# THE APPLICATION OF CHEMISTRY IN THE FIELD OF MEDICINE AND MEDICAL TECHNOLOGY

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**Article History: Received:** 12.02.2023 **Revised:** 03.04.2023 **Accepted:** 12.05.2023

**Abstract**

The research has discussed the factors associated with the chemistry that are utilized in the technology medicines. There is a requirement for effective and significant awards in the usage of chemical while the development of medicines in order to maintain the effectiveness. The findings have shown that there are primarily three stages associated with theory chemistry that includes discovery, enhancement and research related to the potential opportunities and possible drawbacks.

**Keywords:** Chemistry, Oxygen, Medicine, Technology Environment.

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**DOI: 10.31838/ecb/2023.12.1.292**

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## 1. Introductions

Chemistry has a major contribution to the medical field. The process of the scientific study of the various properties and actions of matter is generally known as chemistry. In the health care department chemistry plays a vital role. In manufacturing new medicines, the process usually includes a detailed study of various chemicals and combinations of different compounds. In the department of health care chemistry provides various applications. The complete approach to the chemistry process is much more complex in nature. In order to develop a medical drug usually requires numerous complicated processes. Chemistry requires various laboratory tests using numerous techniques related to chemistry. The subject of chemistry is much needed in our day-to-day lifestyle. It plays a key role in normal daily things like food, shelter, water, health, etc. Chemistry involves various chemical techniques and strategies which eventually become essential in improving the quality of life of an individual. The theory of chemistry makes life easier by providing various beneficial methods to resolve health-related issues. Chemistry provides various techniques and materials which eventually result in energy conversion.

**Objectives**

- To examine the importance of the usage of chemistry in medicine field or in medical technology.
- To highlight the various advantages related to chemistry used in the medical field.
- To recognize various drawbacks and difficulties associated with the application of chemistry in the medical field.
- To focus on the various steps and strategies to improve the impact of chemicals used in the medical technological field.

## 2. Methodology

According to the research data, in old times the analyst used to believe that chemistry is equivalent to the complete science. The continuous achievement of the various scientist in the field of chemistry. Achievements like study of the air by "Antoine Lavoisier and discovery of oxygen by Joseph Priestly" plays vital part in building the believe that chemistry is same as the science. However, with time it gets clearer that the study of chemistry is not equal to proper study of science. Chemistry generally considered as distinct subdivision of science subject. The methodology process of the theory chemistry involves three primary stages such as discovery, enhancement and research related to the potential opportunities and possible drawbacks. The complete concept of chemistry can be referring as accumulative study of science. The study and application of chemistry is much beneficial in order to increase continuous development and growth of the humanity [1]. The study of chemistry can be defined as the combination of fusions that eliminates the issues. The subject of chemistry is generally referring as the most beneficial chemical creation for the community of human beings.

**Drawback issues of chemistry in medicine or medical technology**

The need for "ethics in chemistry" is a vast theory that generally includes various distinct points of view and arguments. Ethics covers the area of rules of science and ethics related to research. This ethical theory includes the "professional ethics and technological ethics in it. However, the usage of chemistry in medicine field does include a few ethical issues [2].

**A. Harmful to the environment**

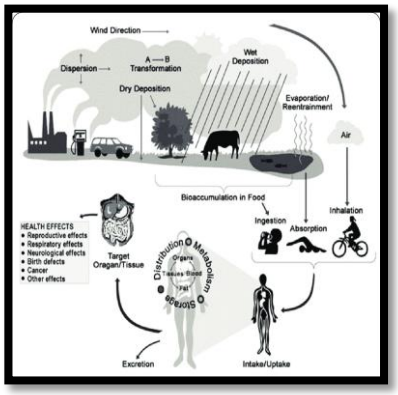


Figure 1: Harmful effects of chemistry on the environment

Excessive usage of chemistry in medicine eventually affects the daily life of people, thus resulting in a negative impact on the environment. In the agricultural field, the excessive creation of chemical fertilizers and pesticides leads to overall environmental pollution. However, the usage of chemistry is much involved in our day-to-day life. Although, the involvement of chemistry is much more harmful and dangerous for the environment as well as for an individual. Chemistry is generally used in order to make daily life easier and more comfortable for the modern generation [3].

**Cause negative impact on health**

Chemistry is associated with the development of various matters which contain harmful chemicals and pollutants. The usage of chemistry in medicine encourages the usage of chemicals in the daily life of an individual. Excessive involvement in harmful chemicals and pollutants affects the health of an individual in future times [4]. These chemicals impact the health of a human being negatively in both short as well as in long rum.

**Provides exposure to harmful chemicals**

Chemistry used in medical technology fields usually leads to the creation of potentially toxic chemicals. Any potential toxic chemicals in different forms like solid, liquid, or gas are referred to as dangerous for the health [5]. These harmful chemicals can enter the human body by inhaling, interacting with contaminated food, via skin contact, etc.

**Role of Chemistry**

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| **Makes the daily life easier for the new generation.** | Chemistry is the key factor in achieving the daily basic requirements of an individual. Such as water, food, health, shelter, etc. Hence, application of chemistry in real life makes the survival easy for the people. |
| **Provides variety of knowledge** | Chemistry is the detailed study of various chemicals and matters. It involves all the essential subjects such as medicine, mathematics, biology and physics. Hence, it provides diversify knowledge and intellect. |
| **Encourages in growth of various industries** | Chemistry plays a vital role in growing and developing the various industries. Few industries which manufacture the materials like glass, paint, cement, paper, etc. All these industries require the use of chemistry in order to manufacture such goods [6]. |

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| **Provides exposure to the various work opportunities across the world.** | The detailed study and application of chemistry in medical technology field gives exposure associated with the various work opportunities across the globe. |

**Subdivided categories of chemistry**

There are various subdivision and branches exists in the subject of chemistry. Following are the main branches that the study of chemistry generally involves.

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| **Organic chemistry** | The study of organic chemistry usually includes the detailed investigation process of the element carbon and its related compounds. Organic chemistry basically includes the living organisms for the study and research purpose. |
| **Inorganic chemistry** | The study of inorganic chemistry is associated with the detailed study of those compounds which generally not get cover in the organic chemistry. This topic of study involves the various compounds such as "ionic compounds, organometallic compounds, minerals, cluster compounds, and solid-state compounds". |
| **Analytical chemistry** | Analytical chemistry is the study of various matters and tools in order to calculate the various properties of matter. |
| **Physical chemistry** | The study of physical chemistry is basically the application of physics into the study of chemistry. Physical chemistry commonly uses the theories of thermodynamics and quantum mechanism with using the study of chemistry. |

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|---|---|
| **Biochemistry** | Biochemical can be defined as the study of analysing the chemical changes inside the living beings. This branch of chemistry also considered as subdiscipline in the subject of organic chemistry. Biochemistry is much similar with the other concepts like molecular biology, genetic and cell biology [7]. |

**Examples of chemistry in the real world**

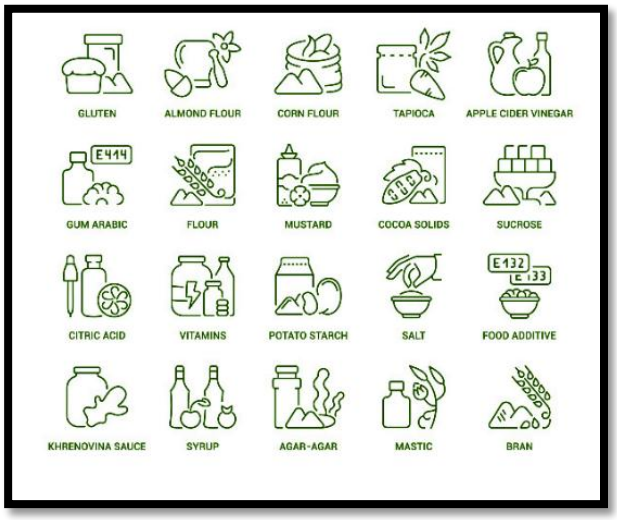


Figure 2: Examples of chemistry in daily life

**Change in colour in the plants**

Chemistry plays a vital part in both the categories of animals as well as the plats. The chemical method uses by the plants in order to make their own food usually known as photosynthesis process. In the chemical process performed by the plants, when the amount of an element called chlorophyll decreases then the discoloration change occurs in the leaves [8]. Chlorophyll is the element present in plants which causes the green colour among the plants

**Digestion process in a living organism**

The food digestion process in a living organism includes various chemical reactions. The food inside the stomach gets mixed with a chemical hydrochloric acid (HCL) which is normally get release by the walls of the stomach. Hence, the food digestion process is one of the most common examples of chemistry in real life.

**Problem statement**

It is a fact that the research and proper application of chemistry in real world is much beneficial. The application of chemistry in our daily life leads to better understanding of the real world. Study of chemistry provides the various knowledge related to diverse topics. However, like any other theory this subject of chemistry does includes few drawbacks and disadvantages. The maximum use of chemistry eventually gives exposure to the harmful chemicals. The harmful chemicals are considered to be much dangerous for the health of a human being. These harmful and toxic chemicals not only affect the health of an individual but also destroy and damage the environment to the maximum extent [9]. Some of the examples of harmful chemicals are toxic acids, biological chemicals, compressed gases, etc.

## 3. Conclusion

The subject of chemistry is one of the subdivision categories of science. Study of chemistry generally associated with the properties, configuration and frameworks of various elements and compound factor. Chemistry usually study and analyses the changes related with different compound and factors. Using the chemistry subject in medicine field is much beneficial and required. Performing the daily work related to day-to-day life style on the investigation of chemistry, the absorption and release process of the elements and compounds are analyses. In short, the study and application of chemistry enhances the overall quality of life. Various related technologies and theories encourages the status regarding health, matters and appropriate usage of energies. Hence using chemistry in medicine field includes various advantages as well as few disadvantages.

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