

Shinrin-yoku research -2- Nature and well-being. Message from Japan

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ESRC Festival of Learning 2021

Connecting with Nature: for Wellbeing, Sustainability and the
Environment – November 2021





Bandai Mountain

- With more than 70% of the country covered by mountains, Japan is often referred to as a "mountainous country".
- For those of us who live in Japan, mountains are so familiar that we see them even when we are not aware of them.
- The mountains give us different impressions in spring, summer, autumn, winter and winter, and people have been writing *haiku* about them.

Haiku, an ancient Japanese poem (the number of sounds in Japanese, 5-7-5), has a strict rule of including seasonal words.

Forest bathing is a seasonal word for summer, and is described in the *haiku* rule book, *Haiku Saijiki*, as "**the spiritual relief and refreshment of being in a forest, bathed in the fresh fragrance of the trees**".

白鳥も森林浴の散歩かな
平畑静塔

Ajisai Temple, Tago Town, Chiba Pref.





Isosaki
Shrine,
Oarai Town.
Chiba Pref.

- There has been a lot of talk about the spectacular appearance of the Kami-Iso-no-Torii (Gate of the Sea), which stands in the middle of the sea. It is a sacred place where two gods, Ohnamuchi-no-mikoto and Sukunahiko-no-mikoto, are said to have landed.
- This place is also famous as the spot for the first sunrise, which rises near the torii gate.





Isosaki Shrine A well-known among subculture fans, Girls und Panzer

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- The sacred tree of Magata Shrine, Narita, Chiba
- In Japan, there is a folk belief that all the gods dwell in nature, and they are often revered and worshipped as sacred trees.



Yahiko Shrine, Niigata Prefecture

- As you can see, Japanese shrines and temples are often surrounded by forests and green spaces, and it is common for people to enjoy forest bathing as an unwitting part of their daily lives.



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Our research on 'Forest bathing'

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1. Medical
evidence and
forest
medicine
approach

Relaxation methods

- ✓ Deep breathing, self-training, biofeedback, guided image therapy, innovative relaxation, self-hypnosis, etc.
- ✓ Aroma, music, bathing, etc.
- ✓ **Shinrin-yoku, Forest Therapy®**
 - It is fun and easy to do on your own.
 - Can be combined with various methods.
 - An increasing number of companies are considering introduction.

“Shinrin-Yoku” is a health promoting method originated in Japan.

*Shinrin=Forest, yoku=bathing

It was registered a trademark in the US in 2017.

SHINRIN YOKU Trademark Information

Feronia Wellness, LLC

Educational services, namely conducting classes and seminars in the field of nature therapy

Health care, medical and forestry services

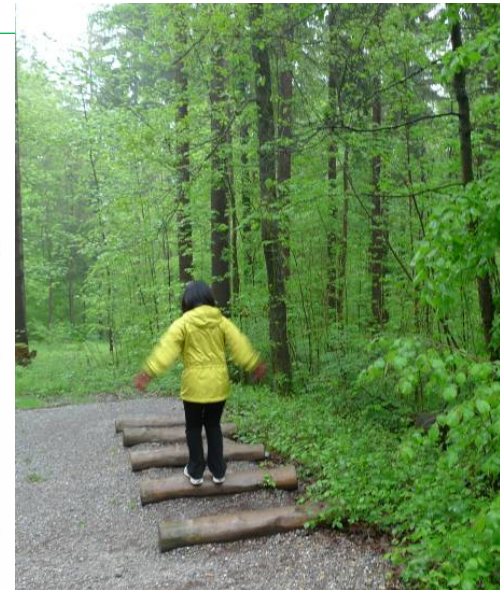
Perfect for these industries

Education and Entertainment Services
Medical, Beauty & Agricultural Services

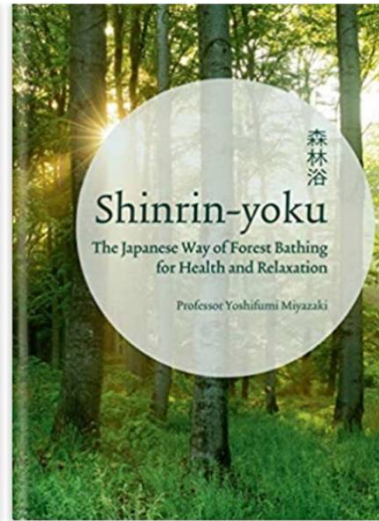
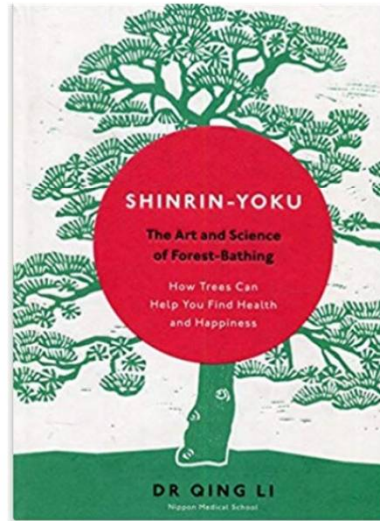
Words that describe this mark

educational services conducting classes seminars
field nature therapy

This is a brand page for the **SHINRIN YOKU** trademark by **Feronia Wellness, LLC** in **Pittsfield, MA, 01201**.



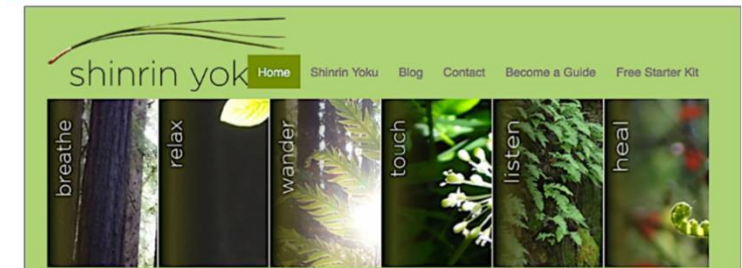
Shinrin-Yoku 森林浴



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Shinrin-Yoku means "Forest Bathing."

Forest baths are gentle walks that support well-being through sensory immersion in forests and other naturally healing environments.

Shinrin-Yoku: The Japanese Art Of Forest Bathing

Plus 5 Places In And Around Tokyo To Discover The Healing Power Of Nature



BY CHRISTY ANNE JONES | MARCH 29, 2018 | HEALTH & BEAUTY, LIFESTYLE



What is Shinrin-Yoku?

by TIMBER PRESS on JUNE 28, 2018

in NATURAL HISTORY

Japan Tokyo Nature & Outdoors

Shinrin-yoku: How Japan is fighting stress with nature

Japan's hottest wellness trend has been shown to reduce stress hormones, lower blood pressure and stave off diabetes.



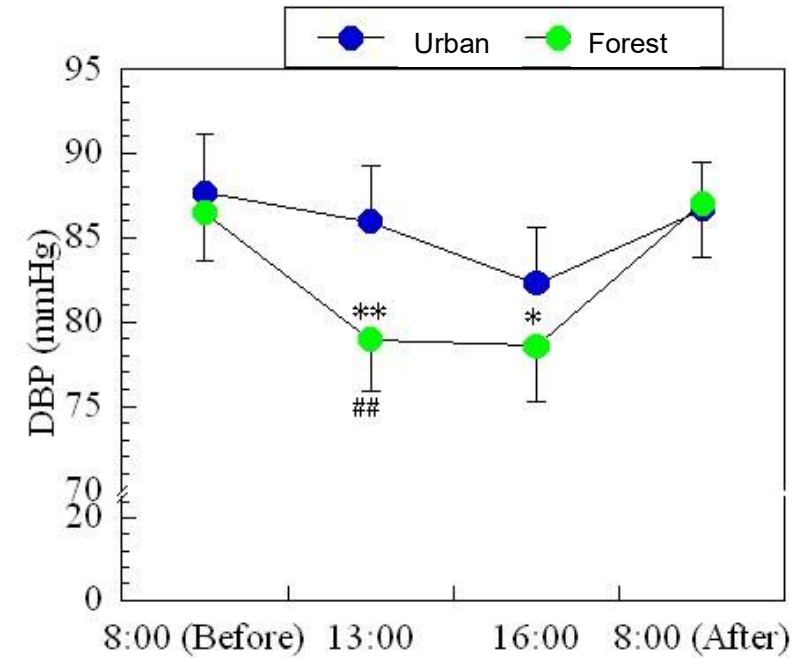
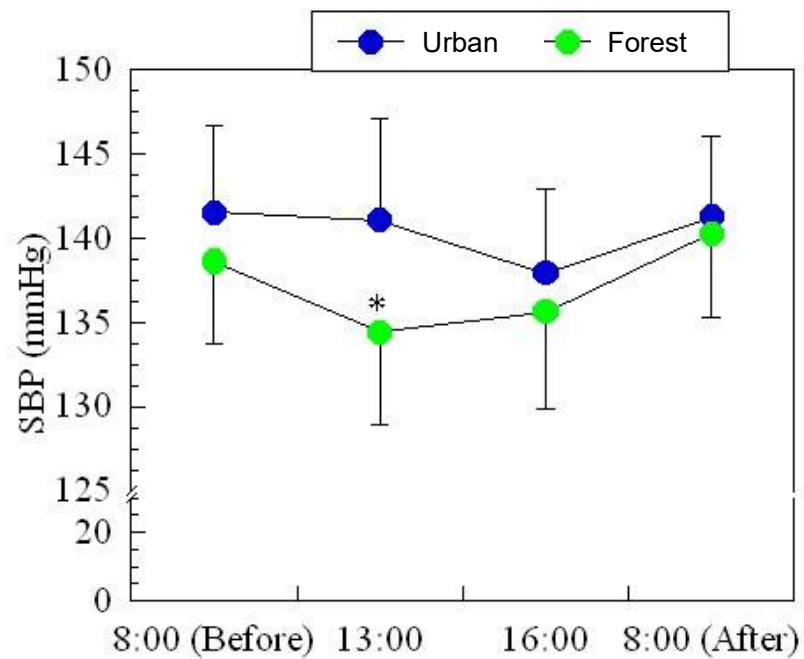
By BBC's The Travel Show
25 August 2018

Forest Therapy Society conducts education system and certification for “Forest Therapist®” in Japan.

- ✓ There are about 1,200 members in total.
- ✓ Participating in a guided program and receiving appropriate advice can enhance the healing effect.
- ✓ The guides are familiar with each forest, the explanation is kept to a minimum .
- ✓ Using “five senses” of “sight, hearing, touch, smell and taste”.
It is a dialogue with nature.



Shinrin-yoku normalizes blood pressure



= Parasympathetic
nerve activity↑

*: $p < 0.05$, **: $p < 0.01$, forest vs city

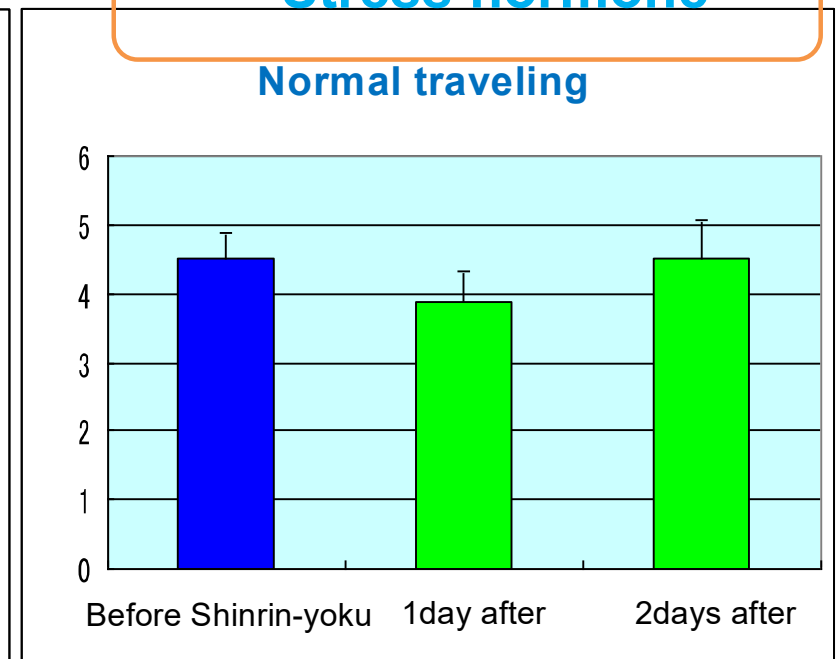
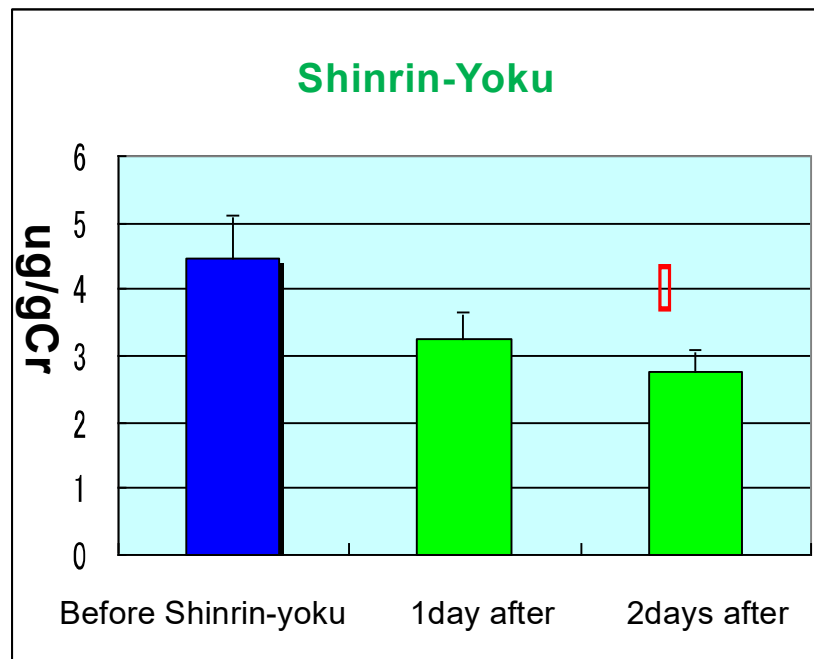
##: $p < 0.01$, 13:00 vs 8:00 (Before), Mean \pm SE

Li et al: Eur J Appl Physiol. 2011;111(11):2845-53.

Shinrin-Yoku decreases Urinary adrenalin

*Normal traveling doesn't effect any.

= Stress hormone

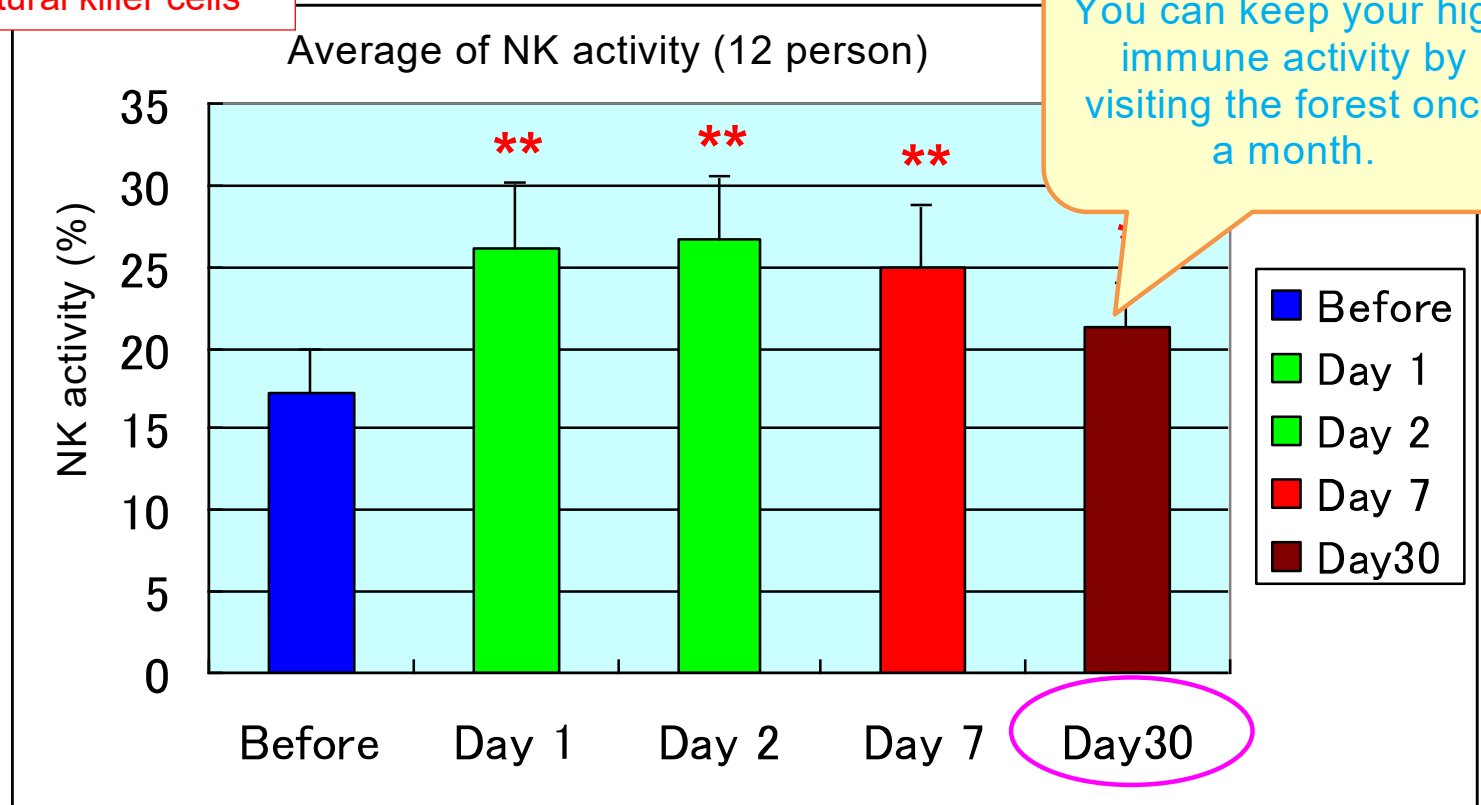


*: $p < 0.05$ (Compared with Shinrin-yoku)

Li Q et al. Int J Immunopathol Pharmacol. 2008;21(1):117-27.

Shinrin-Yoku increases the activity of NK cells. The effect lasts for 1 month.

NK cells =
Natural killer cells

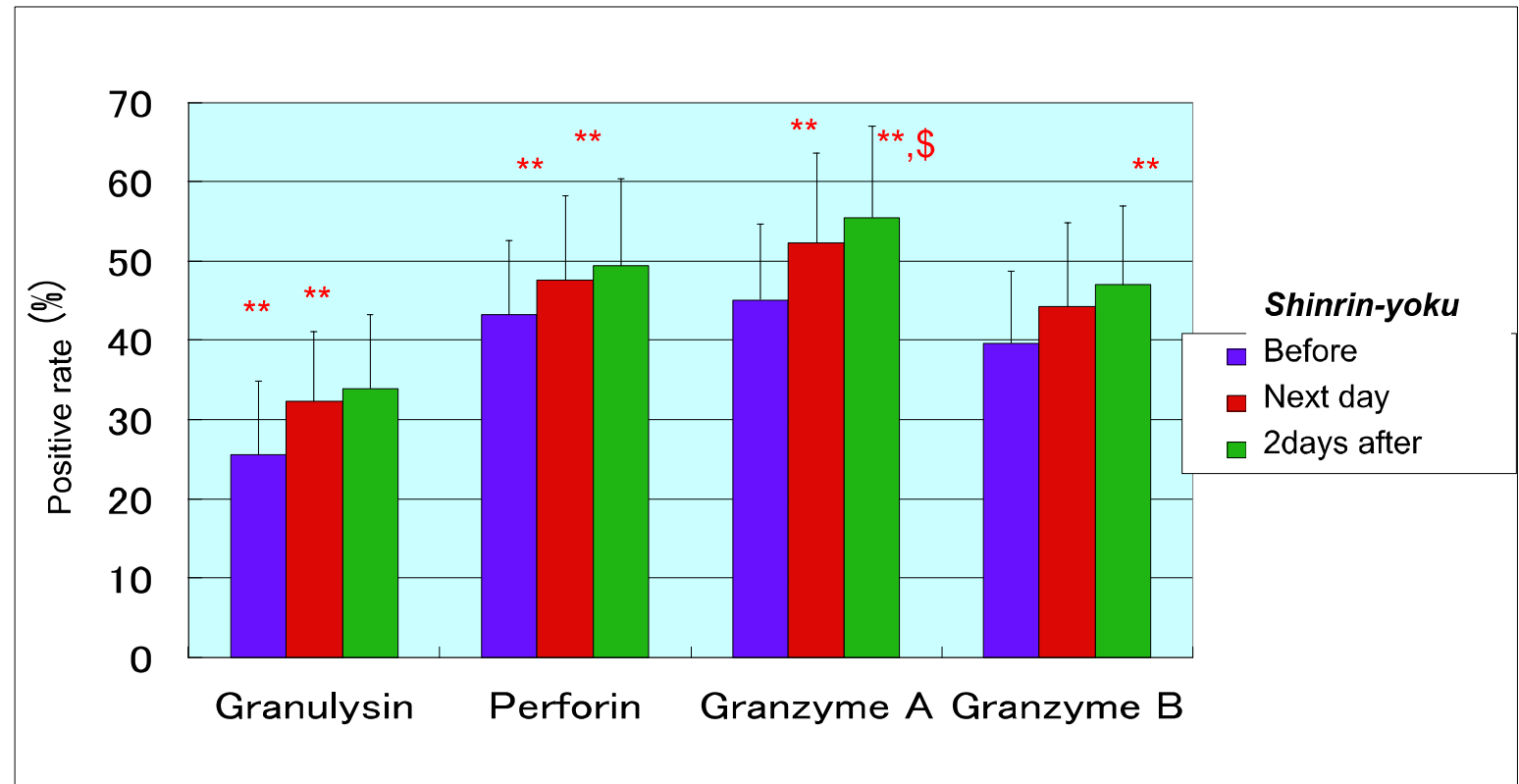


You can keep your high immune activity by visiting the forest once a month.

* $p < 0.05$, **: $p < 0.01$ (Compared with before Shinrin-yoku)

Li Q et al. Int J Immunopathol Pharmacol. 2008;21(1):117-27.

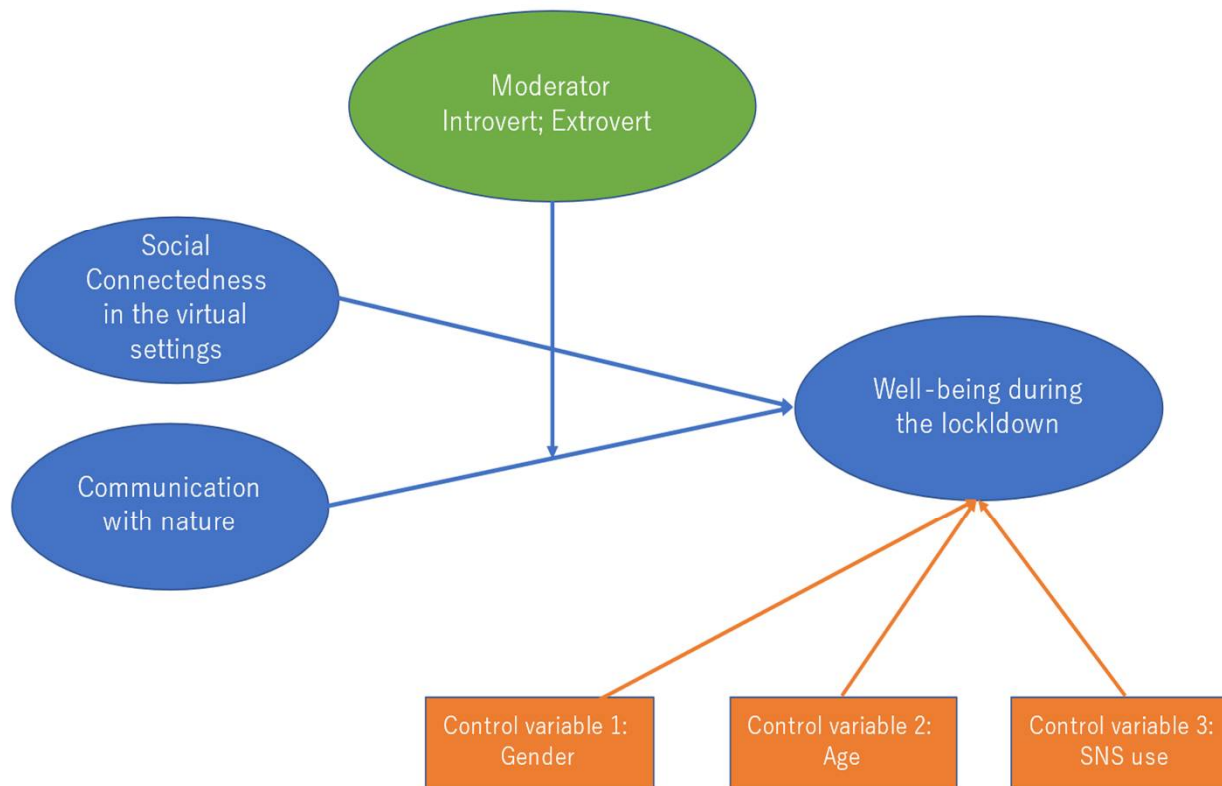
Shinrin-yoku increases the anticancer protein.



* : $p < 0.05$, **: $p < 0.01$, \$: $p < 0.05$

Li Q. et al., Int J Immunopathol Pharmacol. 2007;20(S2):3-8.

2. Subjective well-being during the Covid Pandemic



“Impact of virtual connectedness and the communicating with nature on well-being during the lockdown: A discussion of digital natives’ perspectives”

Tentative outcome of the analysis

Path		All samples		All samples + Control variables		Introvert		Introvert +Control variables		Extrovert		Extrovert+Controle variables	
To	From	Std. path coefficient	P	Std. path coefficient	P	Std. path coefficient	P	Std. path coefficient	P	Std. path coefficient	P	Std. path coefficient	P
Subjective well-being	<--- Social connectedness in cyberspace	0.783	***	0.730	***	0.792	***	0.711	***	0.809	***	0.759	***
Subjective well-being	<--- Communicating with nature	0.156	***	0.137	0.002	0.192	***	0.218	***	0.118	0.058	0.093	0.231
S-1	<--- Social connectedness	0.583		0.557		0.529		0.499		0.597		0.538	
S-2	<--- Social connectedness	0.767	***	0.738	***	0.810	***	0.799	***	0.756	***	0.715	***
S-3	<--- Social connectedness	0.631	***	0.575	***	0.516	***	0.373	***	0.659	***	0.581	***
S-4	<--- Social connectedness	0.645	***	0.581	***	0.660	***	0.643	***	0.696	***	0.611	***
C-1	<--- Communicating with nature	0.676		0.784		0.479		0.514		0.680		0.759	
C-2	<--- Communicating with nature	0.904	***	0.783	***	1.224	***	1.138	***	0.834	***	0.722	***
W-1	<--- Well-being in virtual conumity	0.581		0.504		0.522		0.456		0.637		0.604	
W-2	<--- Well-being in virtual conumity	0.725	***	0.685	***	0.666	***	0.605	***	0.803	***	0.768	***
W-3	<--- Well-being in virtual conumity	0.760	***	0.761	***	0.762	***	0.767	***	0.785	***	0.791	***
W-4	<--- Well-being in virtual conumity	0.561	***	0.438	***	0.403	***	0.255	***	0.674	***	0.556	***
Social connectedness	<--> Communicating with nature	0.483	***	0.491	***	0.260	0.007	0.197	0.024	0.552	***	0.555	***
Control variable													
Well-being in virtual conumity	<--- Age			-0.011	0.678			-0.010	0.835			-0.016	0.726
Well-being in virtual conumity	<--- Gender			-0.008	0.761			0.000	0.999			-0.045	0.310
Well-being in virtual conumity	<--- Frequency			0.167	***			0.187	***			0.111	**
Fit index													
Chi-square (χ^2)		215.355		423.199		153.881		248.525		108.566		216.122	
Degree of freedom (df)		32		62		32		62		32		62	
χ^2/df		6.730		6.826		4.809		4.008		3.393		3.486	
p-value		0.000		0.000		0.000		0.000		0.000		0.000	
Goodness of fit index (GFI)		0.964		0.946		0.930		0.913		0.950		0.923	
Adjusted GFI (AGFI)		0.939		0.921		0.879		0.872		0.913		0.887	
Root mean square error of approximation (RMSEA)		0.069		0.069		0.083		0.083		0.075		0.076	



3. Which of the five senses has the impact on subjective well-being the most?

		Mean	Std. Deviation	Std. Error Mean	the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Q2SQ1.1 [No sound] I felt relaxed when I watched the video.	-0.123	0.666	0.038	-0.199	-0.048	-3.210	299	0.001
	Q2SQ2.1 [With sound] I felt relaxed when I watched the video.								
Pair 2	Q2SQ1.5 [No audio] I want to go to a forest or a field.	-0.077	0.647	0.037	-0.150	-0.003	-2.052	299	0.041
	Q2SQ2.5 [With audio] I wanted to go to the forest or the mountains.								
Pair 3	Q2SQ1.6 [No audio] I felt that we have to take care of the forest and nature.	-0.053	0.576	0.033	-0.119	0.012	-1.604	299	0.110
	Q2SQ2.6 [With sound] I felt that we have to take care of the forest and nature.								



Future research
opportunities

THANK YOU FOR YOUR ATTENTION!

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** References are available upon request*

*** All photos of the nature, Japanese shrines
and temples are copyrighted by Dr Yasuyuki
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