



Elevating the Standard
of Standing Works



<Medical>

The exoskeleton suit “Archelis” alleviates the strain on the legs and lower back caused by standing work.



Labor shortage



Aging



Physical strain

Archelis can help solve these social issues, contribute to reducing strains while performing surgery, and extend surgeon career longevity.

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 “move” and “sit” freely while wearing it.



2. Easy to wear

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



3. No power supply needed

As no power supply is used, there is no need to think about battery life 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)

In this mode your body is supported by bending your knees. Short-distance movement is also possible.



Stand mode

This mode supports a 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.



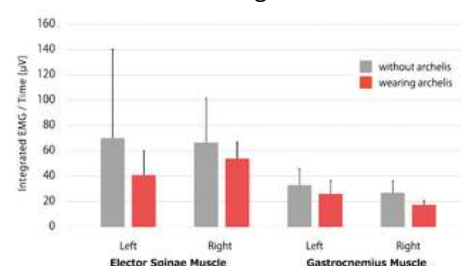
■ Surface pressure dispersion (in-house study)

Evidence

Reduces up to **41%** of back strain



Research alongside MHLW



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

Product introduction

ArchelisFX

Mobility & Stability
Lighter than before



Uses a carbon fiber called
"Flexcarbon®"
Much lighter than metal

Ratchet buckle type
Overwhelming stability



ArchelisFX Stick

Our lightest product yet
Evolved walkability
Improved wearability



Using a carbon fiber called
"Flexcarbon®"
Much lighter than metal

Stick type
Easier to both put on and
walk around.



User testimonials

“Standing with the comfort of sitting is incredible”

<General surgery>



Dr. Faustino Afonso
Hospital San Juan de Dios,
Tenerife

I have used Archelis during several surgical operations and it has been wonderful. I am a doctor with a disability in my hips, and if it weren't for Archelis, it would be impossible to operate on my patients. The feeling of sitting, with my weight resting, while actually standing upright, is incredible.



“No doubt Archelis will improve my surgical longevity”

<Hepatobiliary & General>
<Liver Transplant>



Dr. 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 be 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 feel I can continue doing surgery”

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



Dr. Masakazu Aoki
Matsumoto Kyoritsu Hospital,
Cardiovascular Surgery Department

We perform a lot of different types of surgery in cardiovascular medicine - I'd say that if it's a surgery that will last more than two hours, I'd try and use the Archelis as much as possible. I wish there was an Archelis available in every hospital in Japan.



“If I didn't have Archelis, I couldn't continue to perform surgery”

<Spine>



Dr. Kenji Fukaya
Deputy Director
Ayabe Renaiss Hospital, Department of Neurosurgery

Archelis is really comfortable. I perform about 10 surgeries a week, and I use Archelis for all of them. I no longer need a medical corset. As a specialist in spinal surgery, the fact that I no longer use a corset should convey how good Archelis is. Without Archelis, I wouldn't perform surgeries.



Comparison





ArchelisFX Stick



ArchelisFX



Archelis

Concept	Latest and lightest model	Mobility + Stability	Outstanding stability
Foot parts	<p>Stick structures Attached to ankles, enabling you to walk smoothly and silently</p> 	<p>Ratchet buckle structure Same as ski boots, it is easy to put on and take off. Offers more stability</p> 	
Materials	Flexcarbon®		Metal
Compatibility	Each foot part is interchangeable.		—

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 height	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 reinforced 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 uses.
- Made in Japan

Accessories



Dedicated wheeled stand

Consumables



Thigh cushion



Shin cushion



Thigh belt



Shin belt

Each consumable is also available to purchase separately.

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



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