

Royal Jelly supplementation improves menopausal symptoms in postmenopausal Japanese women

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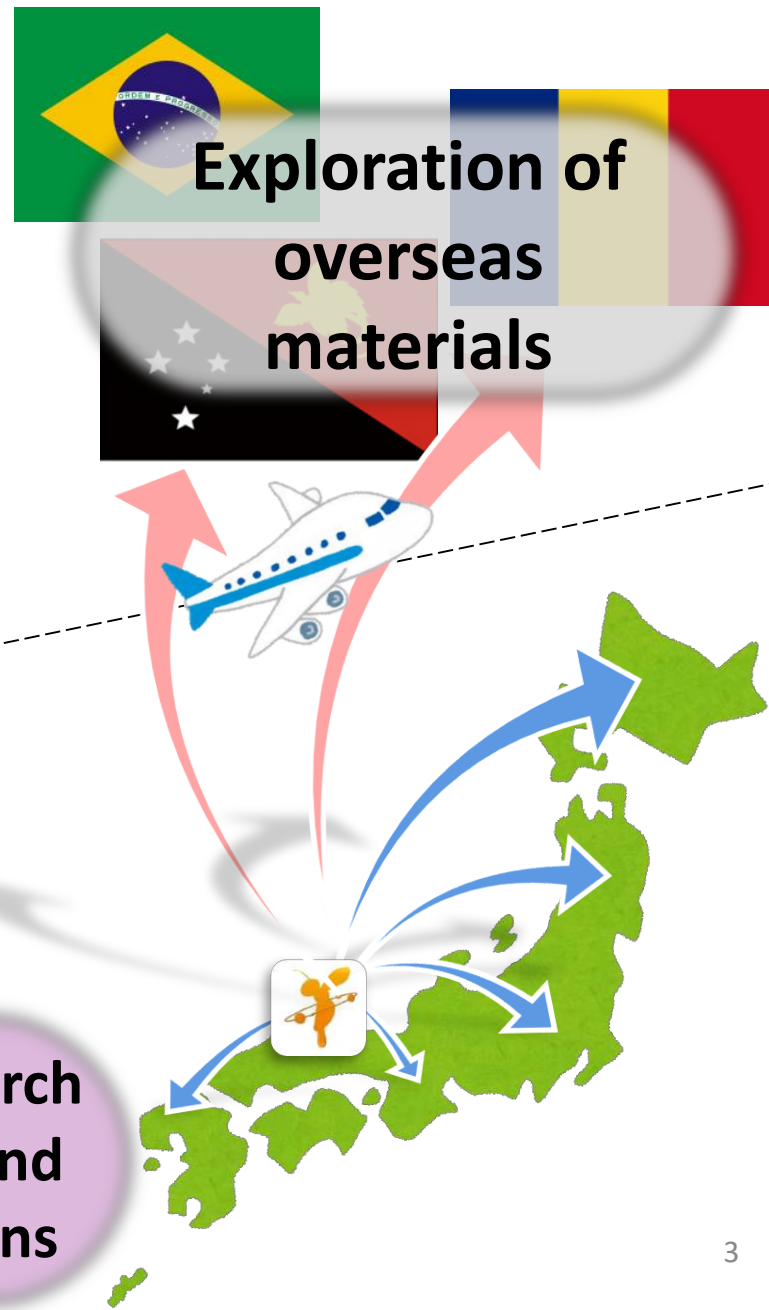
For the sake of individual health



**Extension of
healthy life
expectancy**

**Preventive
medicine**

**Collaborative research
with universities and
research Institutions**



young
adulthood

Climacterium

senior

45 years

50 years

55 years



Menopause*

(Japanese average 49.5 ± 3.5 years old)



* at least 12 month have passed
since their last menstrual period

Menopausal symptoms

Decrease in estrogen secretion, which is caused by decline of ovarian function



1. Symptoms associated with the autonomic nervous system

Hot flashes, Sweating



2. Psychiatric symptoms

Anxiety, Irritability, Depressive mood



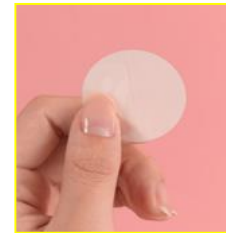
3. Somatic symptoms

Neck stiffness, Low back pain, Joint pain

Hormone replacement therapy (HRT)

■ Adaptation (Benefit)

- Symptoms associated with the autonomic nervous
- Somatic symptom



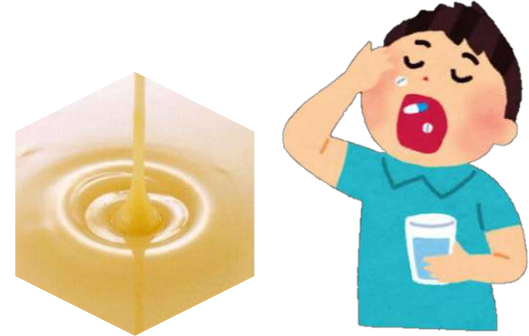
■ Risk

HRT is associated with an increased risk of breast cancer

(*JAMA* 288, 321-333, 2002., *Lancet* 362, 419-427, 2003.)

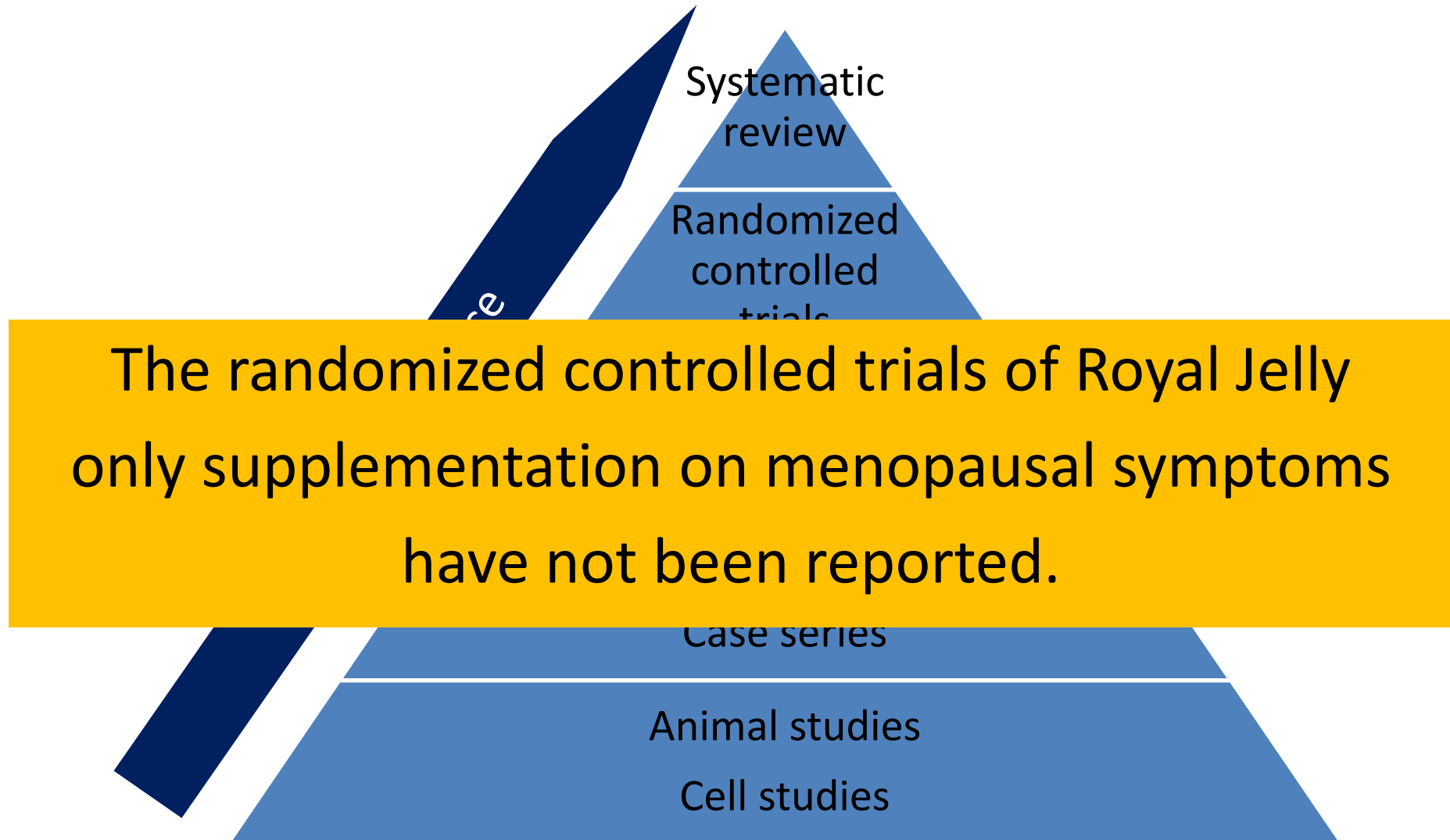
⇒ It is necessary to select on the basis of the judgment of obstetrician considering risk and benefit.

The potential of Royal Jelly for relieving menopausal symptoms in clinical research



- Effects of **Royal Jelly** on autonomic imbalance in menopausal women (Case series).
(*The World of Obstetrics and Gynecology* 25, 103-107, 1973.)
- The efficacy and safety of the combination product of **Royal Jelly** with pork placental extract for indefinite syndromes (menopausal syndromes) and skin troubles.
(*Food function* 3, 2-9, 2007.)
- Effect of tablets composed primarily of **Royal Jelly** and Theanine on sensation of fatigue symptoms in menopausal women.
(*The journal of Japan Mibyo System Association* 14, 162-170, 2008.)

Types of scientific evidence



The aim of this study

To evaluate the effect of Royal Jelly (RJ)
at a dose of 800 mg/day
on menopausal symptoms
in healthy Japanese postmenopausal women
with placebo-controlled design.

Methods

- Participants

Healthy Japanese postmenopausal women
(natural menopause within 5 years)



- Groups

Placebo (n=21)

Enzyme-treated Royal Jelly 800 mg/day (RJ, n=21)

- Intake periods

12 weeks

- Primary outcome

Menopausal symptoms questionnaire of Japanese women

※The study was carried out in accordance with the principles outlined in the Declaration of Helsinki.
The study protocol was approved by Shiba Palace Clinic Ethics Committee (Tokyo, Japan).

Menopausal symptoms questionnaire of Japanese women (VAS scale)

For each symptom listed below,
please mark degree of severity during the past week.

(Not at all)

(Severe)

0

100

Hot flashes

Easy to sweat

Difficulty getting to sleep

Difficulty staying asleep

Irritability

Anxiety

Anxious trifles

Depressive mood

Fatigue

Eye strain

Forgetfulness

Dizziness

Palpitation

Chest tightness

Headache

Neck stiffness

Backache and low back pain

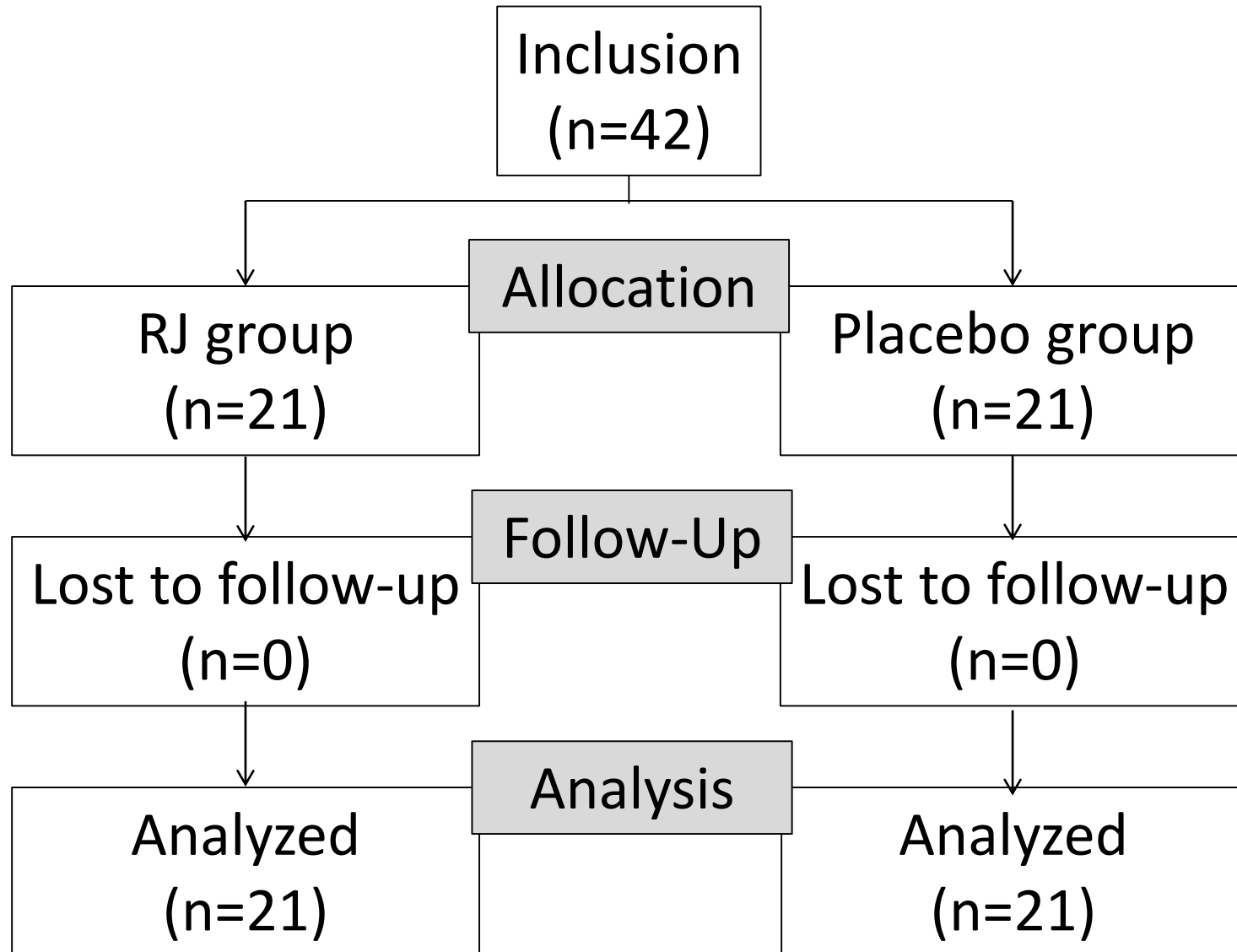
Joint pain

Cold hands and feet

Numbness in the legs or arms

Sensitive to sounds

Trial flow diagram

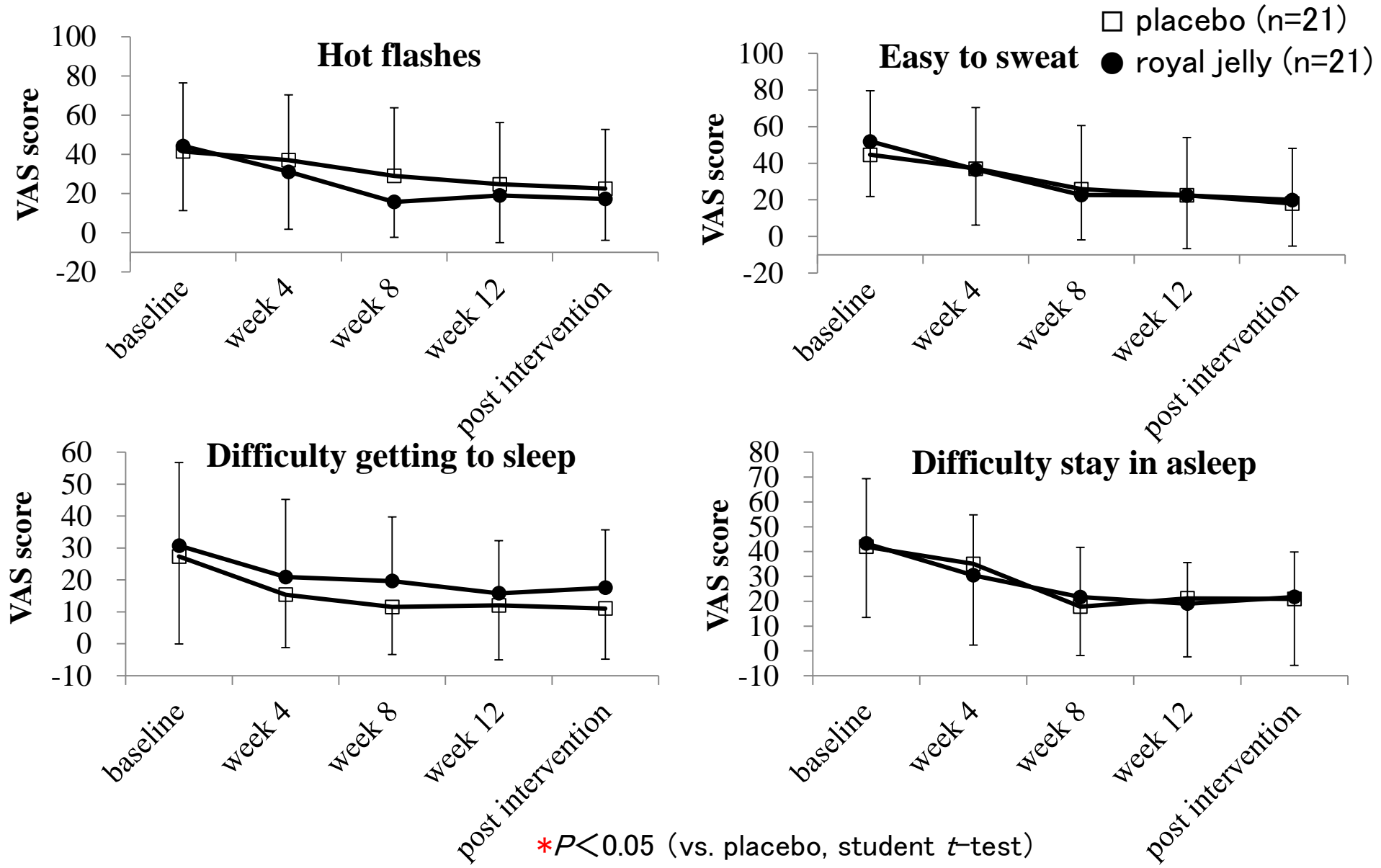


Characteristics of the subjects

		Placebo	RJ
Subject number		21	21
Age (years)		54.4 \pm 3.0	54.4 \pm 2.6
BMI (kg/m ²)		21.2 \pm 2.6	21.0 \pm 3.0
Postmenopausal period	1~3 years	16	15
	3~5 years	5	6

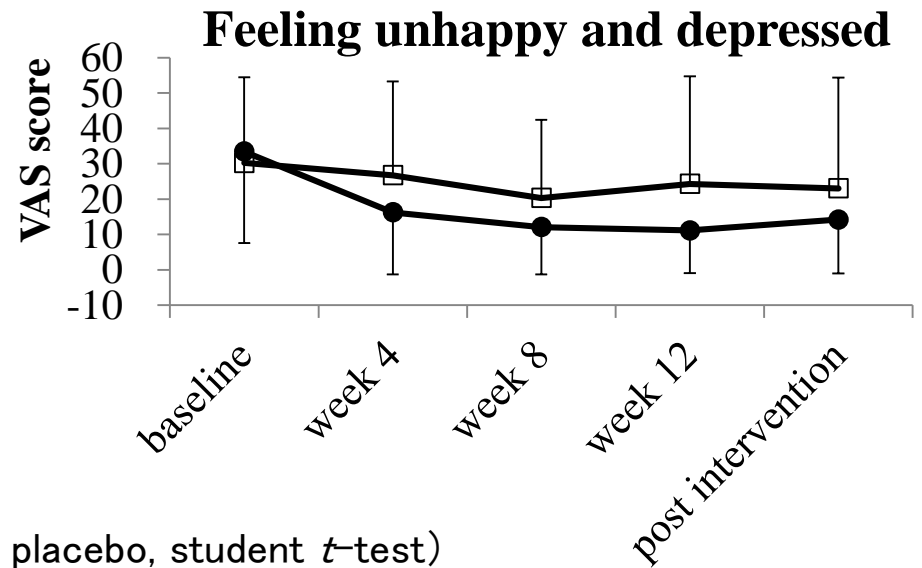
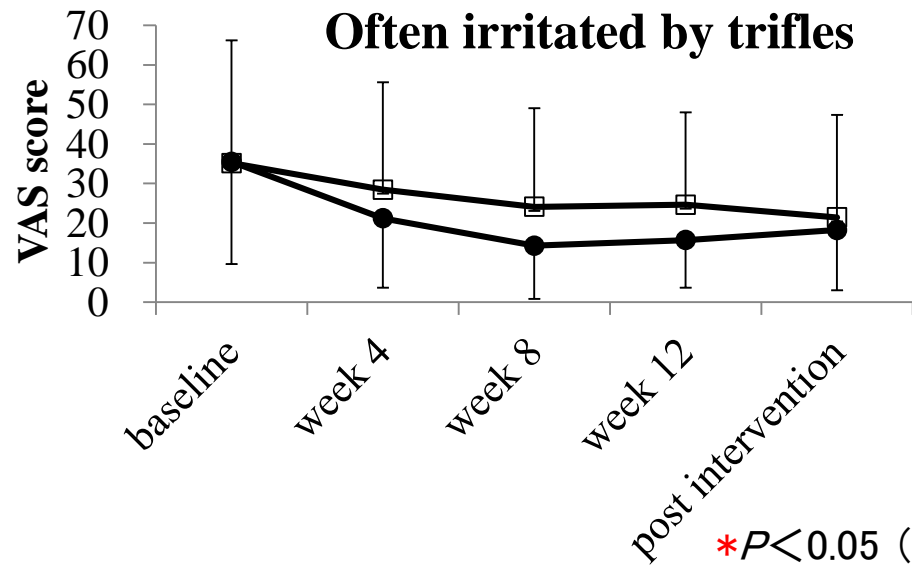
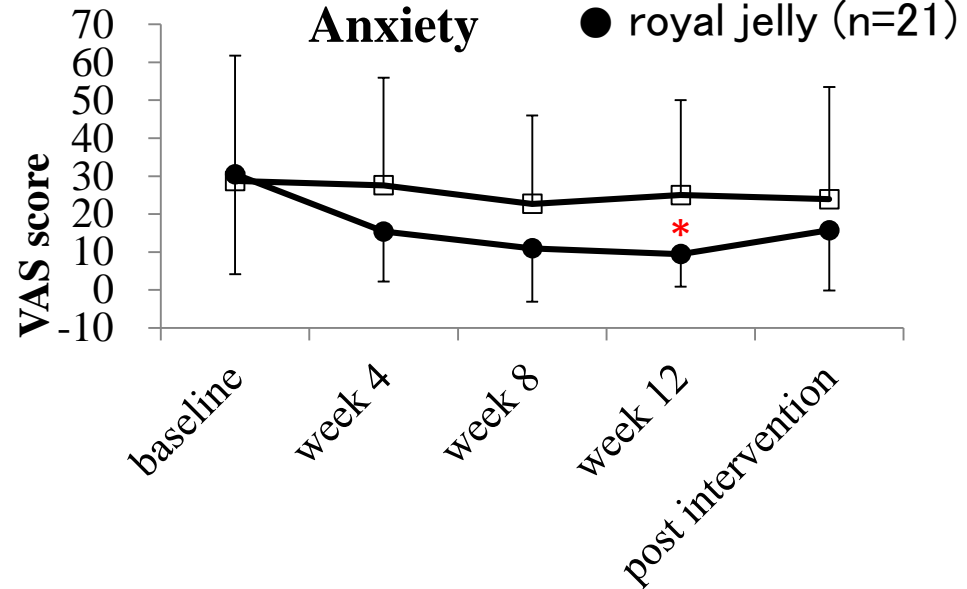
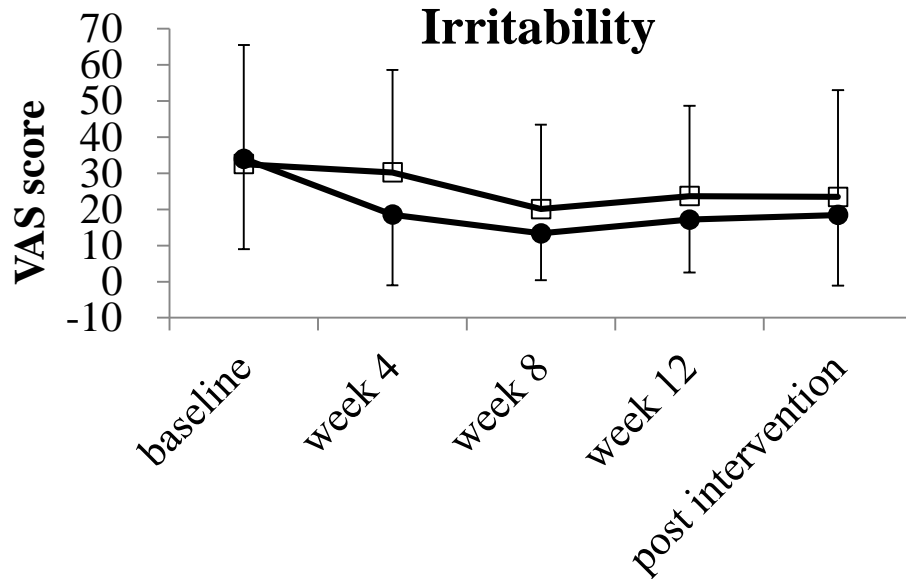
The values are mean \pm SD.

The effect of RJ on menopausal symptoms



The effect of RJ on menopausal symptoms

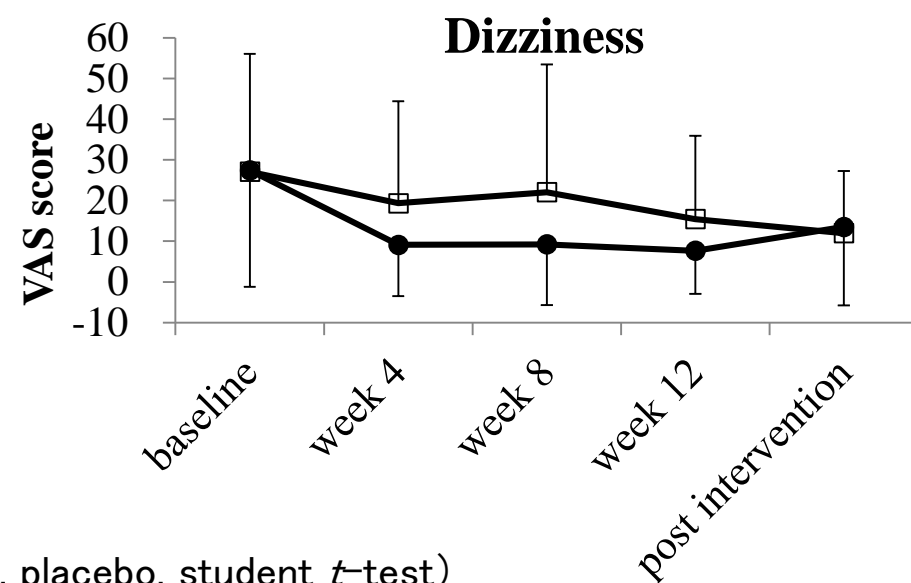
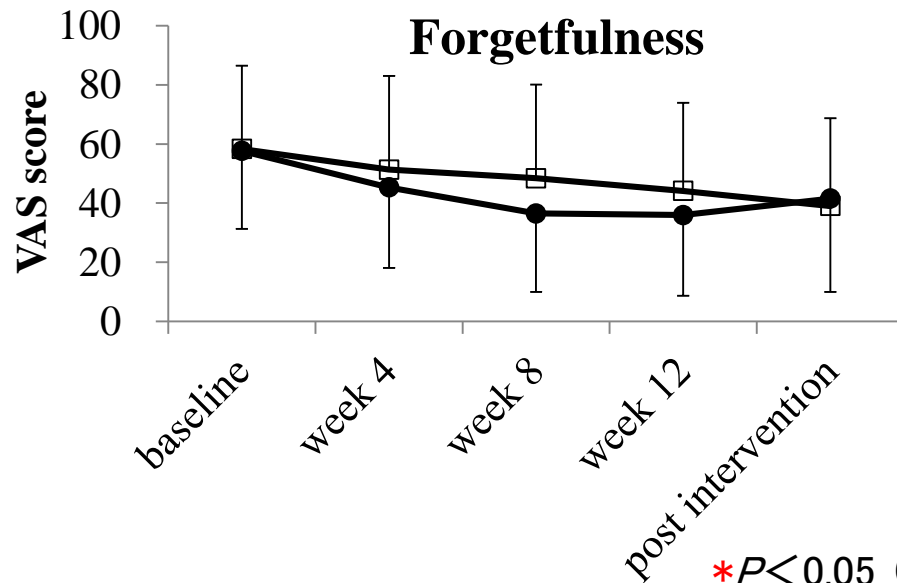
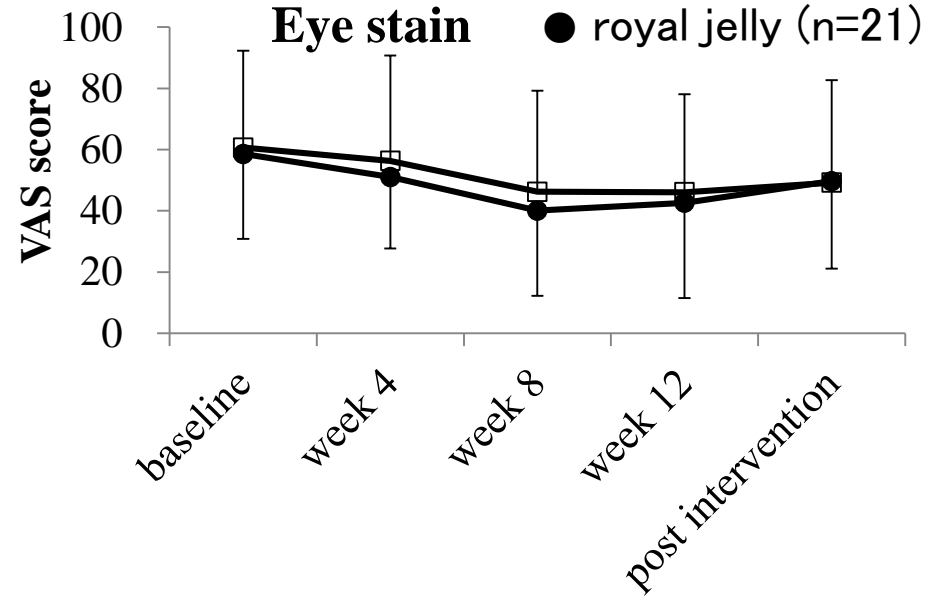
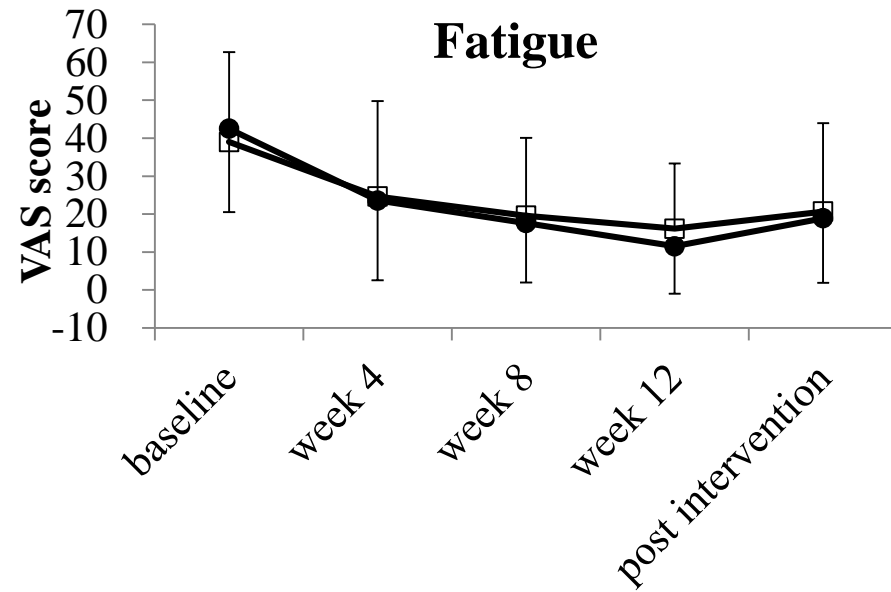
□ placebo (n=21)
● royal jelly (n=21)



* $P < 0.05$ (vs. placebo, student t -test)

The effect of RJ on menopausal symptoms

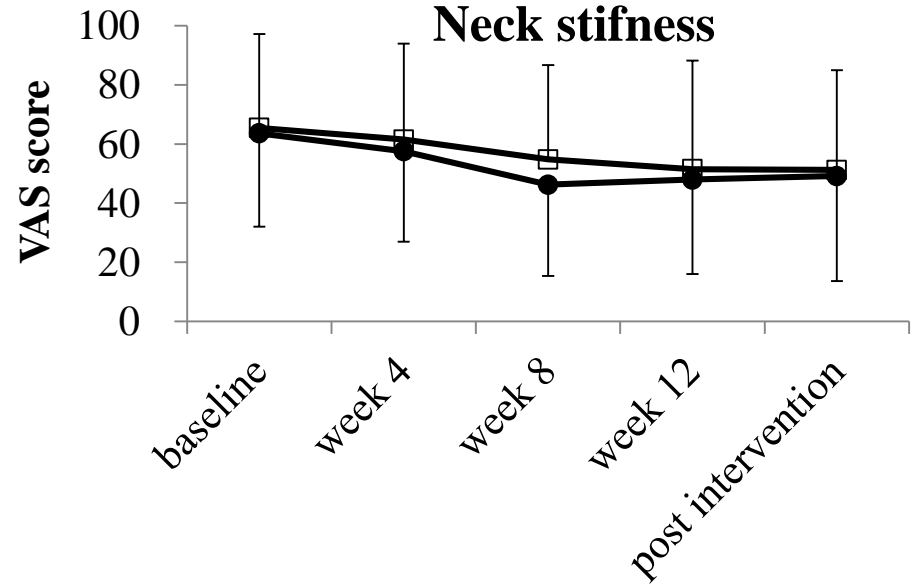
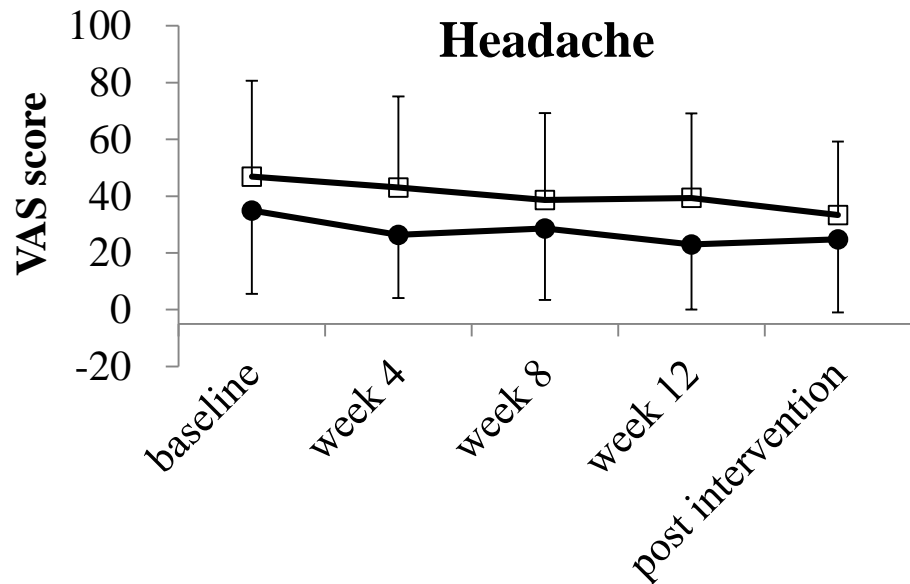
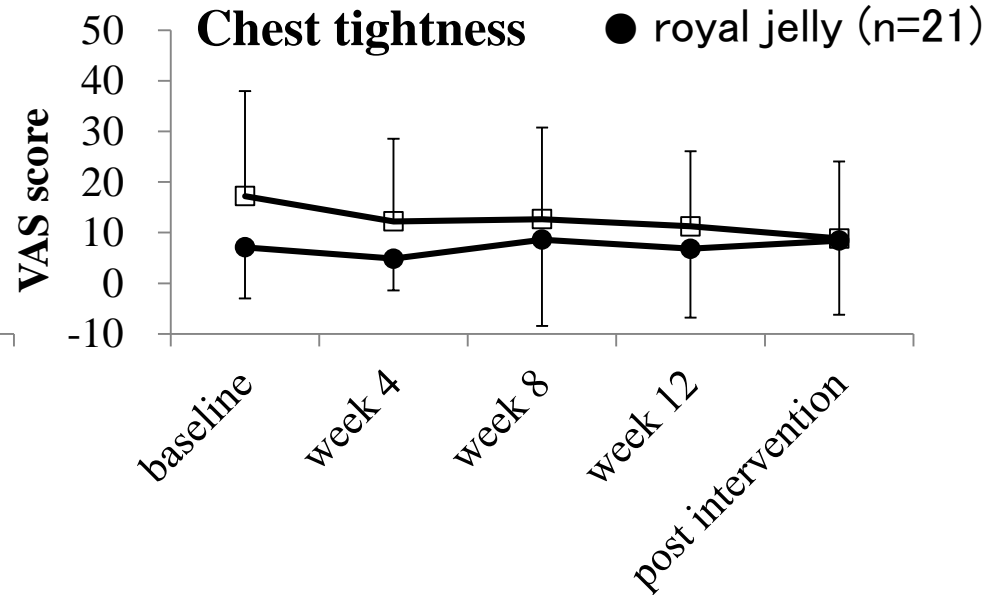
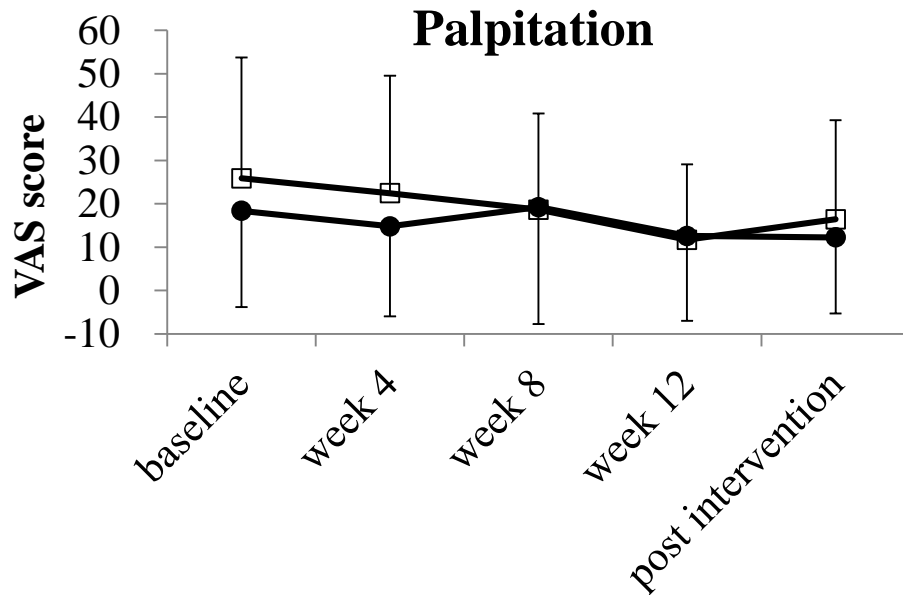
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The effect of RJ on menopausal symptoms

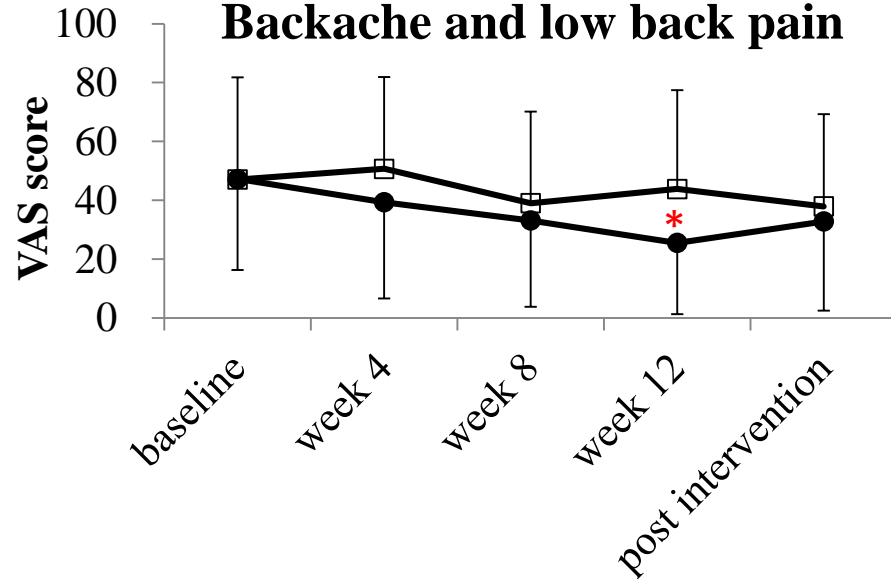
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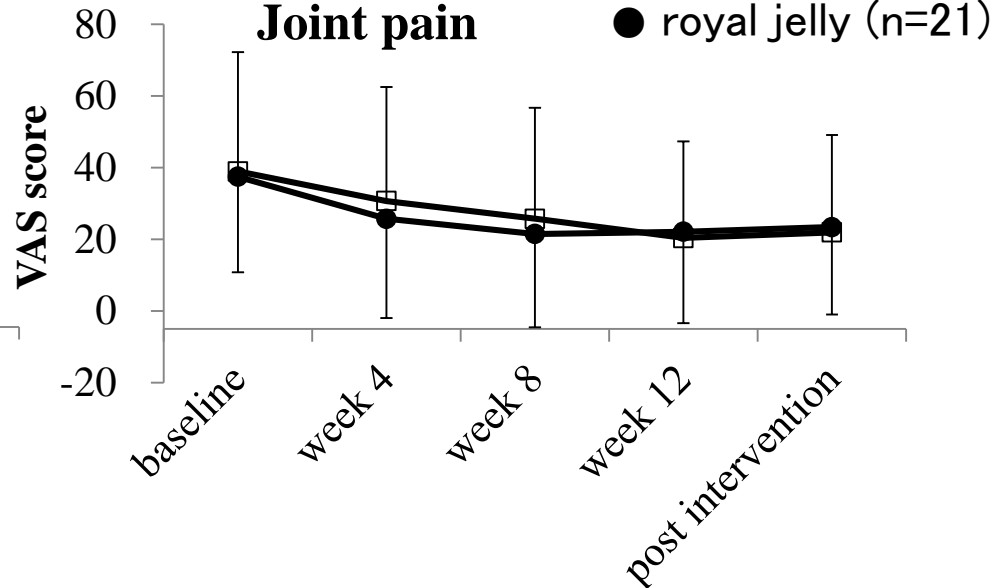
The effect of RJ on menopausal symptoms

□ placebo (n=21)
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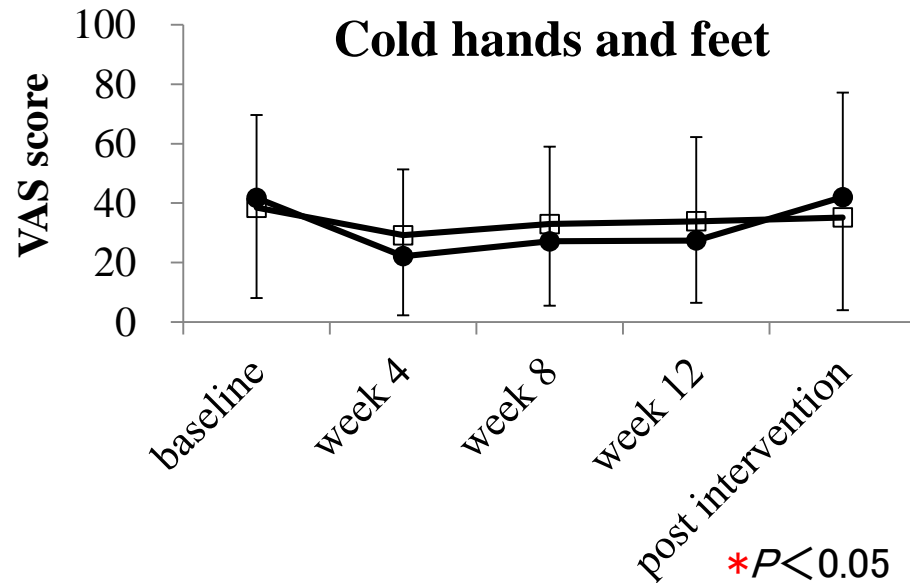
Backache and low back pain



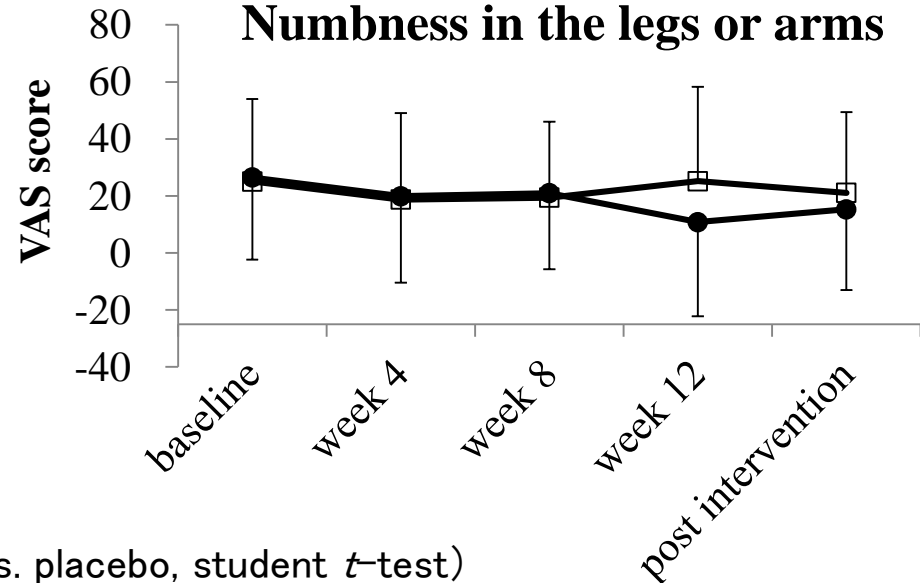
Joint pain



Cold hands and feet

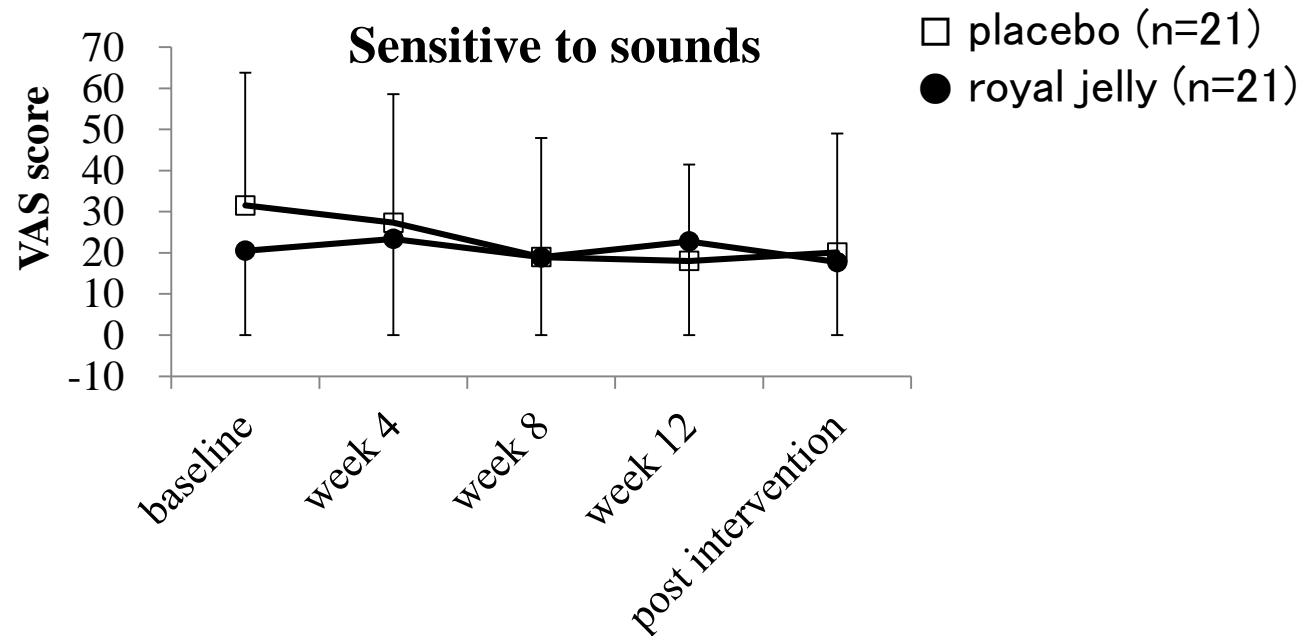


Numbness in the legs or arms



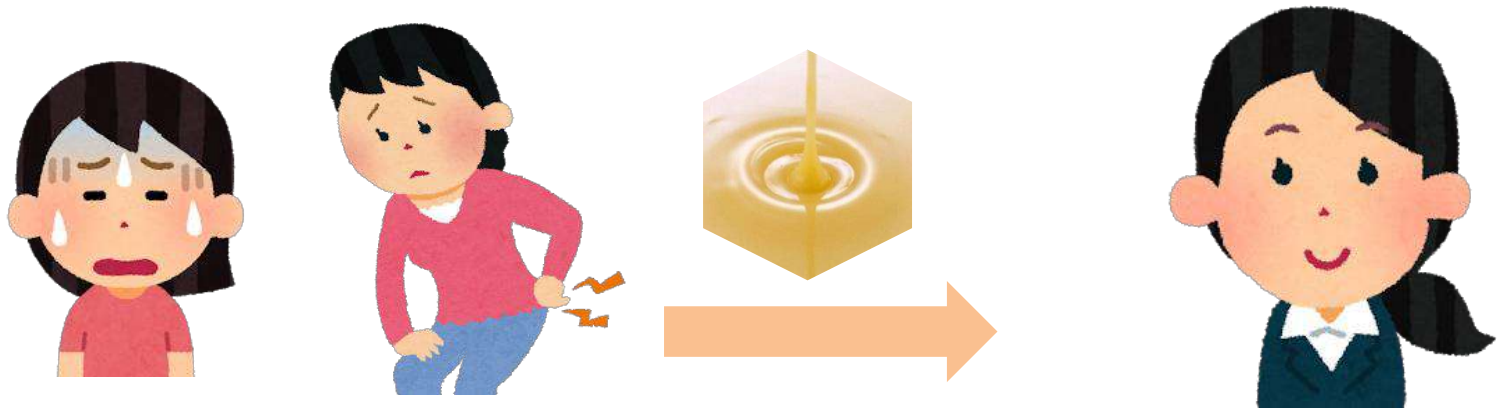
* $P < 0.05$ (vs. placebo, student t -test)

The effect of RJ on menopausal symptoms



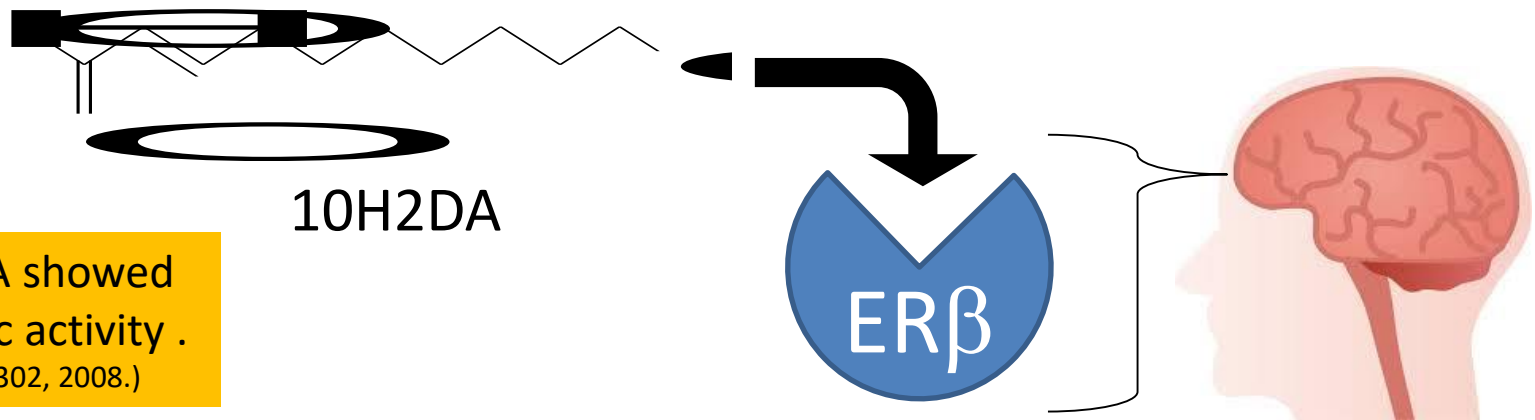
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Summary



RJ supplementation has improved “**anxiety**” and “**backache and low back pain**” score in Japanese postmenopausal women.

The hypothesis regarding mechanism of action



The 10H2DA showed ERβ agonistic activity .
(*eCAM* 5, 295–302, 2008.)

An anxiety behavior increased in ERβ -deficient female mice.
(*Proc Natl Acad Sci U S A.* 98, 12278-82, 2001.)

ERβ deficient female mice had significantly lower serotonin content in several brain regions.
(*Physiol Behav* 84, 157-63, 2005.)

The oral administration of 10H2DA is effective for relieving anxiety in mice.
(*Nutrients* 10, E13, 2017.)

Stabilize the conditions of mental health
Relieve the pain

Thank you very much for your attention!

