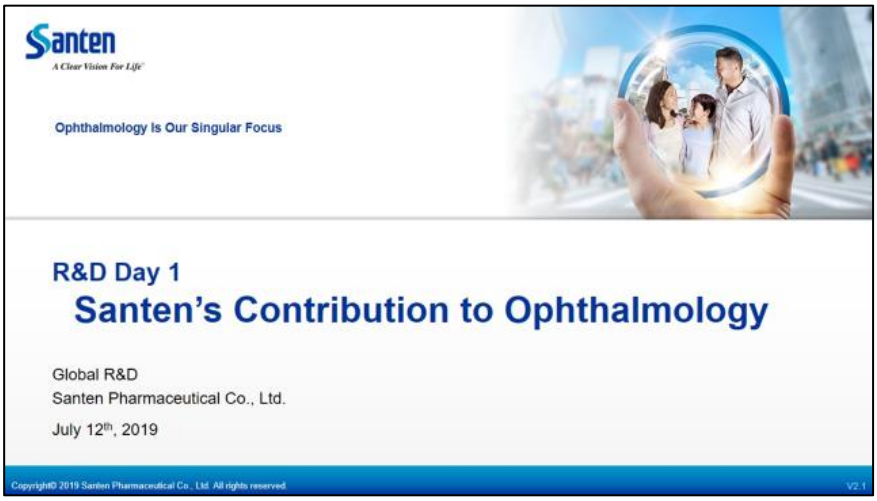
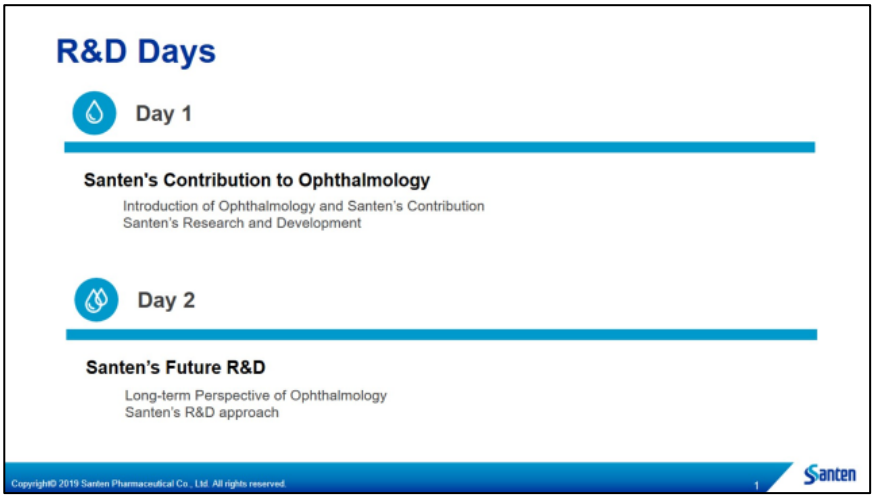


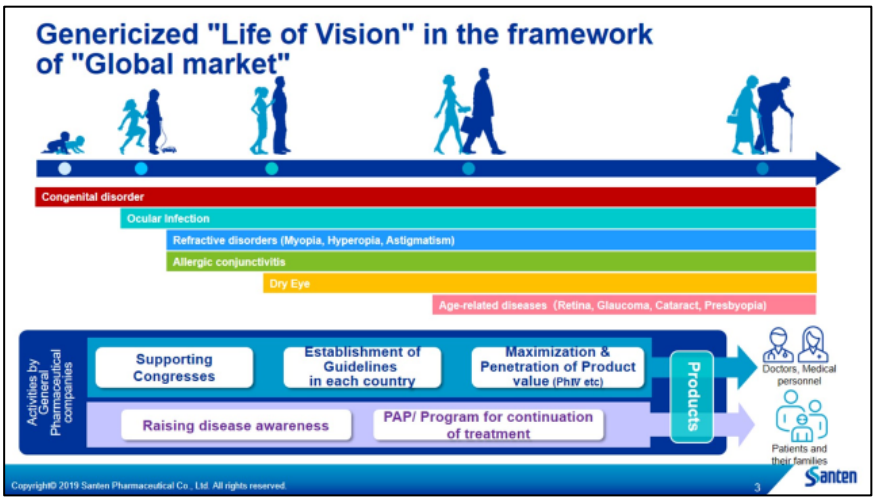


Santen Pharmaceutical will be offering two opportunities to deepen your understanding on Santen's R&D activities, which is one of our strengths. Today is Day 1 and we named this session "Santen's Contribution to Ophthalmology". We will give an overview of ophthalmology and related diseases and where Santen's business lies. We will also discuss our R&D activities and how we have been making contributions to ophthalmology in line with our policy.

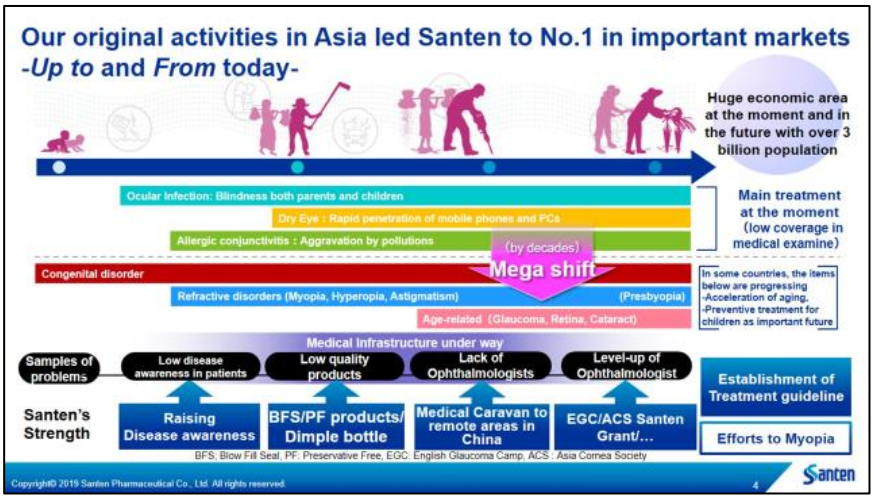
On September 6, Friday, we will hold Day 2, in which we will focus on long-term outlook of ophthalmology, and Santen's initiatives going forward.

Suzuki: Thank you very much. I am Satoshi Suzuki, Head of Corporate Development Division. Welcome to our R&D day. Let me begin by explaining what Santen has been doing in this business.

Of course we always start with our Values and Mission Statement. “Tenki ni sanyo suru” means we think carefully about what is essential and decide clearly what we should do and act quickly. So, in our action and mission, we need to consider the root cause of various challenges and issues. We are trying to capture the healing powers that can be found in nature. While pharmaceutical products are our main focus, we want to go beyond that, as we try to think of what solutions we can provide. Whether the problem is caused by a systemic disease or ophthalmic disease, we consider how many patients are suffering from the disease, the market size, and so forth. That’s the standard way of looking at the pharmaceutical business. Later, our R&D presentation will explain these points, but first I would like to explain about Santen’s overall approach.
It is important to look at each disease, and explain available treatment options and technologies. On the other hand, when we look at the course of each patient’s lifetime, we realize patients suffer multiple diseases. In this sense, it’s important to take multi-faceted approaches to prevent all potential burdens on the patients - this is what we must do to restore the health of patients’ eyes.



The approach shown here may look like a standard, packaged approach. As you can see, the individual faces are anonymous. What kind of patient we are talking about is not quite visible. Some patients, for example, may suffer from congenital disorders from childhood, then suffer develop ocular infections later on. Some suffer from reflective disorders such as myopia, astigmatism, and also hyperopia. You could have allergic conjunctivitis any time in the course of your life time. And you may suffer from dry eye as well.
Recently, electronic screens (tablets) are being used in preschool and elementary classrooms. Therefore, dry eye population is increasing. There are also age-related diseases, including retinal disease, glaucoma, cataracts and presbyopia. Generally, pharmaceutical companies provide support for various academic meetings and help establish guidelines in different countries, and support healthcare professionals and stakeholders to maximize product value. For patient and families, we provide disease awareness activities, patient support program, program for continuation of treatment, and our products. With this standardized treatment or packaged treatment, are we really able to respond to the needs of each patient? This is why we are taking our own approach by taking advantage of Santen’s strength.



Because of time limitation today, I would like to explain using Asia's case as an example - we are strong in this region. As you know, 2.6 billion people are in China and India, and of course many more if we add other Asian countries. This is a huge economic zone and will expand even more. Let's look at what kind of ophthalmic diseases they are suffering from.

As shown in the previous slide, ocular infections, dry eye, allergies are the main disease areas. For example, in some Asia or ASEAN countries where agriculture is still the major industry, many families operate farms. While working on the farm, the father and the child may get damage in their eyes from plants for example. And they wash with water that might not be clean. This could start an infection. Eyes could also suffer from a motorcycle ride without eye protection to a faraway hospital in polluted air. At the hospital, antibiotics and steroids may be prescribed, but quality of these drugs may not be sufficient. In the worst case, both father and child could eventually lose their sight. The challenge in Asia is, as shown in this example, if you use water that is unclean to wash your eyes, it will cause ocular infection. This fact is not well known, so lack of disease awareness is a big challenge. Products containing high levels of preservatives, or products in poor packaging are still on the market. There are still challenges like these.

Regarding the treatment provider side, the lack of physicians is a major issue. For example, in China, the number of physicians is increasing each year, and now, 36,000 ophthalmologists operate. Still, that is 1/5 of Japan on a per capita basis. Access to medicine is limited because of the lack of ophthalmologists. Doctors struggle with treating patients with complex and severe conditions while managing so many patients. Treatment options are limited because some medicines have quality issues and access to the latest treatment is also very limited. Of course, local companies and multinational corporations are providing various solutions to address these challenges. Santen is the only one that has been offering overall solutions that covers various regions and areas.

Of course, raising disease awareness is one of our activities, but also with blow-fill-seal technology, preservative free products and products in our dimple bottles, we can provide high quality products.

And as to the lack of ophthalmologists, last year, we provided a "Medical Caravan" to remote parts of China in collaboration with urban doctors and local governments. In remote areas, there are many patients with infections, as well as cataracts, but there are still challenges with regard to surgery and techniques. Santen has been providing support there. Other initiatives aim to enhance physicians' skill.

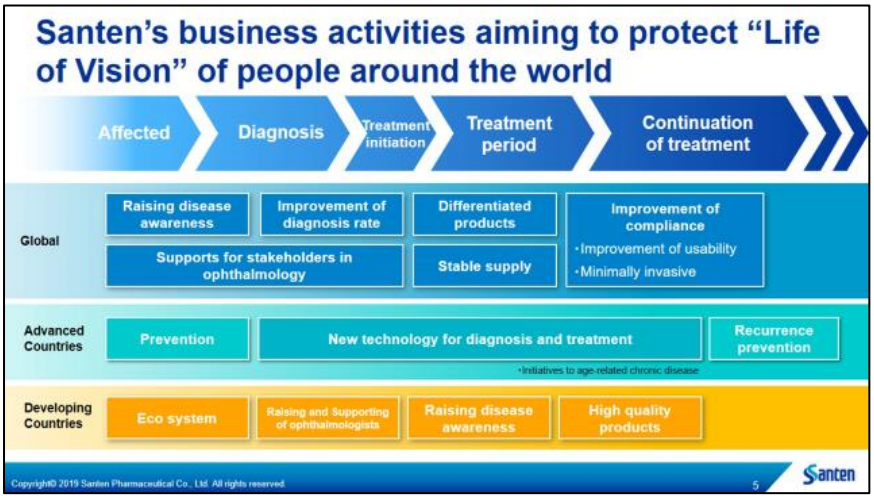
For example, we organized English Glaucoma Camp. That is a symposium to promote exchange between Korean, Thai, and Japanese doctors. Also, we provide support to the Asian Cornea Society. We created a network with doctors from India, Korea, Japan and Singapore. Younger doctors and mid-level-experienced doctors get together and gain experience in various hospitals. Korean doctors will go to India, or the Singapore-based doctors learn in Kyoto. We continue these kinds of programs, so that the standard of

medicine will be improved.

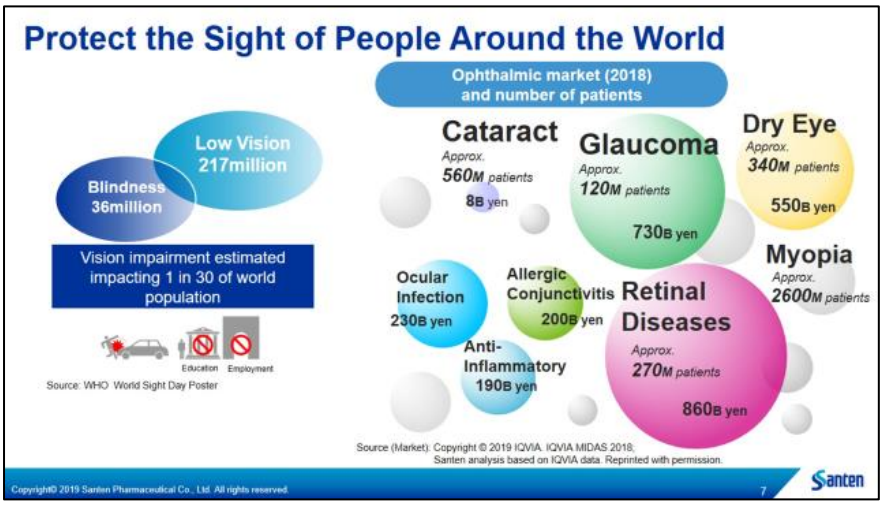
That has been one of the success factors for our company. Our products enjoy number one or number two position in Asian markets. I think these activities support our position in the region.

For the main therapies, like infections, dry eye, and allergies, access to medicines is still limited. There are more patients who need treatment and through these activities, we hope to provide better access for patients. With economic growth, the patients treated will increase. So, going forward, this market would expand further.

When you look at the future, the situation of current treatment of major disease area will go through a mega shift and become closer to that of advanced countries in the next decade or so. Some countries have already been facing aging population and there are various measures taken for children to slow or prevent cases of high myopia. High myopia is characterized by axial length elongation, that is, the eyeball grows too long and becomes oval-shaped. There is a risk that high myopia may develop into more serious disease. So, from school-age children, we need to prevent myopia to prevent onset of different disease. A mega shift is expected to happen. We have bases in China and Vietnam. Although the glaucoma market in these countries is still small, we have been providing products, our knowledge and expertise there. That has been driving our growth. And in the future, with a bigger mega shift, we will be able to provide much greater contributions.



In this background, let's look at the patient journey. What Santen is trying to do may look like a packaged or standardized approach at first glance. But I hope today you'll understand that we have been taking various approaches, global-based approaches, efforts to address the needs of developed countries, and approaches to respond to the needs of developing countries. We can provide products that have been developed in developed countries and that can be used in developing countries. What is unique about Santen is we cover both developed and developing countries. We can provide bridge between the two. We can bring benefits from developed countries to developing countries, and that will address many of existing issues. Through collaboration with Singapore Eye Research Institute (SERI) and Santen Venture Fund, we gain access to state-of-the-art technologies. With this, we may be able to address many issues. For example, DE-128 PRESERFLO MicroShunt is a treatment for mild to severe glaucoma. There are patients in ASEAN countries who have difficulty seeing a doctor because they live in a remote area, or the prescription of 2 or 3 medications is not possible. PRESERFLO MicroShunt, if we can provide that to those patients, we can make a big contribution to society. Regarding forward-looking aspects, that is for our second R&D meeting. Today I wanted to explain Santen's approach in Asia. We do have good track records in Asian countries so far and we hope to continue this. And we hope to expand this further. Now, let's go into R&D part.

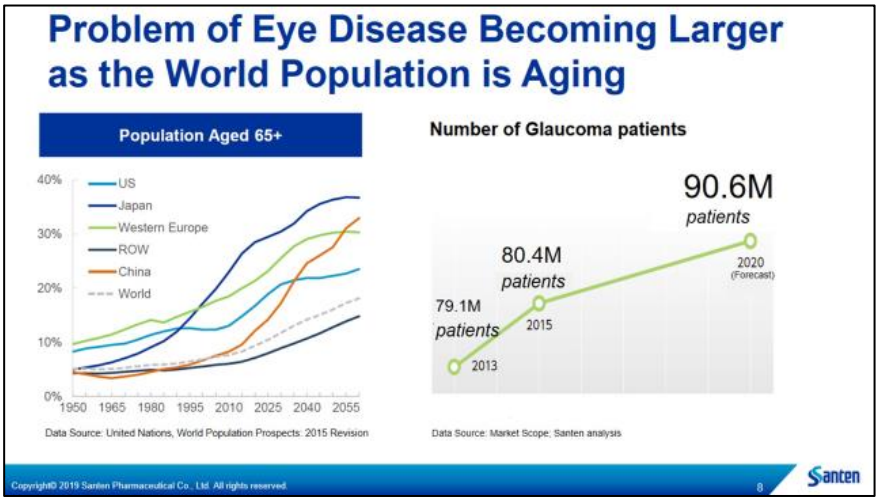


Morishima: I am Morishima, Head of Pharmaceutics & Pharmacology.

To begin with, I'd like to talk about ophthalmic disease areas surrounding Santen. About 217 million people worldwide have visual impairment and about 36 million are totally blind.

The eye is a sphere about the size of a 10-yen coin and it's an important organ that deeply affects our activities, including looking at things and reading letters and it can even affect tasting, balancing, and movement. 1 in 30 people in the world suffer from visual impairment and there are three times greater risks to have a traffic accident if you have visual impairment and there can be impact on employment, working, learning, and social and economic activities.

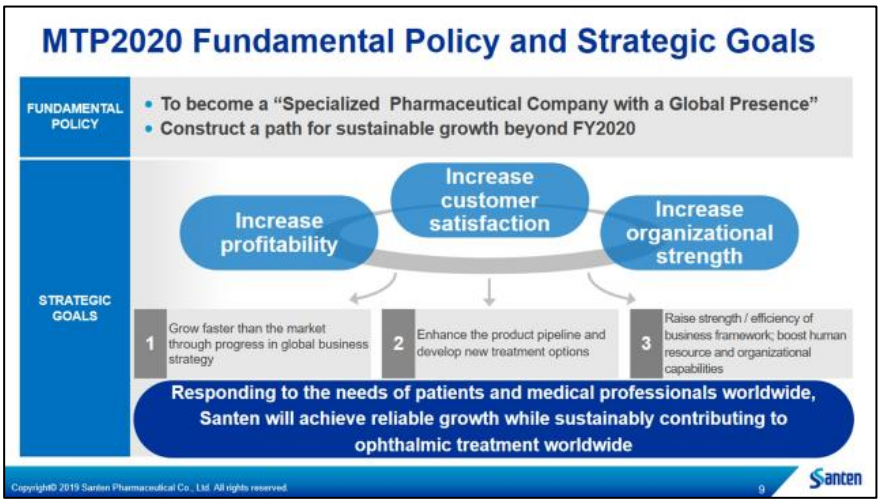
So, this kind of visual impairment can have very problematic impacts on individuals' lives.



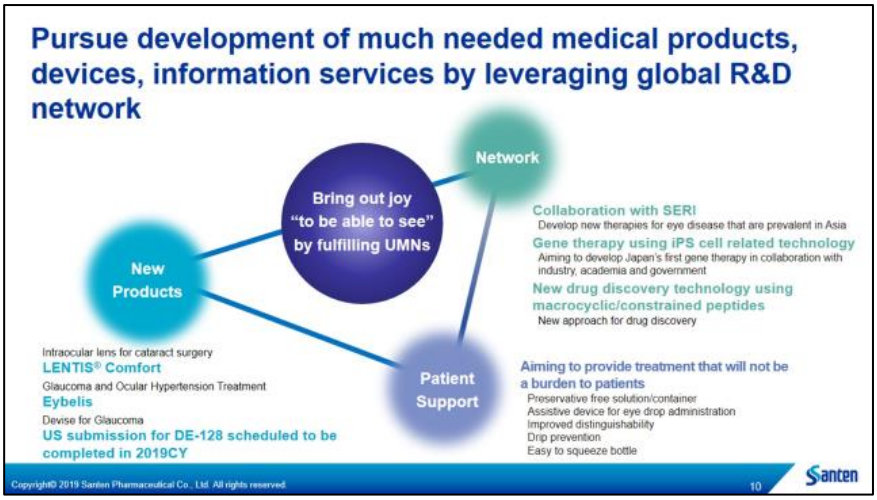
The patient size suffering from ophthalmic diseases is shown on the right side of this slide. The current ophthalmology market is close to 3 trillion yen, of which about 70% is represented by retinal diseases, glaucoma, and dry eye.

The average annual growth rate of the prescription drug market as a whole is said to be about 2%, but the world's ophthalmology segment grows around 5% to 6%. And there are no drugs now to treat myopia. If you consider myopia to be a disease that deviates from the normal condition, that means there are 2.6 billion untreated patients.

Many ophthalmology disorders and vision problems develop and increase as the population ages. The figure on the left shows the proportion of people over the age of 65 in each region. In China, shown in orange, aging will rapidly accelerate and the challenge of ophthalmology diseases will increase beyond 2020. The right graph shows the number of glaucoma patients in the world, which is one of our priority areas and the number is growing. Soon, it will reach 100 million.

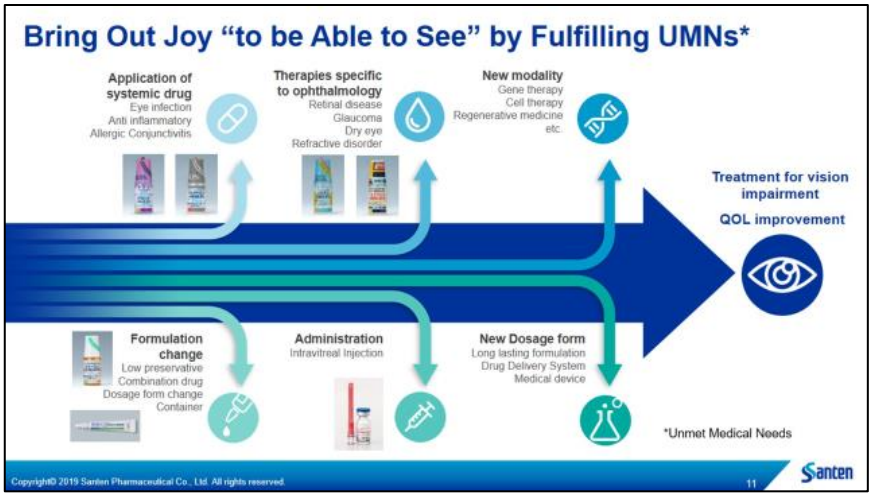


This is the fundamental policy of our mid-term plan, MTP2020, which focuses on ophthalmology. Expansion of our pipeline and development of new treatment options are vital factors for achieving the long-term vision of a specialized pharmaceutical company with a global presence. Research and development also plays an important role in ensuring the product is approved and commercialized in each region. To this end, the R&D division always focuses on talent recruitment and development while also striving to improve its capabilities as a global development platform.



Santen's product development is a different approach from mega-pharma companies. We are using our R&D network globally to acquire product candidates through licensing and co-development with external parties. We accelerate development in collaboration with the world's leading organizations in the development process, as well as are increasing the probability of success of each project.

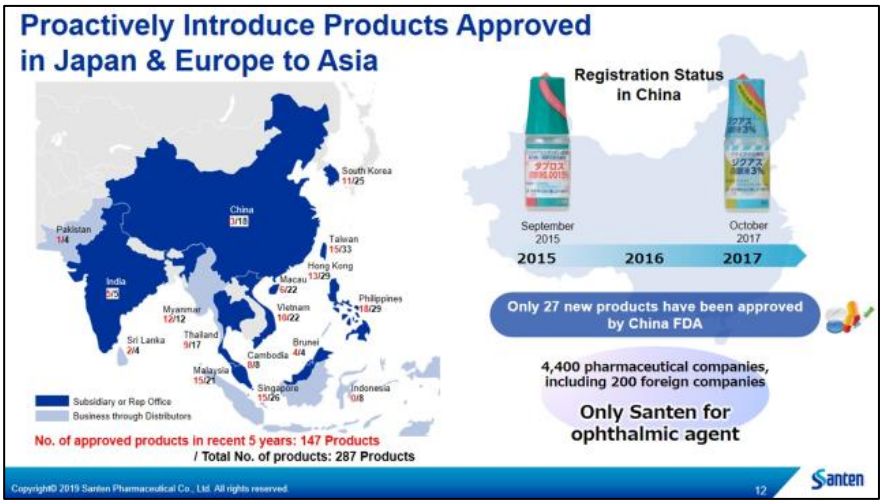
In gene therapy, we have started development and we are also working with PeptiDream for constrained peptides. We have succeeded in developing products gained through seeds developed from external networks. And last year, the LENTIS Comfort IOL and Eybelis for glaucoma were launched in Japan. In addition, we are planning to submit an application for PRESERFLO MicroShunt in the United States this year for launch next year. Furthermore, although it may be unique to ophthalmology, even if a good product is marketed, there are many patients who drop out of their treatment. We are continuing the improvement of our products and our containers, so that people will continue their treatment. We hope to contribute to treatment by developing eye-drop aids as well, improving formulations and containers supporting patent adherence.



Shown here is the transition in ophthalmic treatment to date. In the field of ophthalmology, the first approach was to apply systemic drug to ophthalmology, application of antibiotics, anti-inflammatory drugs, and anti-allergic drugs to ophthalmology are typical examples. So, we continually try to improve solutions, medications and containers to improve adherence and support continuation of treatment.

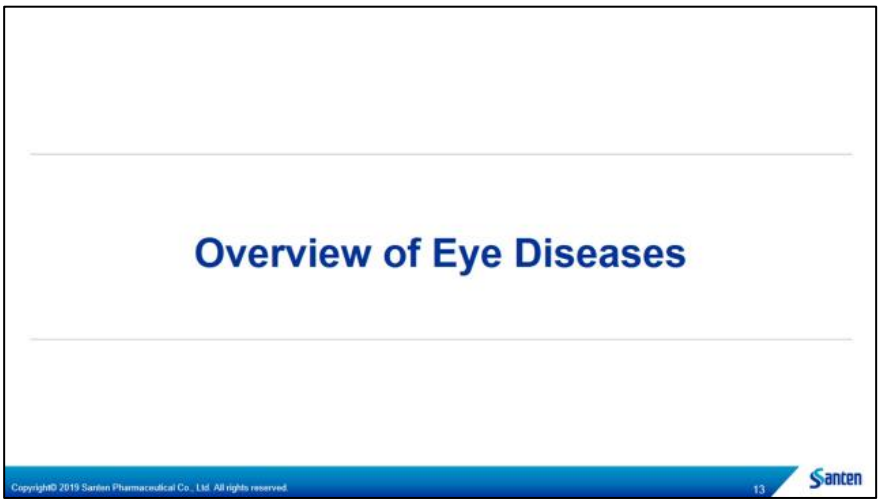
Santen Pharmaceutical launched the world-first drugs, such as Diquas and Eybelis. We are continuing to address retinal diseases, glaucoma, dry eye and refractive disorders, in order to launch more world-first drugs. The front of the eye may be treated with ophthalmic solutions. But, for the back of the eye, intravitreal injections have emerged as a retina treatment. In the future, innovative therapies, with new modalities, such as gene therapy, cell therapy, and regenerative medicine are expected. New therapeutic agents are

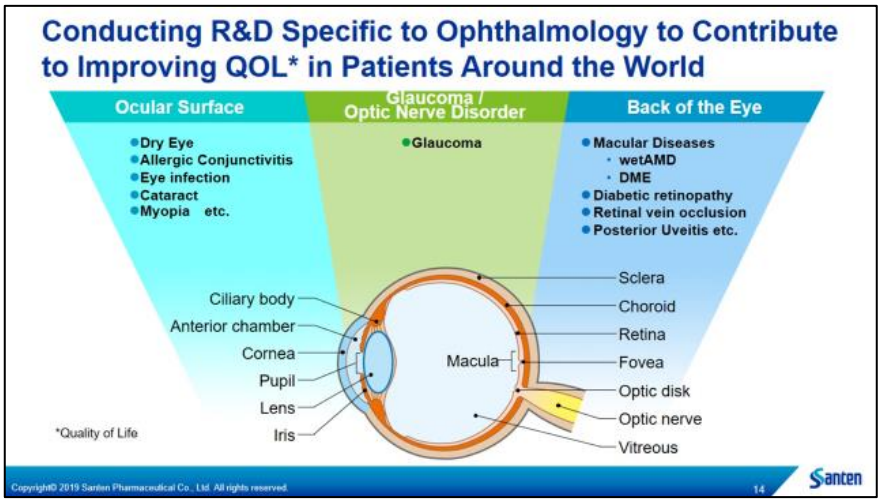
expected to be become better treatments. Long lasting formulations are examples. Santen will continue to lead all of these ophthalmologic treatments with an aim of improving QOL of patients.



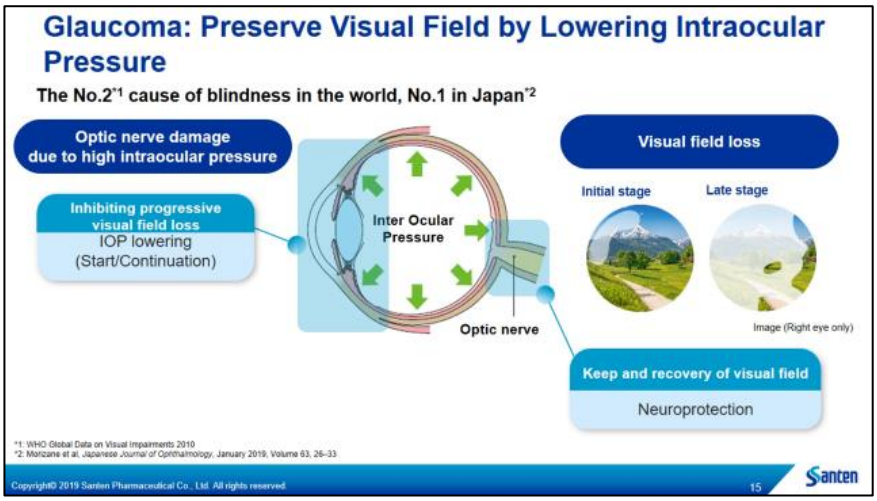
In addition, we are proactively engaged in regional expansion, so that products developed in Japan, Europe, and the United States can be used in many other regions.

This slide shows a recent registration status in Asia. Over the past five years, 147 of our products have been approved. In particular, in China, where we are focusing, Tapros ophthalmic solution, a glaucoma drug, was approved in 2015 and Diquas, a dry eye treatment, in 2017. There are approximately 4,400 pharmaceutical companies, including 200 foreign pharmaceutical companies in China. However, only 27 new products were approved in all of the disease areas over the two years from 2015 to 2017. Of these, Santen Pharmaceutical has received approvals for two drugs. In addition to creating new products in major developed nations, Santen would like to proactively register products in other regions and expand medical treatment opportunities for patients who have not been treated, while also improving our regulatory capabilities.





Matsugi: My name is Matsugi, from R&D Strategic Operations. Now, I'd like to talk about the overview of the eye diseases, and some of Santen's initiatives.

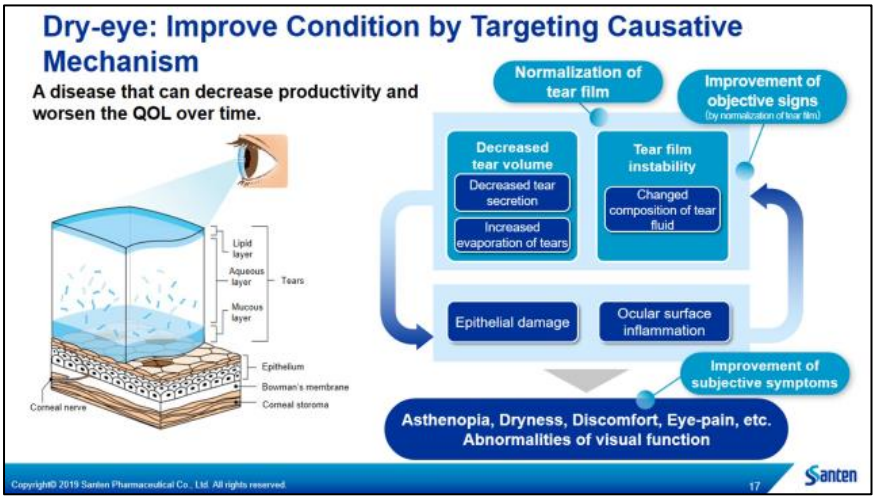


First of all, glaucoma. Glaucoma is the number two cause of blindness in the world and the number one cause of blindness in Japan. Glaucoma is a disorder that affects the optic nerve and narrows the visual field. Delayed treatment may lead to blindness. Damage to the optic nerve is caused by increased pressure in the eye, that is, intraocular pressure, and it compresses the optic nerve. Currently, no treatment has been established to recover the once damaged optic nerve and glaucoma cannot be cured completely. Therefore, treatment of glaucoma is based on lowering the intraocular pressure, so that the optic nerve damage is suppressed and the visual field narrowing is also suppressed. Treatments must be continued for life. The next slide will explain this IOP-lowering treatment.

Current glaucoma treatments aim to reduce intraocular pressure. The basic treatment is with ophthalmic solutions, with laser radiation or surgery is conducted, if necessary. Treatment of glaucoma is daily and lifelong. In the course of treatment, ineffectiveness of IOP lowering agents and side effects may be some of the concerns people have. In addition, it may be more difficult than imagined to instill eye drops at certain times everyday day, while working, traveling, and given a variety of activities. Older people may have difficulty or forget to take eye drops and the burden will continue to increase.

We are developing a variety of lineups of products to help eliminate such anxieties and burden on patients, so that we can select products that fit the patient's condition. For example, there are several IOP-lowering drugs, as you can see here. The first line drug FP agonist, Tapros, as well as Eybelis ophthalmic solution, which has a new mechanism of action for those suffering from adverse reaction and Tapcom ophthalmic solution, which is a combination drug for patients who must instill two or more ophthalmic solutions. We hope to provide our Micro Invasive Glaucoma Surgery device, with minimum surgical invasiveness.

As you can see on the slide, this is a tube with a length of less than one centimeter to allow aqueous humor to flow out of the eye, to lower the IOP. We obtained CE Mark in EU and currently we are conducting Phase 2 and 3 trials in the US. We believe that these diverse lineups have been realized because we had been listening to the voices of patients and healthcare professionals in the process of R&D and marketing of the drug, reflecting them and developing a stronger relationship with them with the introduction of the new treatments.

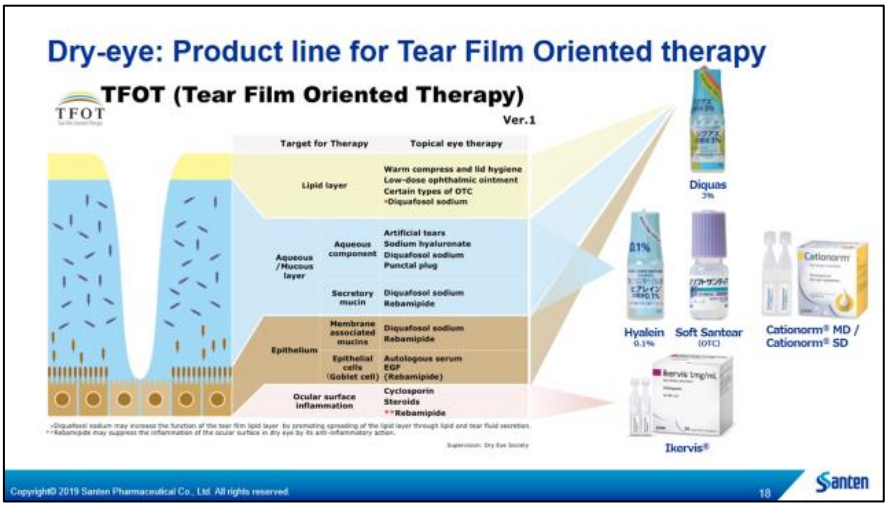


The next is dry eye. It is not a disease that usually leads to blindness. However, it not only causes dryness in the eye, but also causes eye fatigue and dullness. And, further, progression of dry eye may result in blurred vision, poor vision, and other impairments in vision. For example, what happens to you if you have such symptoms while working? I don't think you can concentrate on your work. Thus, this disease decreases work productivity and quality of life, and the number of patients is on the rise in recent years.

The aging population, the use of air-conditioners, the use of PCs and smartphones and the number of contact lens wearers increasing are some of the factors. The development of dry eye is largely related to tear volume and tear film instability and inflammation. The tear film is as thin as 7/1000 millimeters, and is composed of an outer lipid layer, aqueous layer, and mucin layer. Harsh environments for the eyes, such as aging and autoimmune diseases, air-conditioners, long-term watching monitors may result in tear loss and uneven tear delivery to the ocular surface due to a lack of tear volume and an imbalance in tear oil and mucin levels, resulting in scarring and inflammation on the surface of the eye.

Inflammation on the ocular surface may further disrupt the balance of tear quality, thus creating a vicious cycle. Therapeutic targets, including normalization of tear film is necessary. And objective signs, such as corneal epithelial damage should be improved and subjective symptoms should be improved as well.

The following slide provides a detailed description.

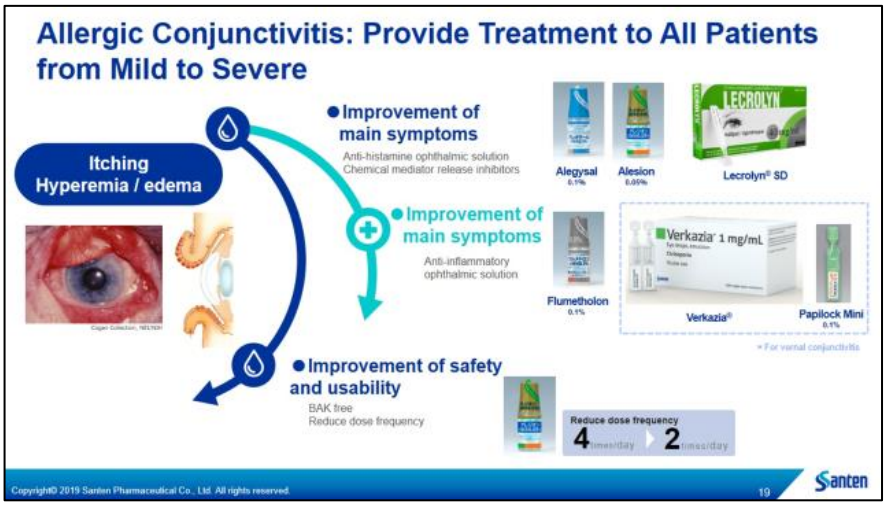


This diagram shows the ocular surface. The brown part is the corneal conjunctival epithelium and tear layer on top. Currently, the Dry Eye Society here in Japan advocates the ideal of treating dry eye more effectively by enhancing the stability of the tear film and treating by layers, according to the structure of the ocular surface. This is a new approach and is called stratified treatment to dry eye treatment.

On the right, we show the current treatment option that may contribute to tear film-oriented therapy of dry

eye. There are a variety of treatments for each of the layers: the lipid layer, aqueous layer, and the epithelium, with Santen providing treatment options for each of the layers.

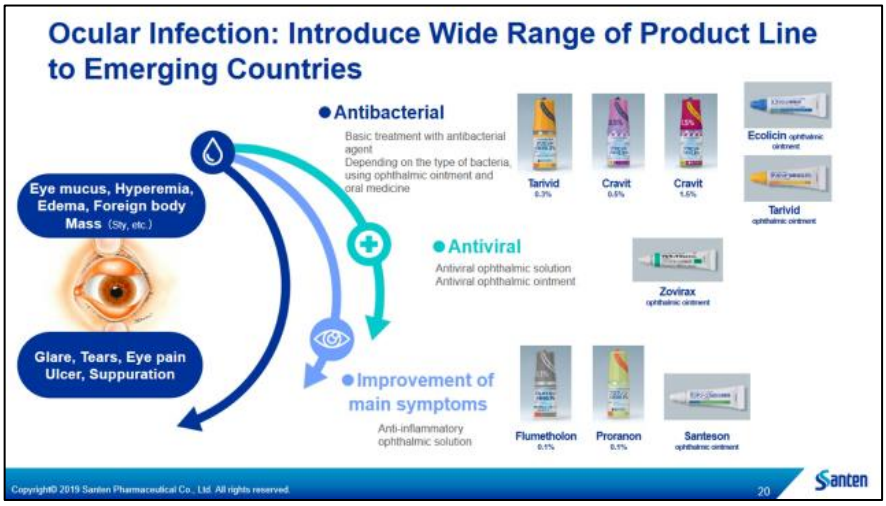
We also have products that address the inflammation of the ocular surface. The Dry Eye Society created TFOT, and a Santen has supported the Dry Eye Society and we also provided support in the preparation of TFOT. In addition, the Dry Eye-Related Quality of Life questionnaire was developed jointly, leveraging on this close relationship. Links with such societies have a major positive impact on subsequent product development, as well as timely grasp of needs. Such activities are also being strengthened throughout Asia and we hope to extend them worldwide.



Next, we would like to explain allergic conjunctivitis. Typical is conjunctivitis due to pollinosis, which is thought to be a disease familiar to everyone. The main symptom of allergic conjunctivitis is itching of the eyes, which is very uncomfortable for the patient. It is known that pollinosis reduces work productivity. In addition, hyperemia and strong edema have cosmetic challenges and have a major impact on normal life, such as inability to wear contact lenses.

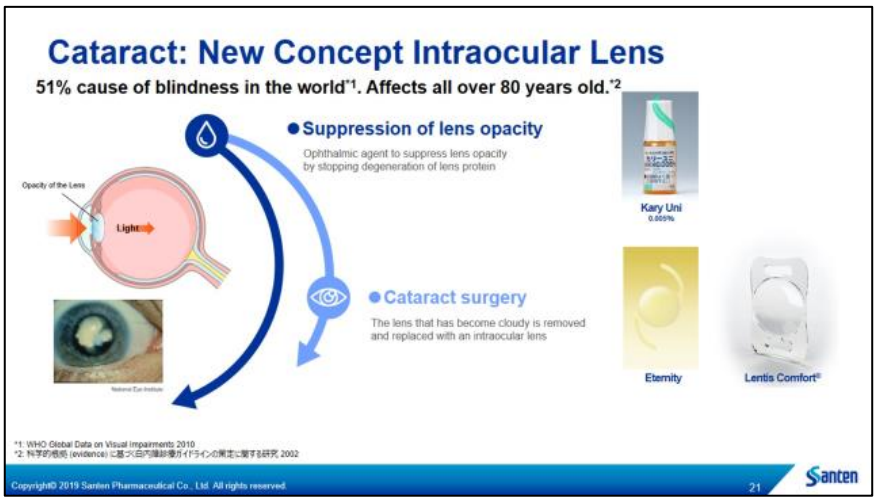
Vernal keratoconjunctivitis is one of the most serious forms of allergic conjunctivitis, seen in children. The number of patients is very small. It's a rare disease. It is characterized by a giant papillae of one millimeter or more in diameter behind the upper lid, and it causes severe itching. With corneal disorders, foreign body sensation, eye pain, and photophobia can be caused and it can lead to loss of vision. Sometimes it is not possible to attend school for such children. Anti-allergic ophthalmic solutions are used first with allergic conjunctivitis. Anti-allergic ophthalmic solutions have only few side effects and can be used safely. However, symptoms may not subside if the amount of pollen is very high or if the eyes are not in a good condition. In this case, an anti-inflammatory ophthalmic solution, such as corticosteroids or an immunosuppressant is added.

In addition, Santen provides Verkazia in Europe and Canada and Papilock Mini Ophthalmic Solution in Japan for vernal keratoconjunctivitis, which is common in children. We are currently working to improve their safety and convenience. We are also developing high concentration formulation of Alesion Ophthalmic Solution and finding the possibility of reducing the number of instillations. In September 2018, we applied for marketing approval here in Japan.



Ocular infections are diseases in which bacteria and viruses infect the eye and cause inflammation in the conjunctiva and cornea. Because the cause is bacteria, virus, or fungus, eradication of those pathogens is the most important treatment. Antibacterial or antiviral drugs are given, according to the type of pathogens. Drugs that suppress inflammation may also be instilled to improve symptoms. Santen has a lineup of steroidal and non-steroidal products, including NSAIDs, as anti-inflammatory drugs, to improve symptoms and there is an option of ophthalmic ointment. There are many antimicrobial agents. The most common is Cravit Ophthalmic Solution. In clinical practice, the most appropriate therapeutic agent is chosen according to the causative bacteria or virus, and the patient's symptoms.

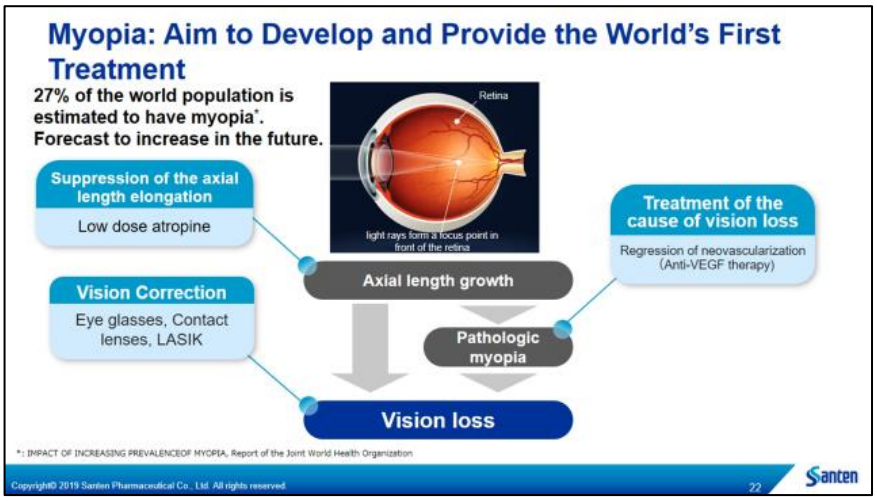
I talked mainly about treatment in developed countries. Routine therapies are available for infectious diseases in developed countries. But there is still a shortage of drugs in developing countries. For example, trachoma is one of the eye infections caused by Chlamydia trachomatis. Trachoma can cause visual impairment and blindness in about 1.9 million people worldwide. Santen also focuses on the regional expansion of antimicrobials. For example, Cravit Ophthalmic Solution is marketed worldwide, particularly strong in Asia, and we hope to expand this furthermore.



Cataract is a condition in which the ocular lens becomes opaque and cloudy, resulting in decreased visual acuity. If untreated, the disease leads to blindness, which still accounts for 51% of the world's blindness. Cataract may result from a variety of causes, most often from aging. There are individual differences but all the people over the age of 80 are said to suffer from this. Eye drop treatment is the standard treatment in the early stage, when vision loss or blurred vision does not interfere with daily life. However, the lens does not return to transparent state with drugs and the treatment goal is to suppress progression of the cataract. If

cataract advances and interferes with daily life, the surgeon inserts an intraocular lens by surgical procedure. Cataract surgery is a widely accepted procedure for many patients who can receive this, and with surgery vision can be restored.

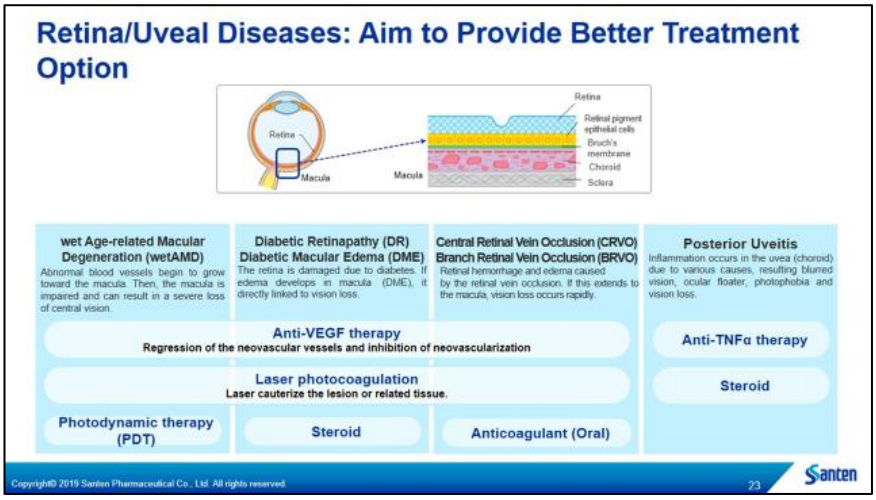
In some developing countries, however, technique or hygienic environment to perform surgery is not quite available. It's not the same as developed countries. Santen's Kary Uni Ophthalmic Solution can suppress progression of lens opacity and it is marketed in various countries worldwide. We also provide intraocular lenses free of charge to organizations providing ophthalmic medical services in developing countries, to support those activities and patients' QOL.



I, myself, suffer from myopia and I suppose some of you have myopia. Myopia is estimated to affect 27% of the world's population. The incidence is expected to grow in the future. Myopia often occurs when the eye, which is usually spherical, extends horizontally. Then, light entering the eye is focused in front of the retina, rather than on the retina. This is called axial myopia.

Although many people have myopia, vision can be corrected with glasses, contacts, so people do not feel the need to treat. However, the retina may be stretched and thinned, resulting in fissure, and the invasion of blood vessels and bleeding can happen. A slight shock or impact may cause detachment of the retina. This type of myopia is called pathological myopia. Treatment of pathological myopia has not been established, but new vascularization caused by pathological myopia is treated with anti-VEGF drugs. But there is no established treatment to treat myopia itself. Santen is working on this in our R&D activities to develop and provide new treatment.

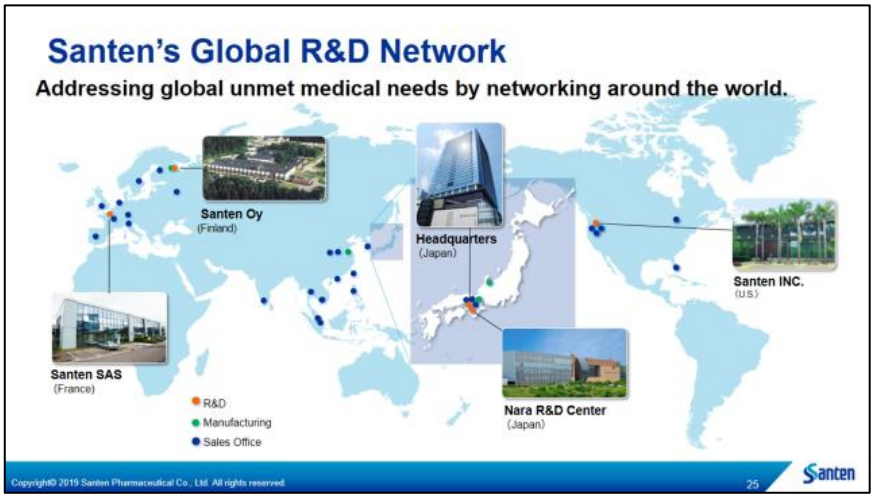
A treatment for axial myopia that has attracted attention recently is the instillation of low-dose atropine. Recent large-scale clinical trials have shown atropine to be effective for school-age children, to suppress myopia. Santen has been developing low-dose atropine ahead of competitors. Myopia patients will increase worldwide in the future and Santen takes dual approaches for myopia, suppression and treatment.



This is my last slide. Let me explain retinal and uveal diseases. Typical retinal diseases include exudative age-related macular degeneration, diabetic retinopathy, diabetic macular edema, and central retinal vein occlusion. Progression of these diseases can cause symptoms, such as distorted vision, black clouding of the central vision field, and blurred vision. These disorders are currently treated primarily with intraocular anti-VEGF treatment.

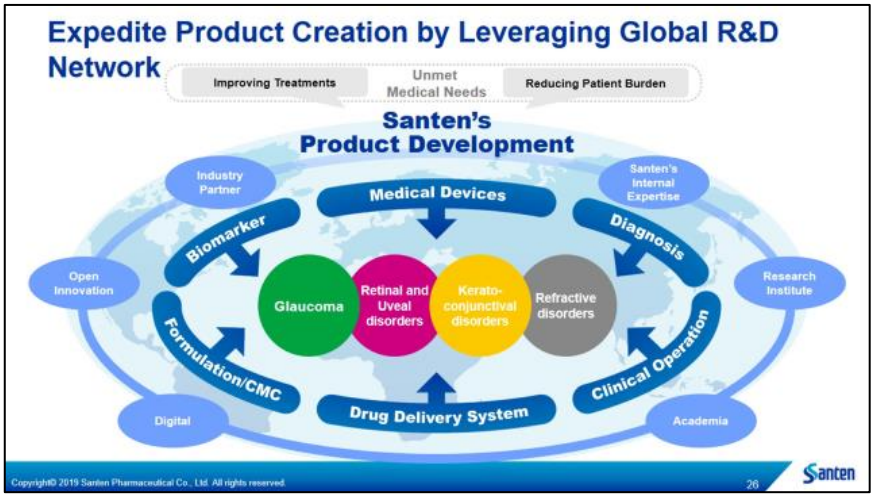
Before the launch of anti-VEGF drugs, the therapeutic goals of retinal disease were to maintain vision and prevent blindness. But, the launch of anti-VEGF drugs has transformed the goal to treat. Laser photocoagulation, steroids, and oral coagulants are also used in accordance with the disease and symptoms. However, none of the drugs and treatments are effective for all the patients and their therapeutic effects are limited. It is also a challenge that anti-VEGF drugs need to be administered repeatedly, despite very expensive costs, resulting in a high burden on patients. This is still an area where there is a great need to fulfill and it is hoped that therapies with less burden will be available with superior efficacy and safety.

On the other hand, uveitis is a typical uveal disease. Let me explain posterior uveitis quickly. Posterior uveitis is a disease in which various causes lead to inflammation of the uvea, mainly the choroid, resulting in symptoms such as blurred vision, bugs like floaters that move through the field of vision, and dizziness, as well as loss of vision. When the causes can be identified, that should be addressed first, but the cause is often unknown. Anti-TNFα and steroids are currently indicated for the treatment of uveitis and uveitis also has a great unmet need. Further therapies, including drugs should be developed.



Nakamura: Nakamura, from Biomedical Strategy and Research. From this section, I'd like to explain R&D activities of Santen.

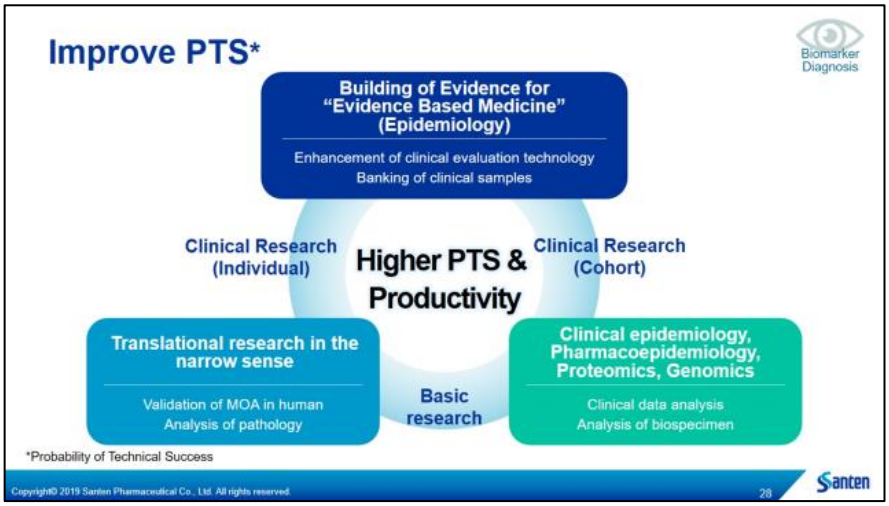
Santen has research laboratories in Japan, United States, and Europe, and is building a network in R&D. Approximately 350 members are engaged in daily R&D activities to meet global medical needs.



We will explain how Santen approaches ophthalmology, which is our focus. As described by Matsugi, there are a variety of diseases in ophthalmology and there are different problems, such as the lack of an optimal diagnostics, inability of existing formulation technologies to achieve adequate efficacy and safety, and the need for long-term sustained efficacy formulation, and we need to address each of these challenges. We will respond to each of these issues one by one and try to develop products with higher probability of technical success with the use of new diagnostic technologies, biomarkers, new pharmaceutical technologies, including drug delivery systems and the introduction of medical devices. We need to address all those with

speed. This is not easy and the speed and success rate of our technology alone will not be enough. Therefore, we will strategically build networks with external parties, including academia or other research institutions with drug candidates and technologies, and companies, to achieve high probability of technical success.

This is an example of a network we have built or is currently undertaken. We have built networks with many companies, academia, and research institutions. A few examples are presented here. We established a joint laboratory with SERI, the top Asian ophthalmology Institute in Singapore. The candidate, DE-127, low-dose atropine, has been generated by this collaboration. We will continue to focus on creating differentiated products that address unmet needs. We have also begun to work in new modalities using networks, including gene therapy drugs. We are aiming to create gene therapy by collaborating with Oxford BioMedica, RIKEN, and Kobe Eye Center, as part of CiCLE program of AMED. We strongly hope to provide innovative medications to patients who have had no available therapies up to now.



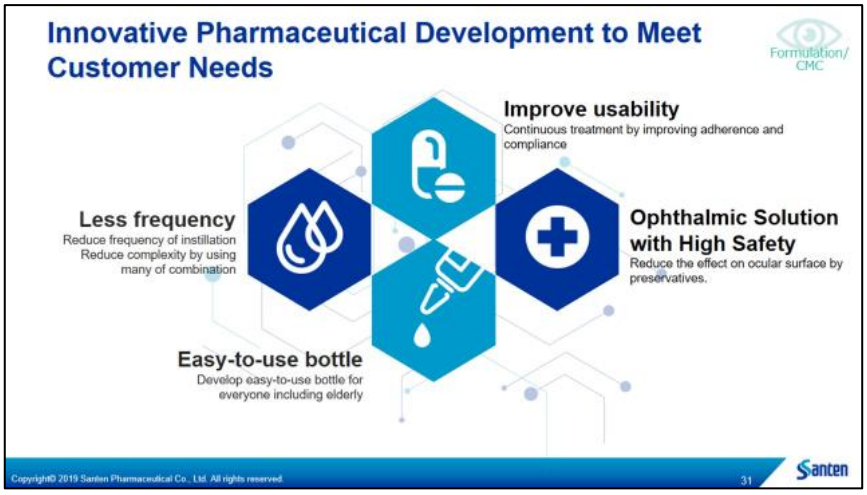
Next, we present translational research activity, as one of our efforts to improve probability of technical success. Santen is working to improve productivity by identifying a wide range of medical research as translational research. Translational research includes not only a bridging from basic to clinical research, but also improving our clinical evaluation techniques in analyzing clinical data. For example, as a clinical evaluation technique for dry eye, Schirmer's test for measuring tear volume has been improved, and now we are able to evaluate efficacy of the drug with fewer patients. These efforts will allow for more appropriate evaluation in clinical trials and will improve speed, with better success rate and reducing the number of subjects needed for trials. In addition, we believe that it can be also used to improve the accuracy of

diagnosis in medical practice and to select appropriate drugs in routine clinical practices.

This slide shows the track record of R&D of Santen. As for the speed of clinical trial, DE-117, Eybelis Ophthalmic Solution for glaucoma was conducted in approximately 14 months, with 253 subjects, in Phase 3 study, in Japan. We take pride in this speed.

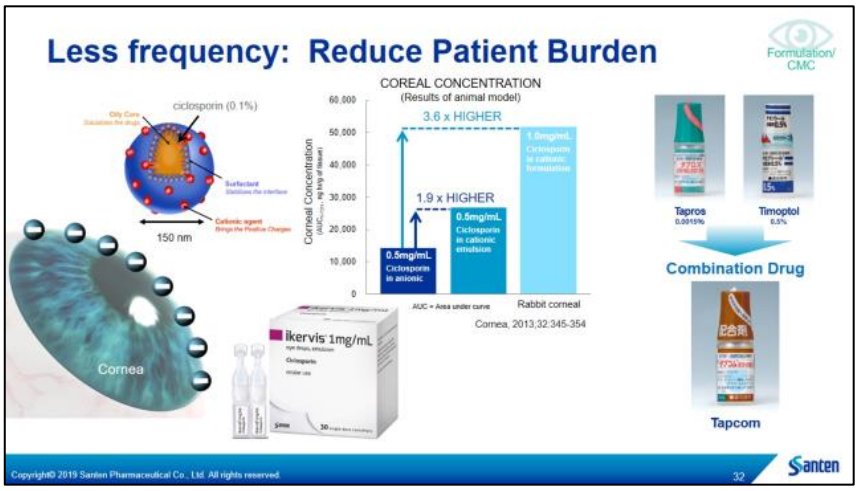
In terms of the success rate of clinical development, the average success rate of Phase 3 ophthalmic trials is approximately 58%. But Santen has a 92% success rate that greatly exceeds the average. In the future, clinical development will reflect the results of translational research introduced early and the speed and success rate will improve furthermore.

Morishima: Next, this is Morishima again. I'd like to talk about the pharmaceutical development. Allow me to introduce you to some of the pharmaceutical technology of Santen.



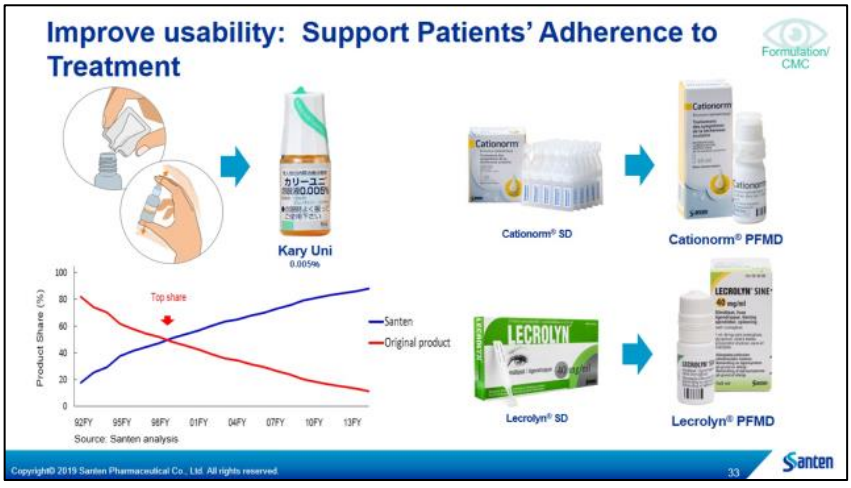
In ophthalmology, there are effective medications. However, many patients cannot continue with the treatment. So, they cannot really treat what they are having as conditions. With newly-diagnosed glaucoma, 30% of patients stop treatment after three months, 40% after one year, and 50% after three years. It is very important to come up with innovative medicine. But, in ophthalmology, it is also very important to have a patient continue their treatment. Santen has been providing improvements so that patients may continue treatment without stress.

Let me show you some specific examples.



First is to reduce the number of administrations, to lessen the treatment burden on patients. Ikervis, a drug used to treat severe dry eye, uses technology called emulsion technology. We provide positive charges to surface of emulsion. By doing so, it successively elevates penetration and retention on the ocular surface, which is negatively charged.

If you look at this graph, the positively charged cationic emulsion shown in the middle has almost two times higher concentration compared to negatively charged emulsion shown in dark blue. Ikervis, compared to the original product, in total, provides higher concentration by 3.6 times. So, we were able to lessen the number of administrations from twice a day to once a day. On the right, for glaucoma, the patient had to go through combination therapy with two or more eye drops, if one ophthalmic solution was ineffective in lowering intraocular pressure. However, when two eye drops are instilled, immediately after one another, the first eye drop will flow out. Therefore, the patient had to wait more than 5 or 10 minutes before administering the second ophthalmic solution, which was a burden on the patient. Therefore, we developed a combination drug to help reduce patients burden and improve adherence of patients.



Next is an example in which we improved usability, supporting continuation of treatment. Kary Uni is a generic product that Santen developed. The original product, you had to dissolve the active ingredient in tablet or granule form in solution before use, which was a burden to the patients. On the other hand, our product is a suspension agent, that remains stable under room temperature for 3 years. As for the original product, there were several cases reported that patients mistakenly took the granules or tablets orally. With our product, Santen has been promoting appropriate administration and preventing such misuse. We have been able to drastically reduce burden on patients and also improve usability, that led to good business results as well.

If you look at the bottom left graph, you can see Santen's product and original product and its shares. By 1997, you can see that our product exceeded the original product. Even though it is a generic, our product now dominates the market.

We have recently been promoting the launch of several preservative-free multi dose bottle in Europe.

In Europe, we are in the situation where we have to add high concentration of preservatives to meet the high requirement standards for preservative efficacy. However, preservative causes corneal disorders. This is why we have developed and launched single use preservative free products. However, single use products may not be convenient as patients have to carry multiple packages, opening the vial may not be easy, and it may be difficult to instill because the size of the ample is small. To improve usability, we will continuously provide Preservative Free Multi Bottle products to reduce burden on the patients.

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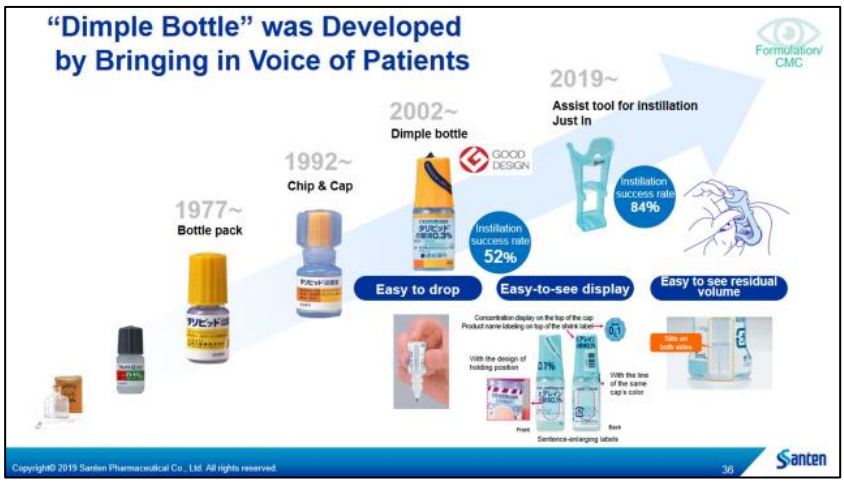
As I mentioned earlier, preservatives do prevent secondary contamination, but it may also cause corneal disorders to some patients. Let me introduce how Santen has been addressing this issue.

BAK, or benzalkonium chloride is the most commonly used preservative in the ophthalmic field. When we launched Hyalein, dry eye treatment for the first time, relatively high level of BAK was used. However, as I mentioned earlier, there were several cases of corneal disorders were reported. Therefore, we lowered concentration of BAK for the second-generation product. By adjusting mixture of other components, we were able to develop formulation that have sufficient preservative efficacy even though concentration of BAK was lowered. BAK also has a property of sticking to contact lenses, hence patients using contact lenses were unable to use this product. This solution should be applied 6 times a day. It was too much of a burden for patients to take off their contact lenses before applying this product. In order to address this issue, we have decided to use chlorhexidine gluconate instead as it doesn't stick to contact lenses so much compared to BAK. Thus, we successfully developed third-generation products that are BAK free, and also offering unit dose preservative free product that can be used for patients who are sensitive to preservatives.

This shows the sales share trend in Japan, Diquas on the left and Alesion on the right. The market almost reached saturation but by offering BAK-free products, you can see that we were able to increase the share of sales. We also offer BAK-free Alesion, which has been contributed in Alesion's sustained growth.



This is my last slide for pharmaceutical development. We also develop eye drop containers, and this slide shows the transition of the improvement to containers. In 1977, we introduced new type of container, bottle pack container. Because formation of a bottle and filling takes place simultaneously, it is excellent in ensuring sterility and preventing tampering.

However, we found out that patients were feeling stressed because they had to create hole to the dispenser tip by twisting the bottle cap. In 1992, we developed chip & cap container by utilizing blow fill system. Patients no longer needed to create hole to the tip, but as you can see, bottle cap and container itself became smaller. Therefore, there were issues related to usability, such as difficulty of opening the cap and needed to squeeze hard to administer. And also, the manufacturing speed at the plants was very slow. Therefore, right after commercialization of Chip & Cap container, we started working on development of new bottle.

In 2002, we successfully developed Dimple bottle, taking a period of approximately 10 years. In that period, we did a lot of hearing from patients and medical professionals to develop the bottle that meets the need of patients.

Today, we brought eye drop sample for you. Please feel free to pick up the bottle and touch. As you can see, the label covers both bottle and cap to prevents tampering. Tampering means that somebody may add something during distribution. You need to peel off the label in order to open the bottle. Please pull the tag here and peel off the label, you can see that it is open for the first time. If you can't move your fingers well, you can open the bottle by twisting the bottle cap and remove the label easily. Next point is a cap. We use a

much larger cap to respond the needs of people with dexterity issues or elderly patients. Shape of the cap is also unique, you can grip this cap very easily, and because this is a conical shape, it would stop this bottle from rolling. In the past, the shape was cylindrical and if you place it on a desk, it will just roll. Again, we made these changes based on the result of interviews that we conducted on professionals and patients.

Next, please look at the label. We have incorporated larger lettering. Of course, this is a sample product, but you can see that the letters are larger and is very easy-to-read.

We provide ophthalmic solutions with different concentrations and sometimes pharmacists mistakenly dispensing medication with wrong concentration. To prevent such errors, we have decided to print the concentration on top of the cap.

Please look at the bottle from the side. You can see there are slits on both sides. These slits make it easy to see how much solutions are left in the bottle and we are the first one to come up with this idea. Ophthalmic solutions are used by people with visual impairment. These efforts do lessen the stress and burden on the patients.

Most important part is administration. With this Dimple Bottle, you can administer eye drop with very little squeeze. Patients do not hold the eye drop bottle in a straight form like this, many patients tilt it. Tip of this bottle is designed in a way that proper size of drop will always come out even patients hold the bottle in different angle. As for other bottles, droplet will run to the side and drop size become bigger if you instill at an angle. Dimple Bottle can provide proper drop size, so the dose will remain consistent. And when you close the cap, you don't have to twist it many times, two or just one twist is enough for our products. These features have been highly evaluated by patients who are using our new bottles.

We thought we have improved usability, but have found out that number of patients who could successfully instill eye drop on the first try was only 52%. Of course if you try multiple time, success rate will go up, but there are so many patients who still find it very difficult to administer eye drops. To address this, we developed and marketed "Just In", a device designed for Dimple Bottle to assist instillation. We developed this device for elderly patients or people who have shaky hands to help administration so they can continue to receive proper treatment.

We will continue with the development of better pharmaceutical and containers to support patients to continue with good treatment and improve QOLs.

As was explained, Santen Pharmaceutical is a specialized company in ophthalmology, we have been conducting R&D activities, with the aim of contributing to ophthalmic care worldwide. Today, through this presentation, we hope you have better understanding of how Santen has delivered a variety of treatments that led to the treatment of visual impairment and the improvement of QOL of patients. We will continue to

contribute to the development of ophthalmic medicine, based on our spirit of protecting world vision.

We are going to hold “R&D 2” on September 6th.

Today, we talked about treatments Santen provides, various eye diseases, and our contribution to ophthalmology today. The next meeting will feature speakers Naveed Shams (Head of R&D), Reza Haque (Head of Biomedical Strategy and Research), Kenji Morishima (Head of Pharmaceutics and Pharmacology), Peter Sallstig (Head of R&D Development), and Takeshi Matsugi (who presented today). They will be presenting what Santen is determined to accomplish going forward. Thank you very much for your attention.

Question & Answer Session

Q1-1

On the slide three and four, you explained your approaches for Asia. Since your acquisition of Merck products, it seems the European business have also been steadily growing. What is the feedback you received from Europe? Is there any experience you can leverage for going into the US market, and what are the challenges for EU business?

A1-1

Suzuki: Thank you for the question. As you mentioned, since the acquisition of MSD products, we have expanded our business in EMEA, starting from Nordic countries, and then G5. We accelerated promotion of the products we acquired and enhanced our presence. We showed various evidence to the regulatory agencies in EMEA, discussed with them, and are getting support from doctors. All these efforts took time, but we have been able to enhance our presence even though the products initially were expected to face high hurdles. Also, we have formed strong relationships with science networks / societies in EMEA and these networks helped us providing support to doctors in Asia and establishing guidelines there. As was mentioned earlier today, we provide support to Dry Eye Global Advisory Board, and doctors from US, Asia, and Japan are members. This network will enable us to launch various global activities depending on business development stage. For the US, we have formed partnership with Glaukos for DE-128, and we also have DE-117, another glaucoma treatment. We expect to continue to work closely with doctors in Japan, US, and Europe to market these products. Innovative and good products developed for US could also make significant contribution to EMEA, Asian, and Japan.

Q1-2

The second question is about slide number 10. Regarding product development, you mentioned Santen will go into various areas, including medical devices, gene therapy, cellular therapies and so forth. Also you introduced Santen's various approaches to improve technical success. Compare to the existing approach, if you were to go into new areas like medical devices, gene therapy, and cell therapy, I believe you have to rely on resources from outside. What kind of value can Santen provide in these new fields?

A1-2

Morishima: Thank you very much for the question. Yes, approaches will be different from what we have been taking in the past. But what's most important is accurately grasping the medical needs and knowing how to develop treatments. I believe that these are areas in which Santen can lead the way. By partnering with first-class pharma and technology companies worldwide, we can link their expertise with our product development.

Q2-1

My first question is about the bottles. Santen has various partnership worldwide, including Merck. How many bottles are developed in Santen's specification? I understand that your bottles in Japan are very easy to use.

Is this something that people in other countries will appreciate? Is it just for the Japanese market or something that is universal?

A2-1

Morishima: As for Merck products, not all products, but we have started production in our plants. We have just started shipments to Europe, so we will be able to know the response going forward. When we developed the Dimple bottle, we conducted customer surveys not just Japan, but in China, Europe, and the US, and the survey result showed that this bottle was evaluated highly by patients in different regions. We also have three-piece Dimple bottle that doesn't require blow flow seal technology to manufacture. So, I believe this style of bottle is easy to use to patients around the world.

Q2-2

I remember that the number of parts increased or decreased on the process of development. Usability has been enhanced but what about the cost to manufacture such bottles?

A2-2

Morishima: Blow flow seal is used to manufacture two-piece bottles. We also have three-piece bottles, which we purchase the bottle and assemble and fill at Santen's plant. Of course, the manufacturing cost of two-piece bottles is lower, because the number of required parts is less. I don't have exact number, but we can manufacture many of our products using this two-piece bottle.

Q2-3

Historically speaking, Santen hasn't been focused on the new molecular entities (NME) so much. You have been developing formulations to make it possible to apply systemic drugs to ophthalmic use. Now, especially for the back of the eye, there are no systemic drugs available, and new modality treatment such as antibody are expected to come to the market. Are you going to stick with the current process or are you going to look for opportunities including NME through Venture Fund? Are you going to change your strategy going forward?

A2-3

Morishima: Well, that is something we will explain at R&D Day 2. We have been taking a best-in-class strategy - that is, we have been developing ophthalmic treatments from systemic drugs for which efficacy has been confirmed. However, the possibility that a systemic drug can be developed as efficacious in treating the back of the eye is low. However, we are not pursuing NMEs on our own. Our basic stance is to have alliances with top-level companies around the world whether antibody, gene vector, etc. so that we can accelerate development and increase success rates. It will be difficult to acquire fully proven treatments going forward, hence, Santen should participate early stages and co-develop products with partners.

Q3-1

My questions are related to the Asian business. What are the cultural difference between Japan and Asian market? For instance, safety concern is quite strong in Japan and sometimes it inhibits share increase. How about Asia? I wonder if some cultures may accept more aggressive therapy despite of safety concerns?

A3-1

Suzuki: With regard to cultural differences, in terms of risk-benefit, I think people in Asia tend to be more willing to take risks compared to Japan, But of course, it depends on the country. Countries including China, are now welcoming new and innovative products as a part of industry promotion policy, so it is beyond cultural differences. Differences I noticed for example, a doctor tell patient to use eye drop for one week. In Japan, patient will apply eye drop precisely for one week and then go see the doctor again. But in Asia, people may wait to use up the whole bottle and then go see a doctor. Even for unit-dose product, some people may use again the next day if a portion remains. In this aspect, as I explained during my presentation, we need to raise awareness and promote proper use of medicine. At some point, I believe it would be aligned across countries.

Q3-2

I heard that treatment fee of advanced medicine in China is mainly covered by the patients. With regard to your products, what's the insurance coverage like?

A3-2

Suzuki: Diquas and Tapros are recently approved in China. Since last year, we have been negotiating with the agency to put these two on the National Reimbursement List. Most of our products are already on the list, so quite many of our products are covered by insurance. There are three types of insurances offered by the government, so the coverage is different depending on the type of insurance.

Q3-3

As for PRESERFLO MicroShunt, what is the plan for Japan and Asia's rollout?

A3-3

Morishima: The biggest difference between pharmaceutical products and medical devices in terms of regulatory path is that ethnic differences must be confirmed in order to get approval for pharmaceutical products. Meanwhile, medical devices are developed aiming to establish targeted function. In the case of PRESERFLO MicroShunt, the function of the device is aqueous drainage and I think there are no ethnic differences related to that function. We will have to show data and have multiple negotiations with PMDA.
We are aiming to launch this product in Japan and in Asia as early as possible.