

Natural vs. Synthetic

Vitamin C tablets, the hair in a wig, and hormones for treating a condition or disease—does it matter if they are *natural* or *synthetic*? What exactly do those words mean?

How We Usually Think about Natural and Synthetic



When we hear something described as “natural,” we often think that it comes from nature (such as lemons) or is made from a substance that occurs in nature (such as lemonade made from lemon juice).

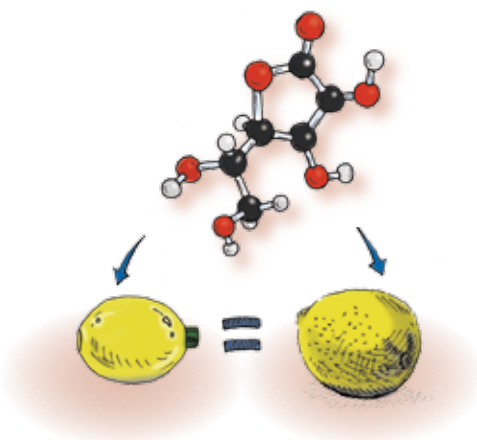
When we hear something described as “synthetic,” we often think that it is “not real” (or imitation) and that it is made by people in a laboratory or factory—not by nature. It may be similar to the natural material, but not identical. For example, synthetic hair in a wig may look and feel like natural hair, but under a microscope, the two are not identical.



Percy Julian synthesized physostigmine (fie so STIG meen), in the lab, making this glaucoma treatment readily available. He assembled molecules that were exactly the same as the physostigmine found in Calabar beans. Like vitamin C, both versions of physostigmine have the same effect on the body because their chemical structures are the same.



Natural and Synthetic in Chemistry



Lemons are a source of vitamin C, but vitamin C can also be synthesized in the lab. Synthesized vitamin C has the same molecular structure as the vitamin C in a lemon. Both have the same exact effect on our bodies. The difference is the process used to make them. So, since both forms of vitamin C are identical in structure and how they work in the body, one can substitute for the other.

Natural hair and a wig are not the same chemically, but the differences probably don't matter to a lot of people.



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