

# Nanomedicine



*“And they went out and preached everywhere, while the Lord kept working with them and confirming the message by the attesting signs and miracles that closely accompanied.” [Mark 16: 20](#)*

The use of nanotechnology in health care is known as nanomedicine. (“Nano” as a size is defined as one billionth!) In science class, we all learned about atoms, those particles too tiny to be seen by our naked eyes. Now try to imagine a device so small that it can enter our body and work on our molecules and atoms, repairing our cells, cleaning out heart arteries, or even building a structure inside our body! Some of this “weird science” is actually happening today, while most is still being developed. The possibilities boggle the mind.

The huge benefit of nanotechnology is the ability to restrict treatment to the diseased cells without harming healthy ones. This is a giant jump in treatment from today—such as with chemotherapy. The chemo targets all fast growing cells (cancer, hair, the insides of our mouths and stomachs), and so it destroys good and bad cells. Nanomedicine goes in on a cellular level and can focus on the cancerous cells, leaving the rest of the body healthy and strong.

Most of this miraculous technology is still in the research stage, but much of it shows real promise for the near future. One of the first uses has been as a dressing for wounds that kills bacteria. There is also a burn dressing that is covered in nanocapsules which contain antibiotics—this is unique because the capsules only break open if an infection occurs. Any infection is treated immediately and at its source. So instead of waiting for signs of infection: pus, redness, and fever, the infection is stopped before it has a chance to really get started!

It is possible that with all the advances being made, that breast cancer could be completely conquered in the next 10 years. Nano devices may be able to erase the natural signs of aging. Heart tissue could be repaired, and cholesterol could be cleaned out of blood vessels. Currently we implant devices, such a heart valve, but the future will be sending a nanobot (a little tiny robot) to **build** that valve! Remember the old movie “Fantastic Voyage” where people were shrunk down to such a small size that they were able to travel around inside someone’s body? Well, a nanobot injected into a body would help physicians explore that body without going in with scalpels or lasers.

Drugs could be given, which would release themselves at the correct time – eliminating the patient’s need to remember how or when to take the medication. Think of the uses for Alzheimer’s patients or those with mental illnesses. Adult stem cells could be manipulated to improve brain function for those with brain injuries. Faster healing of bones and even the repair of damaged spinal cords may possible, as well as chips in the brain to help control seizures.

I think you see the picture—the sky is the limit. While this does seem frightening on some level, antibiotics and vaccines work invisibly in our bodies, but we have come to accept them as every day treatments. It comes down to faith in, and hope for, the future.

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