Dr.Hideo Doya is the author of the best seller “Pain Navigator Exercise”. His principle of “ Self Rehabilitation Exercise” has shown results over many years across wide demographic patients. He has made a number of appearances on national broadcasts, radios and other media and is frequently quoted in news articles.

This book is based on more than 20 years of his experience diagnosing and consulting with patients, both Japanese and non-Japanese. He will share "whys" behind a knee pain (both chronic and acute), and how to reduce pain through self exercise. Furthermore he shares the simple secrets of improving quality of life through lifestyle advices.

This book will be useful to:

- People who has been told to “replace your knee ” but are hesitant
- People who have been told “ there is no treatment, it’s aging (or bad luck)”
- Busy people who can’t squeeze out the time to visit rehab clinics every week
- Anyone who wants to maintain their active life

Topics to be covered:

This book has many illustrations that will guide you to the right exercise. There are also a number of patient testimonials on how people have make a difference to his/her own life – anywhere from getting rid of walking sticks to getting back to the everyday joy of cooking, soaking in a tub, doing a full knee bend. All you need is the motivation to get started! Don't miss this opportunity to deepen your understanding of your own body and how to take control over it!

[Author’s Introduction]

Hideo Doya, MD. PhD.

A graduate from Nippon Medical School in 1994 , Hideo Doya is currently the director of Ochanomizu Orthopedics and Functional Rehabilitation Clinic in Tokyo. Dr. Doya has had broad experience as an

orthopedic surgeon at prominent hospitals such as Chiba University Hospital, National Cancer Center Hospital, Chiba Children's Hospital, Chiba Rehabilitation Center, etc.

The turning point for Dr. Doya occurred when he himself suffered from severe lower back pain. Amid demanding working hours, Dr. Doya used wheeled carts to support him as he made his regular rounds. Since then Dr. Doya has sought alternative methods (other than surgery and sedatives) for treating pain. His method consists of range of motion exercise, nutritional therapy and custom made orthopedic shoes. In 2010 he established Ochanomizu Orthopedics and Rehabilitation Clinic (Ochanomizu Orthopedic Clinic) in central Tokyo. Since then Ochanomizu Orthopedic Clinic has grown to one of the top rehabilitation clinic in Japan that offers unique treatment method on outpatient basis.

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Introduction — Gentle exercise will guide you to the correct pain relief method (Knee Pain)

"What is Pain Navigator Exercise?" That is the first questions every reader has on his/her mind. Well, let's take a quick peek of that chapter.

Just as you see in those illustrations, place your hands on your knees and then extend the joints of your knees, slowly straightening out your legs (make sure you don't jerk your knees!).

(illustration: no text)

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Repeating this exercise 10 times. If you then find that the knee pain starts to subside through this knee extension exercise, then you can categorize your knee treatment as " **Type 1; knee extension positive responder"**.

If you didn't see any change through this knee extension exercise, don't worry. There is another method as you see in the next illustration. Let's do it together. Place your hands on your knees and gently start bending your knees.

(illustration: no text)

Repeat this exercise 10 times. If your knee pain has started to subside, then this bending exercise is helping you alleviate your pain. You can categorize your knee as "**Type 1; knee flexion positive responder**".

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According to survey's conducted within our hospital (N=110), **86% of knee pain can be alleviated through knee extension or knee flexion exercise**. The concept of Pain Navigator is straight forward. Your pain guides you to the right exercise to help you alleviate pain. Simple, isn't it? But is has proven results as we have just seen.

Many patients come to our clinic with diagnosis of herniated disk, spondylosis, osteo arthritis, etc. Especially elderly patients try to avoid surgery or excessive medication as they deprive their quality of life. Those patients come to our clinic as the last string of hope of regaining their active life. We have helped over 30,000 such patients in the last 5 years.

If either of the knee extension or flexion lessened your knee pain, then this book has much to offer you as you build your confidence in self-containing pain…. and regaining an active life! The various exercises presented in this book are simple and non-tedious so you can continue at home (or in office!). Even if you didn't see immediate relief, it is too soon to give up! Within this book are various types of Pain Navigator exercise. I am sure you will be able to find an exercise that works for you.

Here is a quick question for you.
Have you heard of the **Parachute Test**?

No one in their right mind would jump out of an airplane without a parachute just to see what would happen. The result is way too obvious.

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Similarly, **verifying something that is believed to be obvious is known as the Parachute Test**. It means conducting the test is pointless.

The current mainstream treatment for a worn knee joint is to replace it with a metallic artificial knee joint. This procedure is known as **total knee replacement surgery**. Majority of orthopedic surgeons consider this as the obvious choice for severe knee pain (osteoarthritis).

In 2015, a verification test on the effects of total knee replacement surgery was conducted in the United States. In United States, each year close to 1 million people undergo total knee replacement surgery. In response to the gold standard (knee replacement) surgery, Professor Robert L. Katz of Harvard University emphasized that, "**the verification test on total knee replacement surgery is definitely not a Parachute Test**."

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He provided the following comments.

1) Total knee replacement poses risks. About 0.5 to 1% of patients die during the 90-day postoperative period. The risks of deep venous thrombosis, pulmonary embolus, deep prosthetic infection, and periprosthetic fracture range from 0.1 to 1.0%, with higher risks among older persons and those with a higher number of coexisting conditions.
2) The procedure is not universally successful; approximately 20% of patients who undergo total knee replacement have residual pain 6 or more months after the procedure.
3) There are alternatives. Clinical trials have shown that physical therapy (including exercises and manual therapies) can diminish pain and improve functional status in patients with advanced knee osteoarthritis.[9-11] Until now, we have lacked rigorously controlled comparisons between total knee replacement and its alternatives.

It is here that I would like to touch on what causes the majority of knee pain seen in patients with osteoarthritis of the knee. Put simply, osteoarthritis of the knee occurs when the **cartilage in the knee joint has been worn down**.

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If left alone, this will cause damage not only to the cartilage in the knee joint but also the bone itself, leading to deformation and the possibility of not being able to move the knee at all.

(picture: worn-down cartilage)

Research conducted by the Ministry of Health, Labor and Welfare on Japanese people over the age of 40 who contracted osteoarthritis of the knee found that 41.6% of men and 62.4% of women had or showed signs of osteoarthritis of the knee, increasing in proportion to age. With the current population of Japan being roughly 120 million people, we can conclude that number of people experience knee pain in Japan is approximately 25.3 million people (8.6 million men, 16.7 million women).

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However, in Japan, there still isn't clear criteria for the diagnosis of osteoarthritis of the knee leading doctors making decisions based on their individual opinions with regards to the location of the pain, examination results, and x-ray results.

There are patients experience knee pain who visit my clinic that are **receiving treatment at a hospital without seeing any relief**. I would like to touch on the standard treatment practices for osteoarthritis of the knee put forth by the Osteoarthritis Research Society International (OARSI) in the OARSI evidence-based, expert consensus guidelines (henceforth, guidelines).
In the guidelines, it recommends the use of non-surgical methods, or conservative therapy.

● **Lifestyle Guidance (**strength of recommendation **97%)**
The initial focus should be on selfhelp and patient-driven treatments rather than on passive therapies delivered by health professionals. Subsequently emphasis should be placed on encouraging adherence to the regimen of nonpharmacological therapy..
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● **Therapeutic Exercise (**strength of recommendation **96%)**
Patients with knee OA should be encouraged to undertake, and continue to undertake, regular aerobic, muscle strengthening and range of motion exercises.

● **Anti-Inflammatory Analgesic** strength of recommendation **(93%)**
While the use of painkillers is recommended for short-term relief, long-term use can cause various side effects such as damaging the stomach. As such, prolonged use should be avoided.

● **Fomentation/Medical Cream (**strength of recommendation **85%)**
The use of ointments have less side-effects than oral medicines making them safer to use. Ointments that give off the feeling of being hot do so due to capsaicin which is found in hot peppers. While these may feel hot, in actuality they are not. The stimulation of these hot ointments is quite strong and may cause rashes to form.

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Under the guidelines, whenever sufficient pain relief is not experienced after applying conservative therapy surgery is recommended.

● **Arthroscopic Surgery (**strength of recommendation **60%)**
The roles of joint lavage and arthroscopic debridement in knee OA are controversial. Although some studies have demonstrated short-term symptom relief, others suggest that improvement in symptoms could be attributable to a placebo effect..

● **High Tibial Osteotomy (**strength of recommendation **75%)**

For the young and physically active patient with significant symptoms from unicompartmental knee OA, high tibial osteotomy may offer an alternative intervention that delays the need for joint replacement some 10 years.
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(picture: bone just below the knee is out of alignment / cutout a piece of the bone / realign the top bone)

● **Artificial Joint Replacement Surgery (**strength of recommendation **96%)**

Patients with knee OA who are not obtaining adequate pain relief and functional improvement from a combination of non-pharmacological and pharmacological treatment should be considered for joint replacement surgery.
Replacing the worn-down cartilage with artificial cartilage will result in dramatic pain relief; however, the ability to bend ones knees will be greatly reduced. Furthermore, every 10 to 20 years the artificial cartilage will need to be replaced.
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(picture: shave down ends of both bones / cover with a metallic plate)

Due to artificial join replacement surgery being thought of as obvious there hasn't been much in the way of scientific verification tests into the results and effects of the surgery. However, in 2015 Soren T. Skou, P.T. conducted research on the effects and results of artificial joint replacement surgery. The results of the research was quite intriguing so I would like to touch on it a bit here. It is with regards to this research that Professor Katz made his comment about how this is "the decision for treatment with total knee replacement is no parachute at all.".
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For the research, 100 osteoarthritis of the knee patients ranging from medium to severe in status were chosen at random and separated into two groups of 50 people each, an **artificial joint replacement surgery group (henceforth, replacement group)** and a **conservative therapy group (henceforth, conservative group)**. The replacement group underwent the usual artificial joint replacement surgery, whereas the conservative group underwent conservative therapy in the form of counseling and advice on therapeutic exercise, diet and the structure of the knee; they were also provided with shoe insoles and painkillers.
After 1 year the results showed that 85% of people in the replacement group and 67% people in the conservative group saw a 15% increase in pain relief.
There are two points to take note of with regards to this research.
First, within the 1 year observation period, 6 cases for the conservative group and 26 cases for the replacement group were observed in which major problems arose that affected health (non-surgical issues included); showing that the replacement group obviously experienced more issues.

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Looking at cases related to just the knee, there was only 1 case in which surgery was deemed necessary due to inability to contract the knee; in contrast, 3 cases of deep-vein thrombosis, 3 cases in which surgery was deemed necessary due to inability to contract the knee, 1 case of prosthetic joint infection, and 1 case of supracondylar fracture of the femur was seen in the replacement group. It is apparent that

a certain level of risk comes with receiving artificial joint replacement surgery.
Second, 67% patients in the conservative group saw relief from conservative therapy.
In the conservative group 67% (83% in the replacement group) of people saw 15% or more pain relief, 59% (89% in the replacement group) of them saw a 15% or more improvement in everyday activities, and 69% (89% in the replacement group) of them saw a 15% or more improvement in their quality of life.

C**onservative therapy doesn't need to match the results of artificial joint replacement surgery. The point is conservative therapy can provide a significant amount of pain relief**.
I, myself, have done countless number of surgeries and appreciate the outcomes of surgeries. However, when considering fairly both the merits and demerits of a surgery, I consider it as a **last option**. To those seeking immediate pain relief, artificial join replacement surgery is surely an appropriate option. That being said, we must also note that data shows knee surgeries carries serious side effects that should be carefully considered before pursuing them.

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If you are considering a knee surgery but also looking for less invasive, less expensive options, this book is for you. If you are looking for self treatment of knee pain that you can do at home (or office), this book is for you. **Do keep in mind that you will need to commit to sticking to the exercise and not throwing in the towel in a few weeks. It took time to damage your knee cartilage. It will also take time to recoup and regain your active life.**

Every day hundreds of patients visit my clinic from various parts the country. Those patients have dealt with knee pain for years (some decades!), or those who have been told that surgery is their only remaining option. Such patients have one thing in common – they are determined to reduce/ eliminate pain by taking control of their own body and are committed to this simple exercise regimen. As result I have seen a number of dramatic improvement through the series of Pain Navigator exercises (which we'll take you through in this book).

Here's a quick preview of the contents.

In PART 1, we'll cover Pain Navigator Diagnosis as a precursor to Pain Navigator exercise.

In PART 2, we'll cover Pain Navigator exercise together using illustrations. These exercises as I mentioned can be done at your home or office. Once you've read through this section, then it's time for your try it out! Make sure you continue the exercises every day (not a couple times a week, not once a week, OK?).

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In PART 3, we will review our knee structure using illustrations. There are roughly 4 areas which tend to cause knee pain. Learning the fundamentals of a knee structure and root cause of knee pain will deepen our understanding for pain management.

In PART 4, we will dive into posture. Poor posture is often the root cause of knee pain. We , as well as how to go about fixing your posture. I will also touch on the importance of diet and how keeping a diary

can improve our quality of life.

In PART 5, I have collated an FAQ regarding knee pain and knee pain management.

In PART 6, You will see a number of patient testimonies who have improve used Pain Navigator to restore their active lives. Reading through them will give you hope and a conviction to continue with your Pain Navigator exercise.

I have also posted both pre exercise (at the time of diagnoses) and post exercise x-rays. You can see for yourself the results of the exercises I have shown. Seeing is believing!

So let's get started on our journey together. Let's turn the first page… and step into Pain Navigator Exercise.

March 2016
Hideo Doya