



## Probiotic Perspectives

### Should Probiotics Be Taken with Food or on an Empty Stomach?

This question regarding probiotic use is frequently asked and often generates conflicting responses. Health professionals are divided on this issue and product labels and website recommendations may directly contradict each other. Proponents of taking probiotics on an empty stomach argue that food stimulates the secretion of digestive juices and bile acids that can damage microorganisms. They typically recommend consuming probiotics with one or two glasses of water to supposedly dilute the stomach acid and move the organisms quickly into the lower intestinal tract. However, gastric pH when fasting is in the 0.8 to 2 range which rapidly kills probiotics.

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After an hour at pH 1.5 in USP simulated gastric fluid, all freeze dried probiotics are killed unless they have some acid protection such as InTactic®. Advocates of ingesting probiotics with meals point out that food buffers stomach acid thereby providing increased protection for the microorganisms. Gastric pH following food intake is usually in the range of 4 to 7.

Foods also typically contain fermentable substrates that can help nourish probiotic organisms as they transit through the gastrointestinal tract. As an added benefit,

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many lactobacilli and bifidobacteria secrete hydrolytic enzymes that can aid in the digestion of foods. Unfortunately, no research has tested which mode of administration is superior. It is noteworthy, however, that many studies have administered probiotics with food and documented significant health benefits. Indeed, the original mode of delivery of probiotics was in cultured foods such as yogurt or kefir. Human beings have also naturally ingested micro-organisms along with foods throughout evolutionary history. In addition, a recent study found that a commonly used and highly beneficial probiotic, *Lactobacillus rhamnosus*, exhibits excellent survival characteristics under conditions of simulated gastrointestinal processing of a meal. Evidence therefore suggests that the

most prudent approach to taking probiotics is to consume them along with foods. One caveat, however, is to avoid mixing probiotics with hot foods as excessive heat can kill living microorganisms.

*References and further information available on request.*