

# Biomedicine Relies Heavily on Biological Macro-molecules

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## Abstract

Food provides the body with the nutrients it needs to survive. Many of these critical nutrients are biological macromolecules (large molecules) necessary for life to exist. These polymers (macromolecules) are made up of a variety of smaller organic molecules in various configurations (monomers). Natural products are increasingly being used as therapies or medications due to their safety profile, as well as other qualities such as organ selectivity, extensive effectiveness, prolonged mode of action, and high solubility. Carbohydrates,

peptides, proteins, and lipids are examples of natural-source macromolecules with great therapeutic and pharmacological potential. As biomedicines, these macromolecules have been used to treat a number of human ailments. In this sense, biomedicine is a branch of medicine that focuses on biological and chemical themes relevant to medicine and healthcare and applies biological and physiological principles to clinical practise.

## Keywords

Macromolecules, Biomedicine, Healthcare

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## 1. Introduction

Biological macromolecules are massive molecules made up of smaller organic molecules that are essential for life to exist. The four major categories of biological macromolecules are carbohydrates, lipids, proteins, and nucleic acids; each is a critical cell component that performs a variety of functions. When all of these molecules are added together, they account for the majority of a cell's dry mass (recall that water makes up the majority of its complete mass). Biomedical Study (Biomedicine) is a discipline of science concerned with the biological and chemical components of healthcare [1]. Biological sciences, physiological sciences, and bioengineering are the three main areas of specialisation in this field. The purpose of biomedical science occupations is to improve and advance medical knowledge through research and laboratory work. Because of the diversity of this field, graduates have a variety of specialisation options even while still in school, and hence a variety of job opportunities. It's a discipline with a lot of 'real-world' applications. Biomedical experts frequently make the headlines for their accomplishments in their fields, which have a measurable impact. As a biomedical scientist, you could be developing embryos for IVF, 3D-printing a heart, or discovering a new cancer treatment. Biomedicine is a field that brings together biology, chemistry, and a desire to make a difference in the world. Biomolecules are required for the normal functioning of living creatures. These chemicals perform or trigger crucial metabolic actions in living organisms. Examining biomolecules can help us understand the physiological function that controls the proper growth and development of the human

body [2]. The majority of organic compounds in living beings are carbohydrates, proteins, lipids, and nucleic acids. Smaller subunits are linked by covalent bonds to form these macromolecules. Chemical assays will be used in this lab to discriminate between known and unknown macromolecule solutions. Nucleic acids are molecules that store and transport information. Carbohydrates are the primary energy source and component of plant cell walls. They store energy, provide fuel, and aid in the development of body structure. Insulator that also serves as a fat and energy storage facility, Protein provides structure support, transport, enzymes, mobility, and defence. These are the fundamental structures of macromolecules. Structural biology [3, 4] is a discipline of biology that studies the structure of biological macromolecules such as proteins and RNAs. Understanding the effects of structural changes in these biological macromolecules can help researchers better understand their function and role in diseases. The absence of structure in solution could help a function that requires promiscuous interactions with a variety of molecules. The dynamic structure of macromolecules allows for rapid changes that have an impact on the homeostasis of biochemical and molecular biological systems. Because it explains health in terms of biology, modern western scientific medicine is frequently referred to as „biomedical.“ It focuses on mechanisms such as the heart, arteries, nerves, and brain, with an emphasis on body structure (anatomy) and systems (physiology). As with a newly repaired car, health is described as a state in which all of the body's parts are in good operating order. If something goes wrong, such as a virus infecting the body, internal changes causing damage, or parts wearing out, it is submitted to a

professional for repair [5]. This viewpoint offers a distinctive and distinct way of 'seeing' and comprehending bodies and health, as well as a set of principles for interacting to and dealing with them- to treat them as systems in need of proper care and maintenance. A biomedical explanation is one that provides a physical or biological explanation for health as well as physical/biological means of 'repairing' bodies that are not working properly. To figure out what's incorrect, many tests are used. The infection can then be treated with antibiotics or other medications, or body components can be repaired or replaced with surgery. Western cultures and how health and healthcare are seen are interwoven with the biological approach. It is a cost-effective and efficient healthcare paradigm in many circumstances (consider broken legs, tumours, tuberculosis, slipped discs and a host of other illnesses or physical problems).

## 2. Conclusion

Biomedicine is a dynamic paradigm that has influenced people's perceptions of health and illness, as well as their willingness to comply with the biomedical system. Many significant accomplishments, according to proponents of biomedicine, include the elimination of major killers such as smallpox, polio, and other diseases, as well as the reduction of high death rates, such as those found in kids in the early twentieth century. However, an opposing argument has been made that, rather than any specific

preventive or biomedical measure, such as immunisation or widespread antibiotic use, mortality has decreased dramatically over the last century as a result of improved housing and working conditions, particularly improved nutrition. Others may want to emphasise links between the general environment and health, although biological terminology tends to focus our attention on individual medical discoveries and therapies.

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