

# Probiotics in Practice

Information for Healthcare Professionals Only



ISSUE 6

## Probiotics and Quality of Life

Society is changing rapidly and new aspects need to be considered when evaluating the management and treatment of medical conditions. Health-related quality of life (HRQoL) is increasingly gaining recognition as a tool clinicians can use to gain a better understanding of the impact of medical conditions and their management for patients.<sup>1</sup>

**The World Health Organisation define Quality of Life as** *'An individual's perception of his or her position in life in the context of the culture and value systems in which he or she lives and in relation to goals, expectations and concerns. It is affected in complex ways by the person's physical health, psychological state, level of independence, social relationships and how the person relates to salient features of his or her environment'*.<sup>2</sup>

### In Brief:

- Good nutrition promotes health related quality of life (HRQoL)<sup>3</sup>
- Ill-health is the most negative influencing factor on QoL<sup>9</sup>
- Digestive disorders have been found to significantly impact patients' quality of life (QoL), e.g. dyspepsia, constipation, Irritable Bowel Syndrome<sup>6-8</sup>
- Different studies have demonstrated that certain probiotics have an improved effect on severity and frequency of digestive symptoms, whilst also demonstrating an improvement on specific aspects of QoL.<sup>32,37</sup>

### Probiotics – What the experts say

*Peter Whorwell, Professor of Medicine and Gastroenterology, University of Manchester*

The adverse effects of functional gastrointestinal disorders on quality of life can be profound with one study showing that secondary care patients with irritable bowel syndrome experience worse quality of life than patients with diabetes, depression or end stage renal disease and there are a number possible reasons for this observation. For instance, the patient's symptoms can be very severe with many women equating the pain to that of childbirth and those with the diarrhoea variety of the condition, not infrequently suffer from incontinence. In addition, these individuals often suffer from a variety of 'non-colonic' symptoms such as backache, lethargy, nausea and bladder symptoms as well as gynaecological problems in females. Not surprisingly, with

so many aspects of their lives being degraded, coupled with the notorious inadequacies of treatment, the ability of sufferers to cope with their condition is steadily eroded.

It is now realised that there is a mutually beneficial relationship between the normal flora of the gut (the microbiota) and the host to the extent that good health is dependent on this symbiosis. For instance, germ free animals fail to develop a robust immune system and the presence of commensal bacteria also confers a degree of protection against pathogenic bacteria and viruses. Central nervous system activity is also influenced by the microbiota and stress in the form of acute trauma can lead to changes in the bacterial composition of the gut.



Peter Whorwell

Disturbances in motility or epithelial function can lead to major changes in the microbiota and therefore it is not surprising that conditions such as Irritable Bowel Syndrome or Crohn's disease are associated with changes in the microbial flora of the gut. Consequently, attempting to reverse these changes with approaches such as the administration of probiotics is an attractive treatment option but we need to know more about which organisms are best for which indication and what are the optimal dosing schedules.

# Nutrition and Quality of Life

Nutrition has a key role to play in health and well-being. Good nutrition promotes health-related quality of life (HRQoL) by averting malnutrition, preventing dietary deficiency diseases and promoting optimal physiological and psychological functioning.<sup>3</sup> This is why it is imperative that people ensure that they are consuming a healthy balanced diet for overall good health.

**In the 2010 International Quality of Life Index, Ireland was ranked no. 37 out of 194 countries in the health category.<sup>4</sup>**

## Digestive Disorders and Quality of Life

Digestive disorders can significantly impact patients' quality of life. These disorders can account for more than 10% of the work of GPs.<sup>5</sup> Health-related quality of life has been studied in a number of gastrointestinal (GI) disorders, including:

Digestive Disorder	Outcome	Reference
Dyspepsia	Patients with dyspepsia have a reduced QoL because of their symptoms – particularly abdominal pain and indigestion	6
Constipation	General well-being of patients with chronic constipation is lower when compared with the general population	7
Irritable Bowel Syndrome	Patients had a significantly worse QoL than the general population and patients with Gastro-oesophageal reflux disease (GERD)	8

## What role do Probiotics have on QoL?

Bowling (2003)<sup>9</sup> concluded that ill-health is the most negative influencing factor on QoL, which is a major component of general well-being. QoL may have an important role to play when making choices in regards to the management of conditions as it may alert clinicians to changes that otherwise might go unrecognised.<sup>3</sup>



Current evidence suggests that probiotics may have a role to play in reducing the incidence and duration of some conditions, both within the GI tract and at distal sites.<sup>10</sup> Some of these conditions include:

- Diarrhoea<sup>11-16</sup>
- Irritable Bowel Syndrome<sup>25-32</sup>
- Antibiotic Associated Diarrhoea<sup>17-18</sup>
- Rhinitis (children)<sup>33</sup>
- Lactose Intolerance<sup>19-24</sup>
- Respiratory Tract Infections<sup>34-36</sup>

Some studies have also demonstrated that certain probiotics have an improved effect on the severity and frequency of digestive symptoms, whilst also demonstrating an improvement in QoL.<sup>30-31</sup> **This indicates that probiotics may have a role to play in improving QoL for individuals through reducing the severity and frequency of ill-health.**



In general there are not many studies specifically looking at QoL and the role probiotics can play, however this is an area that is in need of more research. In some recent studies, part of the 17 clinical studies conducted on Danone Activia® in adults, Danone have used recognised QoL questionnaires to assess the impact of probiotic consumption on volunteer wellbeing as a secondary criteria within their clinical studies.<sup>32,37</sup>

## Danone Activia® and Quality of Life

### Effect on General Digestive Discomfort\*

A randomised, double-blind, controlled study including 197 women (18-60 years) with mild to moderate digestive symptoms consumed 2 x 125g servings of either Danone Activia® or a control product for 4 weeks followed by a 4 week wash-out period showed the following results:<sup>37</sup>

- % of women reporting **improved GI wellbeing** was **significantly higher** in the Danone Activia® group vs. the control group ( $p=0.006$ ).

Figure 1: Improvement from baseline for HRQoL Digestive Comfort Score (FBA<sup>†</sup>)

- **Significant improvement** from baseline for **HRQoL digestive comfort score (FBA<sup>†</sup>)** for Danone Activia® group compared to the control group ( $p<0.05$ ).



\*Digestive discomfort relates to the following: intestinal transit; stool frequency and consistency; abdominal pain/discomfort; bloating; flatulence; borborygmi/rumbling stomach.

<sup>†</sup>Food and Benefits Assessment (FAB) is used for patient reported outcomes and to assess specifically the benefits of a food or a diet on HRQoL.

### Effect on Irritable Bowel Syndrome – Constipation (IBS–C)

A multicentre, randomised, double-blind, controlled trial of 267 primary care adults with constipation predominant IBS who consumed either 2 x 125g servings of Danone Activia® or a control product for 6 weeks.<sup>32</sup>

This study demonstrated a significant improvement in:

- **HRQoL discomfort score** in **both groups** at week 3 and 6, as compared to baseline ( $p<0.001$ )
- **Percentage responder rate<sup>†</sup>** (65.2 vs 47.7%) for the **HRQoL discomfort score** in the Danone Activia® group vs. the control group at **week 3** ( $p=0.003$ )

<sup>†</sup>Subjects reporting an improvement of  $\geq 10\%$  change from baseline

Danone Activia® is a probiotic food containing the exclusive probiotic culture *Bifidobacterium lactis* DN 173 010/CNCM I-2494.

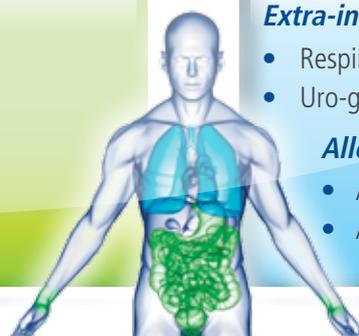




Nutrition is a major modifiable and powerful factor in promoting health, preventing and treating disease and improving quality of life.<sup>38</sup> It is great that studies are looking at QoL within their secondary criteria and in the future, there will hopefully be even more work to understand the impact of nutrition and specific probiotics directly on different aspects of QoL and how they could be working in a clinically meaningful way.

### Gastrointestinal Infections and Disorders

- Irritable Bowel Syndrome
- Diarrhoea
- Antibiotic / *Clostridium difficile* – Associated Diarrhoea
- Digestive Discomfort
- Lactose Intolerance
- Travellers Diarrhoea



### Extra-intestinal Infections

- Respiratory Infections
- Uro-genital infections

### Allergies

- Atopic Eczema
- Allergic Rhinitis

## Summary:

- Good nutrition promotes health-related quality of life (HRQoL) by averting malnutrition, preventing dietary deficiency diseases and promoting optimal functioning<sup>3</sup>
- Ill-health is the most negative influencing factor on QoL<sup>9</sup>
- Digestive disorders have been found to significantly impact patients' quality of life (QoL) e.g. dyspepsia, constipation, Irritable Bowel Syndrome<sup>6-8</sup>
- Different studies have demonstrated that certain probiotics have an improved effect on severity and frequency of digestive symptoms, whilst also demonstrating an improvement on specific aspects of QoL<sup>33,37</sup>

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