

Passage 1

Traditional Botanical Medicine: An Introduction

The role of traditional medicine in the well-being of mankind has certainly journeyed a long way. From an ancient era, in which knowledge was limited to a few traditional healers and dominated by the use of whole plants or crude drugs, the science has gradually evolved into a complete healthcare system with global recognition. Technologic advancements have facilitated traditional science to deliver numerous breakthrough botanicals with potency equivalent to those of conventional drugs. The renewed interest in traditional medicine is mainly attributed to its ability to prevent disease, promote health, and improve quality of life. Despite the support received from public bodies and research organizations, development of botanical medicines continues to be a challenging process.

The use of plants to treat diseases is as old as mankind, possibly older considering that animals have been known to seek out plants if they are ill. Evidence of medicinal plants has been found in prehistoric archeological digs in the Middle East. The knowledge of the healing properties of these plants has been handed down from generation to generation like primitive health insurance. Therapeutic or toxic effects of various plants were observed over thousands of years creating verbal materia medica. Eventually, ancient records detailed the use of medicinal plants in Babylon, China, India, and Egypt. Botanicals are the foundations for modern medical therapeutics.

As man and technology progressed, the interest in the use of whole plant extracts was replaced with the concept of isolating and synthesizing the active components. In this manner, one had the ability to protect the intellectual property with a patent. In addition, clinical research had only single molecules to deal with, facilitating development. Despite this loss of favor, 25% of modern prescriptions have their active components derived from plants. There is a current resurgence of interest in medicinal plants fueled by the disappointing results of current technologies and their ability to create new drugs. Consequently, new drug pipelines are drying up, whereas major disease targets still go wanting. The number of cutting-edge drugs developed by the pharmaceutical industry has been steadily declining. There is also a renewed interest in gentler, more holistic approaches to medical care. The fact that the “baby boomers” are into their 60s may have some impact. There is also the emphasis on everything “green” from an environmental perspective.

What is the rationale for once again going bioprospecting in the plant kingdom? Plants are virtual phytochemical factories. They produce primary and secondary metabolites. The primary metabolites are responsible for plant growth, whereas the secondary metabolites allow the plant to defend itself against predators, environmental extremes, and diseases. These protective phytochemicals have the ability act synergistically. As therapeutic entities in humans, they provide multicomponent medicines. This can be contrasted with

the single-component drugs or new chemical entities usually developed in the pharmaceutical industry. Focusing on herbal medicine could be a quicker, more economical approach to drug discovery. We could begin by increasing efforts in bioprospecting to seek out and analyze new plant species for medicinal properties. This would be interesting but probably not the best approach. We have vast resources in the expertise of traditional medical practitioners around the globe. Nearly every culture has its own particular variety of healer. Their knowledge is time-tested and could provide direction in the search for medicinal plants for specific disease targets. In this manner, laboratory screens can be supplemented, possibly proceeding directly to clinical efficacy studies. Poorly understood diseases without validated screening methods or animal models could still be addressed. Direct contact with traditional medicine practitioners is one approach to acquiring this direction. However, this approach does have the limitation of relying on the accuracy and specificity of the individual's knowledge. The most reliable approach to gathering relevant information is to research texts in which centuries of information on medicinal plants have been recorded.

The two traditional medical systems that have the earliest documentation are Traditional Chinese Medicine and Ayurveda. These ancient approaches have conceptual similarities. Both systems promote health, quality of life, and prevention. They approach disease treatment from several perspectives, combining plants that contain phytochemicals, which are synergistic in their activities, addressing different aspects of the particular disease process.

Although the potential for greater safety in plant derived medicines is possible, it would be a mistake to assume that all whole plant extracts for medicinal purposes are completely safe. For this reason it is imperative to proceed carefully in the botanical drug development process. For example, it is essential that all plant substances are thoroughly analyzed to verify the plants' identity and determine if they contain any potentially toxic substances such as heavy metals. Analyses would also serve to help establish some type of standardization, which would ensure the same percentage of active components in subsequent renderings of plant materials. This has been a major stumbling block, because environmental conditions, plant-cultivating practices, and other factors have made consistency very difficult. Preclinical and clinical studies are important to define potential toxicities, safety, and efficacy.

The future depends on the continued level of interest and support of medical research centers, relevant scientist/investigators, the pharmaceutical industry, and the consumer. The future does seem bright as some of the stumbling blocks for regaining worldwide acceptance were slowly removed over the last decade. Consumer confidence has been strengthened by advances made in the supply chain and innovation programs by public and private bodies in two of the major supplying nations.

The road ahead is long but the journey has begun and promises to be interesting and fulfilling.

Vocabulary

- botanical** *a.* 植物的; *n.* 植物制剂
archeological *a.* 考古的
primitive *a.* 原始的
cutting-edge *a.* 尖端的, 最新的
pharmaceutical *a.* 制药的
holistic *a.* 整体的
bioprospecting *n.* 生物勘探
synergistically *adv.* 协同地, 协作地
efficacy *n.* 功效
validate *v.* 使生效, 确认
documentation *n.* 文件, 证明
Ayurveda *n.* 阿育吠陀, 印度草医学
conceptual *a.* 概念的
synergistic *a.* 协同的, 协作的
extract *n.* 提取物, 精华
consistency *n.* 连贯, 一致性
preclinical *a.* 临床前期的

Reading Comprehension

Directions: *There are four suggested answers to each of the following questions. Choose the best one according to the passage you have just read.*

1. The author starts the article with_____.
 - A. the modern health system
 - B. the evolution of traditional medicine
 - C. the numerous breakthrough botanicals
 - D. the global recognition of traditional medicine
2. China, Egypt, and India are mentioned to illustrate_____.
 - A. their long and splendid history
 - B. existence of primitive health insurance
 - C. written records of the use of medicinal plants
 - D. medicinal use of plants in prehistorical times
3. Progress of man and technology resulted in all of the following EXCEPT _____.
 - A. facilitated drug development
 - B. loss of interest in medicinal plants
 - C. concept of using the active components
 - D. ability to protect the intellectual property with a patent

4. The renewed interest in medicinal plants comes as a response to_____.
 - A. aging of “baby boomers”
 - B. resurgence in major diseases
 - C. disappointment in the development of new drugs
 - D. cutting-edge technologies in pharmaceutical industry

5. Resurgence in bioprospecting is justified by the fact that _____.
 - A. it is more economical to use medicinal plants
 - B. medicinal plants can protect themselves against predators
 - C. the pharmaceutical industry only develops the single-component drugs
 - D. protective phytochemicals in plants provide multicomponent medicines

6. At the end, the author cautions against_____.
 - A. safety of whole plant extracts for medicinal purposes
 - B. consumer confidence in traditional medicine
 - C. standardization of drug development
 - D. overuse of medicinal plants

Passage 2

Voice from the Grave

A subtle change in the sound of someone's voice is the first sign that they are serious about committing suicide. The change is so distinctive that psychiatrists plan to use the sound change as an early warning system to separate those who are seriously suicidal from those who are merely depressed.

The idea that the voice might contain vital clues about someone's mental health came when Stephen Silverman, a psychiatrist at Yale University, noticed he could often sense from a patient's voice whether they were likely to attempt suicide in the near future.

To find out if this observation had any practical use, Silverman teamed up with Mitchell Wilkes, an electronics engineer based at Vanderbilt University in Nashville, Tennessee.

Wilkes recorded a series of interviews with 64 depressed patients and compared them with recordings of 33 others who weren't depressed. In total, 22 patients made a serious attempt on their lives.

He then compared the recordings with the subsequent history of the patients. "In suicidal patients, the voice becomes slightly hollow and empty, you get this change in quality," he says. "They call it the voice from the grave."

Wilkes found that two factors helped him discriminate between those who were at high risk of committing suicide and those at low risk. First he noticed that people who are truly suicidal use a narrower range of frequencies when pronouncing their vowels than people who are just depressed. The voices of suicidal people also become higher pitched. "we find there's a noticeable difference between suicidal and normal, and normal and depressed people," he says.

The reason for the frequency shifts could be related to stress-induced physiological changes, says Wilkes. "A variety of changes can take place under stress—like muscle tone quality—that can affect the vocal chords," he says. "Also you get changes in moisture and elasticity of the vocal tract."

His findings could help the volunteers who staff helplines to assess a depressed caller's mental state. "The goal is to have a diagnostic device for emergency rooms or that could be linked up to helplines," he says. "It could help volunteers on those phones answer the question: is this person in danger of committing suicide?" Emma Charvet from The Samaritans, which runs helplines for suicidal people in Britain, says the research might help to prevent suicides. "If there's any way of finding out earlier the level of someone's risk of suicide, it'd be a great help," she says.

Vocabulary

suicide *v.* 自杀

distinctive *a.* 特殊的; 独特的

psychiatrist *n.* 精神病学家

depressed *a.* 沮丧的

subsequent*a.* 随后的, 后来的

discriminate *vt.* 区别

induce*vt.* 导致, 引起

staff *vt.* 提供人员; 安置职员

helpline *n.* 热线服务电话

Reading Comprehension

Directions: *There are four suggested answers to each of the following questions. Choose the best one according to the passage you have just read.*

1. According to the passage, if someone makes attempt to commit suicide
 - A. he will voice his purpose.
 - B. he will go to psychiatrists for help.
 - C. the sound of his voice will change.
 - D. he will be separated from depressed people.

2. Wilkes did study in order to
 - A. prove if Stephen was right.
 - B. record the percentage of the depressed patients.
 - C. see if "voice from the grave" was of practical use.
 - D. find out how "voice from the grave" was produced.

3. Which of the following is not a feature of "voice from the grave"?
 - A. Its frequencies are narrower.
 - B. It is made from the grave.
 - C. It is hollow and empty.
 - D. It is higher pitched.

4. According to Wilks, the frequency changes are due to
 - A. change of muscle tone quality of the vocal cords.
 - B. changes in moisture of the vocal tract.
 - C. changes in elasticity of the vocal tract.
 - D. all of the above.

5. The last paragraph of the passage is mainly about
 - A. the purpose of the helplines.
 - B. the volunteers who staff helplines.
 - C. practical use of "voice from the grave".
 - D. diagnostic devices for emergency rooms.

Passage 4

Directions: There are 10 blanks in the following passage. For each blank there are four choices marked **A**, **B**, **C**, and **D**. You should choose the ONE that best fits into the passage.

In general, the 1 a medical problem is to treat, the more treatment strategies exist. This observation is certainly true for migraine. Patients and physicians are constantly looking for 2 drug therapy, which is effective in the short term but may have severe 3 effects in the long term.

Nonpharmacologic treatments begin with common-sense advice, such as educating patients about headache and its 4, identifying and managing 5 and modifying lifestyle. Some evidence 6 for the benefit of behavioural treatment. In general, most studies for these types of treatments are small and 7 low methodological quality.

On the basis of the existing evidence, acupuncture should be an option for the first-line treatment of migraine to 8 other nonpharmacologic treatment options. It is at least as effective as prophylactic drug therapy, has longer lasting effects, is safe, seems to be cost-effective and reduces drug 9 with possibly severe unwanted effects. All of this can be achieved even if point selection is not as dogmatic and precise as 10 by the Chinese system.

- | | | | | |
|-----|-----------------|-------------------|----------------|-----------------|
| 1. | A. higher | B. greater | C. lesser | D. harder |
| 2. | A. alternatives | B. options for | C. choices of | D. routes to |
| | to | | | |
| 3. | A. unwarranted | B. unwanted | C. unwarned | D. unwakened |
| 4. | A. causes | B. manifestations | C. management | D. cure |
| 5. | A. triggers | B. complications | C. reasons | D. mechanism |
| 6. | A. exist | B. exists | C. existed | D. have existed |
| 7. | A. to | B. in | C. of | D. on |
| 8. | A. supplement | B. implement | C. complete | D. supply |
| 9. | A. eating | B. intake | C. consumption | D. drinking |
| 10. | A. proposal | B. propose | C. proposing | D. proposed |