

YDSTRONG

EMS/EMA Magic Pants

Help you to build a **strong, amazing** Buttocks



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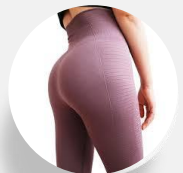
Company and development history

YDSTRONG

Shenzhen YDSTRONG Smart Health Technology Co., Ltd. specializing in R&D, production and sales of textile electrode clothing and flexible sensor electrodes. include Tens supplies, EMS suit, Our products are sold in 69 countries and regions globally across China, Hong Kong, Southeast Asia, Australia, Middle East, Africa, Europe, South America and North America. The EMS muscle stimulation developed by us provides a completely new way of exercise. This is unprecedented in the training industry and we are continuously innovating and moving forward. We believe this is the way to the future.

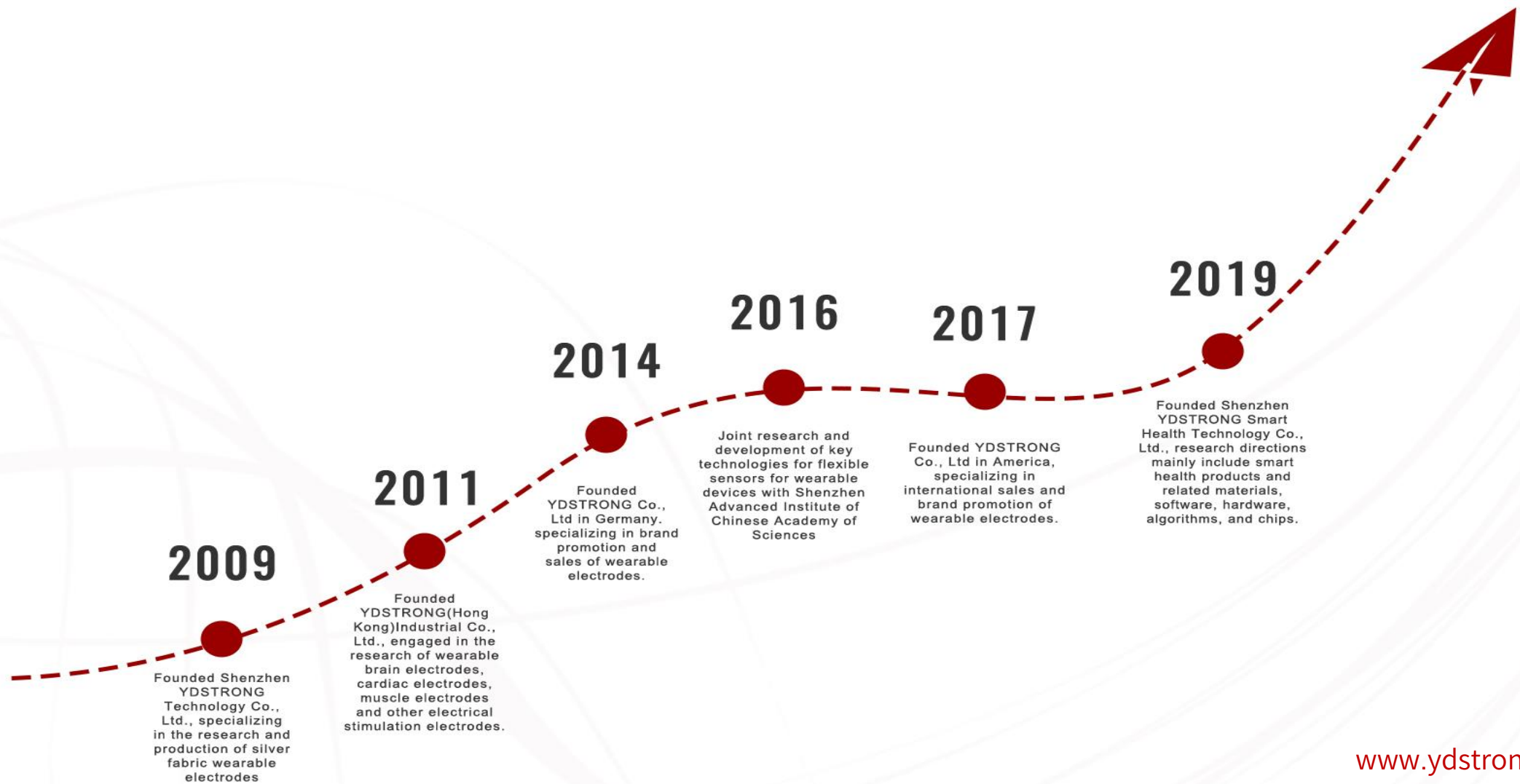


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YDstrong development history

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Founder's motto and achievements

YDSTRONG



“ Human society is always advancing in continuous exploration and innovation, and as a design engineers, our task is to keep innovating, keep improving, and make more many people enjoy better high-tech smart wearable products. ”

Design engineer
Brand founder
CEO

Haisons

Mr. Zou Haisons, 2015 - Stimulating the Comfort of Textile Electrodes in Wearable Neuromuscular Electrical Stimulation

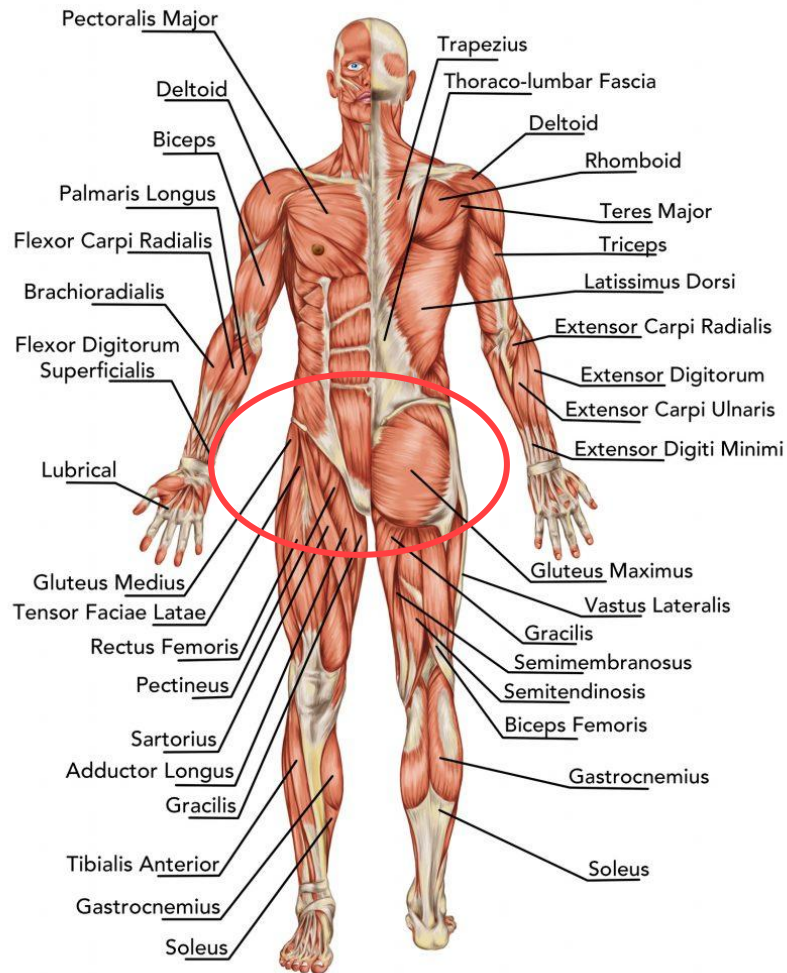
<https://www.mdpi.com/1424-8220/15/7/17241>

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About Glutes Muscles

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The gluteal region is an anatomical area located posteriorly to the pelvic girdle, at the proximal end of the femur. The muscles in this region move the lower limb at the hip joint.

The muscles of the gluteal region can be broadly divided into two groups:

Superficial abductors and extenders – group of large muscles that abduct and extend the femur. Includes the gluteus maximus, gluteus medius, gluteus minimus and tensor fascia lata. Deep lateral rotators – group of smaller muscles that mainly act to laterally rotate the femur. Includes the quadratus femoris, piriformis, gemellus superior, gemellus inferior and obturator internus.

The movement of adduction is used to describe a direction of limb motion that serves to take the limb from a lateral position to its more-axial alignment. During a jumping-jack exercise, for example, abduction of the leg occurs when it is moved away from the midline and adduction when it is moved back toward the midline. The main abductors of the hip are the gluteus medius, gluteus minimus, and tensor fascia lata. Those three muscles also serve to internally rotate the thigh in an extended position and externally rotate the thigh in the flexed position. Another minor contributor is the piriformis. The main hip adductors are the adductor magnus, the adductor brevis, and the adductor longus.

Dr. Shane W. Cummings .etc 2011 - Human muscle system
<https://www.britannica.com/science/human-muscle-system>

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About Glutes Muscles



Gluteus Maximus



Gluteus Medius



Gluteus Minimus

Gluteus maximus

It is considered the third and last of the extensor apparatus of the the lower limbs. Its origin is in the ridge going from the ilius to the sacrum and coxis, and its insertion is on the femur. It's mainly responsible to maintain an erect position, since it abducts the thigh with respect to the trunk. Therefore with the quadriceps and the calf is responsible to counteract gravity. It is thus important in training finalized to running and jumps.

(the main, larger muscle that shapes your backside),

Gluteus medius & Gluteus minimus

The small and middle gluteus participate to the extensory movements of the lower limbs, specifically in the outward rotation and abduction of the thigh.

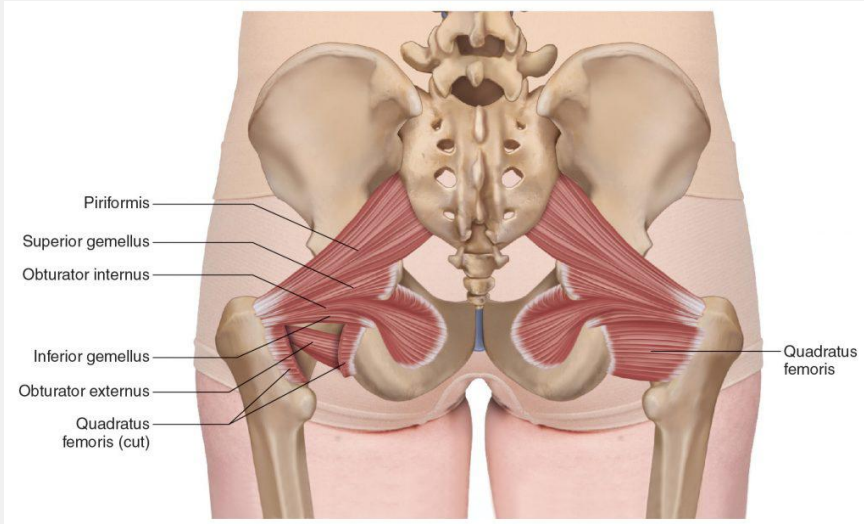
These muscles are deeper than the gluteus maximus. They originate just below the crest of the ilium, and have their insertion on the great trochanter (protuberance) of the femur.

To be effective the stimulation of these muscles has to be done with that of the gluteus maximus. It is mostly doen to obtain **aesthetic results**. From a sport point of view it does not give particular advantages over a stimulation of the gluteus maximus only.

Dr. Oliver Jones, 2019 - Muscles of the Gluteal Region

<https://teachmeanatomy.info/lower-limb/muscles/gluteal-region/>

About Glutes Muscles



Deep lateral rotators

Group of smaller muscles that mainly act to laterally rotate the femur. Includes the quadratus femoris, piriformis, gemellus superior, gemellus inferior and obturator internus. The general action of these muscles is to laterally rotate the lower limb. They also stabilise the hip joint by 'pulling' the femoral head into the acetabulum of the pelvis.

Piriformis

The piriformis muscle is a key landmark in the gluteal region. It is the most superior of the deep muscles.

Obturator Internus

The obturator internus forms the lateral walls of the pelvic cavity. In some texts, the obturator internus and the gemelli muscles are considered as one muscle – the triceps coxae.

The Gemelli

The gemelli are two narrow and triangular muscles. They are separated by the obturator internus tendon.

Quadratus Femoris

The quadratus femoris is a flat, square-shaped muscle. It is the most inferior of the deep gluteal muscles, located below the gemelli and obturator internus.

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About Classification of Muscular Fibers

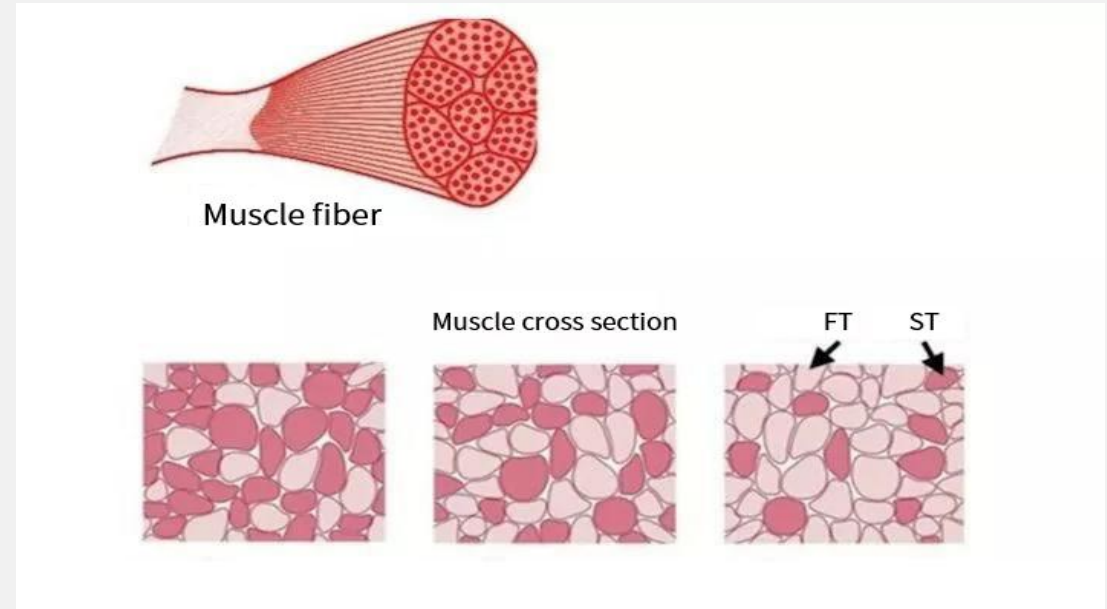
Voluntary muscles are formed by muscle fibers, all of which can shorten on command, contributing to a muscle contraction. However, they may have different characteristics, and they have been classified accordingly into:

- Slow twitch, or slow fibers of type "I"
- Fast twitch, or fast fibers of type "II", which can be subdivided in
- Fast twitch, or intermediate fibers of type "IIa"
- Fast twitch, or very fast fibers of type "IIx" or "IIb";

What used to be called IIb is called IIx by more recent research, and is the accepted correct denomination.

The following table (courtesy of Wikipedia) shows the main functional aspects. From it, it can be understood how, depending on the goal it's useful to train certain types of fiber. For instance for endurance goals it is useful to train slow fibers. To increase maximum force it'll be useful to train Type IIx fibers; it will not be useful to train type I fibers which are not capable to develop a high level of force.

Fiber Type	Type 1	Type 2a	Type 2x (formerly 2b)
Contraction time	Slow	Fast	Very Fast
Motor neuron size	Small	Medium	Large
Fatigue resistance	High	Intermediate	Low
Activity	Aerobic	Long-term anaerobic	Anaerobic
Maximum duration	Hours	< 30 minutes	< 5-1 minutes
Force production	Low	Medium	High
Mitochondrial density	High	Medium	Low
Capillary density	High	Intermediate	Low
Oxidative capacity	High	Intermediate	Low
Glycolitic capacity	Low	High	High



To correctly organize an electrostimulation session, it will be useful to select the type of program in line with the goals listed by this table.

Our specific EMS/EMA program is setted upon the characteristic of FT/ST and EMS/EMS to achieve your goals



Glutes Muscles Benefits

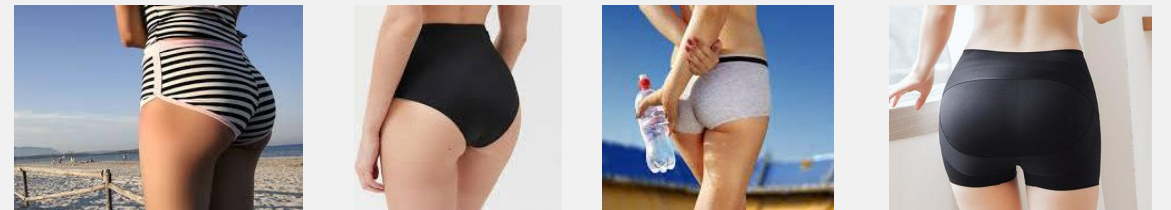
YDSTRONG

From the muscle structure of the buttocks, we ensure that the superficial and deep muscles of the buttocks bring different benefits to our body.

1. Sports steering to improve **sports performance**. Strong hip muscles can improve the comfort of our daily lives, and can improve performance such as running, climbing, and various sports

2. Tightly connect the pelvis and stabilize the hip joint, which can help us avoid medical symptoms and **Injury Prevention**

Of course, perfect gluteal muscles can bring us the **aesthetic** effect of the buttocks



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About EMS/EMA

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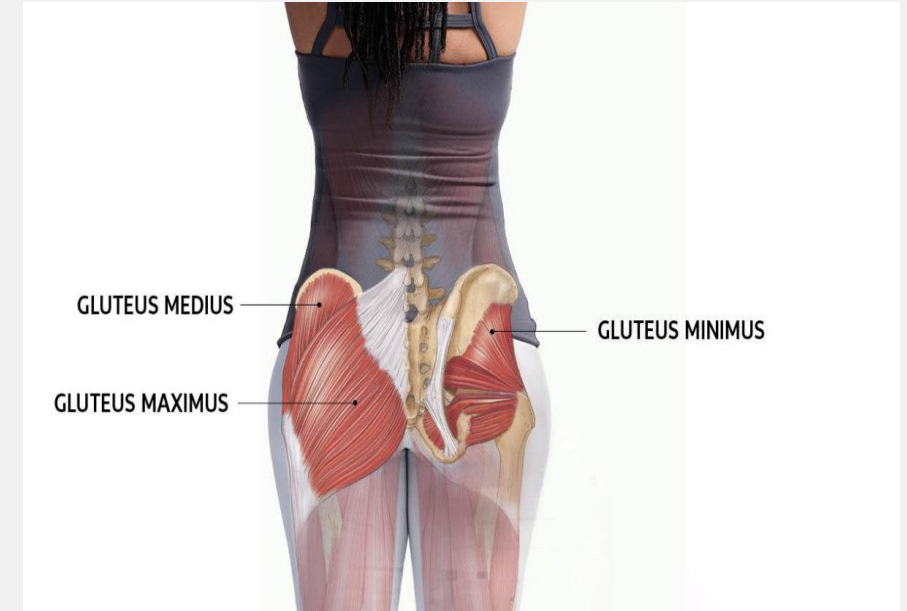
YDSTRONG Magic Pants using the technology of combining EMS and EMA to stimulate the muscles of the buttocks (glutes major / gluteus medius / gluteus minimus)

Through EMS stimulation of the gluteus maximus combined with daily basic exercises to achieve strong buttocks

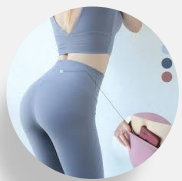
Stimulate the gluteus medius and gluteus minimus through EMA to complete the gluteus medius and gluteus minimus exercise without special training actions.

Electrical Muscle Stimulation (**EMS**) device sends electrical impulses to create involuntary muscle contraction. This device stimulates the nerves by electrical impulses. Those impulses can go through muscles to develop muscle contraction. With EMS machine it's mandatory for clients to do specific exercises to gain their own goals.

EMA is Electrical Muscle Activation. With electrical stimulation goes through all muscle fibers to improve strength and endurance in muscles. This innovative, and highly effective high-tech device stimulates muscle fibers without stimulating nerves, so we don't bother nerves with this machine. By maximally contracting a muscle, at best, only %30 of all muscle fibers are in a state of contraction. With EMA we work on all muscle fibers by using electrical impulses in the modulated mid-frequency range of 2000 Hz. Clients don't need to have exercise. However, doing some activities during working with YDSTRONG system can make achievement of client's goal easier and faster.



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About EMS and its waveform

In the entire EMS/EMA system, the control box transmits the audio model to the pulse generator via Bluetooth. The pulse generator generates different pulse waveforms according to the instructions of the control box. The nervous system receives signals higher than the synaptic transmission threshold, so that the nervous system is controlled. The muscles start to move according to the waveform output by the pulse generator.

Among the known waveforms, there are Monophasic, Rectangular, Biphasic, Sine, Burst and Triangular waveform.

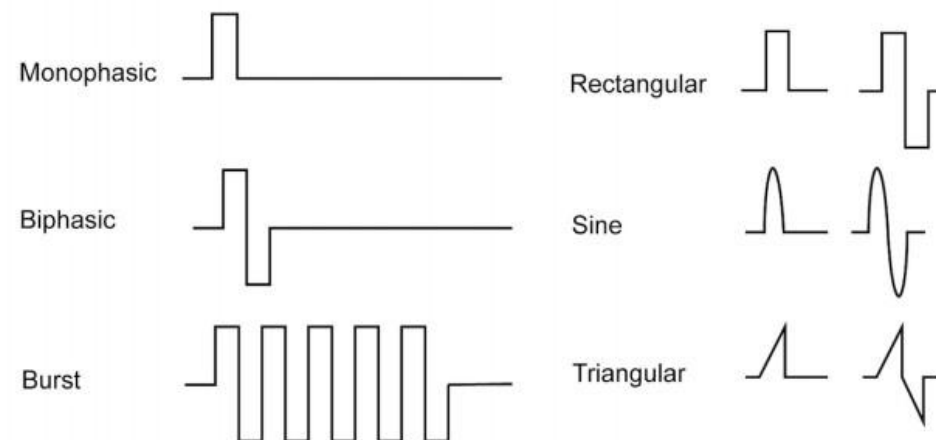
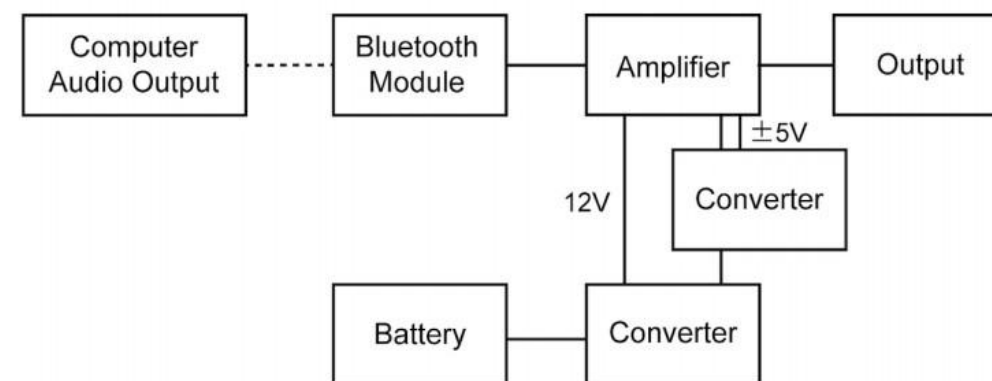
Different waveforms bring us different feelings. In specific use, we recommend that you choose sine waves first. The characteristics of sine waves are less pain and still have greater muscle strength. In long-term EMS stimulation, we recommend changing the waveform pair frequently. Muscle stimulation to achieve better stimulation effect.

-Michinari Kono, Jun Rekimoto

wavEMS: Improving Signal Variation Freedom of Electrical Muscle Stimulation

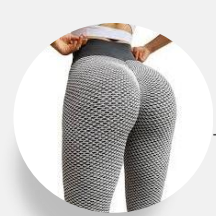
https://www.researchgate.net/figure/Types-of-waveforms-used-in-EMS-A-specific-stimulus-burst-sine-wave-of-a-carrier_fig2_331008828

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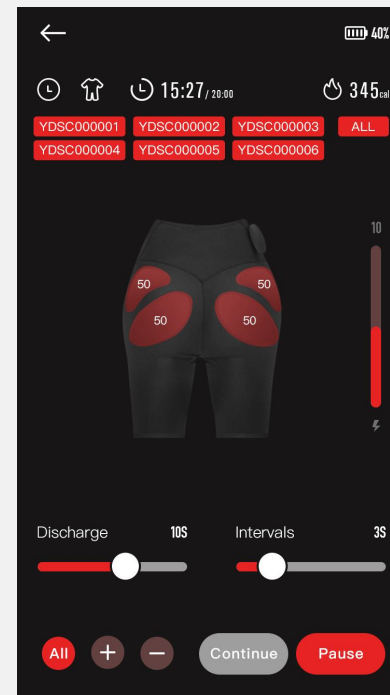
YDSTRONG EMS/EMA Magic Pants



Power box



Magic pants



APP

YDSTRONG EMS/EMA Magic Pants - Power Box



Power box



Weight: 80g
 Power Supply: 400mAh rechargeable lithium battery
 Maximum Charging Current: 1A
 Power Supply Range: 3.2-6V
 Maximum Working Current of Whole Machine: No more than 1A (regulated power supply test)
 Standby Current: 40 MA \pm 3 (power supply test method)
 Static Current: No more than 30uA
 Low Voltage Alarm: 3.3V red light flashes
 Treatment Current: 6mA-100mA
 Ooutput Channel: 2 channels
 Pulse Width: 10-1000us
 Frequency Range: 1~2000Hz
 Indicator
 Green color - EMS training process
 Fundamental Waves:
 Square wave (Biphasic)



YDSTRONG EMS/EMA Magic Pants - Electrodes

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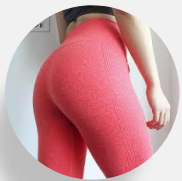


Newest Composite Electrodes

Four Layer Silver Fiber Fabric Electrode

Much more stable and Comfortable

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YDSTRONG EMS/EMA Magic Pants - Fabric

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**High elastic
fabric (1:1.4)**

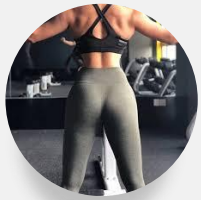


Fabric material:

83% polyamide fibre 17% Spandex



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APP

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Time left / total workout time

Right/left balance button

Bound control boxes

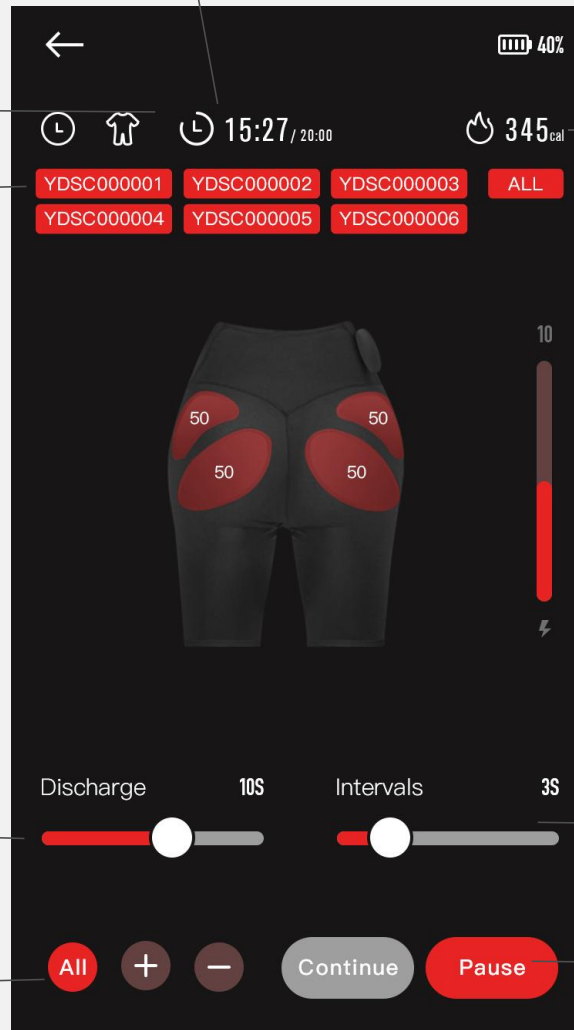
Calories burned

Current discharge duration

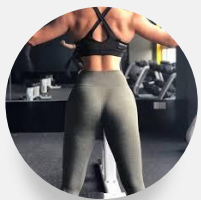
Interval time for discharge

Activate all electrode pads by one click

Start/Pause program



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Size Chart

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Female

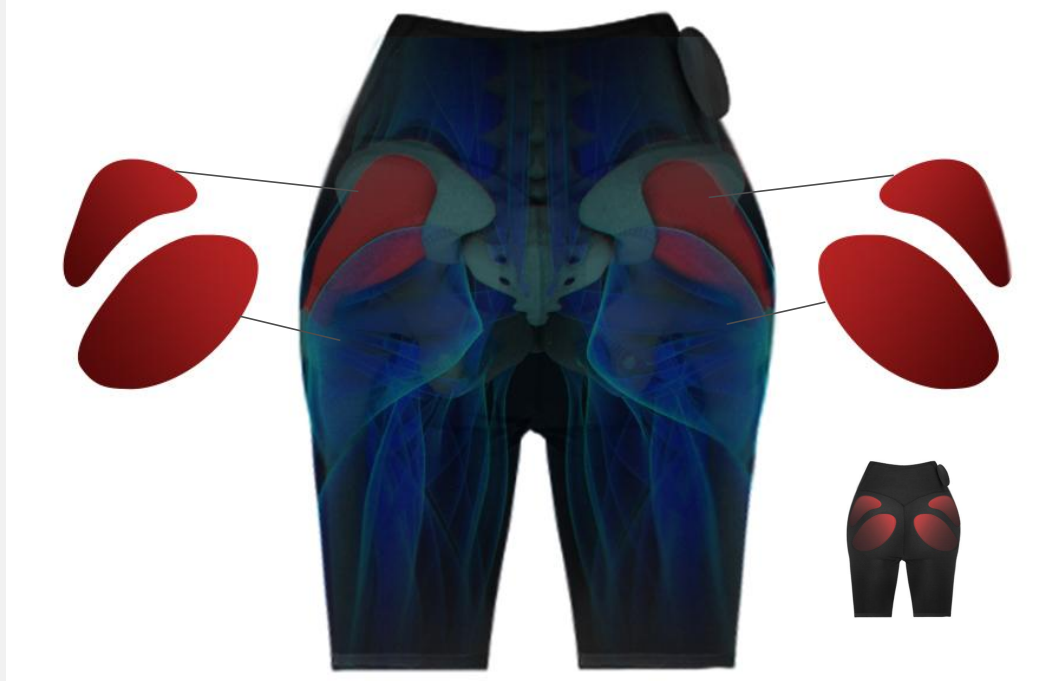
Size chart (CM)							
Size Girth	XXS	XS	S	M	L	XL	XXL
Waist	55~64	59~68	67~78	73~85	84~97	90~104	98~112
Hips	80~96	84~100	92~110	98~117	106~126	111~132	114~136
Length	42	42.5	43	43.5	44	44.5	45

Male

Size chart (CM)							
Size Girth	XXS	XS	S	M	L	XL	XXL
Waist	68~78	73.5~85	78~90	84~96	89~102	95~108	100~114
Hips	77~91	83~98	89~105	94~110	98~116	104~122	109~130
Length	36.5	37	38	38.5	39	39.5	40

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Features



1. Based on the layout of the hip muscles, the electrodes perfectly cover the gluteus maximus, gluteus medius, gluteus minimus, Piriformis, Obturator Internus, The Gemelli, and Quadratus Femoris.
2. Through low-frequency and intermediate-frequency electrical stimulation, not only the superficial muscle can be stimulated, but also the deep lateral rotators can be stimulated by intermediate-frequency electrical stimulation, including Piriformis, Obturator Internus, The Gemelli, Quadratus Femoris.



Philosophy of YDstrong

The design of magic pants is based on the position and function of human hip muscles, as well as the positive effects of EMS/EMA on muscle stimulation through long-term verification.

It is launched by YDSTRONG's many design engineer, ID engineer, structural engineer, and software engineer. We design, develop, produce and promote new products to the market with a scientific and rigorous attitude.

Not only this magic pants, other other products - EMS training system, Tens supplies and other coming soon products.

YDstrong still firmly design, develop, and produce our products based on the principles of science, safety, environmental protection, and seeking truth from facts, and bring customers more advanced, more comfortable, more useful, safer, and more environmentally friendly products.

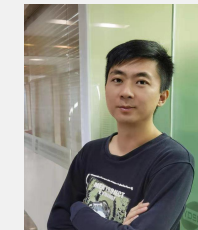
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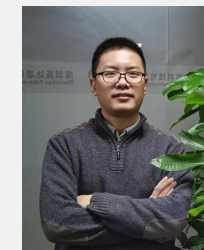
Product Engineer



HD Engineer



ID Engineer



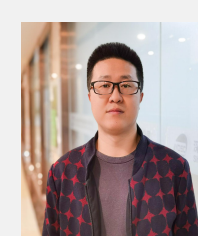
Product Engineer



Software Engineer



Structural Engineer



Software Engineer

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Literature on the active application of EMS/EMA

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Functional Exercise Training and Undulating Periodization Enhances the Effect of Whole-Body Electromyostimulation Training on Running Performance

[Front. Physiol., 13 June 2018 | https://doi.org/10.3389/fphys.2018.00720](https://doi.org/10.3389/fphys.2018.00720)

Whole-Body Electromyostimulation Improves Performance-Related Parameters in Runners

[Front. Physiol., 13 November 2018 | https://doi.org/10.3389/fphys.2018.01576](https://doi.org/10.3389/fphys.2018.01576)

Effect of the Combination of Whole-Body Neuromuscular Electrical Stimulation and Voluntary Exercise on Metabolic Responses in Human

[Front. Physiol., 20 March 2019 | https://doi.org/10.3389/fphys.2019.00291](https://doi.org/10.3389/fphys.2019.00291)

Adjustment Effects of Maximum Intensity Tolerance During Whole-Body Electromyostimulation Training

[Front. Physiol., 24 July 2019 | https://doi.org/10.3389/fphys.2019.00920](https://doi.org/10.3389/fphys.2019.00920)

The Effects of Superimposed Whole-Body Electromyostimulation During Short-Term Strength Training on Physical Fitness in Physically Active Females: A Randomized Controlled Trial

[Front. Physiol., 27 June 2019 | https://doi.org/10.3389/fphys.2019.00728](https://doi.org/10.3389/fphys.2019.00728)

The Impact of Whole-Body Electromyostimulation on Body Posture and Trunk Muscle Strength in Untrained Persons [Front. Physiol., 20 August 2019 | https://doi.org/10.3389/fphys.2019.01020](https://doi.org/10.3389/fphys.2019.01020)

[Front. Physiol., 20 August 2019 | https://doi.org/10.3389/fphys.2019.01020](https://doi.org/10.3389/fphys.2019.01020)

Effects of Whole-Body Electromyostimulation on the Energy-Restriction-Induced Reduction of Muscle Mass During Intended Weight Loss

[Front. Physiol., 12 August 2019 | https://doi.org/10.3389/fphys.2019.01012](https://doi.org/10.3389/fphys.2019.01012)

(Whole-Body) Electromyostimulation, Muscle Damage, and Immune System: A Mini Review

[Front. Physiol., 29 November 2019 | https://doi.org/10.3389/fphys.2019.01461](https://doi.org/10.3389/fphys.2019.01461)

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