Editorial

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Editorial Note on Nano Materials in Treatment of Cardio Vascular Diseases

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Editorial Note

According to the World Health Organization, cardiovascular diseases (CVDs) was one of the leading causes of death worldwide, accounting for more than 17.7 million deaths in 2015. CVDs are still a significant public health problem in the United States. It has influenced the lives of 85.6 million people in the United States. CVDs were the leading cause of death in the United States of America in 2011, with over 596 thousand deaths.

Biomaterials for cardiovascular applications have had a lot of success in the past. A coronary artery stent, for example, is a system made mainly of medical-grade metallic alloys that improves heart attack treatments by providing mechanical support to narrowed arteries. In 2007, approximately 560,000 surgeries to place coronary artery stents were conducted in the United States.

These are only a few of the many promising biomaterials that have been created. Within the fields of cardiovascular engineering and regenerative medicine, a wide variety of applications in CVDs are now being studied and translated, with much of their success owing to advances in biomaterials technology.

These applications include, but are not limited to, targeted drug delivery, CVD diagnosis, and cardiac tissue repair and regeneration. Biomaterials are obviously at the Centre of potential advances in CVD care.

Nanomaterial opened up previously unknown possibilities for overcoming the limitations of traditional biomaterials. Nanostructured plates, nanoparticles, and Nano composites may significantly improve the performance of traditional biomaterials.

Furthermore, advancements in the field of nanomaterial may inspire a range of new therapeutic strategies that could revolutionize the treatment of cardiovascular diseases. Nanomaterial imitates the extracellular matrix and microenvironment for cells and hierarchical tissue structures, with size features varying from protein level (a few nanometers) to cellular level (sub-micron size).

Nano materials, on the other hand, have substantially different physicochemical properties than traditional materials. Their high surface to volume ratio, high surface energy and function, and altered wettability may have a significant impact on protein adhesion and cell activity.