

# *How to Improve the Interest of Learning in Medical Chemistry Teaching?*

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**Abstract:** In order to improve interest and initiative in learning medical chemistry, in the teaching of medical chemistry, the practical application of knowledge is the primary principle of teaching. By introducing the history of medical chemistry, the connection between chemistry and medical knowledge is increased, and the connection between chemical knowledge and daily life is constantly expanded, so that students can learn useful, learn useful and improve their enthusiasm and interest in learning. Interest, further enhance the teaching effect of medical chemistry.

## **1. Introduction**

Medical Chemistry is a basic course for clinical medicine specialty, which is usually offered in the first or second semester of freshman year. Because of various reasons, most of the students have a one-sided understanding of this course. They think it is not important to medical science. They generally do not attach enough importance to it, and their learning initiative and enthusiasm are not high. In fact, medical chemistry is closely related to the following courses, such as biochemistry, pharmacology, molecular biology and so on. It is necessary to strengthen guidance and arouse attention. Considering that medical chemistry course has many characteristics such as many knowledge points, large amount of information, Abstract content, etc. [1, 2], if teaching and learning methods are inappropriate, the understanding of knowledge is inadequate, and more and more problems arise. Therefore, in order to improve interest and initiative in learning medical chemistry, the author takes the practical application of knowledge as the primary principle of teaching, and probes into the teaching methods of medical chemistry.

## **2. Introduction to the history of medical chemistry**

Firstly, at the beginning of learning medical chemistry, the origin of the term "medical chemistry" is introduced. This paper describes the relationship between medical chemistry and organism, such as the metabolism of sugar, fat and protein metabolism and energy metabolism, and DNA, RNA and protein synthesis, and genetic information transmission and so on. The links between medical chemistry and life sciences need to be emphasized and implemented. Let students have more interest in learning this course, better understanding of life.

In the process of teaching, it is necessary to introduce the history of medical chemistry [3]. In

learning enantiomeric phenomena, by introducing French chemist Pasteur's observation of the crystallization process of tartrate, the enantiomeric image was found, which guided students to learn to discover and observe in their study and life, and to develop a scientific attitude of respecting facts and exploring constantly. In studying olefins, taking the 2005 Nobel Prize for Chemistry and the complex decomposition reaction of olefins as an example, the discovery of this synthetic method was introduced [4]. It was applied in industrial production with lower cost and friendlier environment, so that students could experience innovation and change society and life, and cultivate the spirit of innovation. When learning to replace carboxylic acid, by introducing the story of aspirin discovery, students are guided to find problems, analyze problems, solve problems and innovate constantly. In learning carboxylic acid derivatives, through telling the discovery history of penicillin, let students learn to observe, good at observation, and further understand the contribution of great discoveries to human society. By introducing the history of medical chemistry, students are encouraged to love their major and study actively.

### **3. Linkages between medical chemistry and medical knowledge**

At the beginning of learning medical chemistry, why do medical students study medical chemistry? It is pointed out that the phenomenon of human life is the process of metabolism, and the human body is constantly undergoing a series of chemical changes [5]. The chemical changes in normal human body are regular. If the chemical changes are abnormal, the body will be sick.

Secondly, people should use drug treatment when they are ill, and drugs can also be absorbed and metabolized in the body. Drugs can treat diseases by combining with body targets. It can be seen that learning medical chemistry is also very important for recognizing the role of drugs and drugs in vivo. Therefore, medical chemistry is a bridge to medicine. To learn medicine well, we must first learn medical chemistry well. Through the introduction above, the students realized the importance of medical chemistry, so as to improve their learning enthusiasm.

At the same time, when teaching medical chemistry knowledge, it is necessary to be closely related to medical knowledge as far as possible. In learning the chapter of alcohol, phenol and ether, first let students understand that ether is a common anesthetic in surgery, but also tell some brave and self-sacrificing people how to test various anesthetics on themselves; in the process of explaining carboxylic acid derivatives, introduce penicillin, cephalosporin and other antibiotics. The structure, chemical properties and clinical application of these compounds were analyzed. When explaining proteins, the remedy of heavy metal poisoning was related to medicine. Through an example, we can guide students to think, stimulate interest and change passive learning into active thirst for knowledge.

### **4. Linkages between medical chemistry and daily life**

In order to improve interest in learning, medical chemistry related knowledge should be closely linked with practical life in the teaching process. When learning the nature of alcohol, it can be oxidized by acidic potassium dichromate, which is related to the traffic department to check whether the driver drives after spraying or not; when learning aldehydes, it can be related to harmful substances produced in decoration, how to remove formaldehyde; when teaching alkaloids, it can introduce morphine and sea to students. The structure, function and toxicity of drugs such as heroin and methamphetamine make students realize that drugs are the source of all evils, and warn students to stay away from drugs and cherish life. In the teaching of amines, this paper introduces the relationship between nitrite compounds and bacon, pickles, and melamine incidents, so as to improve food safety awareness. Through the connection between these daily life examples and medical chemistry, the interest and enthusiasm in learning medical chemistry can be stimulated, and

classroom teaching effect can be enhanced.

## 5. Teaching means

### 5.1 Visualization of abstract problems

In the teaching process of medical chemistry, the abstract knowledge of hybrid orbital theory, reaction mechanism and stereochemistry can be used to make vivid multimedia courseware. When learning the conformation of alkanes, it is easy to understand this knowledge point by showing the dynamic process of the ethane molecule club model, combining the dynamic model with the static pictures, so that students can intuitively and vividly understand the process of conformation and conformation isomerization. In learning important experiments of medical chemistry properties, we can clearly show the silver mirror reaction of aldehyde, the properties of ethyl acetoacetate and sugar by making dynamic and vivid pictures, so as to deepen memory and enhance their interest in learning.

### 5.2 Application of case teaching

To find relevant information from clinical cases, carefully select appropriate case materials, transform clinical cases into medical chemistry teaching cases, and build case base [6]. Furthermore, case study is applied in medical chemistry teaching to make chemistry and medicine permeate each other and stimulate interest in learning medical chemistry. For example, taking clinical toxic mushroom poisoning as an example, after briefly describing the cause, symptoms and treatment plan of patients, we can provide auxiliary examination data, design relevant problems for case discussion, and combine the knowledge points of solution dependency, acid-base balance, buffer solution, redox balance, etc., which are closely related to medical knowledge, and can also analyze patients. In the end, how to avoid poisonous mushroom poisoning is discussed. Students are taught to respect science and cherish life. Students are guided to pay attention to popular science, enhance sense of responsibility and think about how to prevent tragedy. This teaching method can cultivate good habit of autonomous learning and guide them to learn how to use their knowledge to solve practical problems.

## 6. Conclusion

Through the implementation of the above-mentioned teaching methods, the learning initiative in medical chemistry course has been greatly improved, which can effectively mobilize their interest in learning and achieve satisfactory teaching results.

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