rates of obesity in mind, Campbell Soup Company reviewed three decades of research to better understand soup's weight maintenance possibilities.

Updated in December 2010, *Soup as a Weight Management Strategy, A Comprehensive Research Review* summarizes 46 studies conducted by respected international researchers between 1981 and 2009. The consensus suggests that low energy-density, water-rich foods, like broth-based soups, may help control hunger, reduce total caloric intake and offer eating satisfaction—key factors in weight management.

Energy density refers to the number of calories in a given weight of food—specifically, the number of calories per gram. A food that is high in energy (or calorie) density provides a large number of calories per gram, while low energy-density foods provide fewer calories per gram.

**This is welcome news for those concerned about health and nutrition. MenuSource® is pleased to present a few highlights from the Review.**

**Energy density and caloric intake**  
Feeling full on fewer calories is the concept behind energy density. In 2006, researchers analyzed food consumption patterns of over 7,300 adults.<sup>I</sup> They found that women and men who ate a low

energy-dense diet consumed, respectively, 300 and 400 more grams of food per day than adults on high energy-dense diets. However, daily caloric intake was much reduced for the low energy-density group: 432 fewer calories for men and 278 fewer for women. Despite eating a greater weight of food, subjects who consumed lower energy-dense foods consumed fewer overall calories.

**Energy density and body weight**  
Soup, a water-rich food, has been shown to help control hunger, reduce total caloric intake and provide satisfaction after a meal—all essential to weight management. In 1990, researchers studied the satiety effects of soup as a first course for normal-weight, non-dieting men, compared to cheese and crackers or cantaloupe.<sup>II</sup>

When subjects ate tomato soup as a first course, they consumed an average 100 fewer calories over the course of the meal than with the other starters. They also reported significantly more satiety.

In a 1999 study of 24 normal-weight women, Rolls et al. found that water served **in** a soup appears to be significantly more filling than a glass of water served **with** a meal.<sup>III</sup> Before lunch, participants were fed one of three preload meals: chicken, rice and vegetable casserole; the casserole with a glass of water on the side, or a bowl of soup made of the casserole blended with a glass of water. The women who had the soup consumed 16% fewer calories, and reported far greater feelings of fullness, than those on the other options.

continued on page 2

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continued from page 1

### Soup and satisfaction

Not only has soup been shown to have a high satiety value, but people also *perceive* soup to be filling and satisfying.<sup>IV</sup> A researcher at Purdue University found that soups are *perceived to be* more similar to solid foods than to other liquids in terms of feelings of satiety.<sup>V</sup> What's more, the type of soup (broth, puree, chunky-puree, etc.) does not significantly affect caloric intake or ratings of satiety.<sup>VI</sup>

Does the fact that it takes longer to eat soup than most other foods affect feelings of satiety? Research suggests that it may. Slowing consumption down gives the body more time to signal fullness from ingested food. In a 1981 study, participants who ate soup for lunch or dinner consumed fewer calories and ate more slowly.<sup>VII</sup>

### Energy density, soup and diet quality

Research also indicates that including more water-rich foods like soup can enhance overall diet quality. French researchers found that subjects who ate soup daily had lower intakes of fat and higher intakes of folate, beta-carotene and vitamin C.<sup>VIII</sup>

### The science is in!

This research review paints a compelling picture of how consuming low energy-dense foods such as soup can be a simple and nutritious way to maintain a healthy weight. **For a free copy, ask your Campbell's Healthcare Representative—see page four for contact list.**

### Four Ways Soup Can Help Manage Body Weight:

1. Decrease hunger
2. Increase fullness
3. Enhance satisfaction
4. Reduce calorie intake



<sup>I</sup> Ledikwe JH et al. Dietary energy density is associated with energy intake and weight status in US adults. *AJCN*. 2006;83:1362-1368.

<sup>II</sup> Rolls BJ, Fedoroff IC, Guthrie JF, Laster LJ. Foods with different satiating effects in humans. *Appetite*. 1990;15:115-126.

<sup>III</sup> Rolls BJ, Bell EA, Thorwart ML. Water incorporated into a food but not served with a food decreases energy density intake in lean women. *AJCN*. 1999;70:448-455.

<sup>IV</sup> Rolls BJ, Fedoroff IC, Guthrie JF, Laster LJ. Satiating effects. 115-126.

<sup>V</sup> Mattes R. Soup and satiety. *Physiol. Behav.* 2005;83:739-747.

<sup>VI</sup> Flood JE, Rolls BJ. Soup preloads in a variety of forms reduce meal energy intake. *Appetite*. 2007;49:626-634.

<sup>VII</sup> Jordan HA, Levitz LS, Utgoff KL, Lee HL. Role of food characteristics in behavioral change and weight loss. *JADA*. 1981;79:24-29.

<sup>VIII</sup> Galan P et al. Relationship between soup consumption, folate, beta-carotene and vitamin C status in a French adult population. *Int J Vitam Nutr Res*. 2003;73:315-321.



## Campbell's® Sweet Potato Bisque Perfectly on-trend for your menu!

Sweet potato is one of today's six key flavour trends\*—the top flavours Canadians seek. This delectable Bisque is enhanced with a warm blend of spices and a hint of cream.



For added excitement, top with roasted apples, sprinkle with cinnamon and walnuts.



### “Excellent source of Vitamin A”

#### Each 250 mL prepared serving contains...

- 35% DV Vitamin A
- 6% DV Calcium
- 2 g Dietary fibre
- 650 mg Sodium

#### User-friendly packaging

Make as few as eight servings at a time.

#### For more on-trend serving ideas...

1 800 461 7687



Lacto-ovo-vegetarian: May include milk or milk products and eggs, but excludes meat, poultry, fish and seafood. \* Mintel 2010.

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# Chili COLLECTION

Chili is a spicy stew that was first introduced in San Antonio over 200 years ago. Originated as a combination of peppers, onions and various meats, the collection of cooking secrets, ingredients and even applications now varies from geographies and traditions ranging from classic beef chili to indulgent chicken chili with herbs.

*"The Whole Chile Pepper Book"; by Dave DeWitt and Nancy Gerlach, © 1990, Little, Brown and Company.*

## WHEN IT COMES TO CHILI, WE HAVE YOU COVERED FOR ANY OCCASION



### KLONDIKE CHILI

No.1 branded beef chili in Canadian Foodservice\*.  
\*Direct Link, Q2-2010



### VEGETABLE CHILI

An excellent tasting vegan chili for special menus.



### VERVE® CHICKEN BASIL CHILI

NEW Premium chili in a pouch for an indulgent, yet well-balanced dining experience.

VARIETY	KLONDIKE CHILI	VEGETABLE CHILI	VERVE® CHICKEN BASIL CHILI
NUTRITION	<ul style="list-style-type: none"> <li>• One full serving of vegetables</li> <li>• High source of fibre</li> <li>• Good source of iron</li> <li>• Source of protein, vitamin A, C and calcium</li> <li>• Low in saturated fat</li> <li>• Trans fat free</li> <li>• 800 mg sodium per 250 mL</li> </ul>	<ul style="list-style-type: none"> <li>• Two full servings of vegetables</li> <li>• High source of fibre</li> <li>• Good source of iron</li> <li>• Source of vitamin A and calcium</li> <li>• Low in fat</li> <li>• Saturated fat free</li> <li>• Trans fat free</li> <li>• 650 mg sodium per 250 mL</li> </ul>	<ul style="list-style-type: none"> <li>• One full serving of vegetables</li> <li>• High source of fibre</li> <li>• Good source of iron</li> <li>• Source of protein and vitamin C</li> <li>• Low in saturated fat</li> <li>• Trans fat free</li> <li>• 770 mg sodium per 250 mL</li> </ul>
USAGE	<ul style="list-style-type: none"> <li>• Serve as Classic Beef Chili</li> <li>• Pour over rice, pasta or fries</li> <li>• Chili stuffed baked potato</li> <li>• Chili burger or Chili dog</li> </ul>	<ul style="list-style-type: none"> <li>• Serve as a tasty Vegan Chili for special menus</li> <li>• Value solution: simply add your protein to create new versatile dishes</li> <li>• Pour over rice, pasta or fries</li> </ul>	<ul style="list-style-type: none"> <li>• Serve as Premium Chili for Indulgent Dining</li> </ul>
FORMAT	Frozen Tub	Frozen Tub	Frozen Pouch
YIELD	20 Servings	18 Servings	24 Servings



Vegan: Excludes the use of meat, poultry, fish, seafood, eggs, dairy and honey.

For more information visit [campbellsfoodservice.ca](http://campbellsfoodservice.ca) or call your Campbell Sales Representative at **1-800-461-7687**



Take breakfast up a notch for residents and patients with dysphagia. By starting with Campbell's® Primepure® and a few simple ingredients, this clever Campbell's® Power2Cook® Pro recipe helps you create a tempting, nutrient-dense dish.

## Pureed Breakfast Ham Strata

Yields: 8 Servings • Serving Size: 90 g (3 oz)  
 • Portion Size: 5 x 5 cm (2" x 2")

- 270 g (9 oz) **Campbell's® Primepure® Ham**, thawed
- 3 slices Whole wheat bread, cut in small cubes
- 250 mL (1 cup) Milk
- 4 Eggs, whisked
- 1 mL (1/4 tsp) Salt
- 2 mL (1/2 tsp) Ground black pepper
- 125 mL (1/2 cup) Applesauce
- 120 g (4 oz) Cheddar cheese, shredded

### Method

Thaw **Campbell's® Primepure® Ham** in the refrigerator overnight. In a bowl, place bread and milk. Mix well and let bread soften. In a separate bowl, combine thawed **Campbell's® Primepure® Ham**, whisked eggs, salt, pepper, applesauce and HALF the shredded cheese. Spoon HALF the softened bread mixture in the bottom of a lightly greased 2-L (8" x 8") pan. Top with meat mixture. Spread remaining bread mixture on top. Top with remaining shredded cheese. Bake at 180°C (350°F) for 50 minutes or until internal temperature reaches 74°C (165°F). Portion with a #10 scoop or cut into squares and serve.



**May we suggest?**  
 For more delicious *Power2Cook® Pro* recipes like this one, visit [campbellshealthcare.ca](http://campbellshealthcare.ca), and click on Recipes and Presentation Ideas.

## Healthcare Team *Driven by passion, backed by a promise™.*

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