

Synbiotic was a term originally proposed in 1995 to refer to a combination of a probiotic and a prebiotic. In 2019, a group of scientists met to discuss specifics of this class of substances and to propose a new definition.

Synbiotics

A mixture comprising live microorganisms and substrate(s) selectively utilized by host microorganisms* that confers a health benefit on the host.**

Initially, the idea of synbiotics was to add a probiotic and a prebiotic together. This approach would require that each component meet the criteria for either probiotic or prebiotic.

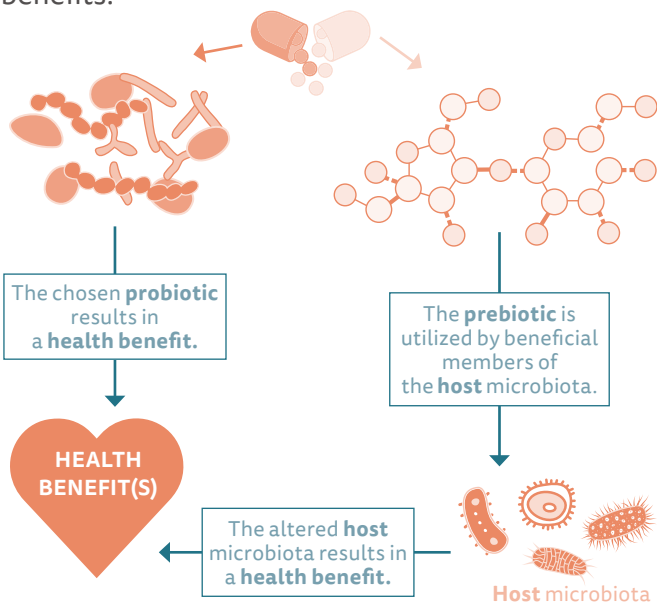


When defining synbiotics, scientists wanted to be sure that innovative products could use this designation. They realized that it would be possible to design a combination of a live microbe and a prebiotic-like substance that could work together – the substance feeding the live microbe – but neither on its own would necessarily meet the definitions of “probiotic” and “prebiotic” (dose and evidence of health benefit). **Hence the definition is not simply a probiotic + prebiotic.**

Synbiotics may be formulated using two approaches:

COMPLEMENTARY SYNBIOTIC

Mixture of probiotic(s) + prebiotics(s). Each works independently to achieve one or more health benefits.



The probiotic and prebiotic components of a complementary synbiotic must meet the minimum criteria of these substances. The probiotic must have a demonstrated health benefit at the dose in the synbiotic mixture. The prebiotic criteria must have a demonstrated health benefit in the same study showing selective utilization by the host microbiota, at the dose in the synbiotic mixture. Demonstration of a health benefit of the synbiotic mixture in the target host is further required, but demonstration of selective utilization of the substrate in the synbiotic mixture is not required.

* Within this definition, ‘host’ microorganisms refer to both resident microbes and externally applied (such as probiotics) microorganisms, either of which can be targets for the substrate contained in the synbiotic.

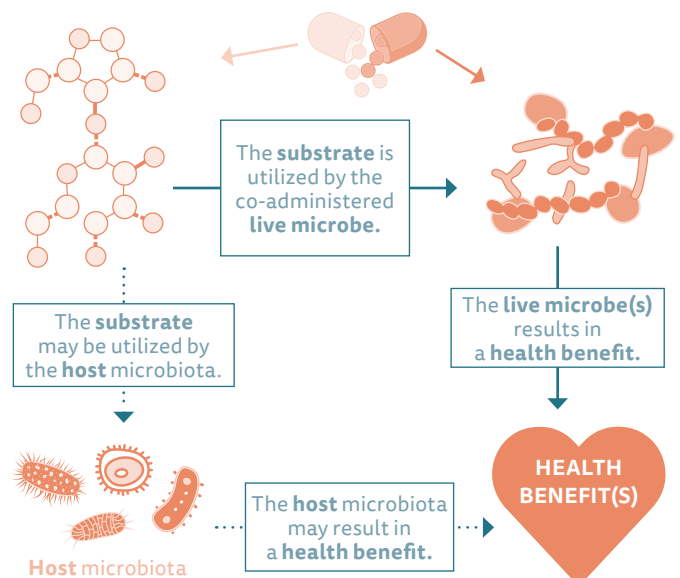
** Implied in the definition is that safety of the synbiotic for its intended use is established.

‘Symbiotic’ is not a synonym of synbiotic and is incorrect in this context.

Swanson, et al. Nat Rev Gastroenterol Hepatol (2020). <https://doi.org/10.1038/s41575-020-0344-2>

SYNERGISTIC SYNBIOTIC

Mixture of a selectively utilized substrate and a live microbe chosen for its ability to deliver a health effect. Components comprising synergistic synbiotics work together to bring about resulting health benefit(s).



For a synergistic synbiotic, demonstration of a health benefit and selective utilization of the substrate by the co-administered live microbe in the target host must be shown in the same study.



A synbiotic may target the gut or non-gut microbial ecosystems in the body and may be formulated into products fitting an array of regulatory categories (such as foods, non-foods, cosmetics, drugs, or nutritional supplements).



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