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Abstract
The microbiota of the human large intestine influences health and well-being. Whereas it has long been accepted that gut bacteria play a role in host pathogenesis, current opinion is that certain microflora components can have beneficial effects on gastroenteritis resistance, blood lipids, antitumor properties, lactose tolerance, and gastrointestinal immunity. It is postulated that in the infant gut an elevated bifidobacterial count may be associated with health advantages that breast-fed infants may have over formula-fed infants. Whereas beneficial aspects of the human gut flora still need definitive confirmation and mechanistic explanations, there is now interest in modulating the composition of gut flora such that a potentially more remedial community exists. This may be achieved through the targeted use of dietary supplementation. This article provides an overview of how probiotics, prebiotics, and synbiotics may contribute toward nutritional modulation of the gut microecology, with emphasis on the neonatal intestine where appropriate. The use of modern molecular methods, as an essential step forward for assessing the validity and accuracy of the modulatory approach, is also discussed.