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## Japanese User Tolerance Until the Medicine Effect Occurs



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HUMAN

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### ABSTRACT

Medicines are substances used to diagnose, treat, and prevent diseases in humans and animals. In Japan, many medicines are available after medical examination at hospitals, pharmacies, and drugstores in the city and by mail order. When taking medicines for treatment or prevention, it is rare to realize that the effects can be obtained immediately after taking them. In this article, we discuss how people using medicines think about the period during which the effects of medicines occur. In Japan, pharmacies and clinics act separately. Dispensing is performed mainly at a pharmacy based on the prescription written by a doctor after a medical examination at a hospital and presented by the user. When a doctor examines a patient at a hospital, and the prescription is presented at the pharmacy, it is classified as a medicine obtained at the hospital. Over-the-counter drugs (those not prescribed for each user, OTC medicines) are considered separately from prescribed medicines.



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## INTRODUCTION

Medicines are substances used to diagnose, treat, and prevent diseases in humans and animals. Diagnostic medicines are used for clinical tests in some hospitals and laboratories (e.g., X-ray contrast agents, blood test reagents). Although medicines for treatment or prevention are taken, medicines for diagnosis are not. In Japan, many medicines for treatment and prevention are available after medical examinations at hospitals, at pharmacies and drugstores in the city, and by mail order. Many medicines designed to maintain health are promoted on TV and in magazine advertisements. Medicines, unlike foods, should not be taken daily. Drugs are taken at a temporarily prescribed dosage to achieve the purpose. While the effect is expected for most patients, the action involves the risk of side effects. In particular, drug administration is required to comply with the dosing method (i.e., when and how to take it). Side effects are more likely to occur when the dosage is changed, such as increasing the dosage because no effect is obtained or more effect is desired.

When a medicine is taken to treat or prevent disease, the effect can rarely be obtained or realized immediately after taking it. Only the achieved diagnostic purpose can be confirmed immediately after use because the test results are given in a visible form. Alternatively, the person using the medicine (the person who has undergone the test) may not be very aware of the use and may not be interested in it. When a medicine is used for therapeutic or preventive purposes, it may be unclear whether the effect is manifested, even if it is of interest to the user whether the medicine effect cures the disease or maintains health. It may be indistinguishable from natural healing<sup>1)</sup>. In this paper, we discuss how Japanese people (hereinafter referred to as users) think about the period during which the effects of medicines prescribed by doctors or purchased at general pharmacies occur. We obtained some information from the previous research on supplements (healthy foods)<sup>2)</sup>. In Japan, pharmacies and clinics operate separately. Medicines (medicinal drugs) may be dispensed in the hospital, based on the prescription written by the doctor, or at pharmacies. The classification is shown in Table 1. In both cases, these were defined as medicines available from hospitals and considered separately from over-the-counter drugs available at pharmacies and drugstores (that are not prescribed for each user; abbreviated as OTC medicines). Diagnostic medicines will not be discussed further in the following text.

***Taking medicines for preventive (health-maintaining) purposes***

When a person becomes ill, medical personnel, such as doctors and pharmacists, estimate or confirm the disease name and select medical treatment to be performed. When a user is subjectively in good physical condition or health, it is rare to seek instructions from a medical professional. In many cases, people select medicines by self-judgment or by taking advertised products. The main sources of the latter are Internet search results, TV, and magazine articles. Typical examples of medicines include vitamin tablets and energy drinks. The effect may not be clearly stated, but various supplements are usually considered to be similar. The use of the product is often continued even if the effect cannot be felt. Usually, the person is not particularly ill and does not feel sick. The common reasons for a person deciding to use such medicines are because he/she is worried about the balance of nutrition taken from food, lack of sleep, and poor physical condition due to aging and fatigue (i.e., it cannot be said that physical deterioration is involved, and it cannot be objectively determined that medicine is needed). Although the improvement is not seen in many cases (because the person is originally in good physical condition), it is thought that the placebo effect is responsible for the maintenance and perceived effects of the medicine.

In such situations, it is important to evaluate objectively whether the medicine overdose may be causing side effects and worsening one's physical conditions<sup>3)</sup>. Medicines are promised to be effective and may have a strong effect. They are likely to affect the body and cause poor physical conditions. Side effects are more likely to occur if the medicine is not taken according to the prescribed usage and dosage. Overdose is not recommended, even if you want to get better results. Healthy people usually do not have problems getting sick with these medications when following the above rules.

***For treatment (curing or alleviating diseases)***

When a medicine is used to correct a disease, the fact that the effect does not appear in a short time is one of the reasons for discontinuing or changing to another medicine<sup>1),4)</sup>. In the case of medicines that are prescribed individually at hospitals, doctors and pharmacists explain that it may be dangerous to continue taking medicines or stop halfway. In city pharmacies, pharmacists and registered sellers do not explain much. Even if it is adequately explained, it is easy for the prospective user not to hear or forget it. Some think they are free to stop or change the amount or type of medicine because they bought it at their discretion. Medicines

for life-threatening treatment are available only in hospitals. This is because it can be combined with a surgical approach and a definitive diagnosis can be made by examination. However, Japanese people tend to rely on over-the-counter drugs and folk medicines rather than going to other hospitals for a second opinion when the hospital does not seem to be effective. This may be due to differences in the values and accessibility of hospitals and pharmacies. It may also depend on the difference in consciousness between getting medicines and going to treat diseases. The event of changing medication may depend on whether the person's personality is cautious or not. Not even medical personnel can guarantee medicine efficiency. It is even more difficult to predict the effects when an individual obtains a medicine without being properly diagnosed at a hospital or when the medicine is advertised and purchased OTC. The customers tend to stop taking it as soon as they feel that the effect is not as expected (at the earliest, in 2–3 days). When taking medicines obtained at hospitals, medical information such as doctors' advice may lead to an extension of use<sup>5)</sup>. It should be recognized that medical practice is not the role of pharmacies. Further, providing information when medicines are purchased by mail orders is neglected even more.

Depending on the type of medicine, it may be better to continue taking it for an extended time even if the effect is not felt. For example, minoxidil, recognized in Japan as an ingredient for treating alopecia, is a pharmaceutical ingredient applied to the scalp as a hair restorer that can be purchased at drugstores and pharmacies. According to the distributor, it will not be effective unless it is applied continuously for at least 3–6 months<sup>4)</sup>. A scientific rationale for this is clear, such as that hair growth consists of multiple steps. Although it is recommended to apply the medication for a long time, we suspect it is rare for the user to read, understand, and follow the text properly. Experts such as pharmacists also tend to focus on communicating side-effects information and do not say much about the period of use. Similarly, medications to treat infections require continuous application even if they appear to be completely healed<sup>6)</sup>. The rationale is that pathogenic symptoms can become weaker and then stronger, and the pathogen is distributed throughout the body. Suddenly stopping medicines treating mental illness could make the condition much worse than before, even if it feels that the medicine is not helping.

In addition, prescription medicines at hospitals are often dispensed to patients to last 14 days unless there are special circumstances<sup>1),7)</sup> such as if the patient has difficulty coming to the hospital; in such cases, one month's worth of prescription may be given at once. This period

is partly due to the doctor's medical-care cycle, but also to regularly monitor and mitigate the side effects of medicines that may occur during that period (adjusting the dose or taking other drugs at the same time may reduce side effects). Also, some medicines may deteriorate when stored incorrectly at home for a long period. Hence, medicines are dispensed every two weeks<sup>3),8)</sup>. Many medicines are effective within two weeks, but even if they are not, this should be confirmed by a medical personnel<sup>1)</sup>.

### *Differences in medicine handling depend on the type of medicine*

Western medicines are usually synthetic, manufactured as tablets and capsules. Oriental medicines, including herbal medicines originating from natural animals and plants, and Chinese medicines such as decoctions, basically do not differ in their effectiveness and the presence or absence of side effects. Many Japanese users may think that Western medicines are artificial and have strong side effects and that Oriental medicines are derived from natural products and have few side effects<sup>9)</sup>. Some people may think that oriental medicine is less effective. Currently, many hospitals are using both types of medicines and prescribing them selectively, so it seems that users do not need to consider the difference. However, many users think that Oriental medicine can be taken easily without medical personnel's guidance. While going to a hospital requires a decision, many people feel free to get medicines at pharmacies. This is despite the difference in the amount of information about medicines and diseases obtained at that time. Although not shown numerically in this paper, it is reflected in the difference between staying time at hospitals and pharmacies. Going to the hospital and trying to get medicines is when the illness you are suffering from is so serious that you do not think you can easily treat it with medicines alone, or when you do not know what kind of illness you are suffering from. When the symptoms are mild, it is often the case in Japan that the medicine is obtained at a pharmacy and treated without going to the hospital. There are pharmacists and registered sellers in pharmacies and drugstores, and they are accountable at the time of sale, but explanations may be omitted if the user has been using the product continuously or says that explanation is unnecessary. In the case of mail-order sites, it is not usually explained verbally only by being given a cautionary note, and it is difficult to obtain side-effects information. Unfortunately, compared to hospitals, the same stores, and mail-order sites are rarely used continuously. The staff at pharmacies and drugstores cannot track medical records and medication history and may not be deeply involved with the users. Users sometimes dislike detailed explanations; unfortunately, it is difficult to obtain accurate

information. Many users dislike medical examinations and tests at hospitals but like medicines. Drugstores and mail-order sites may meet their needs.

### *For supplements*

The previous research on supplements that are not medicines<sup>2)</sup> positioned supplements as a part of healthy foods. Their original purpose is to supplement nutrients that are deficient in diet alone. Products with special functions that are useful for health have been on the market. For example, some products state effectiveness in recovering from fatigue, increasing physical strength, and preventing aging<sup>2)</sup>. Some users state that it is difficult to stop taking medicine even if some effect claimed to be obtained cannot be felt. The former is because the customer wants to continue obtaining medicines' effects. The latter is due to the belief that continuous administration may have an effect in the future. Unlike medicines, supplements are considered to be weak even if they exert an effect, but it cannot be said that there are no side effects. It is the same as a medicine that you can easily buy at a pharmacy and may expect too much<sup>2)</sup>. Unlike medicines, at least 43.8% of users find supplements effective (Fig. 1). These users do not know when to stop taking supplements even if there are occasional side effects (Fig. 2), triggers to discontinue, or replace with other supplements. However, there are cases where the patient continues to use the medicine with anxiety because they do not understand its disadvantages. Even if it is a supplement, side effects may be treated at the hospital, so if possible, it is said that a medical technician can check if you write down the type of supplement used<sup>2)</sup>. The same applies to using medicines.

### **CONCLUSION**

This article discusses how long Japanese people should wait for the effect of medicine to occur. If the effect appears early, it is not a problem. If the effect does not appear quickly, the user may stop taking the medicine. We explain that this may be ineffective and cause side effects. If the purpose of medicine is to treat a disease, it is important to learn how to use it before taking it. Subsequently, it is better to consider carefully before stopping any medicine and relevant information should be obtained from doctors, pharmacists, and registered distributors. In general, medicines have advantages and disadvantages. Depending on the type of medicine, the effect may appear only slowly even though it is effective, so it is better to consider this when determining the duration of continuous use carefully. If medication must

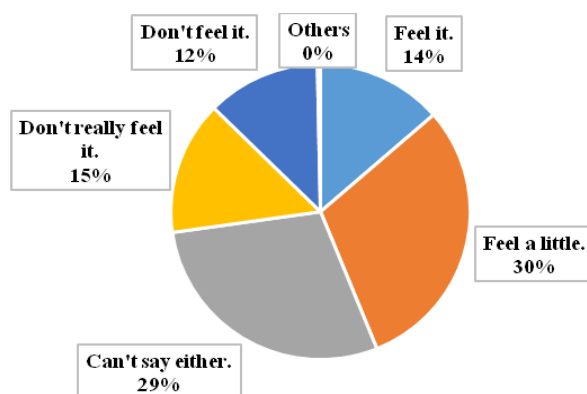
be stopped suddenly, medical staff must be consulted<sup>5)</sup>. Even when taking a supplement for maintaining health, there is a risk of side effects, so it is important not to overdose.

In addition, the duration of taking medicines is affected by the difference in how the user perceives hospitals, pharmacies, and drugstores. By going to the hospital, medical examinations reveal the patient's condition, but doing so, it is easy to think that going to a hospital is a high and expensive hurdle (often, it is unclear how much it will cost before receiving medical treatment). Pharmacies are easy to reach, and it is easy to judge the availability after hearing the price of the medicine. However, it is difficult to provide medical care on the spot, and one may not get the medicine that best suits their condition. While the medicine is easily available, the user understands that the medicine may not fit the disease in question. Hence, if the effect is not seen, one is likely to stop taking medication. The same applies to medicines prescribed in hospitals, though not as much as those obtained at pharmacies. In any case, the medicine should be selected and used after one is adequately informed. At a hospital, the physician will select the medical treatment and the medicine. In pharmacies, the customer should listen to and heed the information provided by pharmacists. When considering mail-order sales and personal imports, the user must obtain the correct information and decide which medicine is appropriate<sup>5)</sup>. The user also needs to know and consider the risk of side effects. Finally, how long the treatment will continue to be used even if it does not seem effective, depends on the user's personality, the acquisition route (hospital, pharmacy, *etc.*), and the advice of medical personnel. In any case, sudden discontinuation may cause side effects and should be reconsidered. If you have any questions about medicines, you should feel free to consult with a drugstore or pharmacy specialist selling you the medication.

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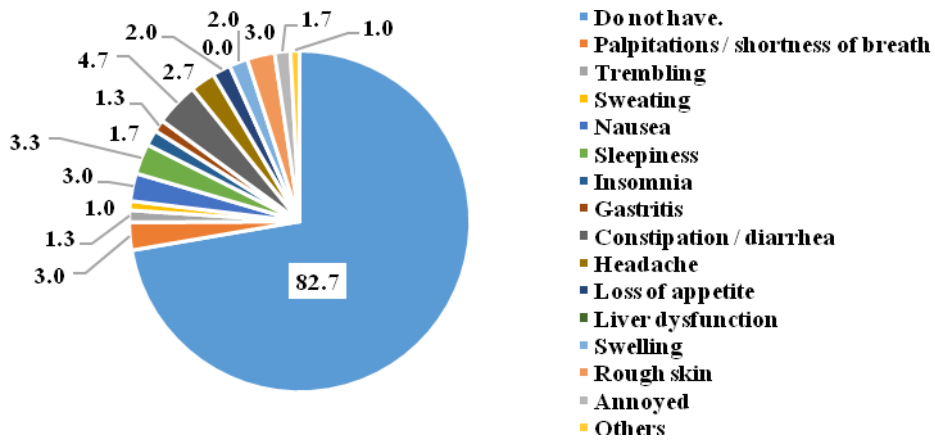
**Fig no. 1 Do you feel the effects of using supplements?**

A web survey was conducted on July 15–16, 2021 for 500 marketing research monitors.

Number of valid responses: 301 (number of people who have used supplements).

Based on the data in reference 9).





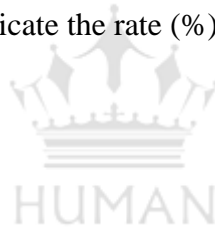
**Fig. no. 2 Have you ever been sick after taking supplements?**

A web survey was conducted on July 15–16, 2021 for 500 marketing research monitors (multiple selections allowed).

Number of valid responses: 301 (number of people who have used supplements).

The numerical values in the figure indicate the rate (%) of side effects.

Based on the data in reference 9).



**Table no: 1 Classification of medicines**

Classification	Subclass		Description
Medical drugs <sup>*1</sup>	Prescription medicine		A medicine that cannot be purchased by the general public without a prescription from a doctor. To obtain it, you need to see a medical institution such as a clinic and get a prescription from a doctor or dentist.
	Medical drugs other than prescription medicine		As with prescription medicine, the principle is to deliver medicines based on prescriptions, but if the conditions are met in the 2005 notification, it has become possible to purchase medical drugs other than prescription medicine without a prescription.
	Pharmacy manufacturing and sales of medicine		A product that can be manufactured in the dispensing room of a pharmacy by obtaining approval.
OTC (over-the-counter) medicines <sup>*2</sup>	Medicine requiring guidance		A category newly established in June 2014. Medicine is defined as “a medicine that may cause health hazards to the extent that it interferes with daily life due to side effects, but requires special attention regarding its use and contains newly marketed ingredients”. Face-to-face sales are required.
	Non-prescription medicine <sup>*3</sup>	Class 1 medicine	The risk is high, and it is obligatory to sell by a pharmacist and to deliver a document to the user at the time of sale.
		Class 2 medicine	The risk is a little high, even registered sellers can sell it, and it is obligatory to make efforts to deliver a document to the user at the time of sale.
		Class 3 medicine	The risk is relatively low, even registered sellers can sell, and there is no need to issue a document to the user at the time of sale.

Based on reference 10).

\*1: A medicine that is used by doctors, or is prescribed to be used by the prescription or instructions of these persons. Face-to-face sales are required.

\*2: Over-the-counter medicines that do not require a doctor's prescription at the time of purchase.

\*3: Medicines that can be purchased without a doctor's prescription. In Japan, it has become possible to purchase on the Internet after 2017.

