# What effect does melatonin have in colitis?

**In rats with experimental colitis, the marked increase in bacterial translocation in postcolitis rats has been reversed by melatonin administration. This is due to melatonin's anti-inflammatory and anti-apoptotic effects.**

Using an elegant study design, including experimental colitis model, this research was performed by doctors from the Departments of General Surgery, Microbiology, Pathology and Biochemistry of the Faculty of Medicine at the University of Erciyes, Kayseri, Turkey.

This study, performed by a team led by Dr. Alper Akcan, is described in a research article in the February 14 2008 issue of the *World Journal of Gastroenterology*.

According to the authors, the purpose of this study was to determine whether exogenously administered melatonin had any influence on the impairment of bacterial translocation and apoptosis in experimental colitis. To their knowledge, their study is the first one showing the relation between colitis, melatonin, and bacterial translocation.

The exact pathogenesis in inflammatory bowel disease (IBD) is poorly understood, but evidence exists that IBD involves interactions between immune system, genetic susceptibility and the environment. In IBDs, the intestinal mucosal barrier is disrupted by inflammation and ulceration. In these circumstances, translocation of enteric bacteria and their products through the bowel wall to extra-intestinal sterile sites may result. Bacterial translocation may cause secondary infection of intra-abdominal inflammatory processes, such as intra-abdominal abscesses, or peritonitis. Recent studies have, however, shown the important role of anti-inflammatory and antioxidant agents, including melatonin, in IBDs.

Melatonin is an agent that promotes sleep and is produced at night by the pineal gland. While produced primarily in the pineal gland, melatonin can also be found in cells of the bone marrow and the gastrointestinal tract and plays a fundamental role in the neuroimmuno-endocrine system. In most of the published studies an antioxidative effect, improved microcirculation and a stimulation of intestinal epithelium may also apply in the preventive or therapeutic effect of melatonin on the symptoms of colitis induced in rats has been documented.

Further research should explain the similar effects of melatonin in humans.

Source: World Journal of Gastroenterology