

# A lowfat yogurt that helps naturally regulate the digestive system

## Presenting—ACTIVIA® by Dannon®

Clinically proven to help regulate the digestive system when eaten daily for two weeks.

- ACTIVIA® is a creamy, blended, probiotic-cultured, lowfat yogurt.
- ACTIVIA® helps with slow intestinal transit and contains a unique culture – *Bifidus Regularis*.™
- ACTIVIA® has the great taste and quality that you expect from Dannon.®



## ACTIVIA® helps naturally regulate your digestive system

ACTIVIA® is a probiotic, lowfat yogurt that contains a unique culture, *Bifidus Regularis*,™ clinically proven to survive passage through the gastrointestinal tract and scientifically known as *Bifidobacterium animalis* DN-173 010.

Daily consumption of ACTIVIA® helps with slow intestinal transit, particularly in women and the elderly. ACTIVIA® also possesses the standard nutritional qualities of a dairy product, thanks to the proteins and calcium it contains.



## What are probiotics?

Probiotics are living microorganisms that, upon ingestion in sufficient numbers, exert health benefits beyond basic nutrition.

# The gastrointestinal tract, the intestinal microflora, and intestinal transit

## The gastrointestinal (GI) tract and the intestinal microflora

The GI tract is an extremely complex environment with multiple functions. The small intestine acts as the main site of enzymatic digestion of foods and absorption of nutrients. The colon or large intestine absorbs large quantities of water and electrolytes and allows evacuation of waste matter and toxic substances. The colon also appears to be responsible for regulation of intestinal well-being, particularly through its complex bacterial microflora and maintenance of intestinal balance.

The intestinal microflora of each individual is highly specific and remains remarkably stable over time.<sup>1</sup> However, it develops in stages throughout the individual's lifetime as a result of diet, host health status and environmental conditions. The intestinal tract of an adult human contains microflora comprising approximately  $10^{11}$  microorganisms per gram of stool, with approximately 400 to 500 different bacterial species. The dominant population consists of strict anaerobic bacteria: *Bacteroides*, *Bifidobacterium*, *Eubacterium* and *Peptostreptococcus*.<sup>2</sup>

A balanced intestinal microflora rich in bifidobacteria helps ensure optimal functioning of the digestive system.<sup>3,4</sup> Research suggests that when the intestinal microflora is out of balance, it may affect overall health. This balance can be disturbed during physical or psychological stress, with age, in menopause, during drug treatment (e.g., antibiotics) and in the event of acute or chronic intestinal diseases.<sup>5,6,7</sup> The intestinal microflora balance can be temporarily restored by ingestion of certain probiotics.<sup>8</sup>

## Intestinal transit

Intestinal transit is the process by which gut intestinal contents pass through the digestive system. The average transit time from mouth to anus in a healthy adult takes under 72 hours and most of this transit time is spent in the colon. Transit time varies significantly between individuals in spite of identical diet and also varies within specific individuals. In addition, it appears that transit time is longer in women than in men and increases with age.<sup>9</sup>

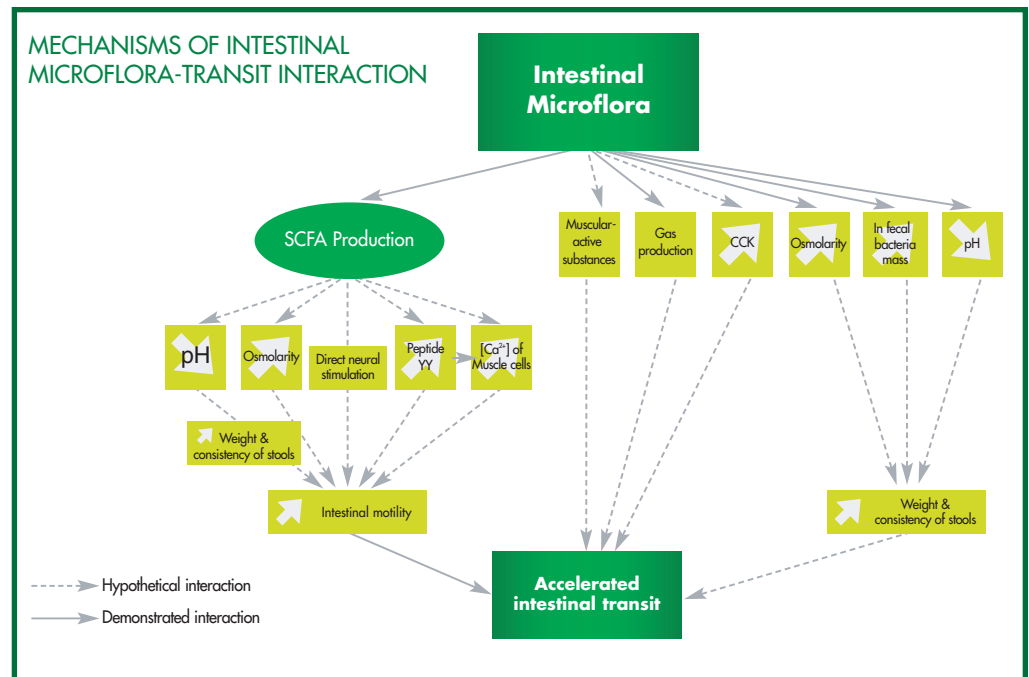
Intestinal transit is affected not only by the quality of the diet and by environmental parameters (e.g., age, stress, etc.), but also by the intestinal microflora.

Slow transit is not necessarily pathological and it corresponds to the upper limit of normal transit time and is between 48 and 72 hours. However, slow intestinal transit is a source of daily discomfort for a large proportion of the population and the physical and physiological consequences on the quality of life should not be underestimated. Bloating, heaviness, difficult and painful defecation are all troublesome symptoms when they become chronic.<sup>10</sup>

A total transit time exceeding 72 hours is considered abnormally long and normally gives rise to a diagnosis of constipation, also involving excessive dehydration of stools. Maintaining a regular intestinal transit is therefore essential for health and general well-being.

## Interaction between intestinal microflora and transit

Several studies have attempted to determine the mechanisms by which the intestinal microflora stimulates transit. These studies focus particularly on the effects of products from bacterial fermentation, such as Short-Chain Fatty Acids (SCFA), and on physicochemical modifications induced by the microflora. Various hypotheses, illustrated on the diagram below, have pertained to the effects of the intestinal microflora on transit.<sup>11, 12, 13, 14, 15, 16</sup>



# Clinical Evidence

Since certain strains of probiotics have been identified through their beneficial effect on the endogenous intestinal microflora, it was logical to assess their impact on transit. Bifidobacteria have thus been particularly and closely studied in man.<sup>17</sup> Their effects on transit have been clearly demonstrated through studies performed recently with ACTIVIA® by Dannon® and its specific strain: *Bifidobacterium animalis* DN-173 010.<sup>18,19,20,21</sup> Dannon's *Bifidobacterium animalis* DN-173 010 is an exclusive probiotic culture of food origin, which is found live and in large quantities in ACTIVIA®, and remains stable throughout the product shelf life.

## Effects of ACTIVIA® and/or *Bifidobacterium animalis* DN-173 010 on transit time in healthy adults<sup>18</sup>

In a parallel, double-blind study including 72 healthy adult volunteers (mean age 30 years), the ingestion of a fermented milk (3x125 g/day) containing the strain *Bifidobacterium animalis* DN-173 010, for 11 days, significantly reduces total colonic transit time by 21% and sigmoid transit time by 39% compared to an identical fermented milk (3x125 g/day) in which bacteria were killed by heat treatment. The effect was more pronounced in women ( $p < 0.03$ ), particularly in those with a long baseline transit time compared to men ( $p < 0.05$ ). These beneficial effects were not found with heat-treated product, suggesting that both probiotic survival and metabolic activity are necessary.

## Action of ACTIVIA® on colonic transit time in women<sup>19</sup>

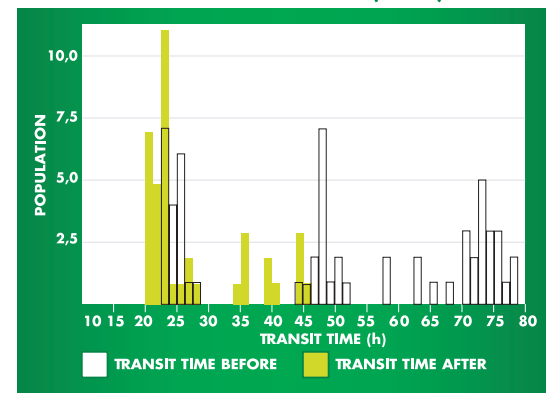
A double-blind, randomized, cross-over study including 36 healthy women (mean age 27 years) compared the efficacy of ACTIVIA® (3x125 g/day) with a fermented milk preparation containing no *Bifidobacterium animalis* DN-173 010 (3x125 g/day) during a consumption period of 10 days. Total colonic and sigmoid transit times were significantly shortened ( $p < 0.05$ ) with ACTIVIA® versus control (51.5 +/- 30.2 hours vs. 60.7 +/- 27.1; sigmoid: 21.6 +/- 14.9 hours vs. 26.8 +/- 14.2). In women with a total transit time of more than 40 hours, the sigmoid transit time and total transit time were significantly shorter following consumption of ACTIVIA® versus the baseline values recorded prior to consumption.

## Effects of ACTIVIA® on total transit time in elderly subjects<sup>20,21</sup>

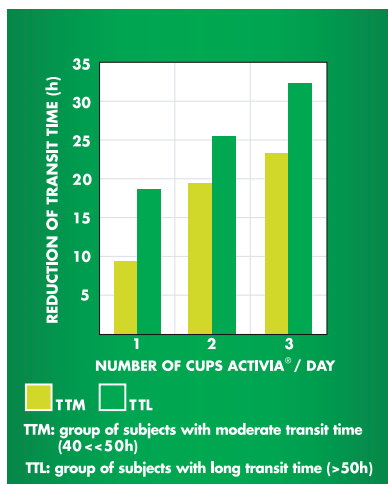
Two randomized studies investigated the efficacy of different doses of ACTIVIA® with *Bifidobacterium animalis* DN-173 010 on transit time by focusing on elderly subjects. The first study (total 100 subjects) showed that consumption of 2x125 g or 3x125 g of ACTIVIA® per day for two weeks significantly reduced intestinal transit time ( $p < 0.001$ ). A 10% reduction was found in the groups with a short transit time (less than 40 hours) and a 40% reduction was found in groups with a long transit time (greater than 40 hours). The results were greater in those elderly subjects who had 3x125 g of ACTIVIA® versus 2x125 g ( $p < 0.05$ ). Intestinal transit time is shortened in elderly subjects by consumption of two or three cups of ACTIVIA® for two weeks.

A second, large-scale, controlled study evaluated lower doses and the duration of the beneficial effects after discontinuing consumption of the product. The study included

### TRANSIT TIME BEFORE AND AFTER CONSUMPTION OF 3 CUPS OF ACTIVIA® PER DAY FOR 2 WEEKS IN ELDERLY SUBJECTS (n=39)



### DOSE-EFFECT OF ACTIVIA® ON TRANSIT TIME



200 elderly, healthy volunteers, aged 50–75 years, divided in two groups—100 with moderate transit time (40–50 hours) and

100 with a longer transit time (50–70 hours), who were randomized to receive either 1x125 g or 2x125 g of ACTIVIA® per day for 2 weeks. Consumption of one or two 125 g cups of ACTIVIA® significantly reduced intestinal transit time, both in subjects with moderate and long transit times ( $p < 0.05$ ). However, two servings per day were more effective than one serving per day ( $p < 0.05$ ). The action of ACTIVIA® persisted for at least two weeks after the end of consumption of one serving and for at least four weeks after the end of ingestion of two servings of ACTIVIA®.

In conclusion, these two studies demonstrate the efficacy of ACTIVIA® in reducing transit time in elderly subjects, particularly in those with long transit times. A dose-dependent effect was observed (from 1 to 3 cups).



# Clinically proven to survive in the GI Tract

**ACTIVIA® contains *Bifidobacterium animalis* DN-173 010, which has been clinically proven to survive the passage through the gastrointestinal tract.**

Various human studies have been performed to demonstrate the high survival of *Bifidobacterium animalis* DN-173 010 in the digestive system when consumed in a fermented dairy product.<sup>22, 23, 24, 25</sup>

- *Bifidobacterium animalis* DN-173 010, incorporated in ACTIVIA®, survived successfully ( $10^5$ – $10^6$  cfu/g) for at least 90 minutes in the stomach, while another commercial strain was much less resistant. The shelf life of the product does not affect the survival capability of *Bifidobacterium animalis* DN-173 010.
- *Bifidobacterium animalis* DN-173 010, incorporated in ACTIVIA®, survived passage through the entire gastrointestinal tract and was recovered live and in large quantities in stools ( $>10^8$  cfu/g). The amount of *Bifidobacterium animalis* DN-173 010 recovered was similar to the quantity initially ingested.

## ACTIVIA® Benefits

- ACTIVIA® by Dannon® is clinically proven to naturally help regulate your digestive system in two weeks when consumed daily, as part of a healthy lifestyle and balanced diet.
- Daily consumption of ACTIVIA® helps with slow intestinal transit, particularly in women and elderly subjects. In subjects whose digestive system functions regularly, no marked change or risk of diarrhea was observed.
- The effect of ACTIVIA® is in part due to *Bifidobacterium animalis* DN-173 010, a unique probiotic culture, clinically proven to survive passage through the gastrointestinal tract.

## How to recommend ACTIVIA® for your patients

- ACTIVIA® by Dannon® helps optimize the function of the gastrointestinal tract, helping to achieve a more regular intestinal transit, leading, in turn, to better daily well-being and a natural regulation of the digestive system.
- The scientifically demonstrated benefits allow us to recommend regular daily consumption of ACTIVIA® by Dannon® for everyone.
- ACTIVIA® is suitable for the entire family and can be included as part of a balanced diet.

## ACTIVIA® Product Information

- ACTIVIA® is available in 6 tasty flavors: vanilla, strawberry, mixed berry, prune, peach and blueberry.
- ACTIVIA® contains no artificial flavors or preservatives.
- ACTIVIA® is a probiotic-cultured, lowfat yogurt.
- ACTIVIA® is Kosher certified.
- Now available—ACTIVIA® Light, 70 calories per 4-oz cup.

Nutrition Facts	
Serving Size 1 container (113g)	
Amount Per Serving	
Calories 110	Calories from Fat 20
% Daily Value*	
Total Fat 2g	3%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 5mg	2%
Sodium 75mg	3%
Potassium 220mg	6%
Total Carbohydrate 19g	6%
Dietary Fiber 0g	0%
Sugars 17g	
Protein 5g	10%
Vitamin A 0%	Vitamin C 0%
Calcium 15%	Iron 0%

Strawberry as dated 12/14/06

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