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Mibyou-care Functional Food: Integrated Role and Use of Functional Foods in Mibyou-care

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Abstract

Functional food is currently well-accepted in society and is contributing to sustaining and/or improving human health and wellness. As a book of knowledge is accumulated on the pharmacological background of bioactive ingredients in food resources, the border between medicines and functional foods becomes obscure. On the other hand, Mibyou, an old concept in oriental medicines, which is alternately recognized as a sub-healthy or pre-disease condition, is now reevaluated as the primary target in preventive medicine. Mibyou care is thus the basic strategy for maintaining human health and wellness. Functional foods play a pivotal role in Mibyou's care. Based on the modern definition of Mibyou, it is worthy to classify the role and the use of currently distributed functional foods and integrate them into the Mibyou-care functional foods.

Keywords: Mibyou; Functional food; Mibyou-care; Mibyou-care functional food.

Abbreviations: DASHEA: Dietary Supplement Health and Education Act; FOSHU: Food of special health use; FDA: Food and Drug Administration, USA

Introduction

The idea that foods are medicine has been well accepted from the ancient in both oriental and Western societies. About 2500 years ago, Hippocrates, a father of Western medicine, said "Let food be thy medicine and medicine be thy food" [1]. On the other hand, almost 4000 years ago in China, 365 natural edible resources have been categorized into three groups according to their physiological and pharmacological functions [2]. The first group is those that are not toxic and have health-beneficial functions such as nourishing, astringent, and anti-aging functions, and, therefore, are good for the preservation and promotion of health by eating every day. The second group includes those having specific effects to stimulate or adjust certain physiological conditions. Therefore, they are useful as a remedy for adjusting certain distorted conditions but are not recommended to eat every day. The third group's resources are toxic and thus cannot be eaten, but are used for medicine to treat certain diseases. It is interesting to find the similarity to the current

concept of food functions contributing to human health. The health-promoting and disease-preventing functions of foods are currently getting more attention, and extended studies of food resources have accumulated scientific knowledge on the food functions and established a new category of foods named "functional food", and the related market is also growing in the longevity society [3,4].

Functional foods and drugs

Functional food is defined as FOSHU (foods of special health use) in Japan and distributed under government regulations as food that can claim health effects, such that this product is recommended to the person who tends to have high blood pressure [5]. The administrative regulations are diverse in other countries including EU but are almost similar to FOSHU. In the USA, due to DASHEA of 1944 [6] dietary supplements are distributed under FDA regulations and occupy a certain position in social health care. Functional foods are generally taken by normal healthy persons



and also the persons who are not yet ill but are anxious about developing diseases. Therefore, the primary purpose of taking them is for sustaining health and protecting against diseases. On the other hand, clinical medicines or drugs are used to treat diagnosed diseases. Therefore, there are differences between functional food and clinical medicine, typically, in terms of their composition and way of usage. Clinical medicines are made of a single pure chemical and the effectiveness is pharmacologically explained by the ligand-receptor interaction [7]. Although some of the functional foods are provided in the form of capsule or tablet as same as medicine, they are basically food that is a mixture of many ingredients including nutrients and non-nutrient components such as dietary fibers and polyphenols. Moreover, as is indicated by the term “functional”, functional food is implicated in giving certain pharmacological functions as same as medicines, since the specific bioactive component, often named “food factor or biofactor” in the food resources used for respective functional food, typically, the xenobiotics like polyphenols, lignans, and terpenoids, plays a critical role in the pharmacological function of the food [8]. Indeed, the functional foods distributed in the current market are called by a variety of names such as pharmafood and nutraceuticals which let us convince certain pharmacological or medicine-like effects. According to the accumulated knowledge of bioactive ingredients [9]. The border between medicine and functional food has become somewhat overlapped and obscure in terms of their application and usage. To use functional foods more effectively and reasonably in the preventive medicine field, it will be better to redefine the concept and classify the functional foods currently distributed in the market according to the usage and targets for their application.

Modern Mibyou and Traditional Mibyou

Another issue we need to discuss for the beneficial use of

functional foods is the physiological and/or pathological status of users. In modern medicine, the physiological state is categorized by two conditions that are healthy or ill, but in traditional oriental medicines, an additional physiological condition that is not healthy but also not ill has been defined between healthy and disease conditions and was named Mibyou. The Mibyou, alternatively described as a sub healthy or presymptomatic condition, was considered the primary target for disease prevention and thus treating Mibyou was more important than treating the diseases after diagnosis [10]. The significance of this traditional Mibyou concept is getting recognized in current preventive medicine [11, 12]. According to the current development of disease diagnosis technologies such as biochemical assays of body fluid samples and physical methods like imaging, the diseases are diagnosed at their very early stage, there, the patients can spend regular daily life as healthy people without taking care in hospital. Therefore, the traditional concept of Mibyou was renovated by Japan Mibyou Association into modern Mibyou, where the Mibyou is classified into two stages, that is, Mibyou-I and Mibyou-II, and they were distinguished from the diseases that need medical and nursing care in the hospital [13,14]. Here, the Mibyou-I is a condition similar to the traditional Mibyou. Although people feel some abnormality or disorder, clinical inspection or biochemical assay of disease markers do not indicate any diagnosed diseases. On the other hand, in the Mibyou- II, disease markers indicate the presence of certain disorders or diseases such as type-2 diabetes and even early-stage cancer; however, the patients can live or enjoy normal life although occasional assistance of medication or medical interventions are required. Therefore, the physiological and pathological conditions of humans have been defined by the following four stages; Normal (healthy) - Mibyou-I - Mibyou-II - serious diseases as shown in (Figure 1).

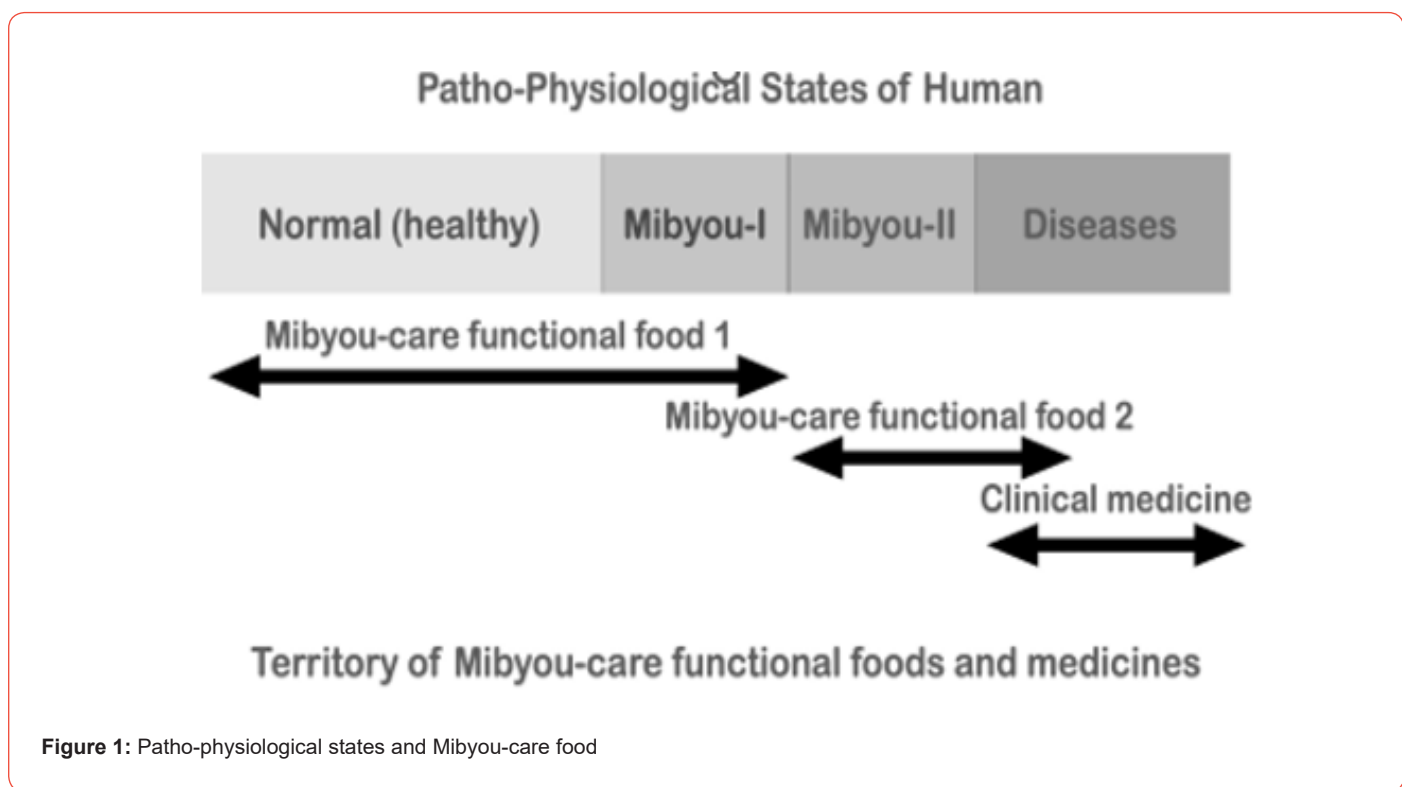


Figure 1: Patho-physiological states and Mibyou-care food

Mibyou-care Functional Foods

This concept indicates that Mibyou-care is the primary target in preventive medicine such as for preventing diseases and sustaining health and wellness in the longevity society [15]. The term “Mibyou-care” includes any practices to prevent Mibyou’s progression into diagnosed diseases such as diet, physical exercise, mental training, and remedies like massage and Yoga. Functional food obviously plays an important role in the Mibyou-care practice. The modern Mibyou concept defined above helps to make the target and the use of functional foods clear. For example, the functional foods distributed in a market can be interactively covered by the concept of Mibyou-care food, and the Mibyou-care functional foods are characterized by the following two types, according to the target for their usage [16]. The first type of Mibyou-care foods are taken by people in the normal and Mibyou-I stages and thus named Mibyou-care functional food 1. These are primarily taken for the preservation and promotion of health and wellness, therefore, the substantial targets are anti-aging and disease prevention through modulating such as oxidative stress, inflammation, immune function and gut microflora. Preservation of mental health, as well as immune and endocrine functions pivotal for maintaining the homeostatic potential, are also important targets of Mibyou-care functional food 1. They are able to be not only provided in common forms such as tablets or capsules used for the functional foods or supplements in the market, but also in the form of processed foods like ready-eat products such as candy or gel. Obviously, vegetables, fruits, and other raw foods enriched with nutrients and/or food factors also belong to this category.

The second type of Mibyou-care food targets people of the Mibyou-II category and is named Mibyou-care functional food 2. The Mibyou-care functional food 2 is used to control certain diseases in the Mibyou-2 stage and thus functional food like FOSHU or some of the nutraceuticals are classified in this category. In the Mibyou-care functional food 2, the bioactive ingredients play a pivotal role in their function, therefore, the target of action is rather clear. Therefore, beneficial use of these functional foods can be attained by monitoring respective biomarkers like blood sugar and blood pressure, for example, in the case of lifestyle diseases. Since drug-functional food interaction is another problem, we need to be aware [17] and thus medical intervention and an appropriate guide for using Mibyou-care functional food 2 by medical and/or nutritional professionals are recommended. Further, the Mibyou-care functional food 2 will also play a role in complementary and alternate medicine practices as an adjuvant to increase the efficacy of medication or certain therapies like chemotherapy and radiotherapy.

Conclusion and Perspective

The role of functional foods is getting approved for sustaining human health, anti-aging, and prevention of diseases. Moreover, the social need for functional food is high for a wellness life which includes such fields related to mental health including depression and mood, sleep, locomotive function, fatigue, and ED as the important targets of Mibyou-care. Further, in the functional foods used in Mibyou-care, the effects of mental and psychological factors

cannot be ignored as a factor affecting their efficacy, where the placebo effect will play a significant role. Although the placebo effect has to be discriminated in clinical medicines [18], we need to discuss the appropriate use of the positive contribution of the placebo effect especially in the use of Mibyou-care functional food 1 as far as their safety and non-toxicity are certified. This small article may help to initiate discussions on the more beneficial use of functional foods for human health and wellness.

Conflicts of interest

The author declare that he has no conflicts of interest.

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