# IMPACT OF GUT MICROBIOME MODULATION ON QUALITY OF LIFE IN PEOPLE WITH CHRONIC KIDNEY DISEASE (CKD) USING PRO/PREBIOTICS - RESULTS OF A SURVEY

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**Introduction**: Probiotics and Prebiotics are attracting much greater interest for various applications in health and disease conditions. They are generally used in gut disorders like digestive and immune health. Recent scientific advances, in the field of "Gut Microbiome" and its modulation beyond gut health is garnering greater exposure in several other diseases like obesity, cardiovascular diseases, autism, colon cancer, asthma and allergies including gut-brain axis. As yet unrecognized field is the R&D on gut microbiome, dysbiosis and its modulation with Pro/Prebiotics towards CKD (Gut-Kidney connection) patients worldwide. We at Kibow Biotech have been working over a decade in our R&D with a Pro/Prebiotic dietary supplement product formulation for the removal of uremic toxins diffusing from the circulating blood into the bowel. A pharma like validation – *in vitro and in vivo* both in animal and human clinical trials have demonstrated its usefulness towards CKD applications. This case study is primarily aimed to collect information on the impact of gut microbiome modulation using Renadyl™, a specifically formulated Pro/Prebiotic probiotic supplement product for kidney health, on quality of life and health status of patients with CKD.

**Methods**: Survey questionnaires were mailed out to 951 patients using Renadyl™. The final sample size was n=834. Results were tabulated and analyzed using SAS V9.2 and MS Excel software tools.

**Results**: A total of 168 responses were received (20% response rate, 42% female, 47% male, aged 12-98 years). A majority (85%) was over 51 years of age, in stage III or IV of kidney disease (58%) with at least one comorbid condition (77%), and almost half (48%) were retired. A greater number (61%) reported experiencing at least some or even great improvement since they started taking the supplement. Statistical analysis indicated a significant difference ($p<0.0001$) in distributions of quality of life responses when comparing responses before and after taking the product. Multivariate analysis indicated that the duration of administration ($p<0.0001$), employment ($p<0.012$), comorbidity ($p<0.012$), and GFR ($p<0.0015$) were significant factors influencing the reported quality of life. Even the disabled respondents all reported significant improvement.

**Discussion**: Based on the patient/consumer survey and the results of our randomized clinical trials, Kibow's product-Renadyl™ is well documented to provide benefit to patients in all stages of CKD and with a variety of comorbid conditions. It does not interfere with any other medical treatments, including dialysis. It appears to have a stabilizing effect on the overall health status and quality of life, maintaining or improving kidney health in particular. Further, adequately powered studies that could establish a clearer correlation between this supplement and its impact on GFR are warranted.