

Elevating the Standard
of Standing Works



DESIGN
AWARD
2020



reddot award 2020

<Medical>

The exoskeleton suits “Archelis” to alleviate the strain on the legs and lower back caused by standing work.



Labor shortage



Aging



Physical strain

Archelis can solve these social issues and contribute to reducing your strains while performing the surgery and extending your surgeon's life.

Why did we develop Archelis ?



Hiroshi Kawahira

MD, Ph.D., FACS Professor & Director Medical Simulation Center Board Certified Surgeon in Gastroenterology School of Medicine Jichi Medical University

Archelis was born from the medical issue surgeons have faced. In recent years, medical technology has evolved significantly. Laparoscopic surgery reduces patient burden, but surgeons face increased strain on their lower back and legs from prolonged standing. The exoskeleton “Archelis” addresses this issue by allowing surgeons to sit while standing, reducing fatigue and improving performance.

Features

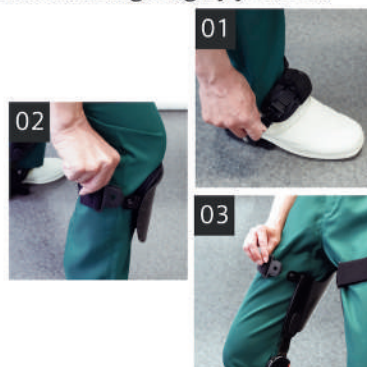
1. Freely move and sit anywhere

By independently separating each leg, it enables one to repeat "move" and "sit" freely while wearing it.



2. Easy to wear

It can be worn only 3 steps just by fastening three belts each foot, shin and thigh leg by yourself.



3. No power supply needed

As no power supply is used, there is no need to care the battery and charging.



Modes

Free mode (No support)

You can freely bend your knees and even perform squats with ease. No need to worry about steps or stairs either.



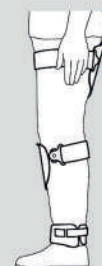
Archelis mode (Half-sitting)

This mode, where your body is supported by bending your knees. Short-distance movement is also possible.



Stand mode

This mode supports the standing posture. It's more upright and straight compared to the Archelis mode.



Benefits

Mechanism

By dispersing the wearer's weight, it reduces the load on the lower back, legs, and feet.



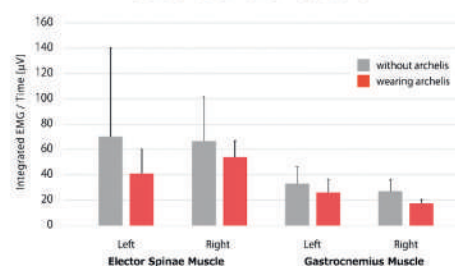
■ Surface pressure dispersion (in-house study)

Evidence

Reduce the max. **41%** of back strain



The scene of the research



Demonstration Project for Safety and Health Equipment for Older Workers(2021.MHLW)

Product introduction

ArchelisFX

Mobile & Stable
Lighter



Adopting the carbon fiber
called "Flexcarbon®"
Much lighter by far

Ratchet buckle type
Overwhelming stability



ArchelisFX Stick

The lightest
Evolved walkability
Improve the wearability



Adopting the carbon fiber
called "Flexcarbon®"
Much lighter by far

Stick type
Increased ease of
movement, wearing



User testimonials

Without Archelis, I would not have had the surgery.

<Spine>



Kenji Fukaya
Deputy director
Ayabe Renaiss Hospital Department of Neurosurgery

My body is really comfortable while wearing Archelis. I do about 10 surgeries a week, and I use Archelis in all 10 of them. As a doctor specializing in back surgery, I no longer need a corset by wearing Archelis. I think this fact shows how good Archelis is.



No doubt Archelis will improve my surgical longevity

<Hepatobiliary & General>
<Liver Transplant>



Kellee Slater
Deputy Chair of the National Board in General Surgery for
General Surgeons Australia Senior Lecturer,
University of Queensland

I have been using the Archelis system for 2 months and it would hard to do a case without them now. They have significantly relieved the stress on my back and feet and I have more energy at the end of the day. They are simple to use and I would highly recommend them to nurses and surgeons alike.



**Thanks to Archelis, I got the confidence.
“I can still perform the surgery for ages.”**

<Cardiovascular surgery>
<Hybrid>
<Open chest surgery>



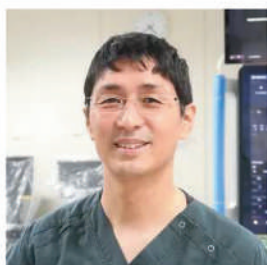
Masakazu Aoki
Cardiovascular Surgery Department
Matsumoto Kyoritsu Hospital

The surgery that I find easiest is endoscopic surgery. Because I don't move much during surgery and I can stand in same position all the time. I really hope that Archelis will spread the word, I believe it's so worth it.



**Since introducing Archelis,
I'm less tired the next day!**

<Cardiology>
<Catheter ablation>



Michitomo Kawahito
Manager of SCSH-Heart Care Team
Department of Cardiology
Shizuoka City Shizuoka Hospital

Archelis has been very helpful in terms of “not leaving me tired the next day,” so I think Archelis is already a necessary part of my life. I believe that it is more important to prevent back pain before it gets worse than to deal with it after it gets worse.



Comparison





ArchelisFX Stick



ArchelisFX



Archelis

Concept	Latest model The lightest	Mobile and Stable	The Most Stable Available in two colors(White/Black)
Foot parts	Stick structures Free to your ankles and enable you to walk smoothly and silently 	Ratchet buckle structure Same as ski boots, it is easy to put on and pull off. It makes you stable 	
Materials	Flexcarbon®		Metal
Compatibility	Each foot part can be replaced with another type		—

Product Specification

Product name	ArchelisFX stick	ArchelisFX	Archelis
Product code	arFXS001-S (Size S) arFXS001-M (Size M) arFXS001-L (Size L)	arFX001-S (Size S) arFX001-M (Size M) arFX001-L (Size L)	ar001-S (Size S) ar001-M (Size M)
Material(thigh, shin)	Flexcarbon®*1		Metal
Wearable heigh	1.45-1.65m (Size S) 4'9"- 5'5"ft (Size S) 1.60-1.85m (Size M) 5'3"- 6'1"ft (Size M) 1.70-1.95m (Size L) 5'7"- 6'5"ft (Size L)		1.45-1.65m (Size S) 4'9"- 5'5"ft (Size S) 1.60-1.85m (Size M) 5'3"- 6'1"ft (Size M)
Max. load weight	65kg / 143lb (Size S) 90kg / 198lb (Size M) 115kg / 254lb (Size L)		65kg / 143lb (Size S) 90kg / 198lb (Size M)
Dimension(one leg)	17.5 x 28.0 x 71.5 cm (Size S) 6.9 x 11.0 x 28.1inch (Size S) 17.5 x 28.0 x 78.5 cm (Size M) 6.9 x 11.0 x 30.9inch (Size M) 17.5 x 28.0 x 82.3 cm (Size L) 6.9 x 11.0 x 32.4inch (Size L)		17.5 x 28.0 x 71.5 cm (Size S) 6.9 x 11.0 x 28.1inch (Size S) 17.5 x 28.0 x 78.5 cm (Size M) 6.9 x 11.0 x 30.9inch (Size M)
Weight(one leg)	1.7kg / 3.7lb (Size S) 1.8kg / 4.0lb (Size M) 1.9kg / 4.2lb (Size L)	2.0kg / 4.4lb (Size S) 2.1kg / 4.6lb (Size M) 2.5kg / 5.5lb (Size L)	2.3kg / 5.1lb (Size S) 2.7kg / 6.0lb (Size M)
Color	Carbon black		Black / White
Accessory	Dedicated stand		

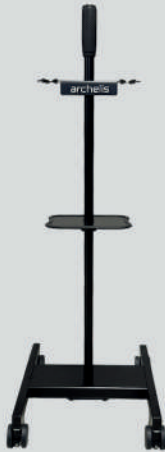
*1 Flexcarbon® is strong and light fiber rein-forced plastic developed by Suncorona Oda Co., Ltd.

Quality



- This product conforms to the Japanese Industrial Standards 《JIS B 9810》
- It has cleared durability tests designed for 100,000 times.
- Made in Japan

Accessories



Dedicated caster stand

Consumables



Thigh cushion



Thin cushion



Thigh belt



Thin belt

Each consumables are also available by single items for purchase

The Founder's Thoughts

The Archelis project started with the thoughts of “reducing the burden on doctors who perform surgery while standing for long hours.”

There are many people in the world who are engaged in standing works while suffering from backaches, not only doctors but also factory workers, security guards, cooks, and so on. Our goal is to solve social issues by completely new ideas through technology and design.

We propose a new style of a working environment and make it the global standard in the near future. Our vision is to free humanity from the burden of standing posture by technology and design and to realize the society where people across the globe live healthy forever.

Founder & CTO
Hideyuki Fujisawa



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Case Study



Distributor (contact for inquiries)