

Effects of AACD

— Insights from Data —

Ryohei Miura (JP)
FDM Asian Association

Research Background

Manual therapy is empirically known to be highly effective.

However, it is difficult to show this objectively.

To get people to know the value of manual therapy, we cannot avoid showing its effects objectively.

FDM is a highly effective treatment.

Anyone can be successful in giving treatment if they are properly educated and properly diagnose and treat patients according to the FDM theory.

I am going to illustrate the effectiveness of FDM for the following reasons.

And I found the Anterior Ankle Continuum Distortion (AACD) to be the most suitable case study.

1. A large number of patients
2. AACD must be done for ankle sprains
3. Simple technique
4. Easy measurement of improvement in dorsiflexion limitation

Therefore, we took on the challenge of aggregating data on AACD treatment using various factors to present it more objectively.

Research Outline

The aim was to investigate the efficacy of treatment for anterior ankle continuum distortion (AACD).

The period is from November 2019 to the end of December 2020.

A number of 507 cases.

We asked 317 patients to participate.

Twelve FDM clinics were invited to participate.

I have developed a database specifically for collecting and analyzing large amounts of data.

Record Sheet

Next, we will explain how to record patient data.

Here is the recording sheet.

We recorded IDs, names, ages, genders, sports, injury dates, injury causes.

Symptoms such as swelling, gait evaluation, dorsiflexion angle were recorded.

The method of measuring the dorsiflexion angle used the standards of The Japan Orthopedic Association and The Japan Association of Rehabilitation Medicine.

Here you draw a line with a marker on the long axis of the fibula and the long axis of the fifth metatarsal.

Have the patient lightly flex the knee and loosen the tension in the lower leg.

The intersection angle of 90 degrees between the fibula and the fifth metatarsal was measured as a reference angle of 0 degrees.

The dorsiflexion range is displayed as plus (+), and the base flexion range is minus (-).

Date / / Recorder () Clinic ()

AACD Effectiveness Record Sheet

No Patient Name times

Age Gender

Sports

Day of Injury /Unknown

Day of Treatment

Case of Injury

/Unknown

Swelling(Large Medium Small)

Walking Before (5 4 3 2 1)

After (5 4 3 2 1)

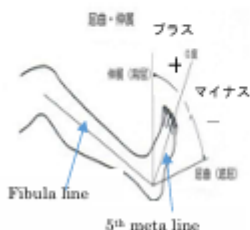
ADA(※) Before () °

※ADA=ankle dorsiflexion angle

After Starching () °

After AACD () °

Total () °



Indications of evaluation

Swelling

Large: The ankle looks thicker

Medium: The shape of the condyle is swollen and deformed

Small: Not swollen or slightly swollen

Walking

5: Normal, no pain

4: Slight lameness, little pain

3: Lane, with pain

2: Be able to stand, but unable to move forward (need crutch)

1: Hardly put any weight,

How to measure angle

1. Draw a line on the long axis of the fibula
2. Draw a line on the long axis of the fifth metatarsal bone
3. Flex the knee
4. Measure dorsiflexion and plantar flexion with 90 degrees of the fibula and fifth metatarsal as 0 degrees.

足 ankle	屈曲 (底屈) flexion (plantar flexion)	45	腓骨への垂 直線	第5中足骨	膝関節を屈曲位で行う。	
	伸展 (背屈) extension (dorsiflexion)	20				

Database

This is a database developed by FileMaker 19 for this research.
It was useful for aggregating and analyzing 507 pieces of data.

Two types of research

There are two types of research.

One is,

The data that only AACD was performed.

The period is from November 2019 to January 2020.

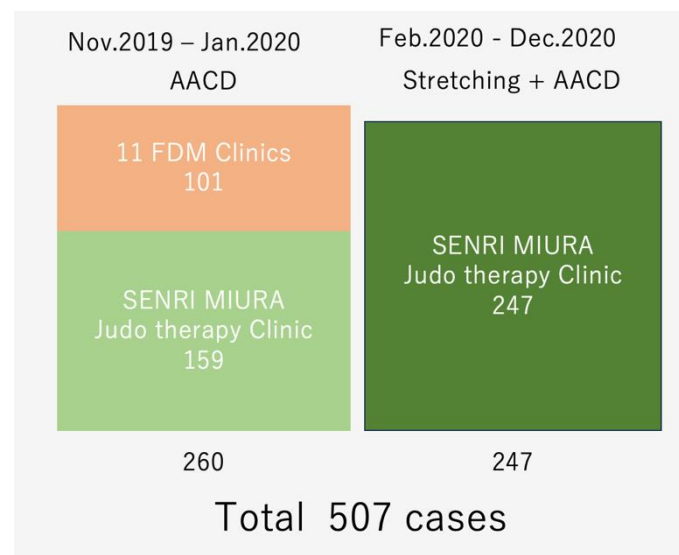
Data from 12 Japanese FDM clinics.

The other one is,

To compare AACD and stretching, we first stretched and then performed AACD.

The period is from February 2020 to December 2020.

Data for my clinic (SENRI MIURA Judo Therapy Clinic) only.



Subject Data

Age distribution is shown as 80% were teenage students, and mostly due to sports.

Teenagers in Japan actively participate in school and community sports activities.

Gender distribution:

In terms of numbers, 53% are male and 47% are female, slightly more male.

However, on recording paper, 47% for men and 53% for women.

The number of treatments is higher for women.

Left and right:

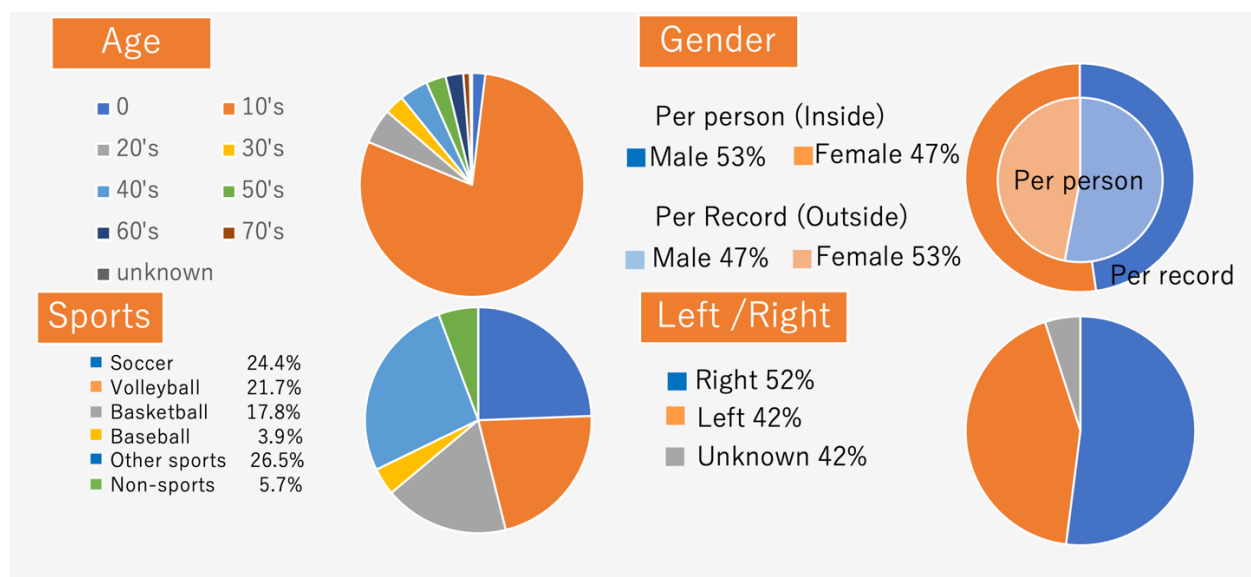
Right 52.0%, left 42.3% (the rest is unknown), the data revealed that the right is slightly higher.

Sports:

Soccer (24%), Volleyball (22%), Basketball (18.8%), Baseball (4%)

29 cases (6%) without sports.




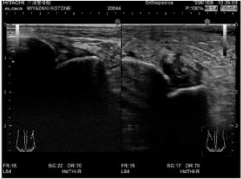
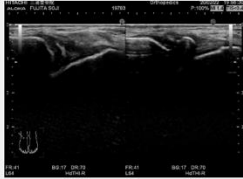
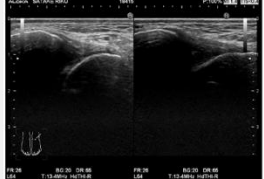
As expected, ball games are known to have a high risk of ankle sprains.



Evaluation of Swelling

Swelling was evaluated in three levels.

Large: The entire ankle appears thick and clearly swollen.

Large: The ankles appear thicker	Middle: The ankles are swollen and deformed.	Small: Slight swelling or no swelling.
		
		

Middle: Malleoli are swollen and deformed in shape.

Small: Slightly swollen or not swollen.

Gait Evaluation

The assessment of the walking condition was 5 levels.

I gave each one a point for later calculations.

- 1 point: You can hardly put your feet on the floor.
- 2 points: You can stand but you can't move forward. Inability to walk.
- 3 points: Walking is accompanied by lameness and pain.
- 4 points: With slight lameness, with a little pain.
- 5 points: Walking normally and no pain.

1 and 2 need crutches,

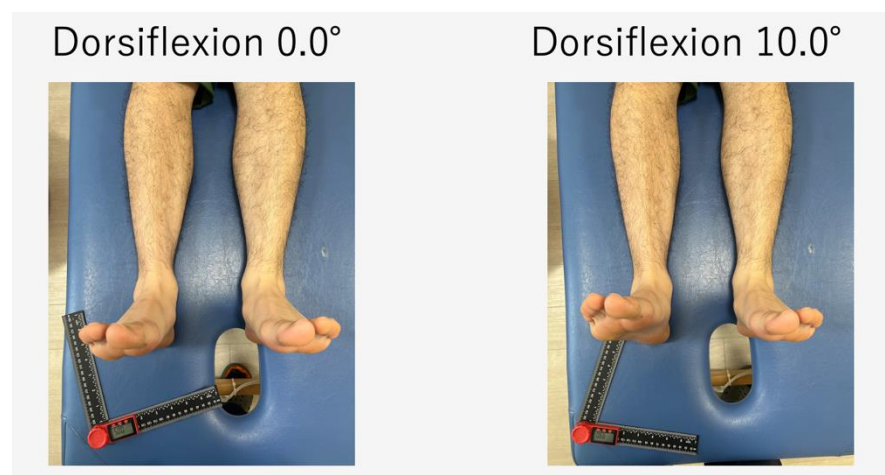
It was unnecessary because you can walk at 3 or more.

Point	Gait	Crutch
1	Unable to place the foot on the floor.	○
2	Able to stand but unable to move forward or walk.	○
3	Walking with a limp and experiencing pain.	—
4	Slight limp and mild discomfort.	—
5	Able to walk normally.	—

Changes in the Photo

The photo below shows a dorsiflexion angle of about 0.0 degree and the right photo shows a dorsiflexion angle of 10.0 degrees.

The 10.0 degree improvement can be clearly seen visually.



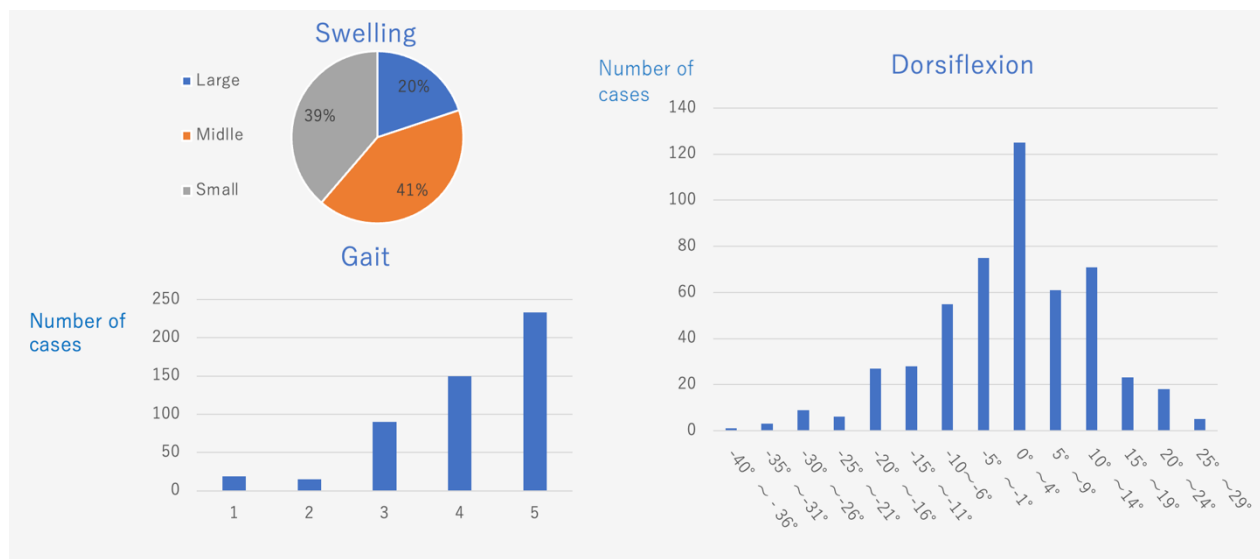
Previous State of AACD

Here you can view pre-treatment symptoms of AACD.

Swelling was 20% large, 41% medium, and 39% small.

About half of the patients were able to walk normally with a 5-point evaluation.

The most common dorsiflexion angle was 0 to 4 degrees, and the distribution was almost normal.



Effects of AACD

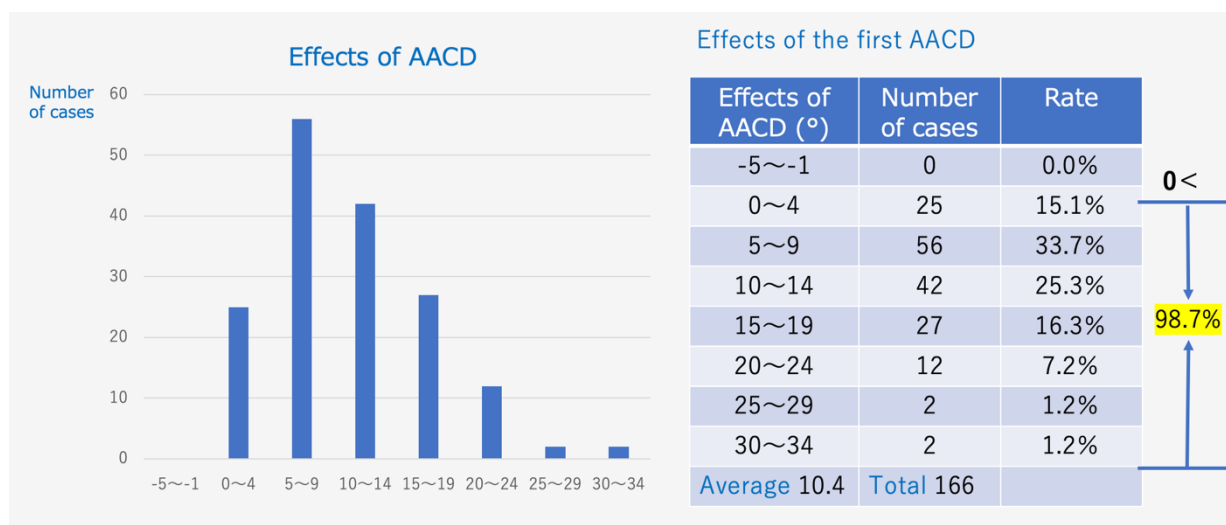
I will show you here the data about the effect of AACD.

This table shows that the average effect of the first AACD was 10.4 degrees.

The median value was 10.0 degrees.

5 to 9 degrees was the most common, and those with an improvement of 5 degrees or more were more than 75%.

There were only two cases with a 0-degree effect, and the proportion of cases with an effect of 1 degree or more was 98.7%.



Improvement of Swelling and Dorsiflexion

The effects of AACD are more pronounced in patients with severe symptoms.

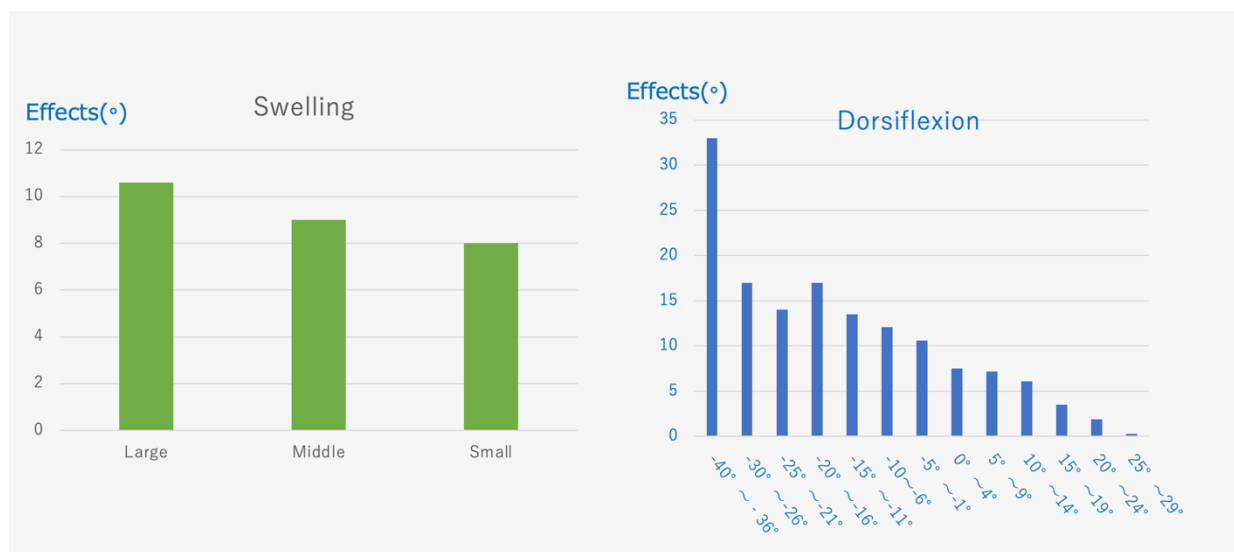
It can be seen from the graph that the effect of AACD is higher in the order of large, medium, and small swelling.

Large is 10.6 degrees, medium is 9.0 degrees, and small is 8.0 degrees.

The same is true for dorsiflexion restriction.

In general, the smaller the dorsiflexion angle, the more effective it is.

Since it approaches normal after treatment, it is more effective if the condition before treatment is worse.



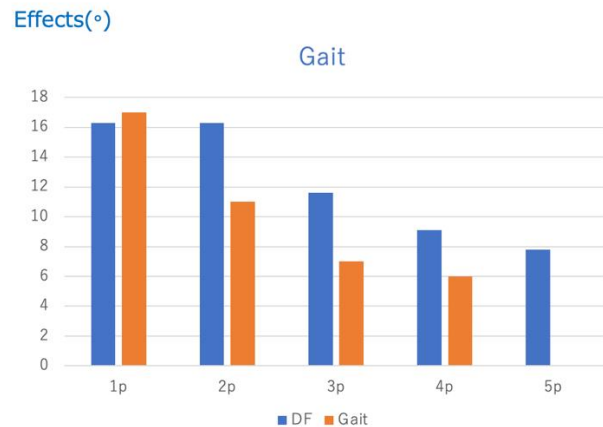
Improved Gait

Improvement of walking is also more effective in severe cases.

People who needed crutches saw improvement as their pain disappeared. They appreciate improvement and no longer require crutches.

GP	DF (°)	Effects of AACD (°)	GP after AACD (°)	Crutch
5	5.2	7.8	5.0(±0.0)	-
4	-0.2	9.1	4.6(+0.6)	-
3	-6.1	11.6	3.7(+0.7)	-
2	-13.0	16.3	3.1(+1.1)	○
1	-16.2	16.3	2.7(+1.7)	○

GP: Gait Points
DF: Dorsiflexion



Comparison of the Effects of AACD and Stretching

AACD and stretching were compared.

This is a summary of the data at my clinic after February 2020.

The Stretching method is to dorsiflex the ankle with knee extension as strong as the patient can tolerate and keep the position for 10 seconds.

The reason why I set it to 10 seconds is so that there is not much difference from the time required for AACD.

The effect of Stretching was 4.6 degrees, while the effect of AACD was 9.0 degrees.

AACD had a difference of about twice the improvement rather than stretching, and the superiority of AACD was clear.

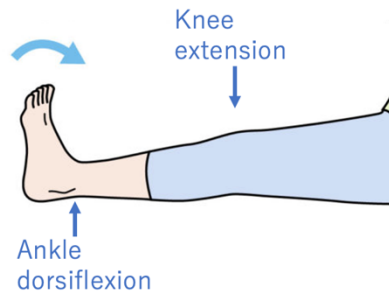
AACD alone was 9.0 degrees, while AACD and Stretching were 9.9 degrees, showing a difference in effect.

This is thought to be due to the synergistic effect of Stretching.

Since it is important to treat the patient, stretching alone did not end the treatment, but I think it is enough to show the advantage of AACD.

This fact shows that AACD has a specific effect on dorsiflexion limitation and is one of the evidence for the existence of Continuum Distortion.

How to stretch



	Effect of Stretching (°)	Effect of AACD (°)	Number of cases
AACD		9.0	260
Stretching +AACD	4.6	9.9	247

Influence of Practitioner Proficiency

I investigated how much the practitioner's skill level affects the effectiveness of AACD.

Practitioner A is myself. As of 2020, FDM had been treated for 17 years experience, practitioner B for 9 years experience, practitioner C and D each have 4 years experience, and practitioner E has 2 years experience.

No practitioner had a career of less than 2 years.

Looking at the table, it seems that the greater years of experience had a higher effect of AACD.

AACD is a simple technique of pressing the CD with the tip of the thumb, but there was a difference in proficiency.

It seems that subtle manipulations are involved even in techniques that look the same.

Practitioners C and D had the same years of experience, Practitioner C treated 87 cases while Practitioner D treated 25 cases.

The actual number of treatments may also have played a role in influencing the outcome.

	Years	Effect of AACD (°)	Number of cases
A	17 years	10.5	141
B	9 years	10.7	67
C	4 years	9.2	87
D	4 years	7.9	25
E	2 years	6.8	86

Number of Ankle Sprain Treatments

This is the number of FDM treatments required to improve the ankle sprain.

I verified the data at my clinic, Senri Miura Osteopathic Clinic.

All patients were asked to repeat the treatment if there was no improvement, insufficient improvement, or worsening of functionality of their ankle.

Although the purpose of this study was to collect AACD data, all patients had appropriate FDM techniques after AACD.

Therefore, this is the total effect of FDM on ankle sprains rather than only the effect of AACD.

Since we are not a research institution, but rather a patient care center, so please understand that when viewing the results below.

As a result,

65.4% of patients received FDM only once and 21.3% twice.

An average of 1.6 treatments were required to heal an ankle sprain in FDM.

Of the 312 participants (77.0%) who came to the hospital with other symptoms, the ankle sprain was completely cured and there were no sequelae.

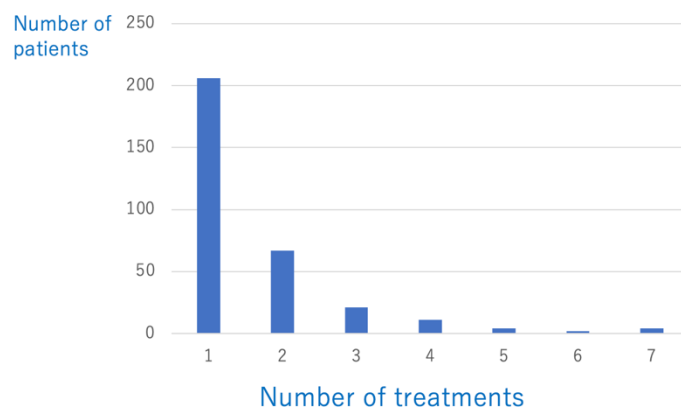
If all patients were surveyed by telephone, the results would have been even higher.

The effects of FDM are not temporary.

It is impossible to suspect this result as a placebo effect.

This is a fact that greatly encourages us.

Times	Number of treatments	Rate
1	206	65.4%
2	67	21.3%
3	21	6.7%
4	11	3.5%
5	4	1.3%
6	2	0.6%
7	4	1.3%



Summary

- AACD is 98.7% effective.
- AACD can improve dorsiflexion limitation by an average of 10 degrees.
- AACD is twice as effective as stretching.
- FDM ankle sprain treatments are significantly effective, with fewer treatments averaging 1.6 sessions.
- The effects of AACD and FDM are not temporary.

Other studies have also demonstrated the effectiveness of the technique in healthy volunteers and there have been a few clinical case reports.

But no other study has collected 500 like this one.

It was never easy to do research using actual patients.

The study has been an immense experience and I want to thank you very much for giving me this opportunity to present my data.

I hope you can use this data in your work and future treatment.

Thank you for your reading.

References

- [1] Stephen Typaldos, D.O, “Clinical and Theoretical Application of the Fascial Distortion Model”
- [2] Takehiko Torisu, “Hyoujun Seikrigekagaku 8th edition”