

# Bioregulatory Functions of Jason Winters Tea Extract

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(Dr. Katakura's comment in his presentation is in this green box)

Dr. Katakura: I started off my research from the perspective of anti-aging foods. I would like you to think what outcomes on your life you want from anti-aging food and what disease you want to prevent by doing anti-aging. Also, I will talk how close to those goals we can go with JWT.



九州大学

## 1. Nutrition

Vitamins, minerals

## 2. dietary fiber

## 3. Intestinal bacteria

## 4. Antioxidant

## 5. Anti-inflammatory

## 6. Immune activation

## 7. Hormonal Balance

## 8. Metabolism improvement

Metabolic syndrome, bone metabolism

## 9. Lifestyle-related diseases

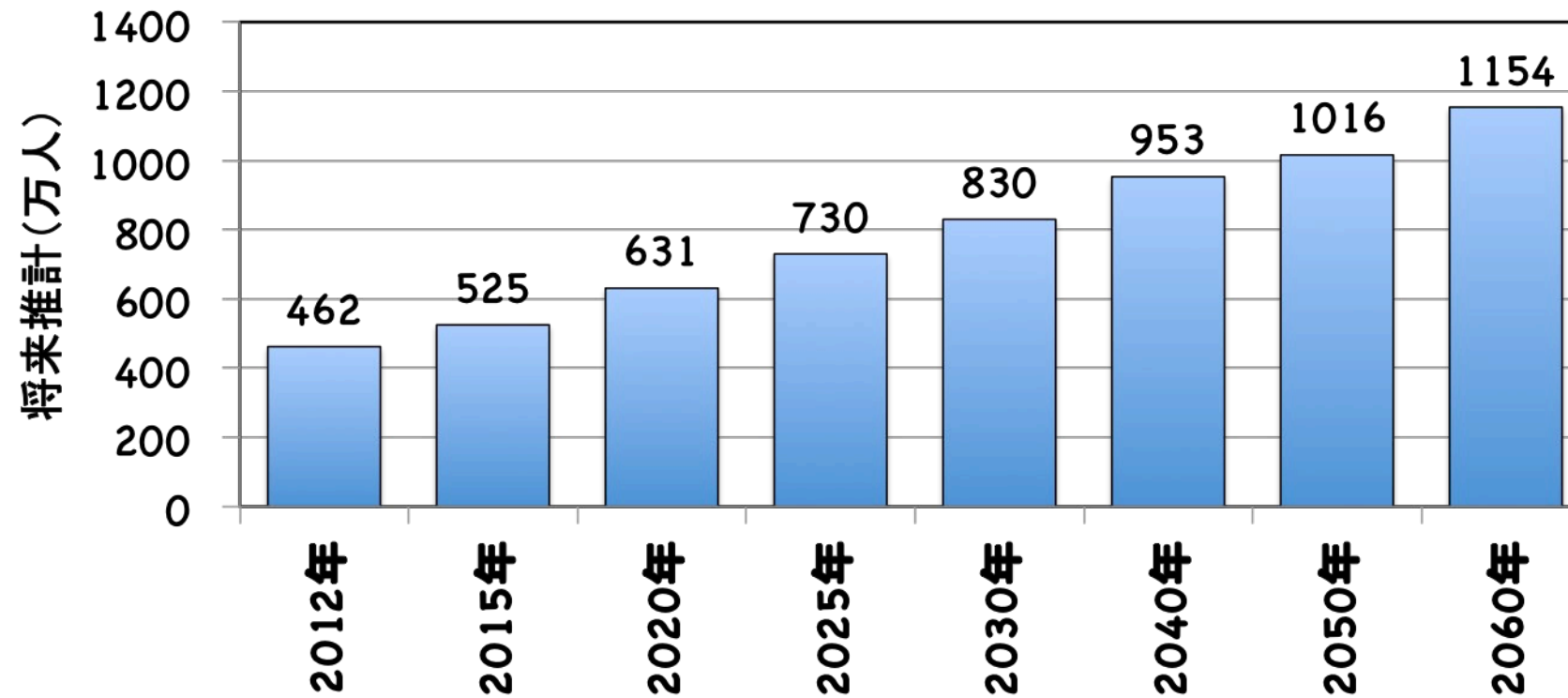
## 10. Exercise mimetic drugs

## 11. Longevity Gene

Dr. Katakura: I first started my focus of study on #8 metabolism improvement and moved on to #10 exercise mimetic drugs, and to #11 longevity gene. It is interesting that JWT has an effect to strengthen your muscle. About #11 longevity gene, we tend to focus on activation of the longevity gene by fasting, but my study is activation of the longevity gene by eating a certain food and finding what food can have the impact. I started the research, on the hypothesis that JWT is the food with the impact on #8, #10 and #11.

# Diseases to avoid in old age Dementia

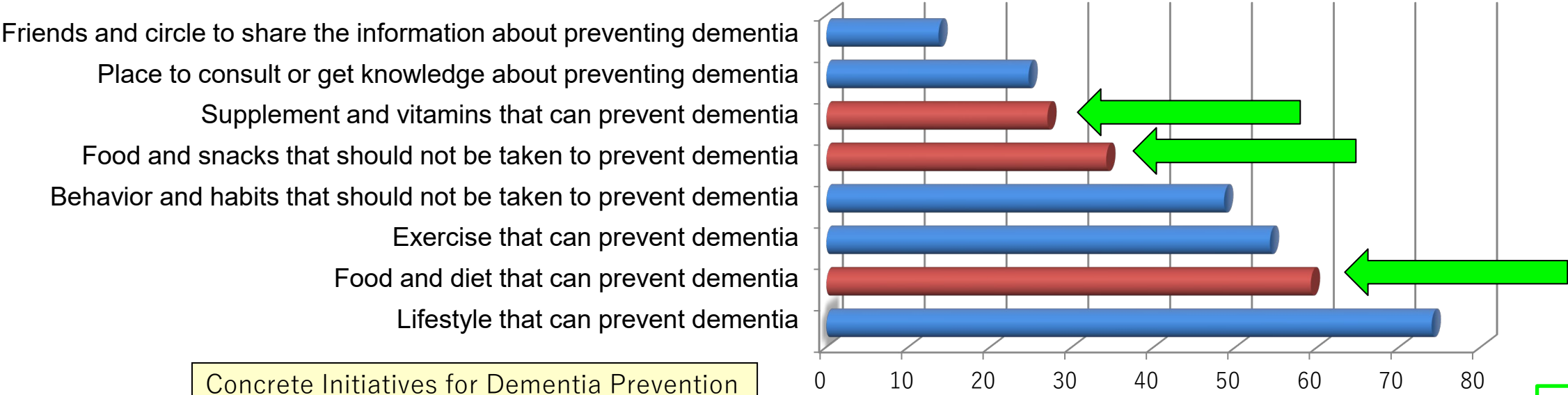
2



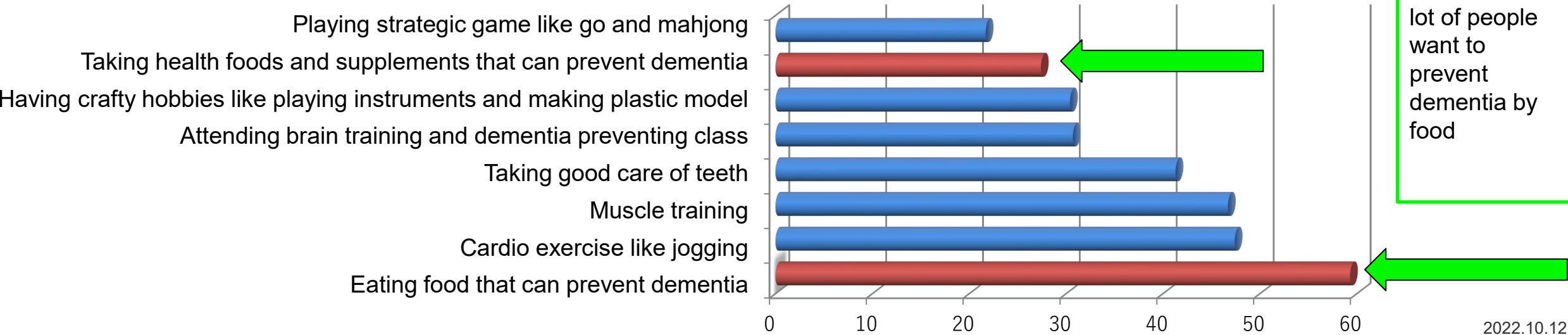
Also later in the presentation I will talk about dementia because nowadays 1 out of 10 people in Japan will have dementia in 2050, which is shocking. Without any medicine, we have to prevent dementia in our daily lifestyle.

# How to deal with dementia?

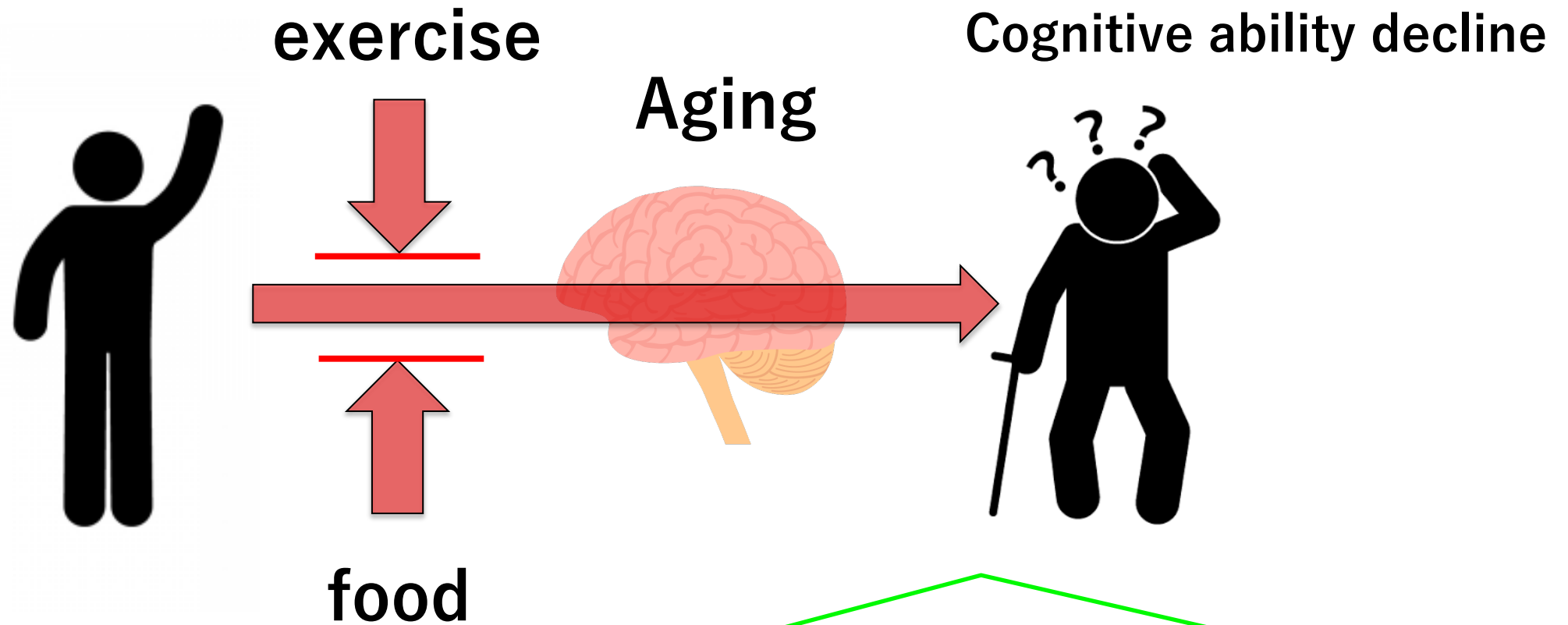
What information do you want about dementia prevention?



Concrete Initiatives for Dementia Prevention



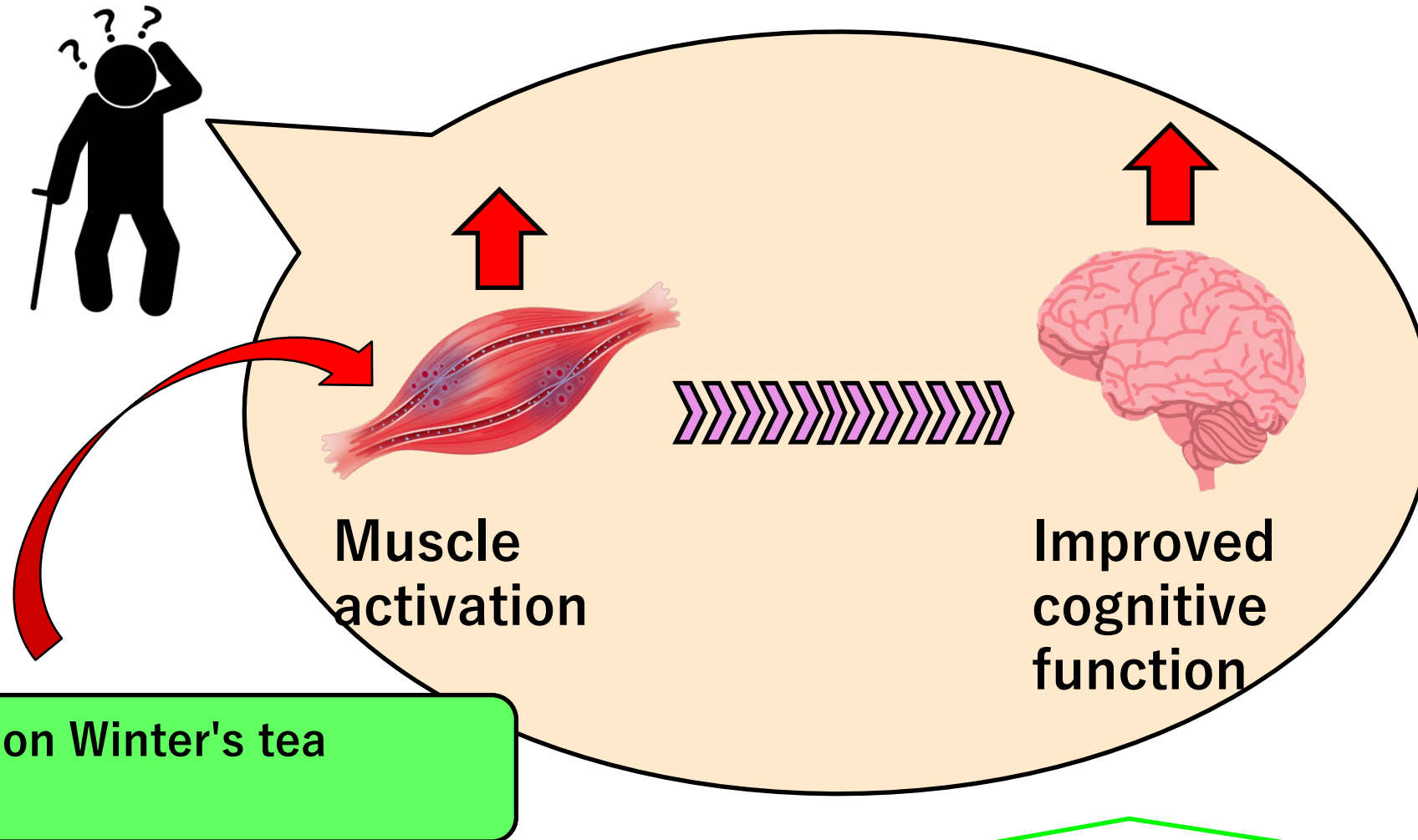
You can see a lot of people want to prevent dementia by food



We want to prevent dementia by exercising and choosing good food

# How to deal with dementia?

5



When I first heard that JWT help you lose weight, I suspected the JWT's impact on muscle because muscles help metabolism activate more and burn more calories resulting in weight lost.

# How to deal with dementia?

6

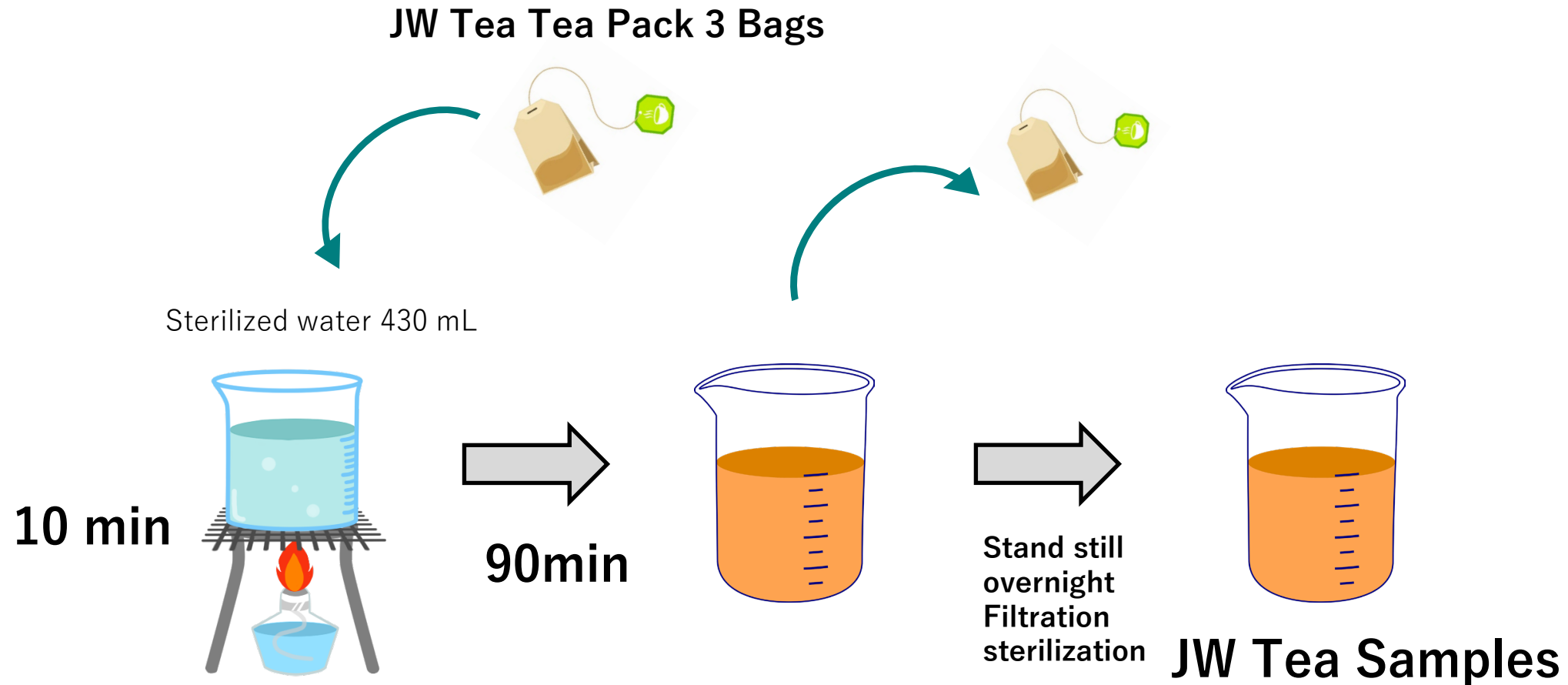
Red Clover  
Indian Sage  
Harvereen

oolong tea

Jason Winters Tea

Metabolism improvement, dementia prevention, constipation improvement, skin beautifying effect, etc.



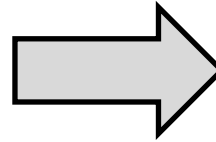


Learn how to prepare samples. First boil 430 mL of Milli-Q water and put 3 bags of JWT in it. After measuring for 10 minutes, turn off the heat and leave the tea pack in place for 90 minutes. The tea packs were then removed, laid overnight, and filtered and sterilized as samples.

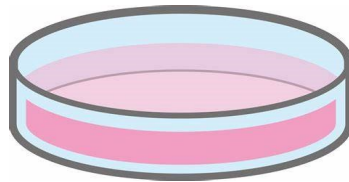
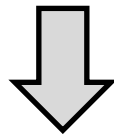




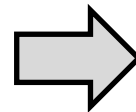
**JW Tea Samples**



**Analysis of changes in gene expression in muscle cells**



**Muscle cells**

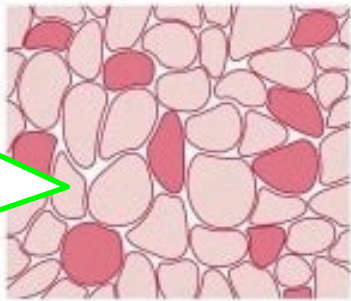
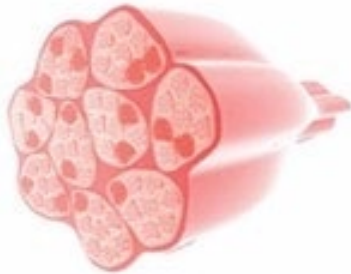


**Were muscle cells activated?**

# Types of Muscles

9

Sprint runner's muscle is white because it has less myoglobin and mitochondria.



白筋(速筋)

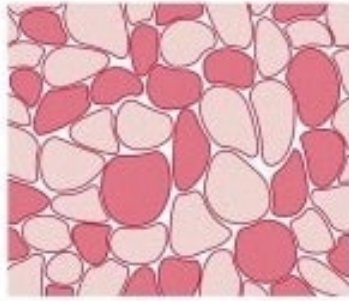
ミオグロビンが少ない  
ミトコンドリアが少ない

Fast twitch  
glycolytic  
less myoglobin  
Less mitochondria



短距離走

Sprinting



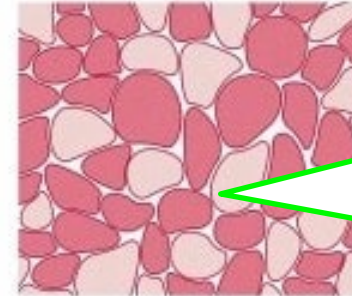
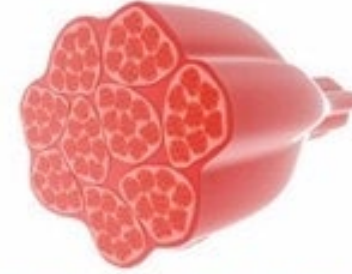
ピンク筋(混合筋)

Fast twitch  
oxidative



中距離走

Medium distance running



赤筋(遅筋)

ミオグロビンが多い  
ミトコンドリアが多い

Slow twitch muscle  
more myoglobin  
more mitochondria



長距離走

Long-distance running

Marathon runner's muscle is red because it has more myoglobin and mitochondria, because it uses oxygen.


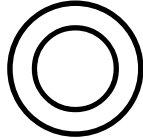

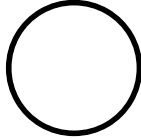
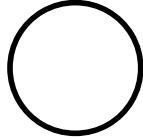
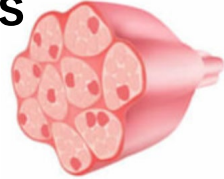
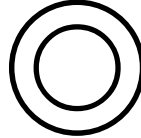
## 健康的なミトコンドリア

栄養素と酸素を取り込んで  
エネルギーをつくりだす

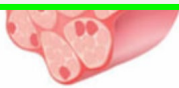



Mitochondria is an indicator to see the process of evolution of human being. That is why mitochondria gathers attention from researchers in a lot of academic areas.

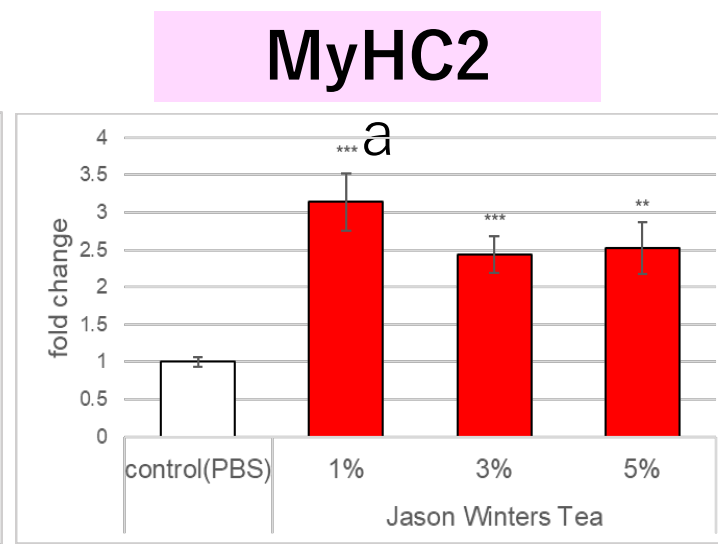
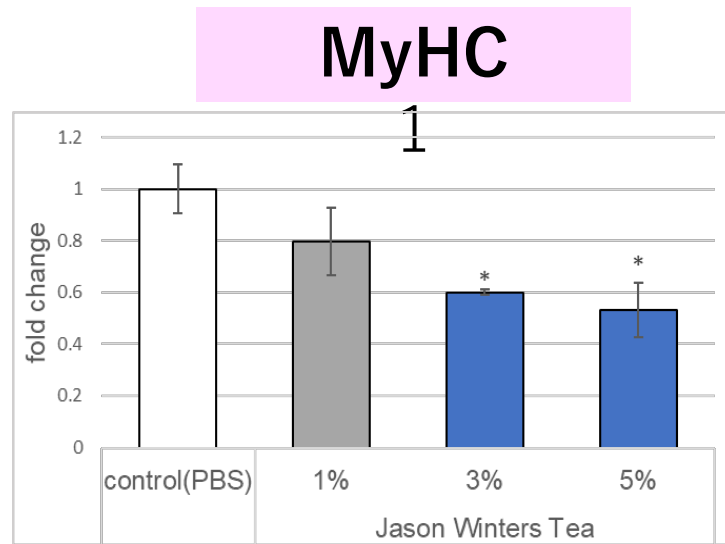
# Types of Muscles

	controlling muscle fibers	Agility	duration	mitochondria
<b>Tardier muscle</b> 	<b>MyHC I</b>			<b>many</b>
<b>Intermediate muscle</b> 	<b>MyHC II a</b>			<b>middle</b>
<b>Speed ribs</b> 	<b>MyHC II b</b>			<b>few</b>

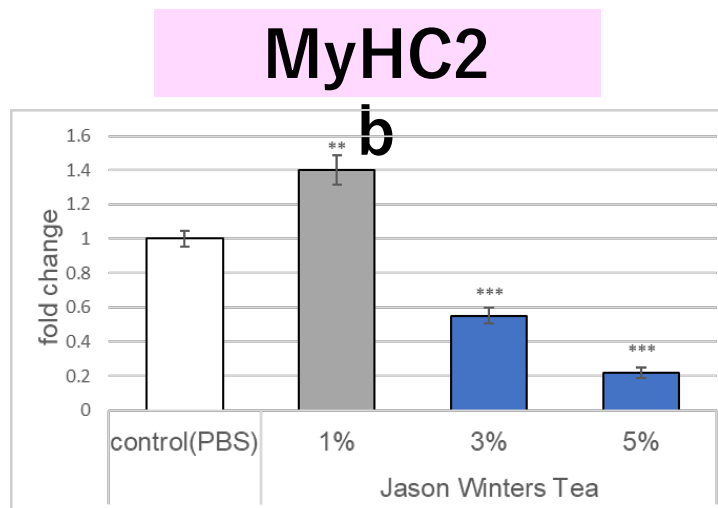
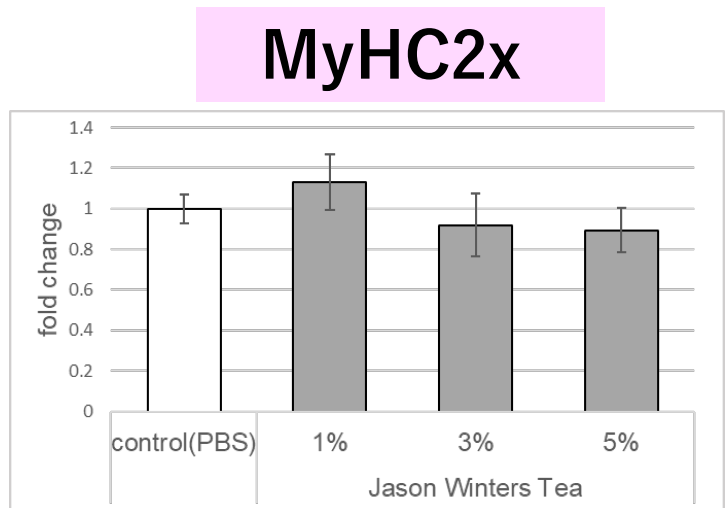
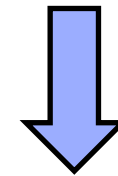


	支配筋繊維	瞬発力	持久力	ミトコンドリア
Tardier				
<p>Next, we examined how Jason Winters Tea caused changes in muscle fiber types. First, I will explain the muscle fiber type. Muscles can be broadly divided into slow muscles, fast muscles, and intermediate muscles with intermediate properties in between. The tardier muscle is a muscle with excellent endurance and a lot of mitochondria, and the fast muscle is a muscle with few mitochondria with excellent instantaneous power. And the intermediate muscle is a muscle fiber with relatively high instantaneous power, endurance, and mitochondrial count.</p>				
				How

# JW tea increased the middle muscle



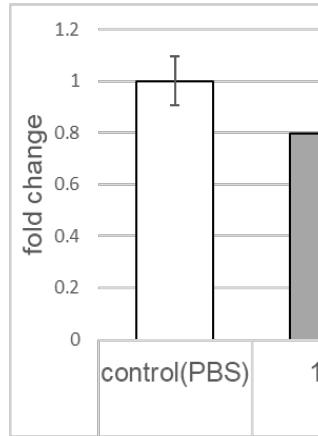
**MyHCII.a  
increased**



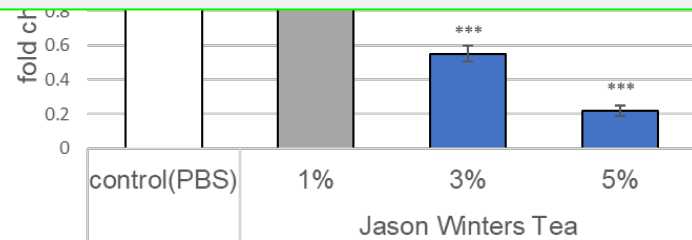
**II.a type  
Increased  
intermediate  
muscles**

# JW tea increased the middle muscle

## MyHC

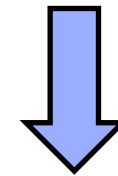


## MyHC2

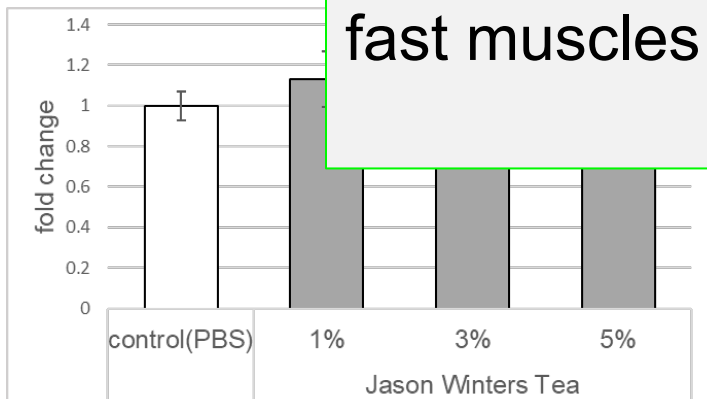


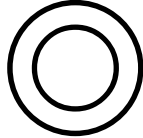
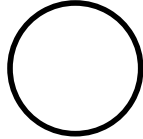
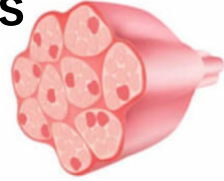
Muscle fibers are the result of type changes about. As a result of RT-PCR, not only MyHC1, a slow-myo-myozation marker, but also MyHC2b, a fast-myopathization marker, decreased, and MyHC2a was significantly increased, so it was thought that the intermediate muscle having the property intermediate between slow and fast muscles increased.

MyHCII.a  
increased



.a type  
increased  
intermediate  
muscles



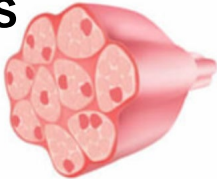


	支配筋繊維	瞬発力	持久力	ミトコンドリア
<b>Tardier muscle</b> 	MyHC I			many
<b>Intermediate muscle</b> 	MyHC II a			middle
<b>Speed ribs</b> 	MyHC II b			few

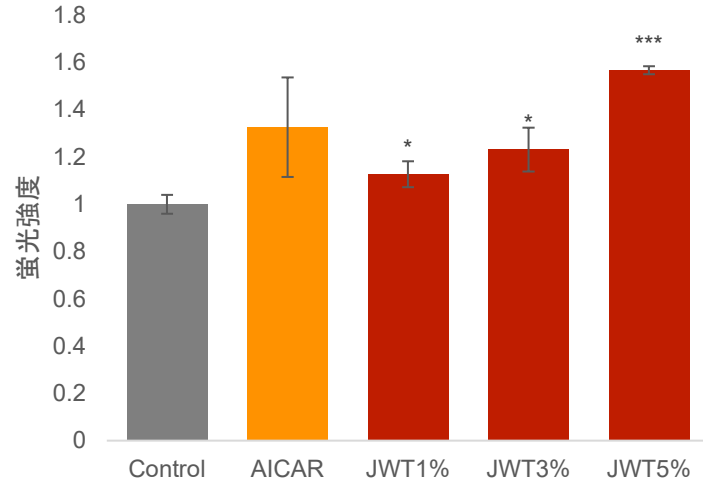




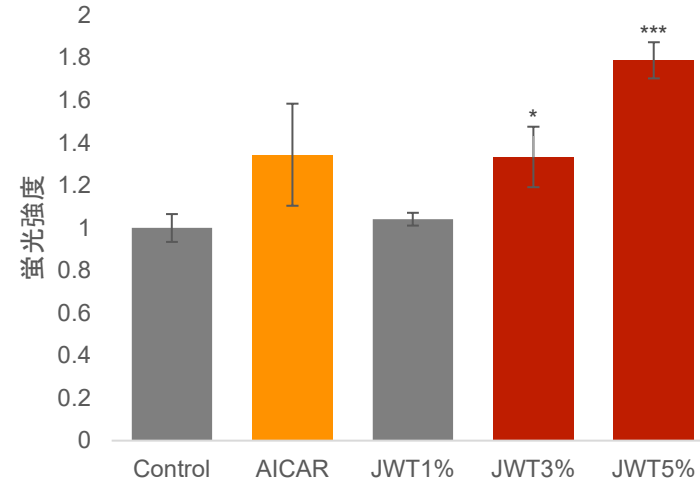
# Types of Muscles

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<p><b>Tardier muscle</b></p> 		many
<p><b>Intermediate muscle</b></p> 		middle
<p><b>Speed ribs</b></p> 		few

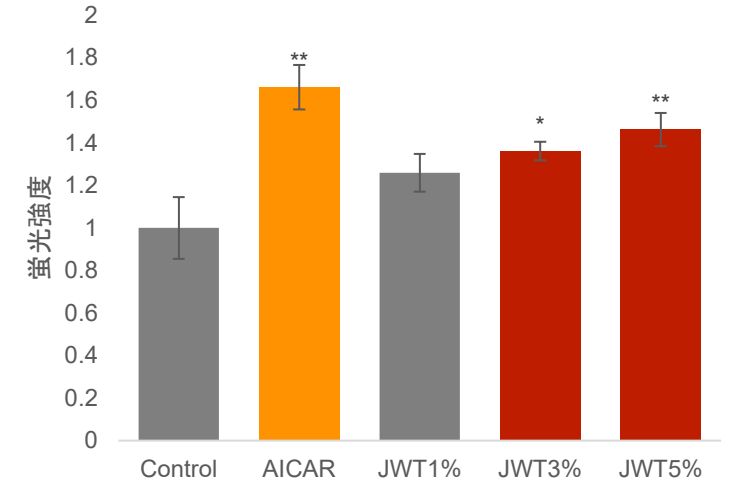
## Mitochondrial number



## Mitochondrial area

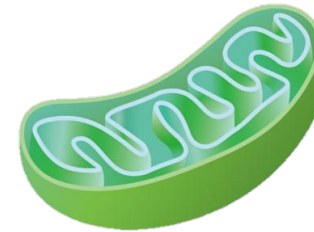
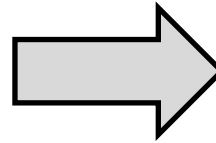


## Mitochondrial activity

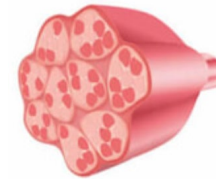




JW Tea Samples



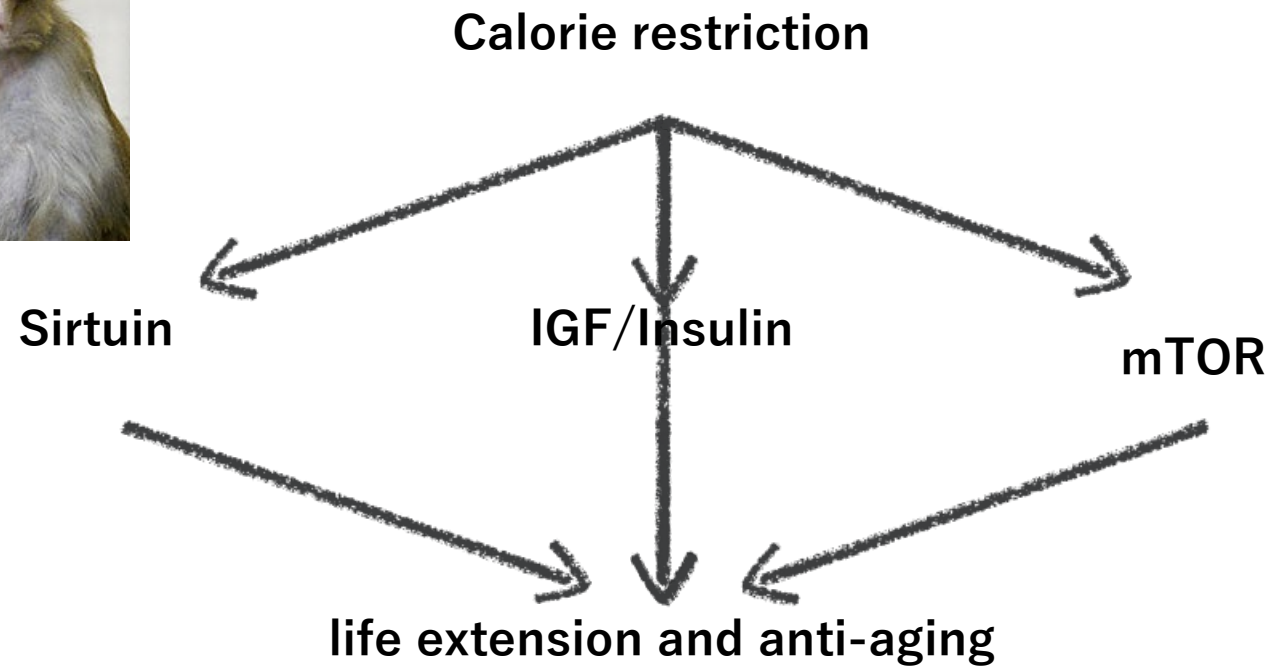
Mitochondrial number, activity



Intermediate muscle enlargement



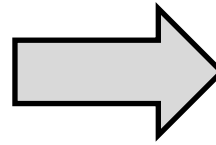
# Anti-aging targets seen from the viewpoint of aging and longevity <sup>19</sup>



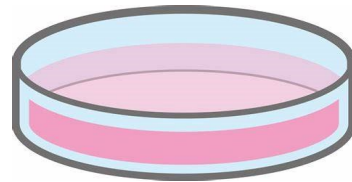
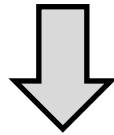
サーチュイン	局在	機能
SIRT1	核・細胞質	代謝・炎症・寿命延長
SIRT2	細胞質	細胞周期・運動性・ミエリン形成
SIRT3	ミトコンドリア	脂肪酸酸化・抗酸化制御
SIRT4	ミトコンドリア	インスリン分泌・脂肪酸酸化抑制
SIRT5	ミトコンドリア	尿素回路
SIRT6	核	ゲノム安定性・代謝・寿命延長
SIRT7	核小体	rDNA転写



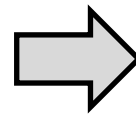
JW tea



Analysis of changes in gene expression in muscle cells

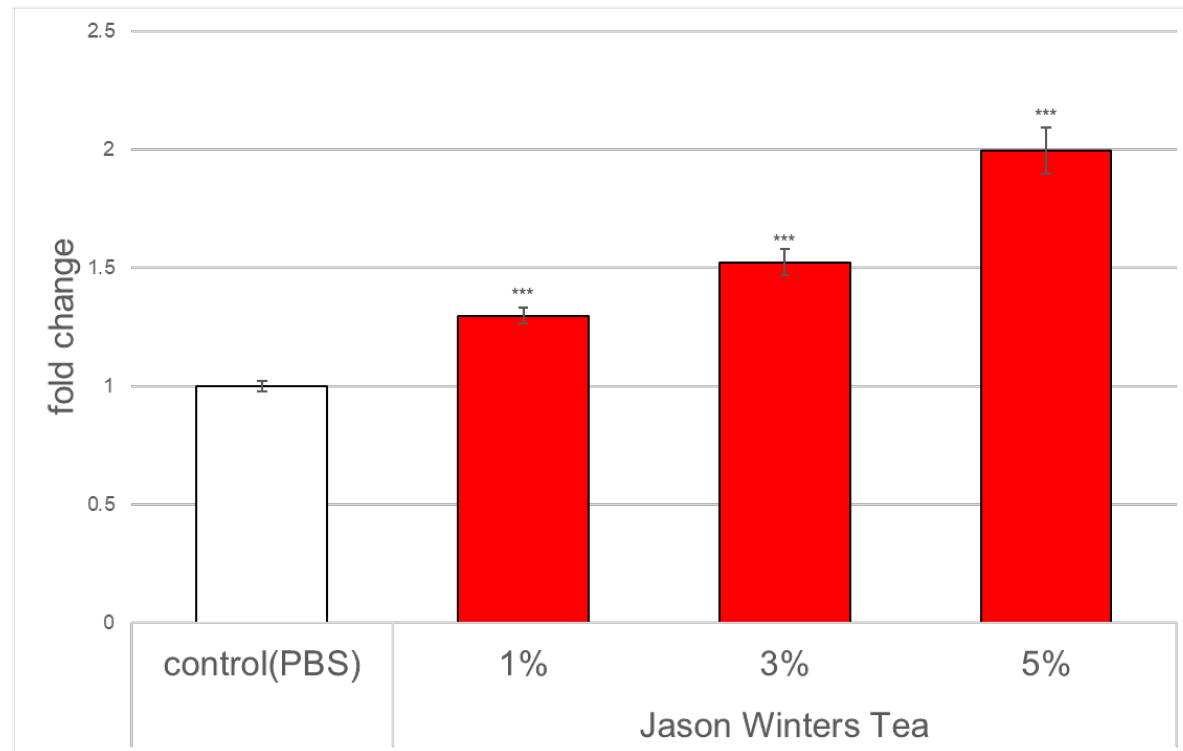


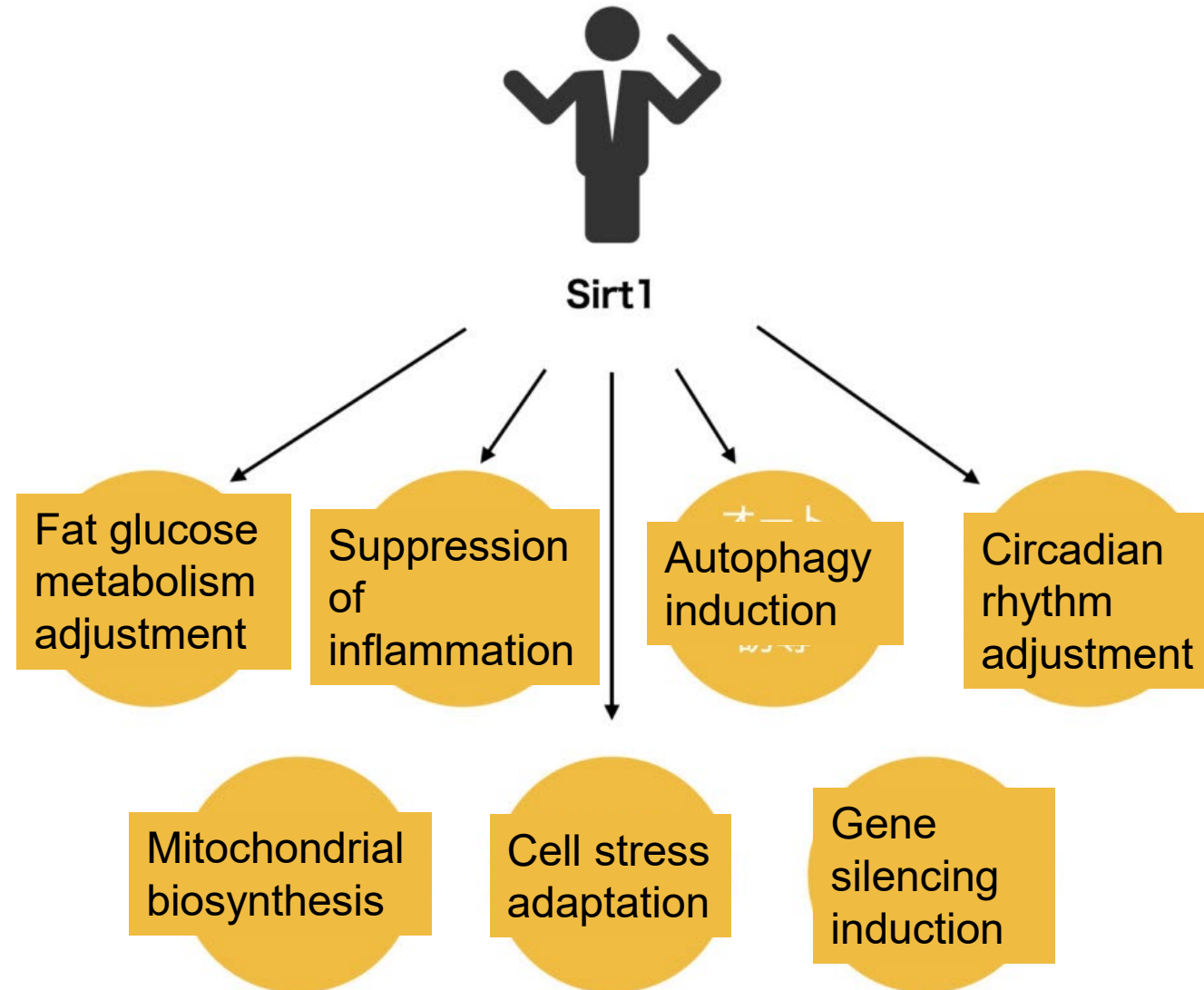
Muscle cells



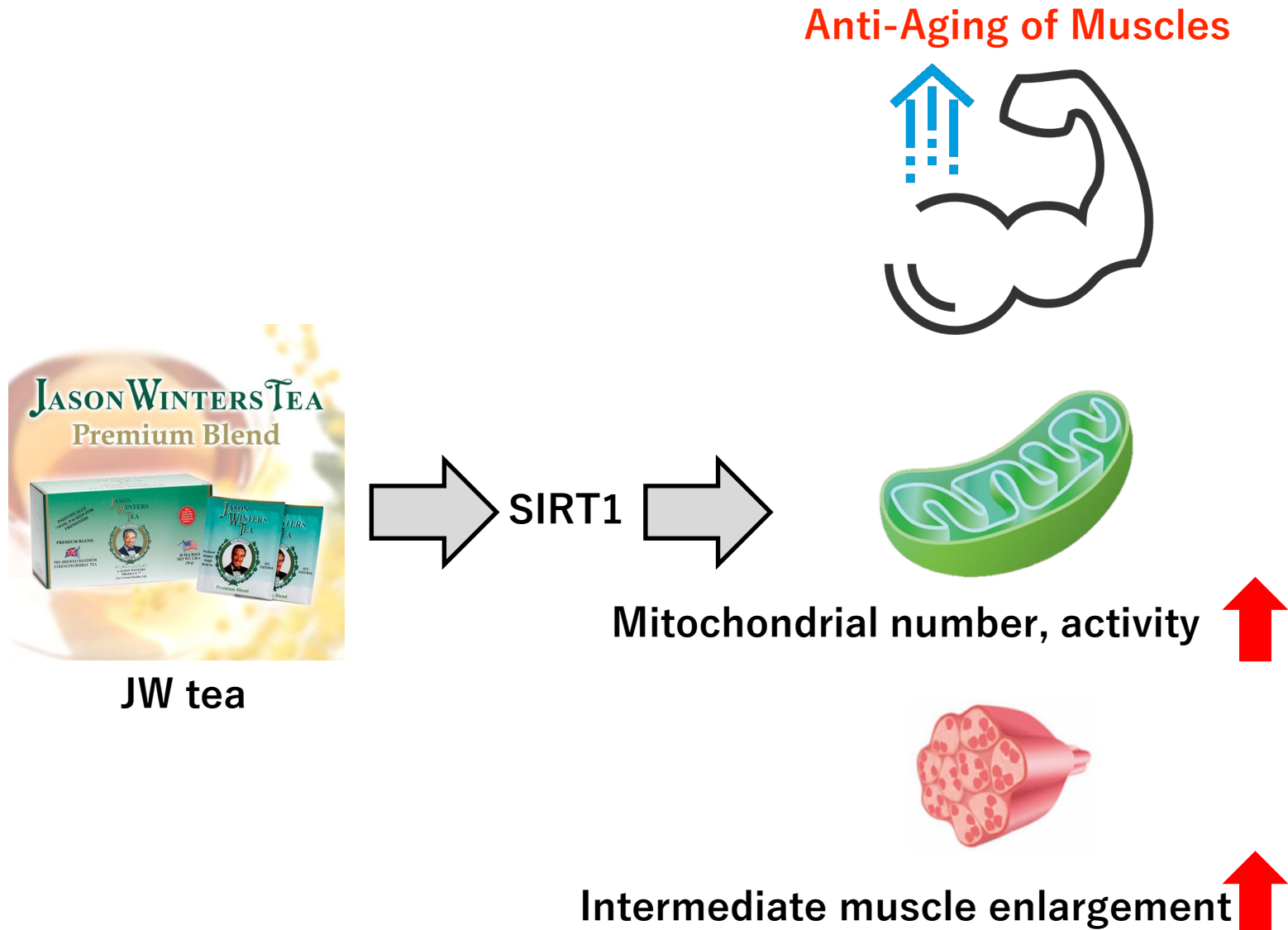
Were muscle cells activated?

## SIRT1





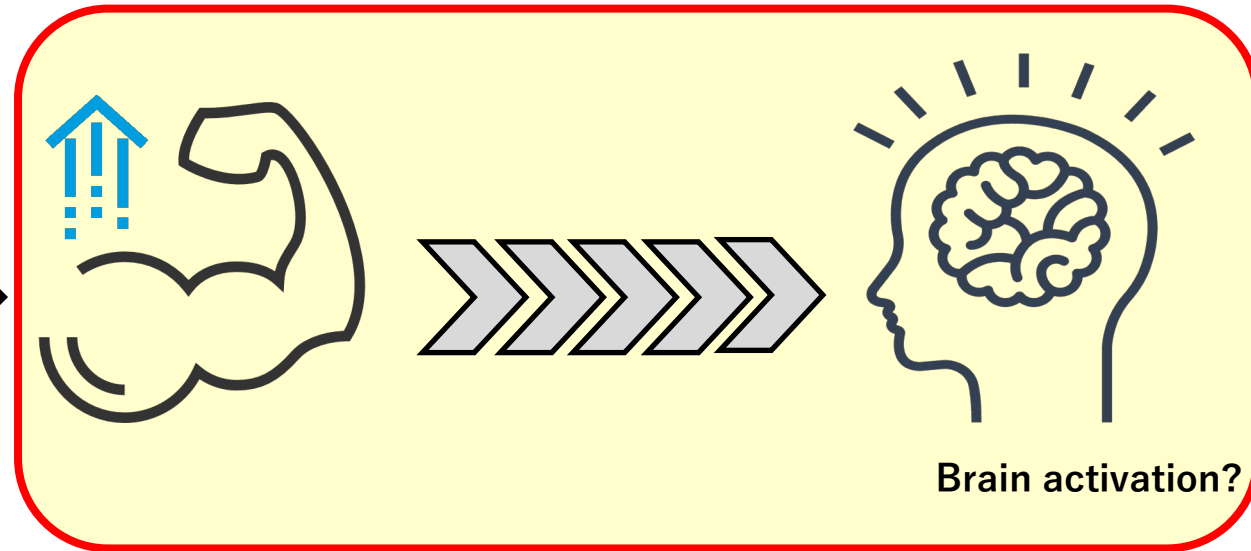
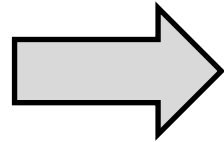




# Improvement of brain function through muscle anti-aging of JW tea<sup>5</sup>

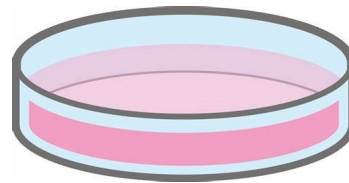
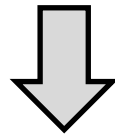


JW tea

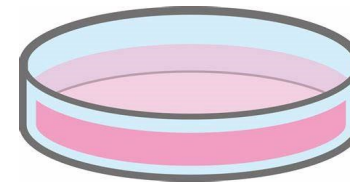
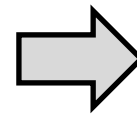




JW Tea Sample



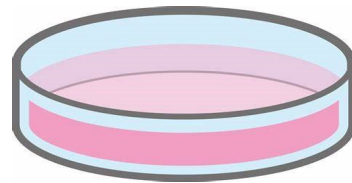
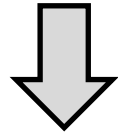
Muscle  
cells



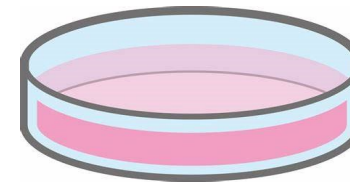
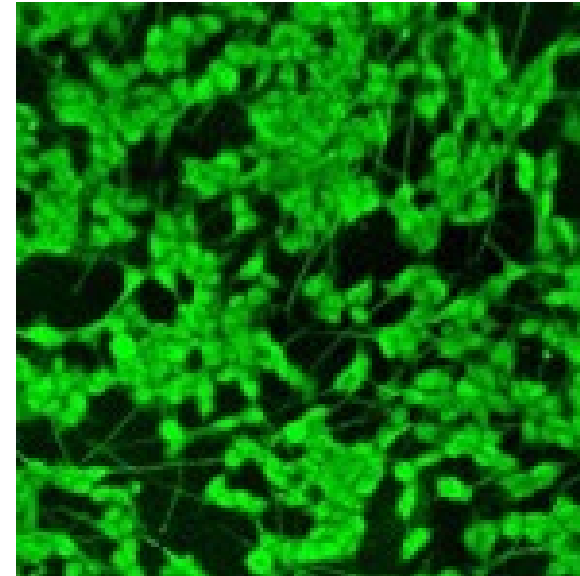
neuron  
cell



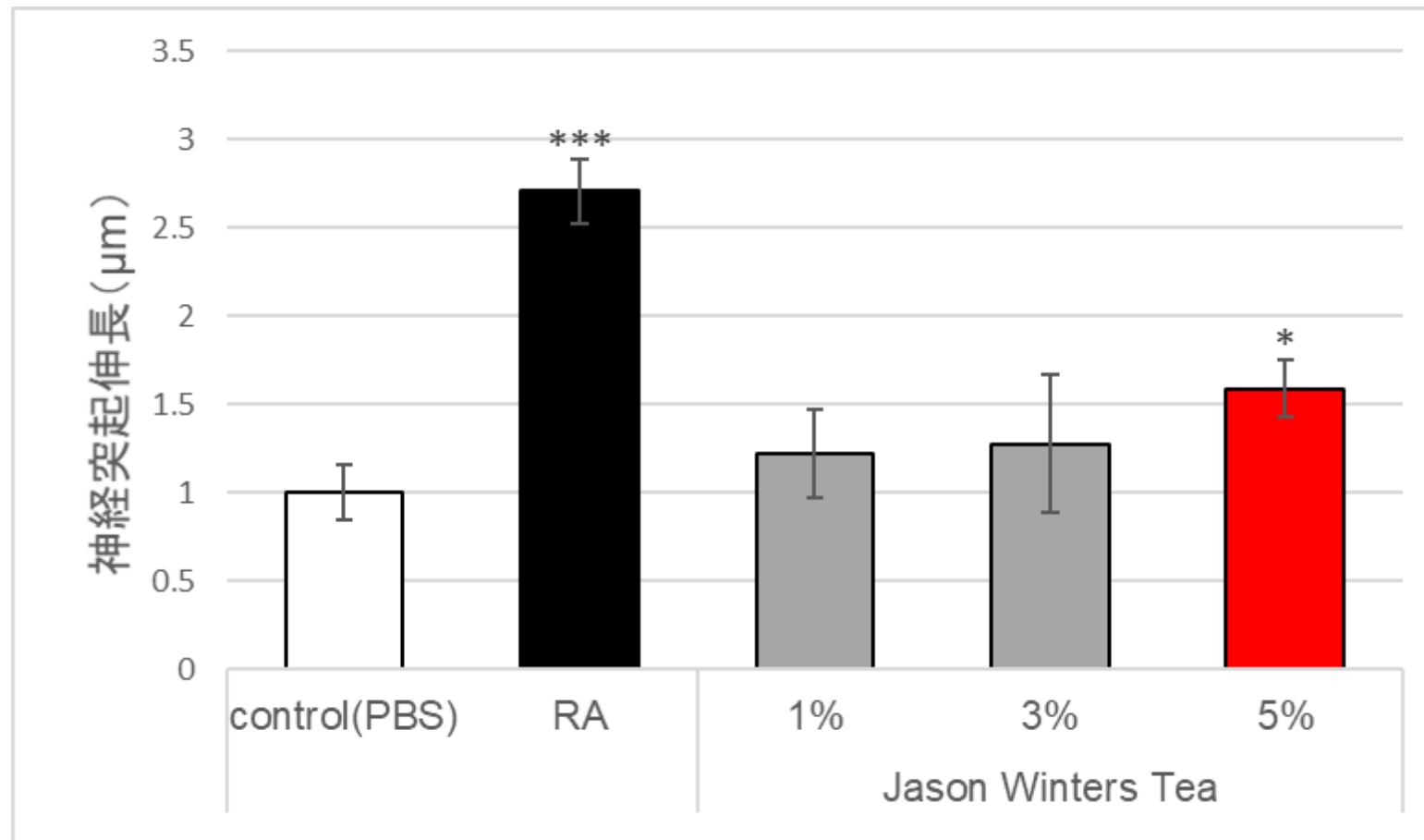
JW tea



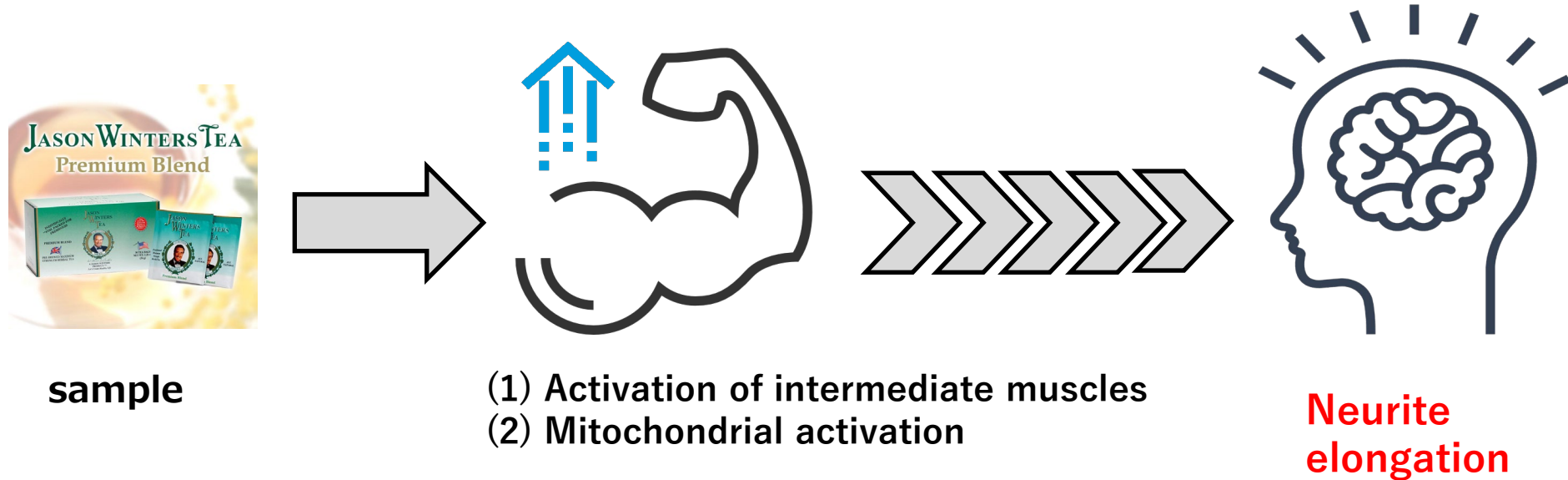
Muscle  
cells



neuron  
cell



# Improvement of brain function through muscle anti-aging of JW tea<sup>29</sup>



Jason Winters Tea rejuvenates the muscles,  
As a result, nerve activation was promoted.

# Anti-aging of the whole body through muscle activation of JW tea 30

