

PLURALSIGHT



The Mindful Developer: The Science of Stress Management



Matthew Renze
Data Science Consultant

Stress

Stress
Mindfulness

Stress
Mindfulness
Science

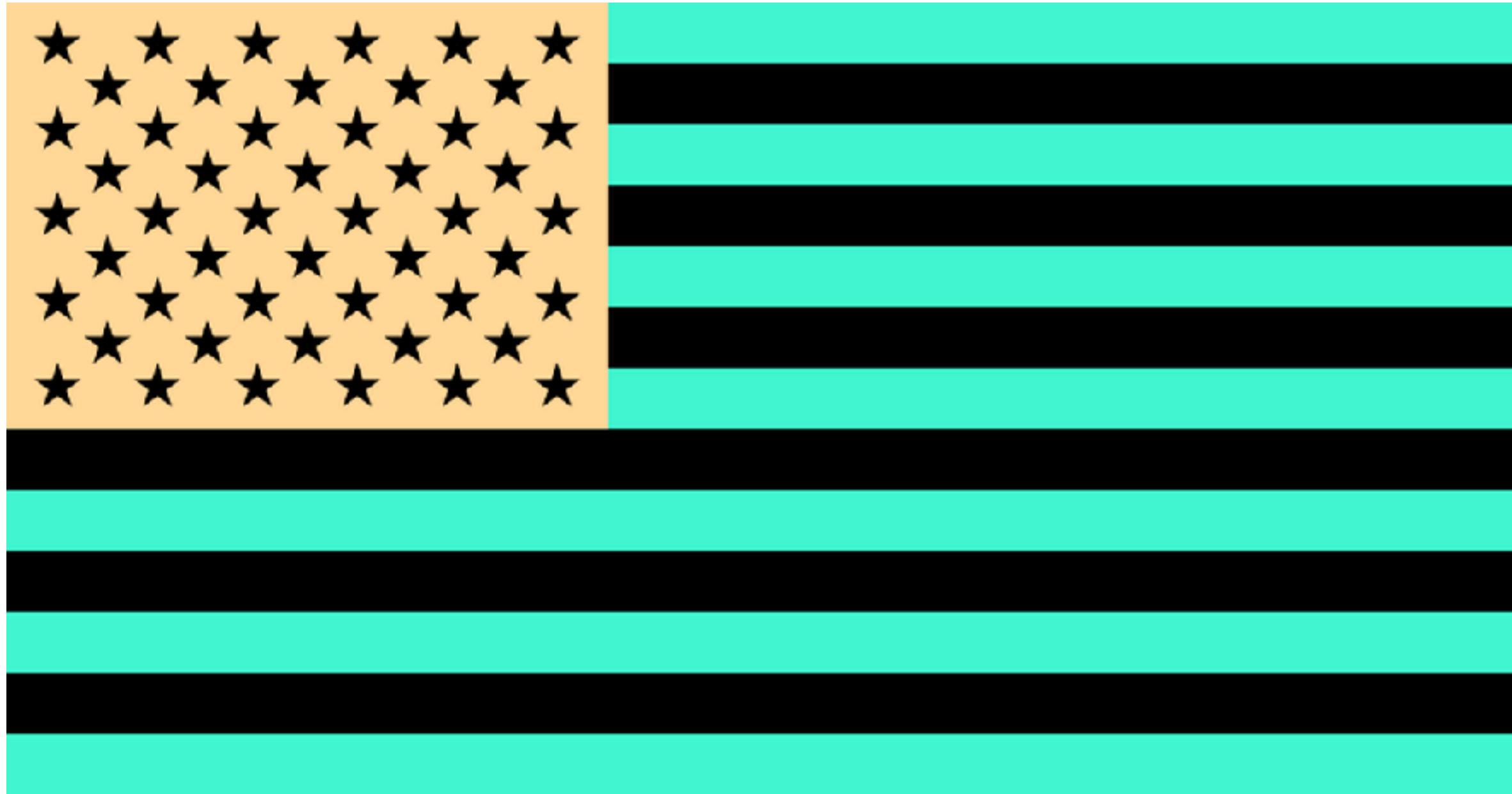
February 7, 2014











Other Symptoms

Visual

Vibration in text

Trailing images

Bright-light issues

Night-vision issues

Halos at night

Auditory

Loud-noise issues

Conversation issues

Environmental-noise issues

Ear pop/click noise

Tactile

Pulsating buzzing

Fine tremors





Source: Mayo Clinic

'Visual snow' – a disorder distinct from persistent migraine aura

Christoph J. Schankin,^{1,2,*} Farooq H. Maniyar,^{1,2} Kathleen B. Digre³ and Peter J. Goadsby^{1,2}

¹ Headache Group, Department of Neurology, University of California, San Francisco, San Francisco, CA, USA

² NIHR-Wellcome Trust Clinical Research Facility, King's College London, London, UK

³ Departments of Neurology, Ophthalmology, Moran Eye Centre, University of Utah, Salt Lake City, UT, USA

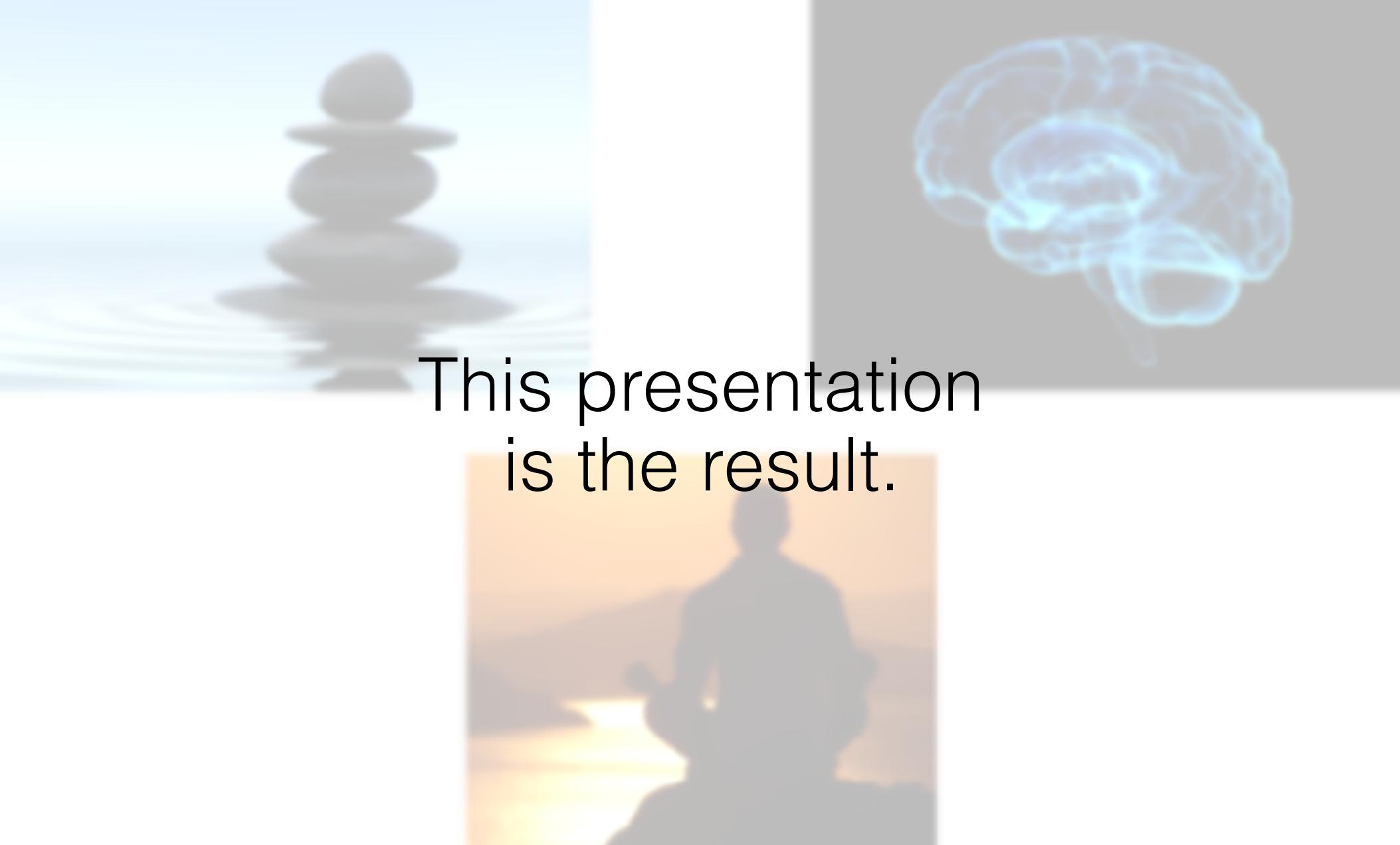
*Present address: Department of Neurology, University of Munich Hospital - Großhadern, Munich, Germany



Source: Rochester Convention
and Visitors Bureau







This presentation
is the result.

A photograph of a large, spreading acacia tree standing in a dry, golden-brown savanna grassland. The tree has a thick trunk and a wide canopy of dark green leaves. In the background, there are rolling hills and mountains under a clear blue sky with a few wispy clouds.

Stress











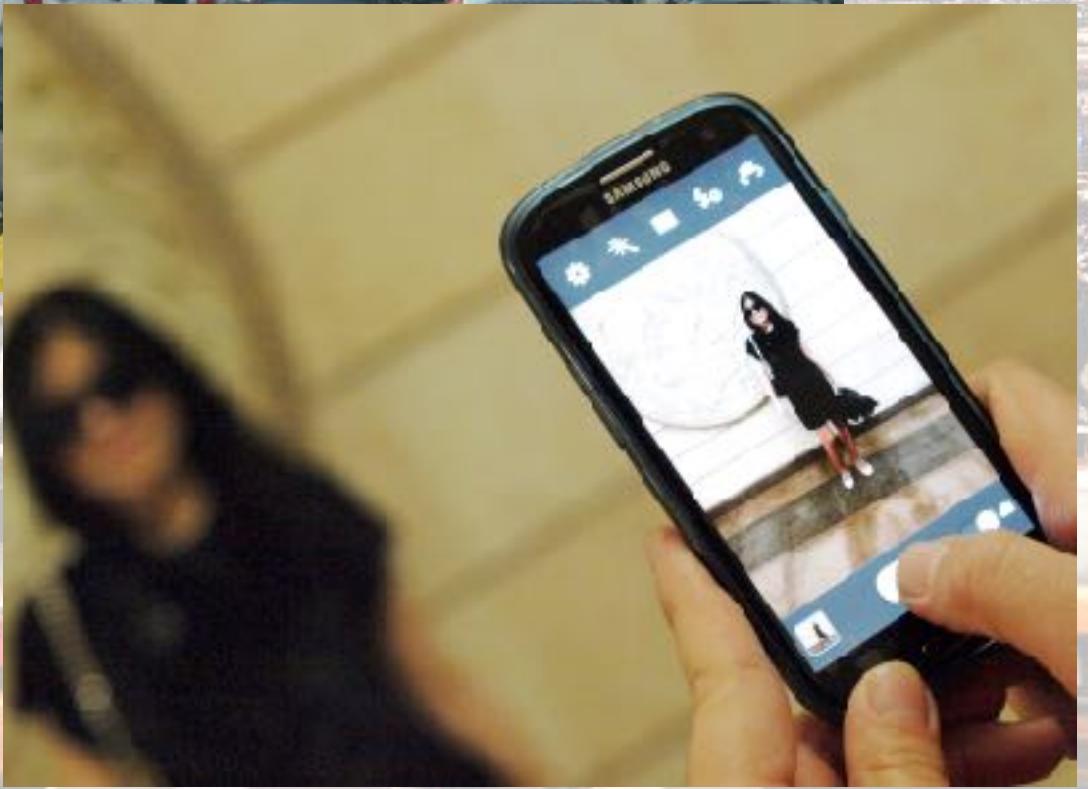
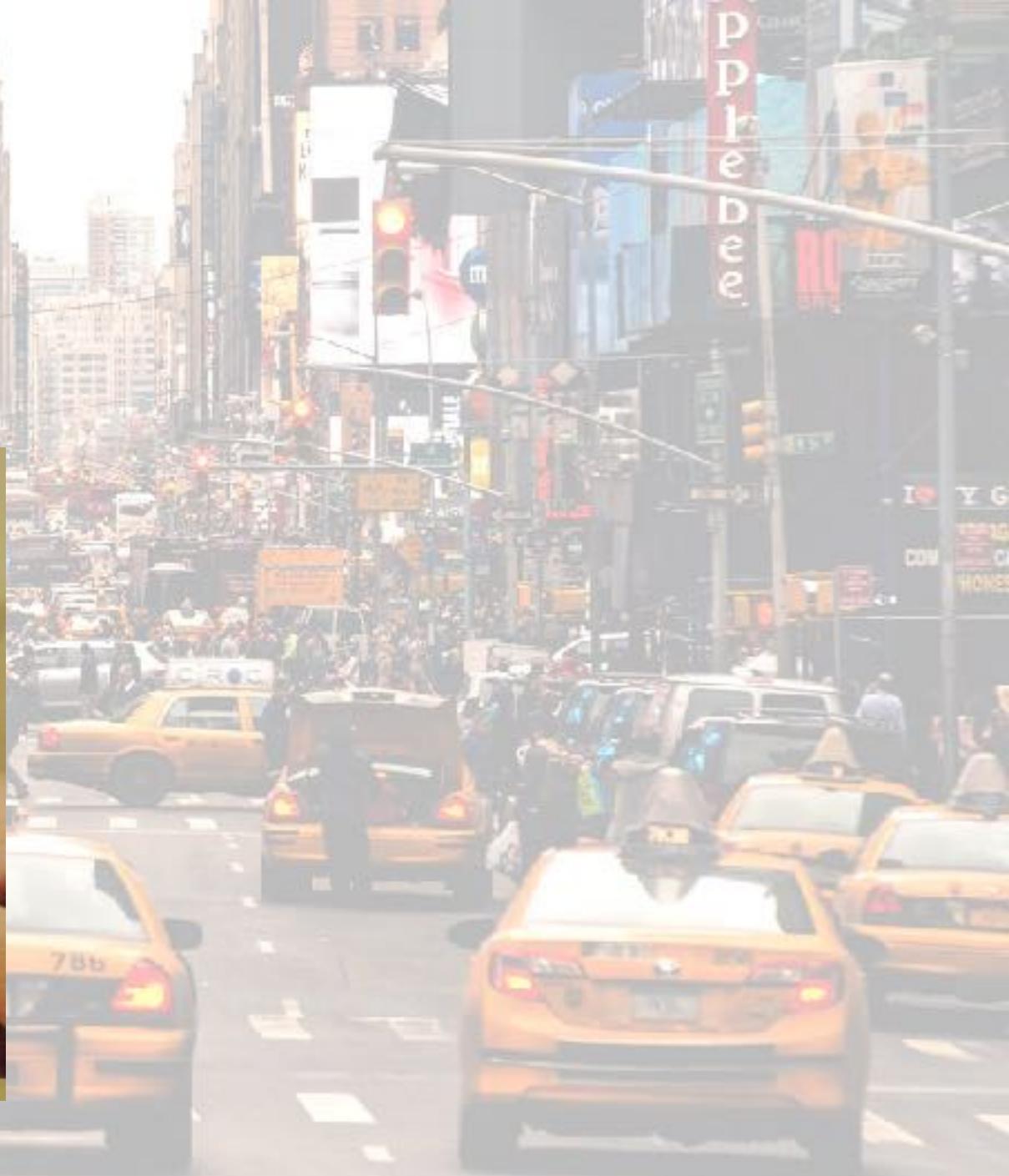
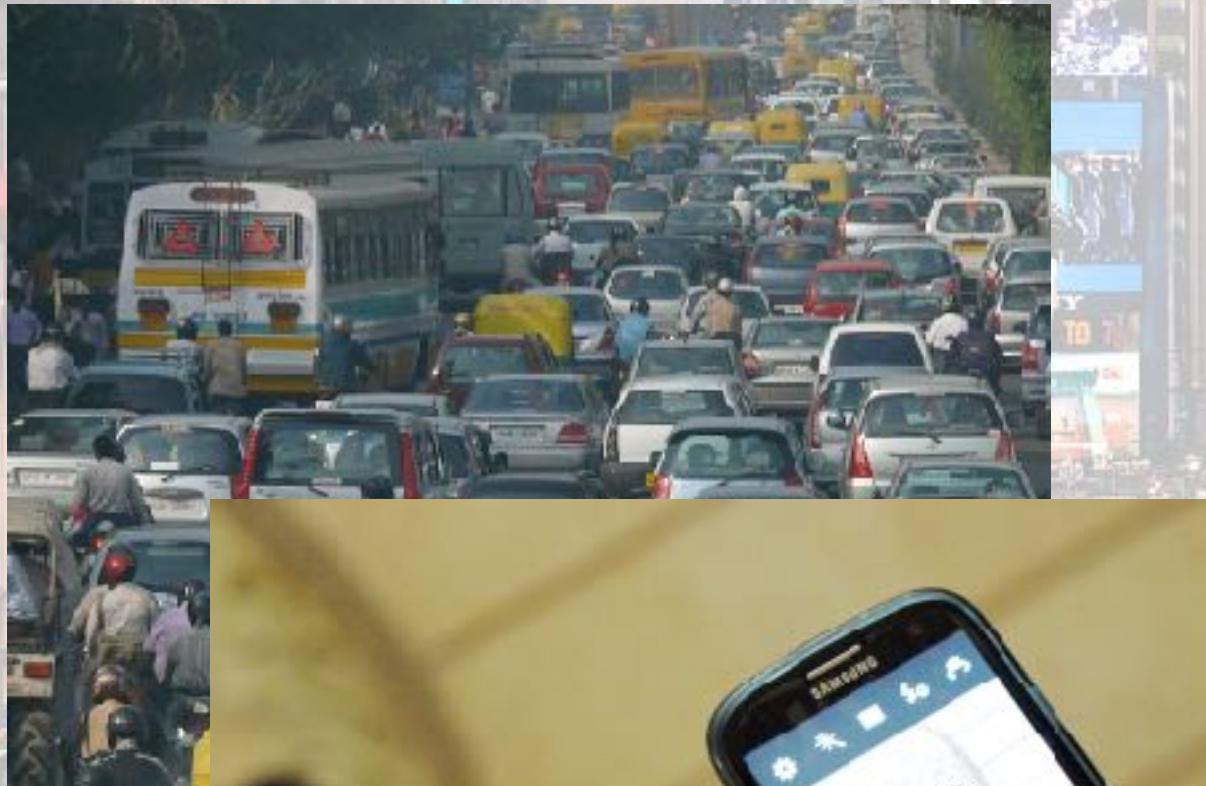


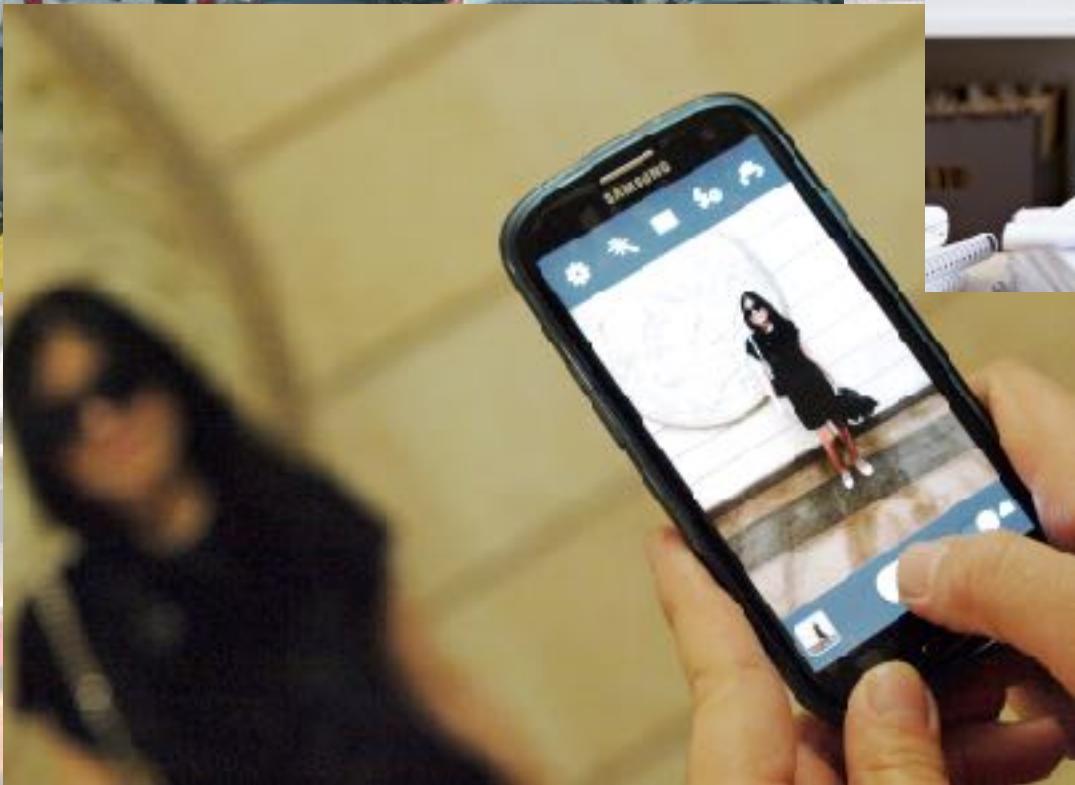


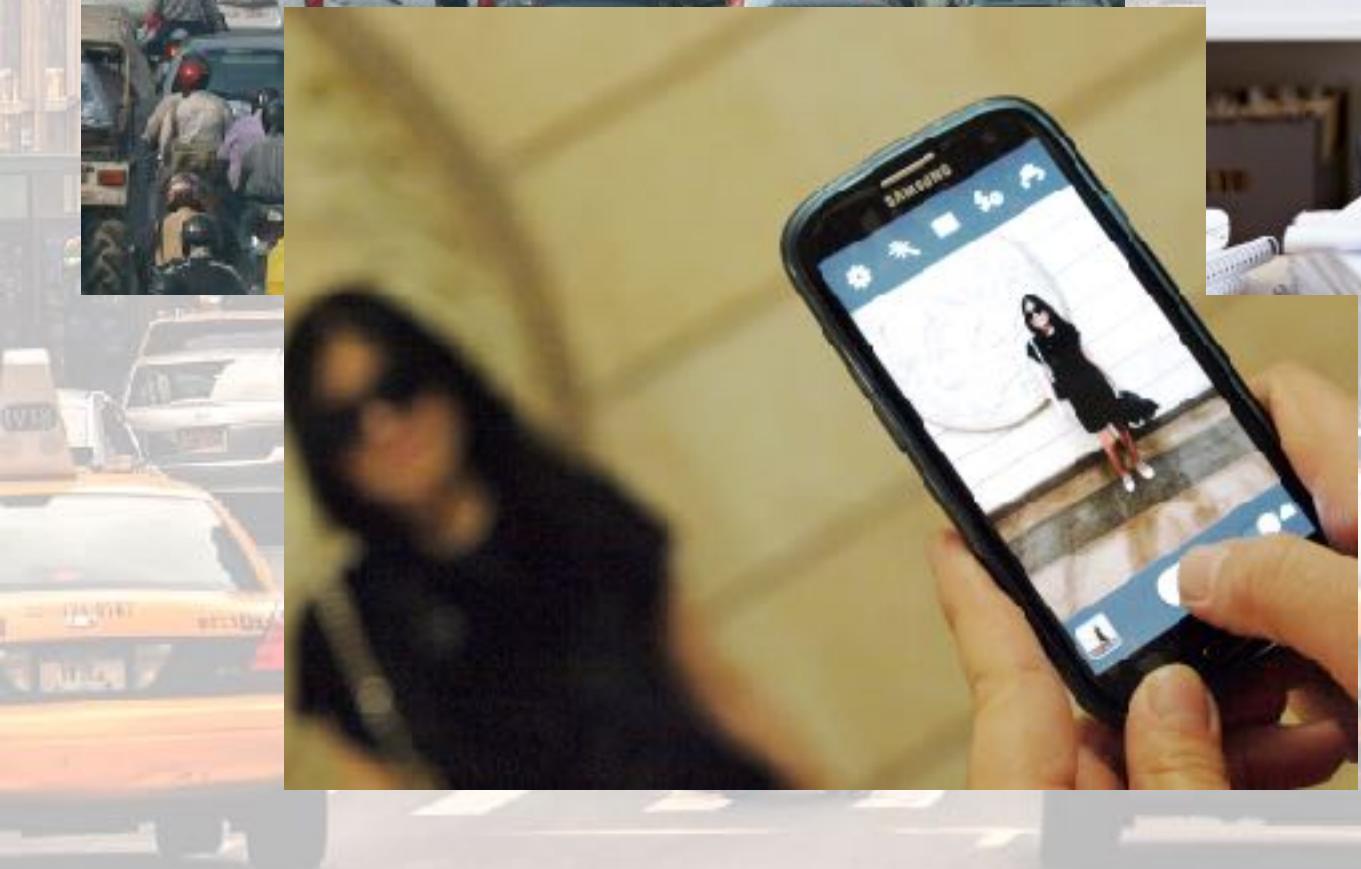


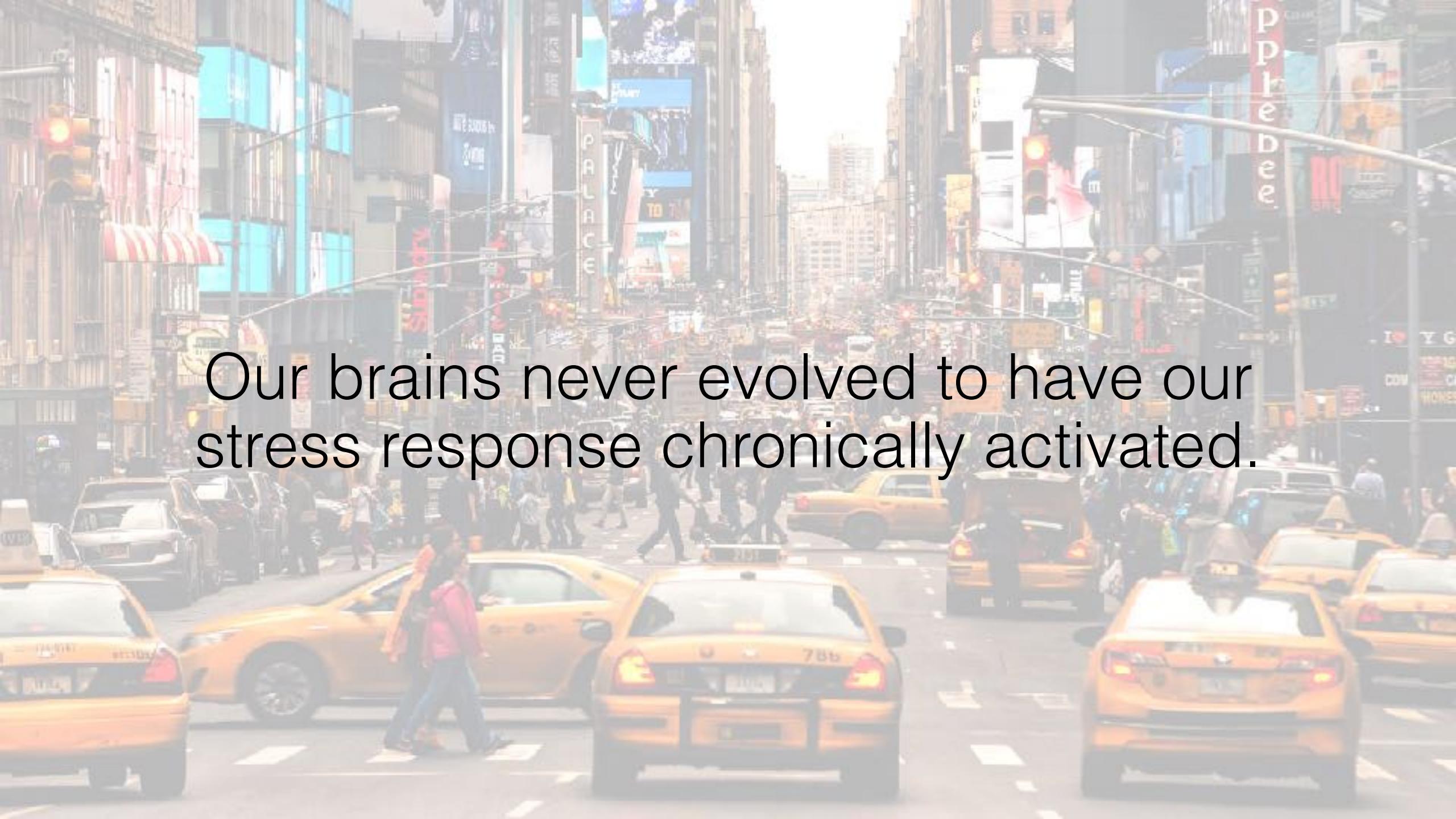












Our brains never evolved to have our stress response chronically activated.

Negative Effects of Chronic Stress

- Heart disease
- Metabolic syndrome
- Digestion issues
- Autoimmune system
- Immunosuppression

Negative Effects of Chronic Stress

Heart disease

Metabolic syndrome

Digestion issues

Autoimmune system

Immunosuppression

Female reproduction

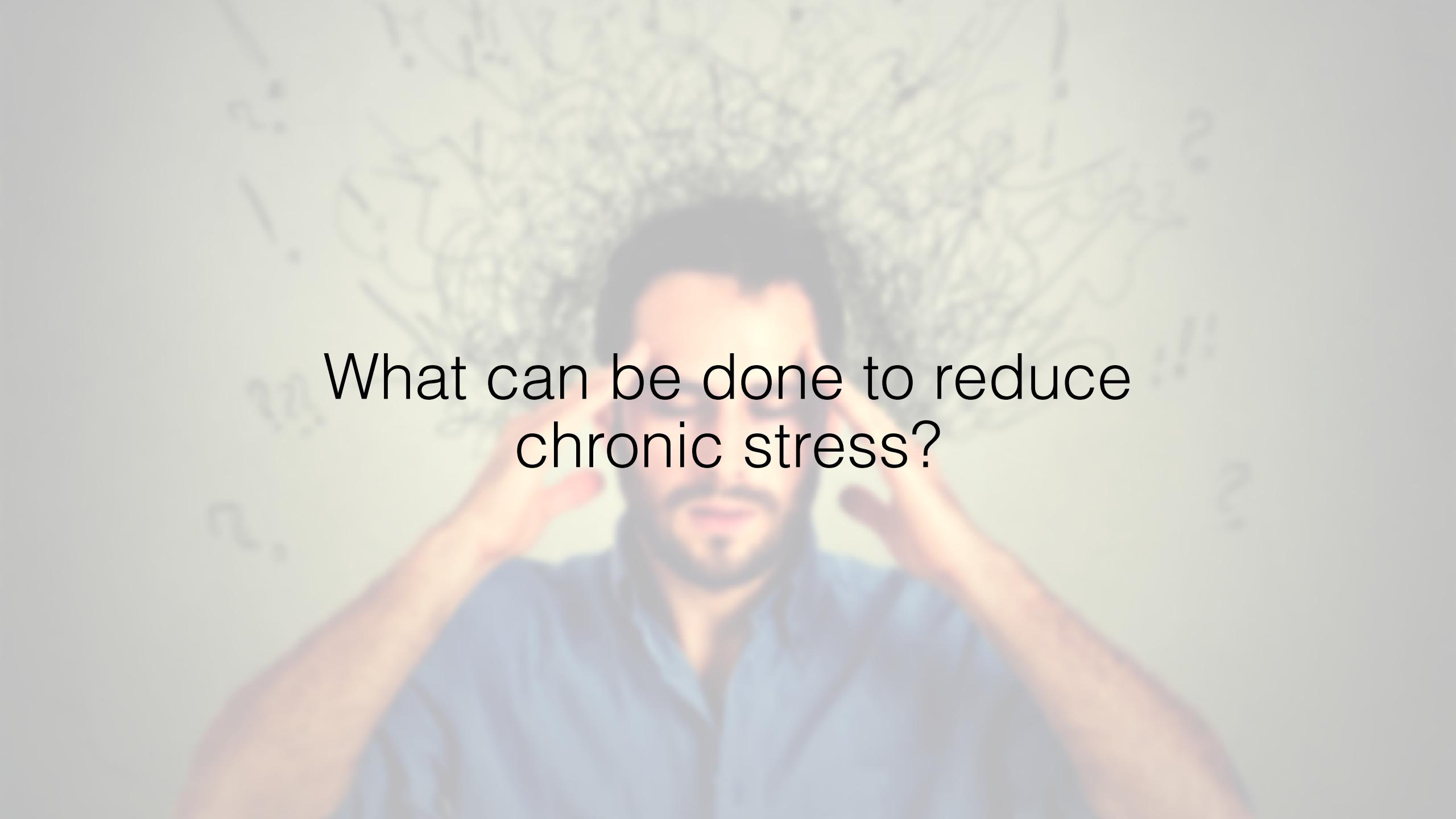
Male reproduction

Developmental disorders

Cancer complications

Mental health



A blurred background image of a man with dark hair and a beard, wearing a light blue shirt. He is sitting cross-legged on the ground with his hands clasped together in front of him, resting on his knees. He appears to be in a contemplative or stressed state, with his eyes closed or looking down. The setting is outdoors with trees and foliage visible in the background.

What can be done to reduce
chronic stress?

Mindfulness



Mindful of
the force,
you must
be.

What
does that
even
mean?

And why am I
taking advice
from a
muppet?

Being aware of
present experience
with acceptance.



Presence

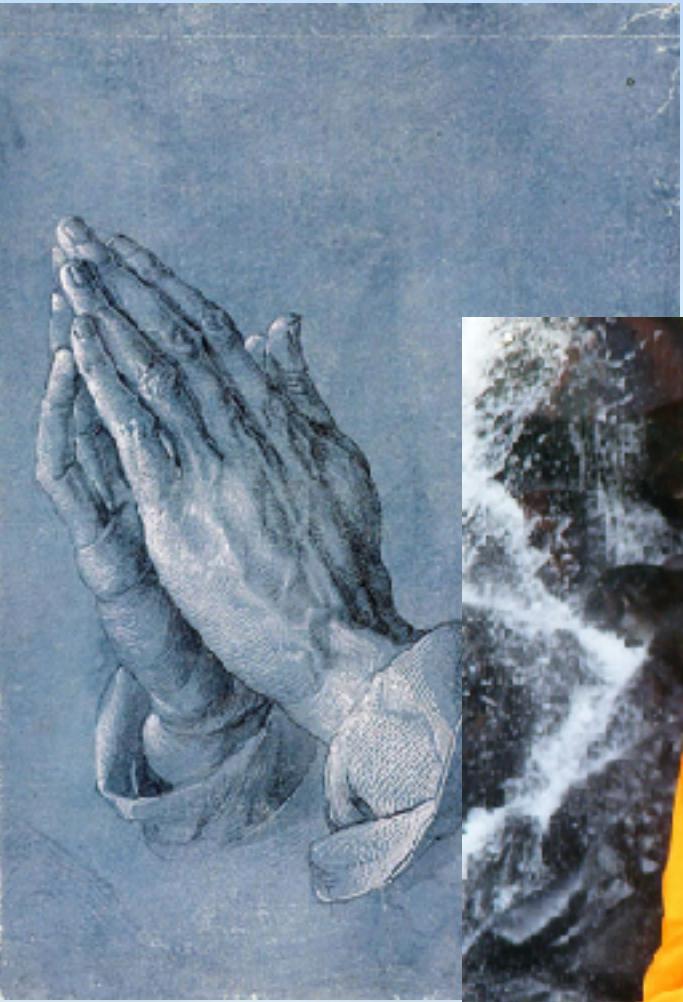


Presence
Awareness

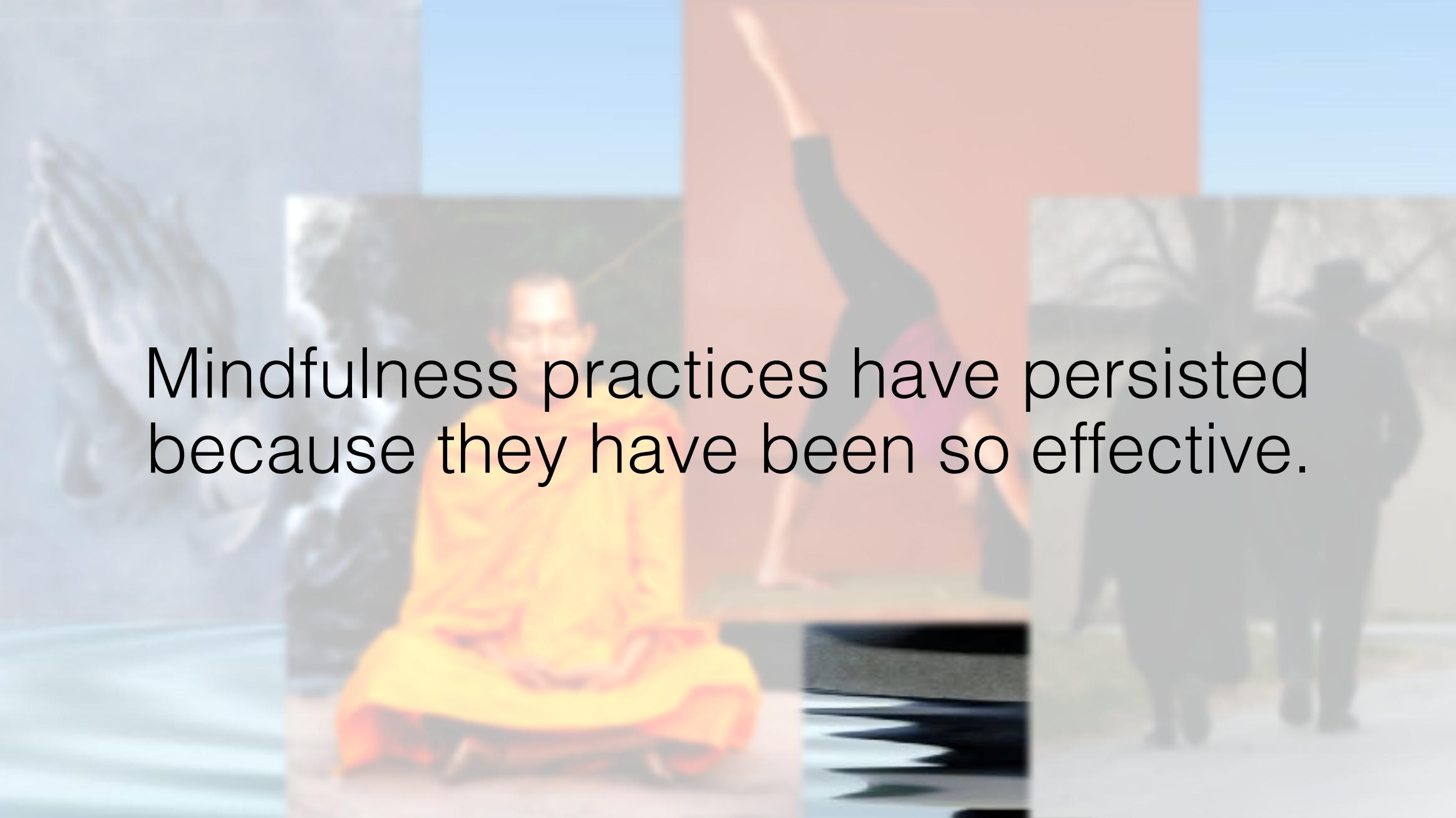


Presence
Awareness
Acceptance





Source: Wikipedia



Mindfulness practices have persisted because they have been so effective.

Meditation





Geek meditation session.

How to Meditate



How to Meditate

1. Sit in a comfortable position



How to Meditate

1. Sit in a comfortable position
2. Position your hands



How to Meditate

1. Sit in a comfortable position
2. Position your hands
3. Close your eyes



How to Meditate

1. Sit in a comfortable position
2. Position your hands
3. Close your eyes
4. Focus on your breath



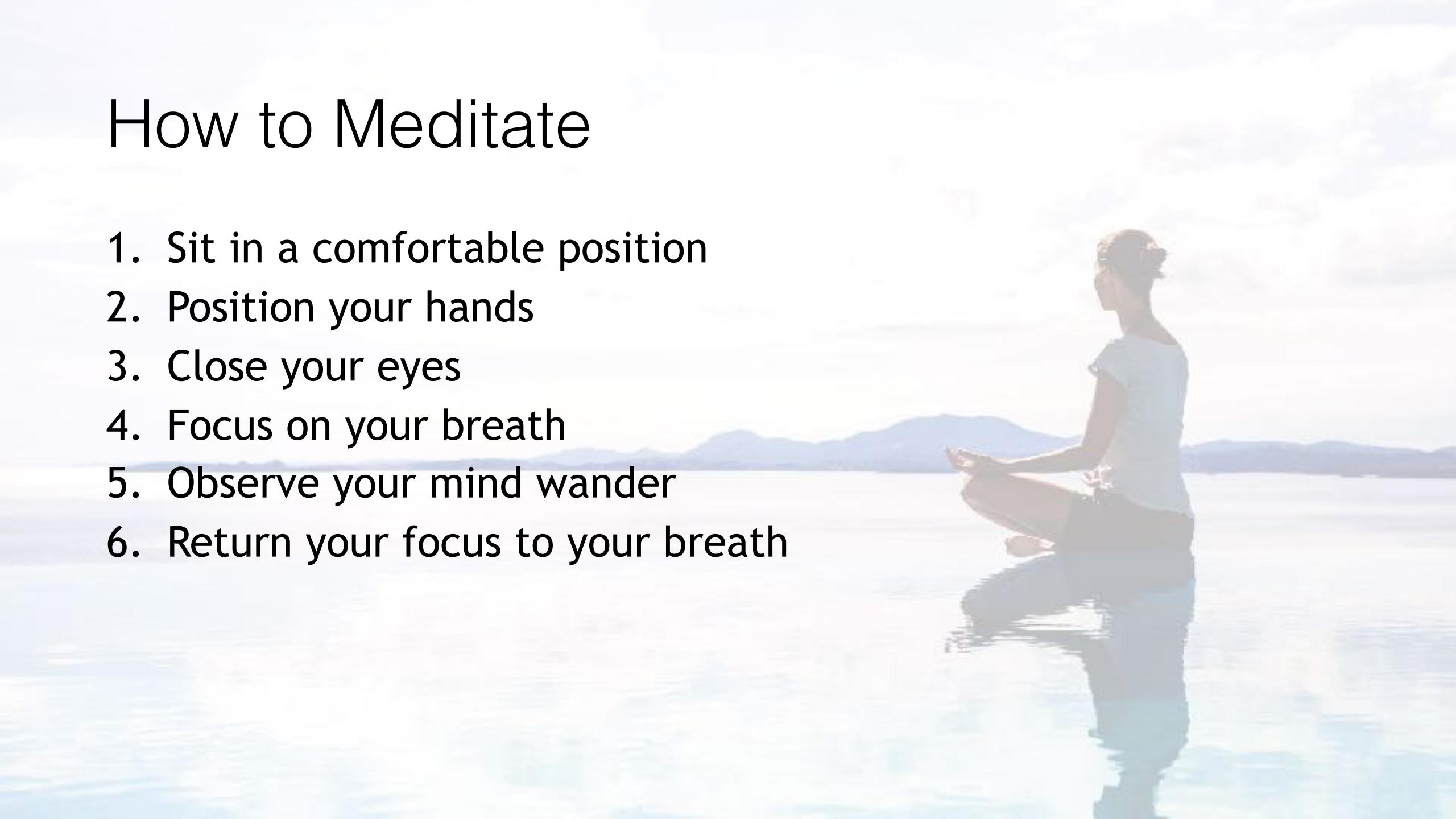
How to Meditate

1. Sit in a comfortable position
2. Position your hands
3. Close your eyes
4. Focus on your breath
5. Observe your mind wander



How to Meditate

1. Sit in a comfortable position
2. Position your hands
3. Close your eyes
4. Focus on your breath
5. Observe your mind wander
6. Return your focus to your breath



How to Meditate

1. Sit in a comfortable position
2. Position your hands
3. Close your eyes
4. Focus on your breath
5. Observe your mind wander
6. Return your focus to your breath
7. Accept your experience as it is



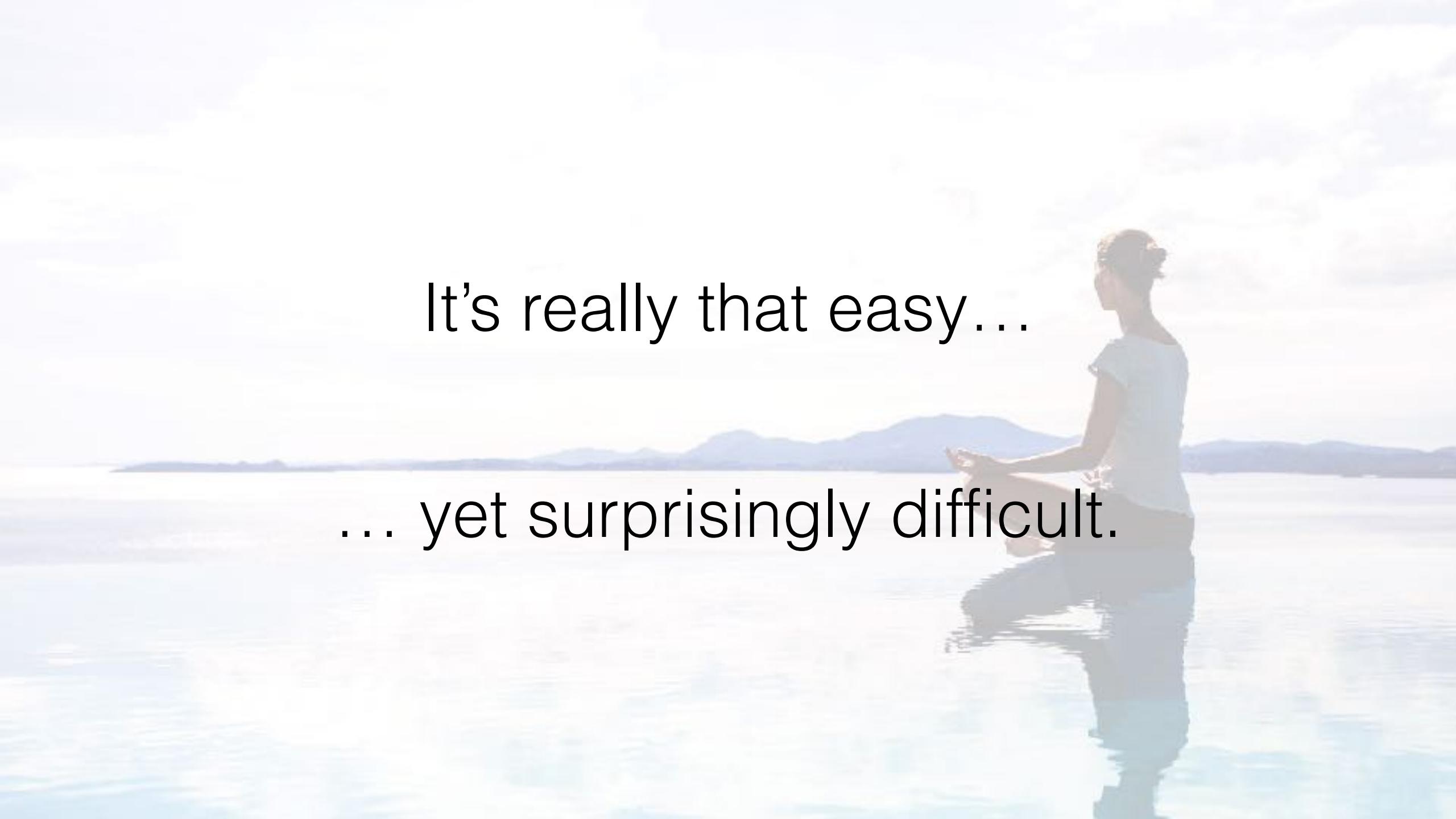
How to Meditate

1. Sit in a comfortable position
2. Position your hands
3. Close your eyes
4. Focus on your breath
5. Observe your mind wander
6. Return your focus to your breath
7. Accept your experience as it is
8. Repeat



A photograph of a woman meditating on a beach at sunset. She is sitting cross-legged on a mat, eyes closed, with her hands resting on her knees in a mudra. The sun is low on the horizon, casting a warm glow over the water and mountains in the background. The overall atmosphere is peaceful and serene.

It's really that easy...

A photograph of a woman meditating in a cross-legged lotus position on a sandy beach. She is wearing a light blue t-shirt and dark pants. Her hands are resting on her knees in a mudra. The background features calm ocean waves, distant hills under a hazy sky, and a bright sun setting on the horizon.

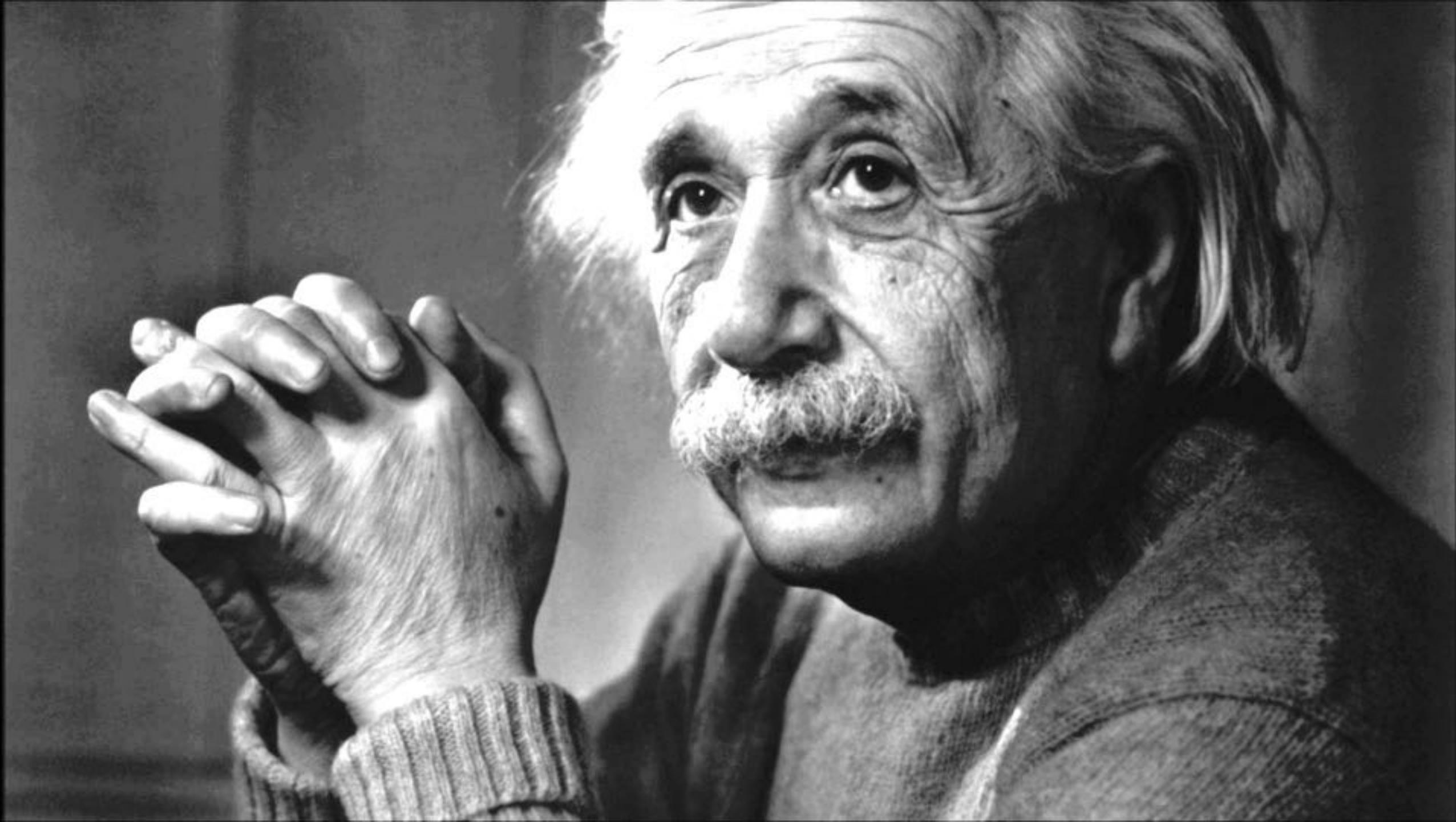
It's really that easy...

... yet surprisingly difficult.

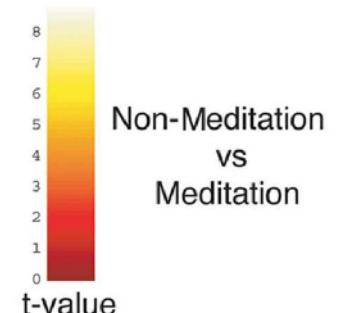
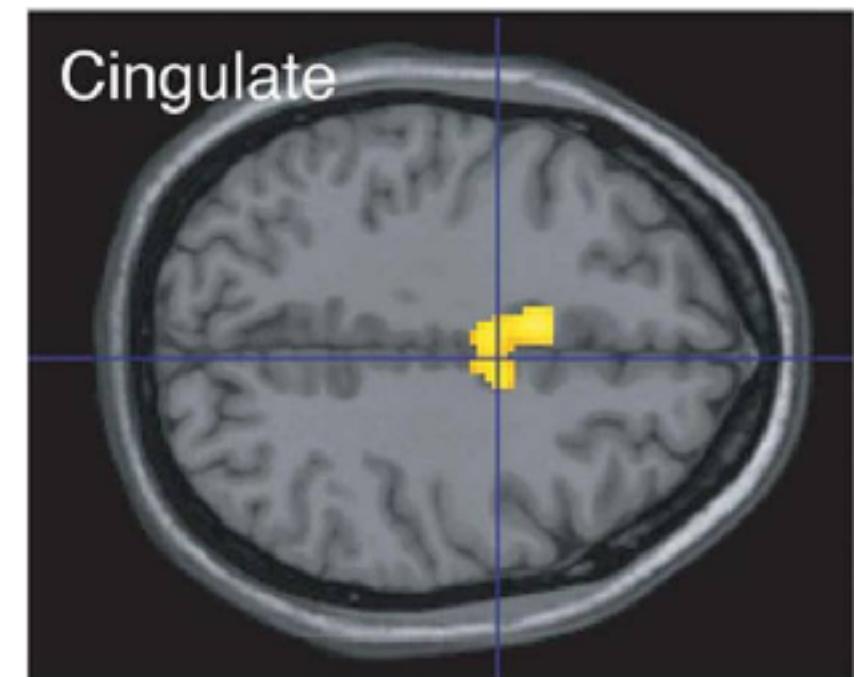
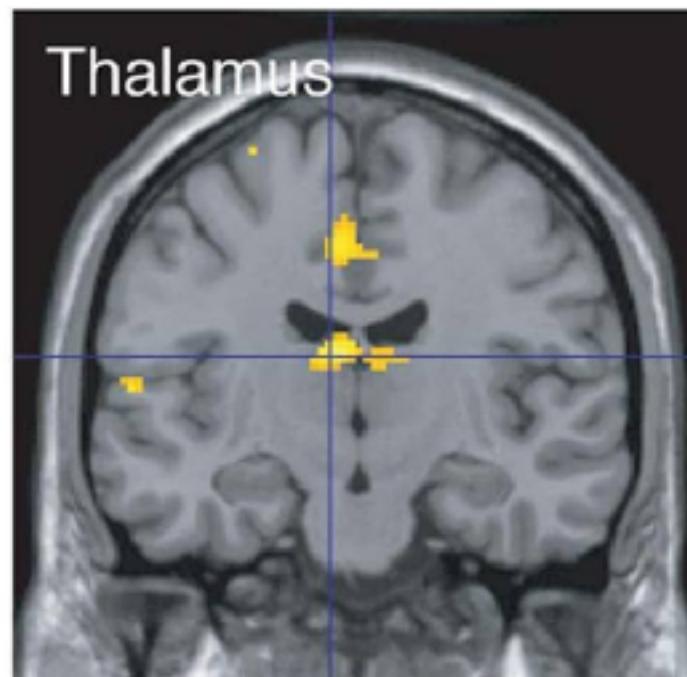
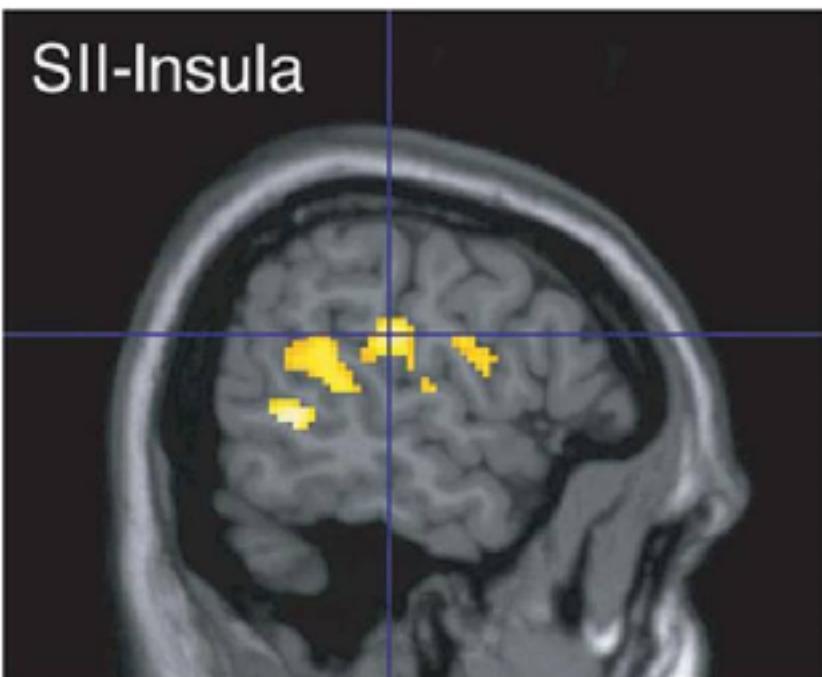
Neuroscience





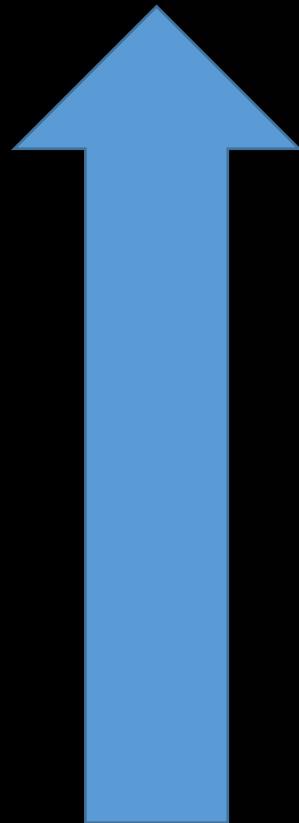


Meditation reduces pain-related neural activity in the anterior cingulate cortex, insula, secondary somatosensory cortex, and thalamus

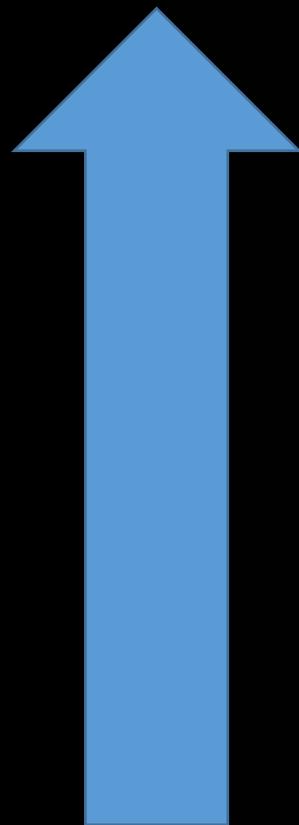




Source: <http://www.forbes.com/sites/alicegwalton/2015/02/09/7-ways-meditation-can-actually-change-the-brain>



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Other Structural and Functional Changes

Amygdala

Default-mode network

Cortical thickness

Anterior cingulate cortex

Prefrontal cortex

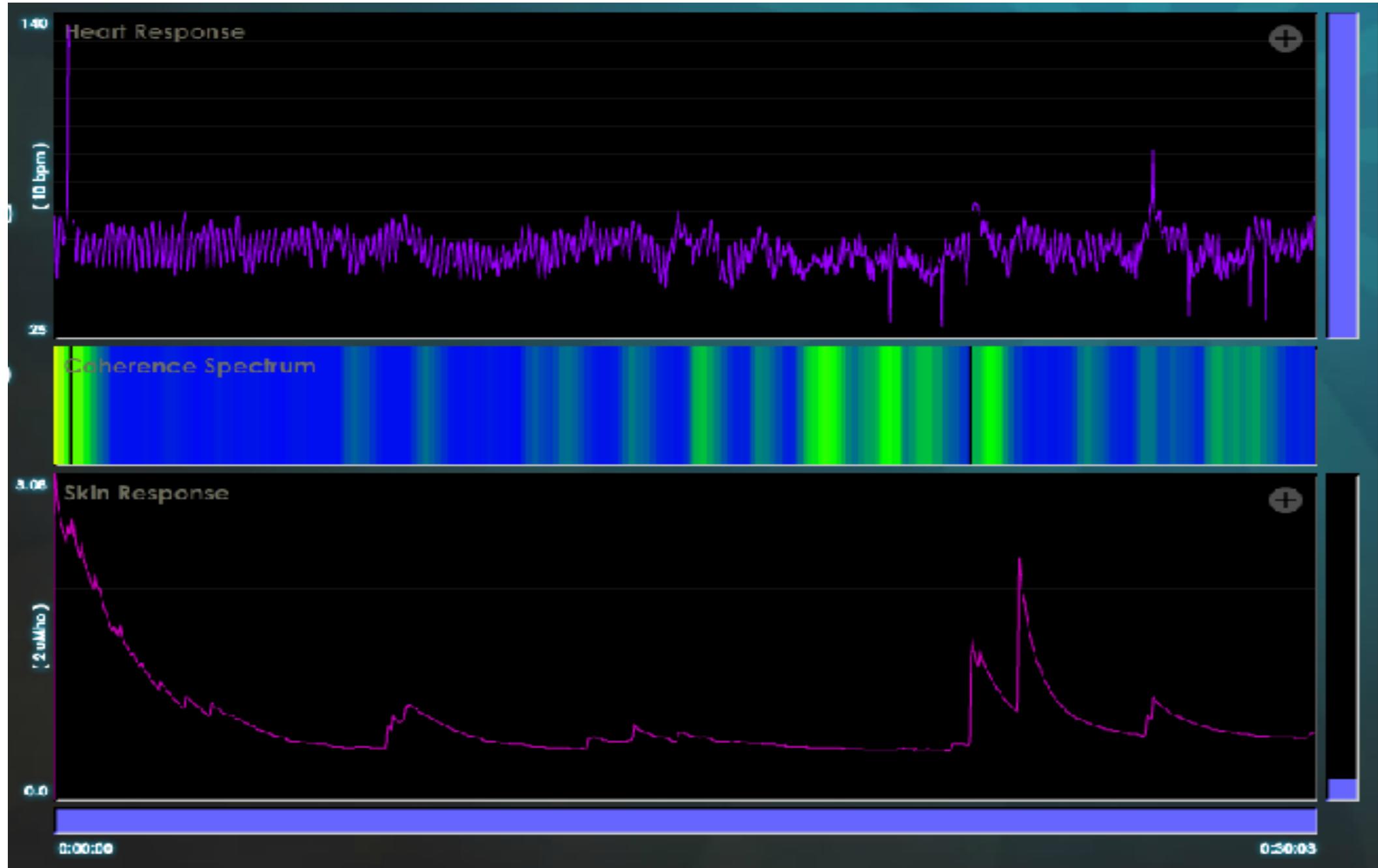
Hippocampus

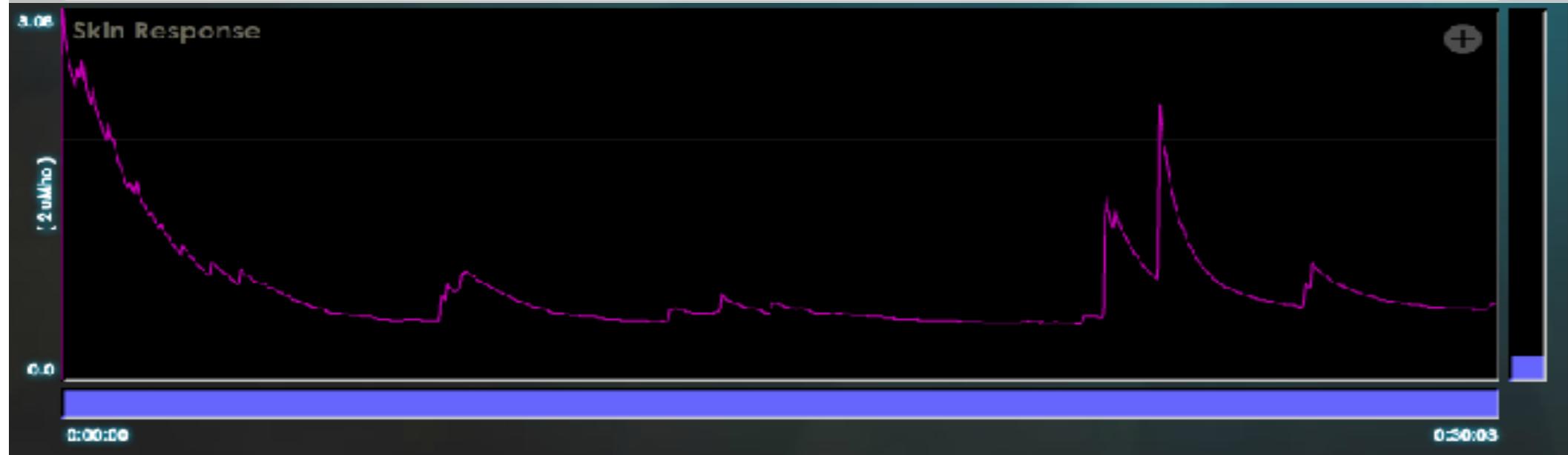
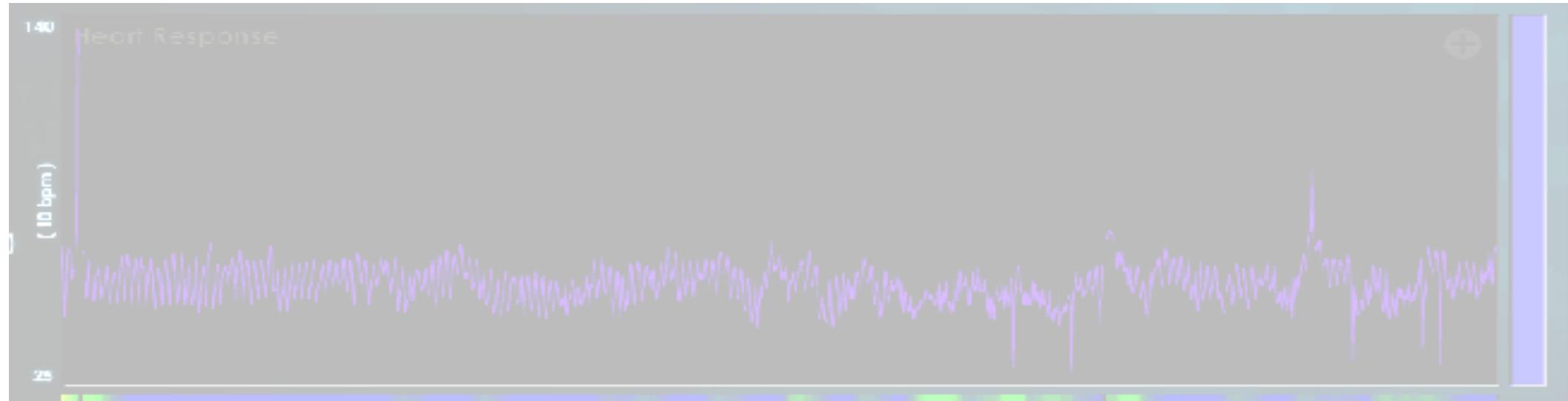
Insula

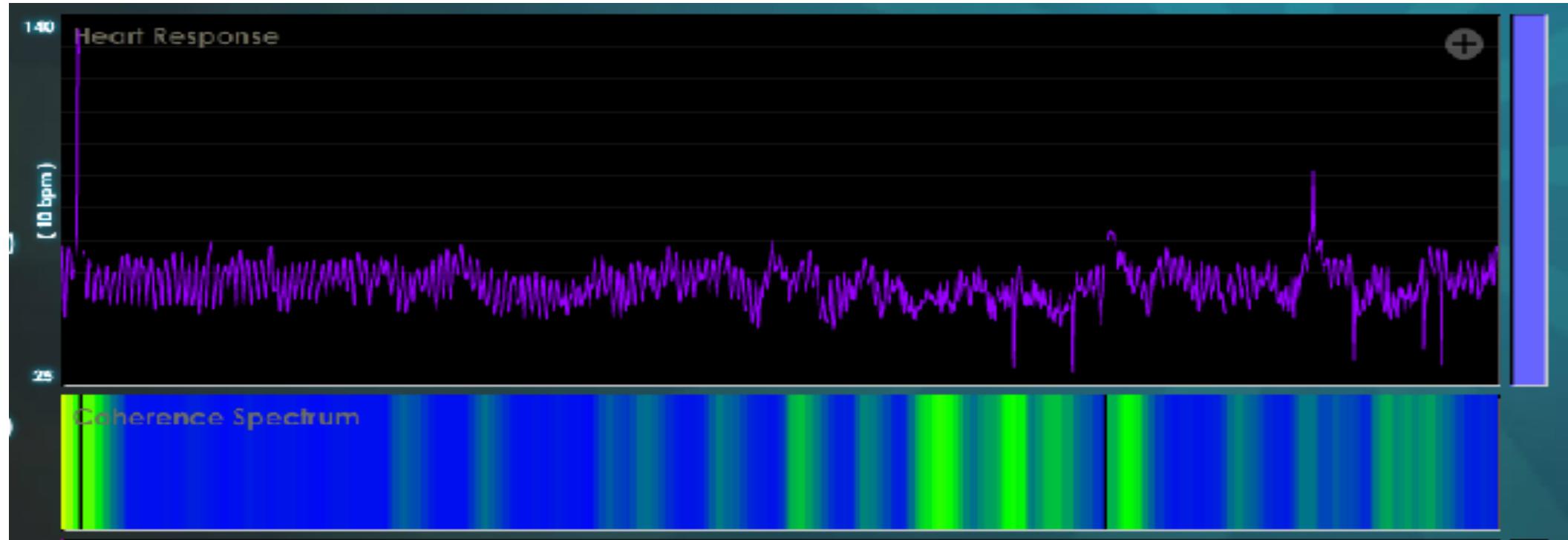


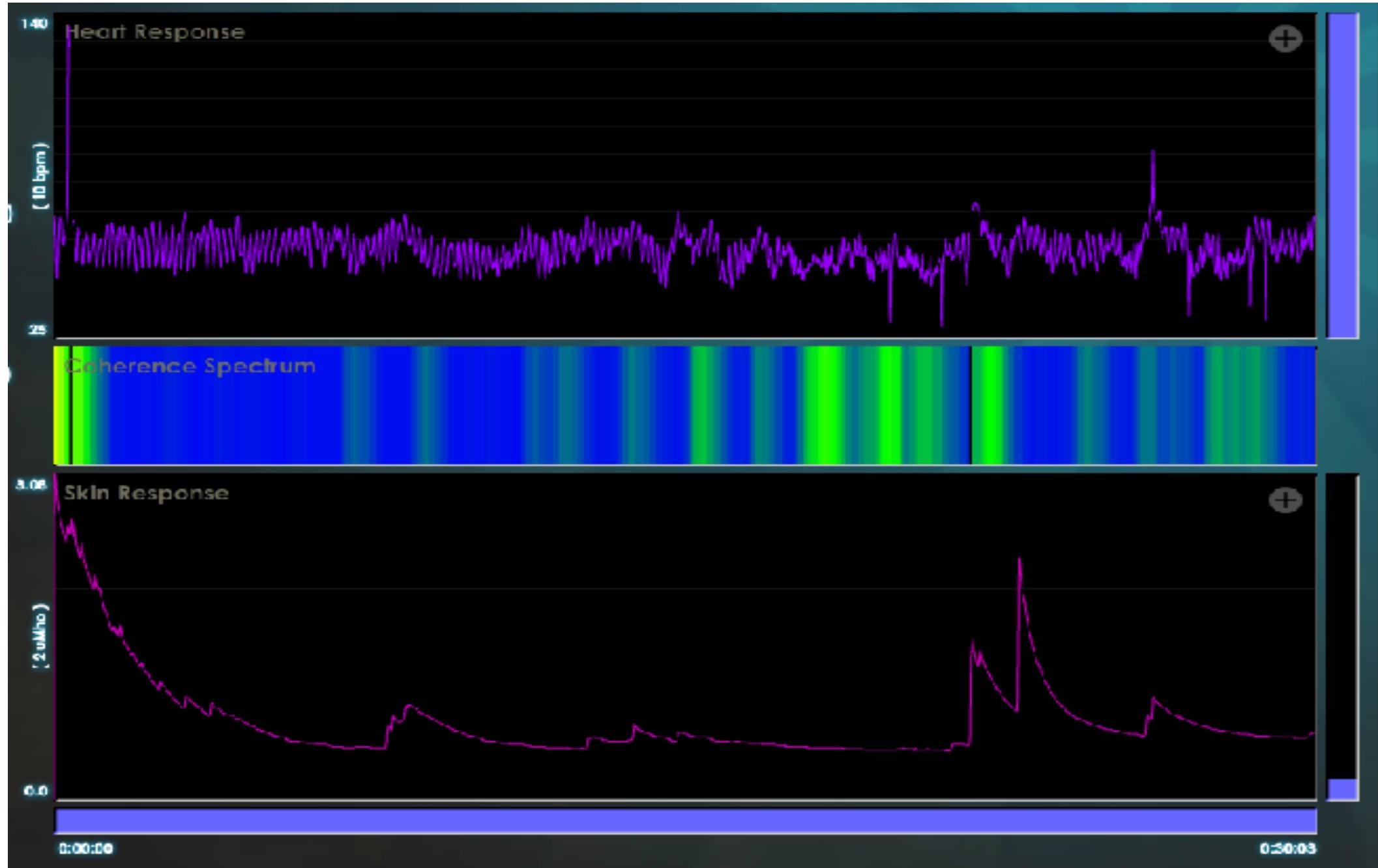




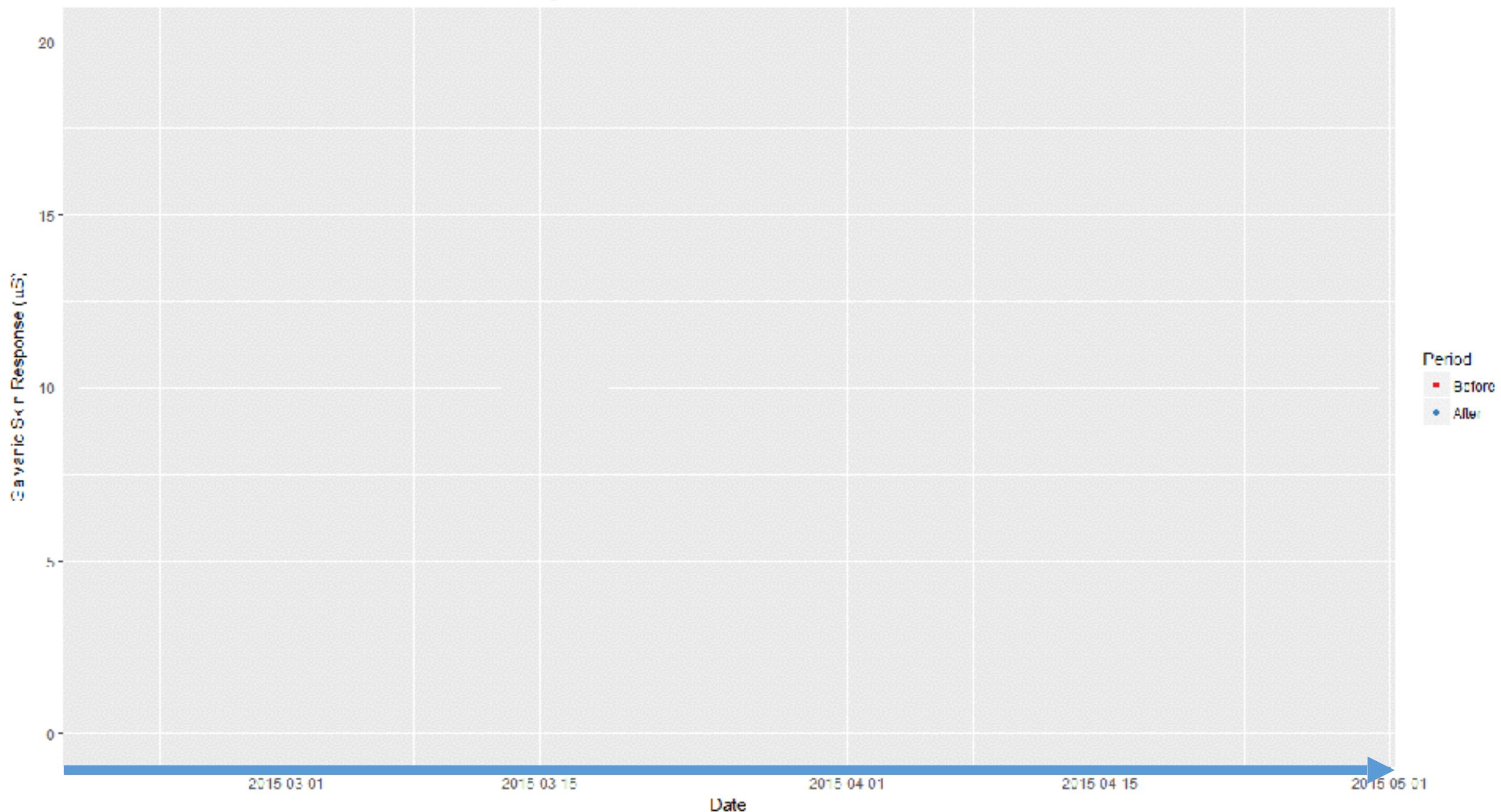




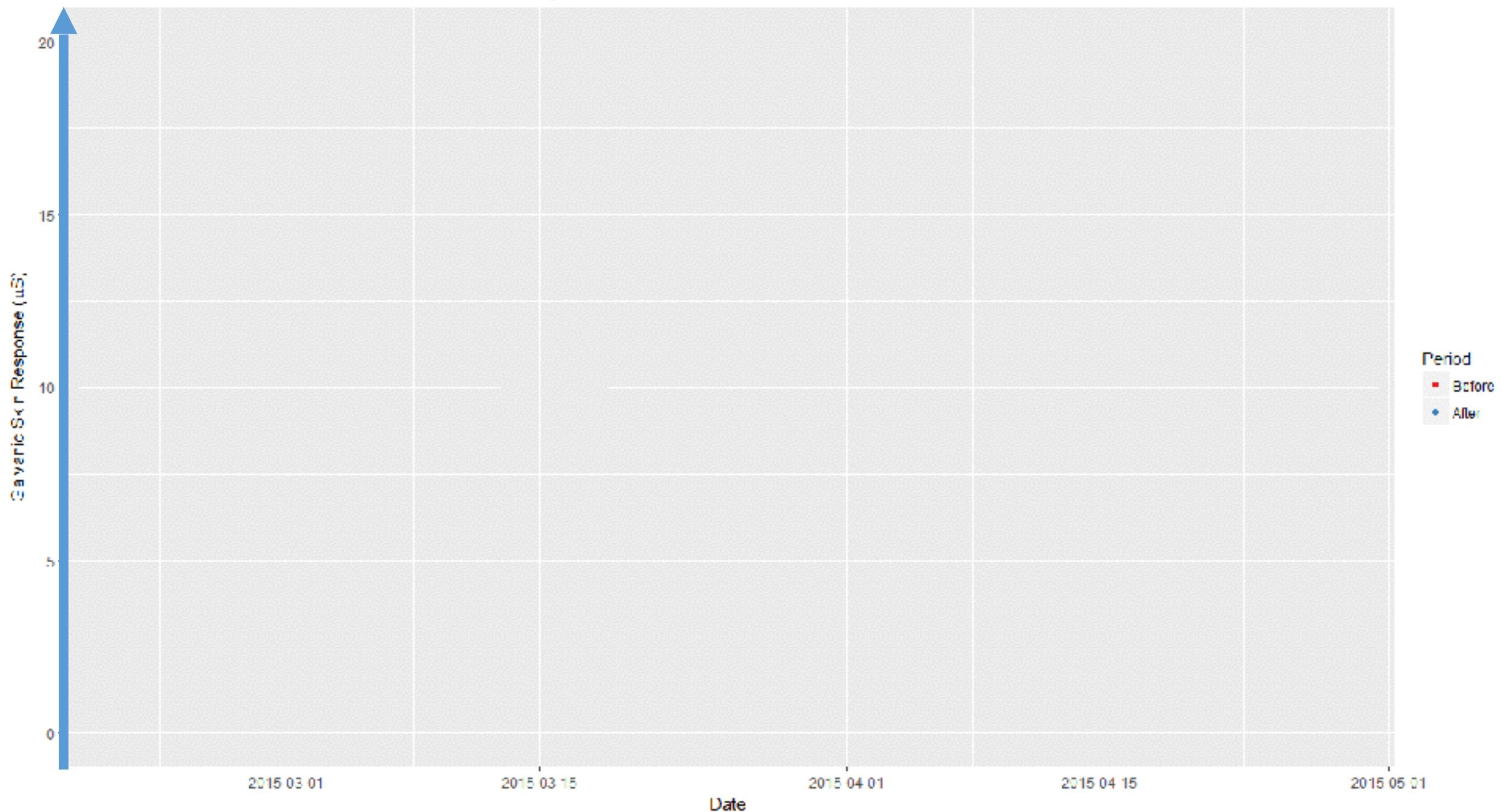




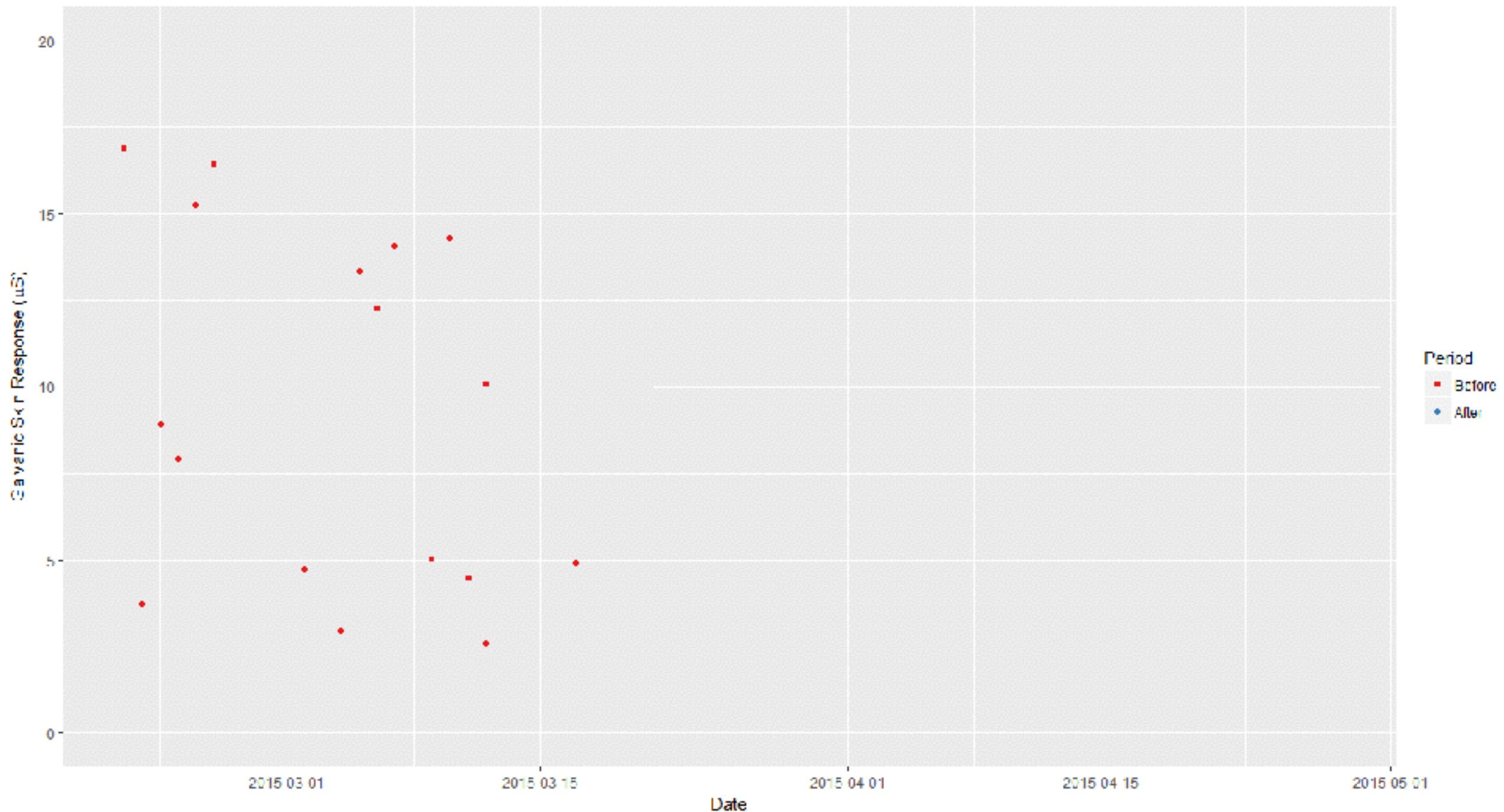
Average GSR Before and After Meditation Retreat



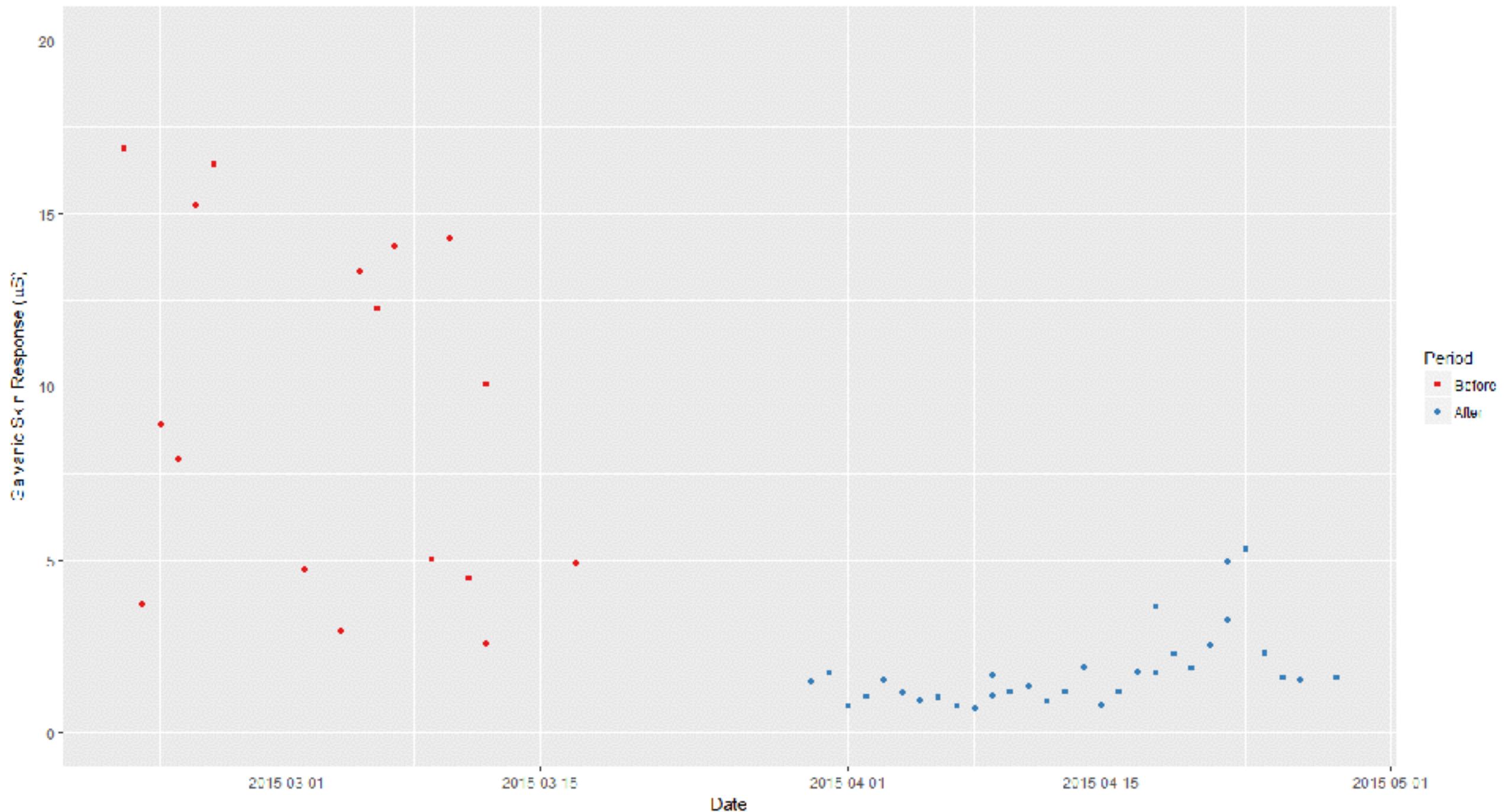
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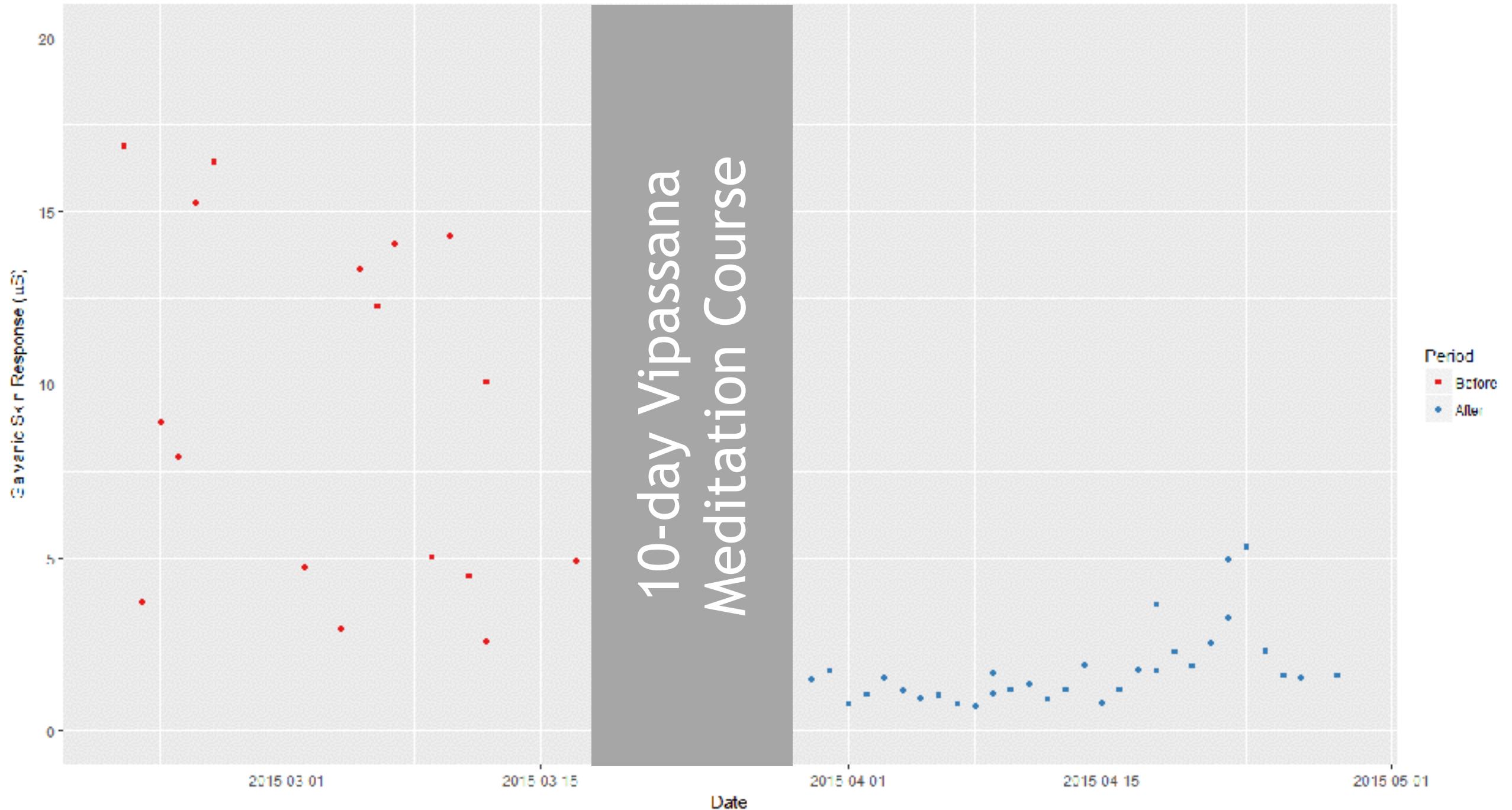
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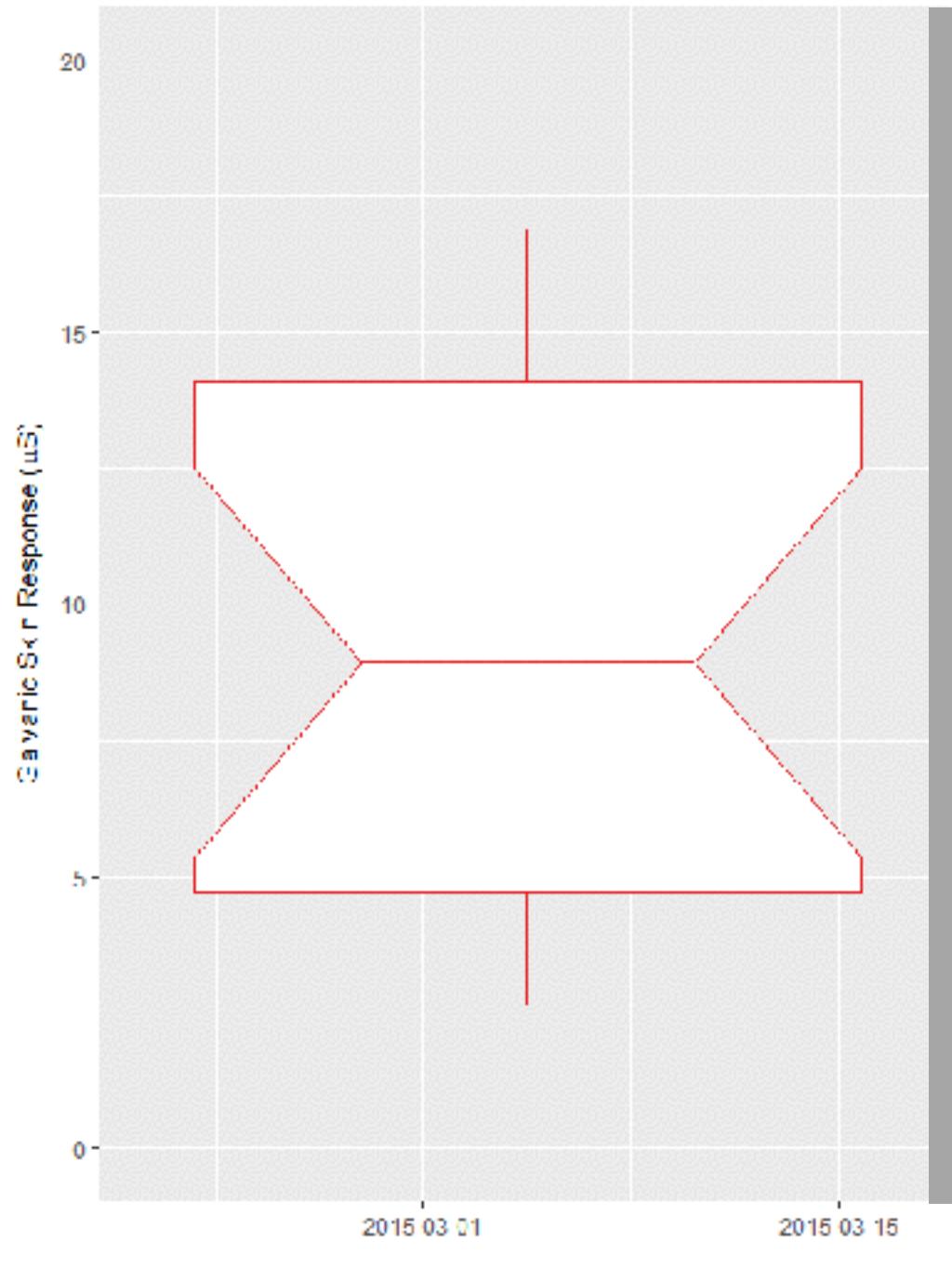
Average GSR Before and After Meditation Retreat



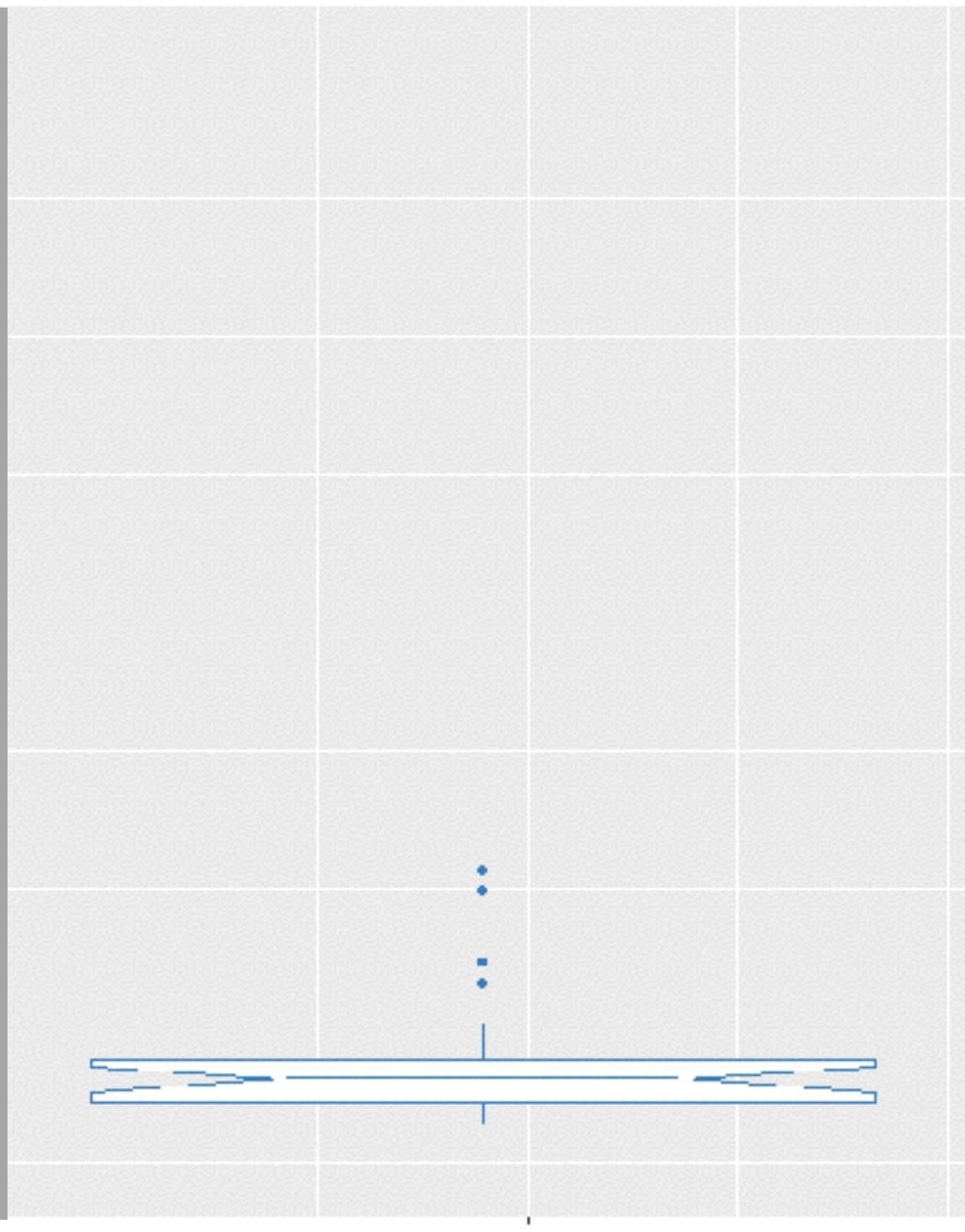
Average GSR Before and After Meditation Retreat



Average GSR Before and After Meditation Retreat



10-day Vipassana Meditation Course



Period
— Before
— After

Disclaimer

Benefits



Benefits



A large, semi-transparent silhouette of a person in a meditative lotus pose is centered in the background. The person's hands are in mudras, and they are looking upwards. The background features a warm, orange and yellow sunset or sunrise over a landscape with hills and mountains.

Benefits

Equanimity

Benefits

Equanimity
Concentration



Benefits

Equanimity
Concentration
Non-judgement

Benefits

Equanimity
Concentration
Non-judgement
Egolessness

Benefits

Equanimity

Concentration

Non-judgement

Egolessness

Compassion

Benefits

Equanimity

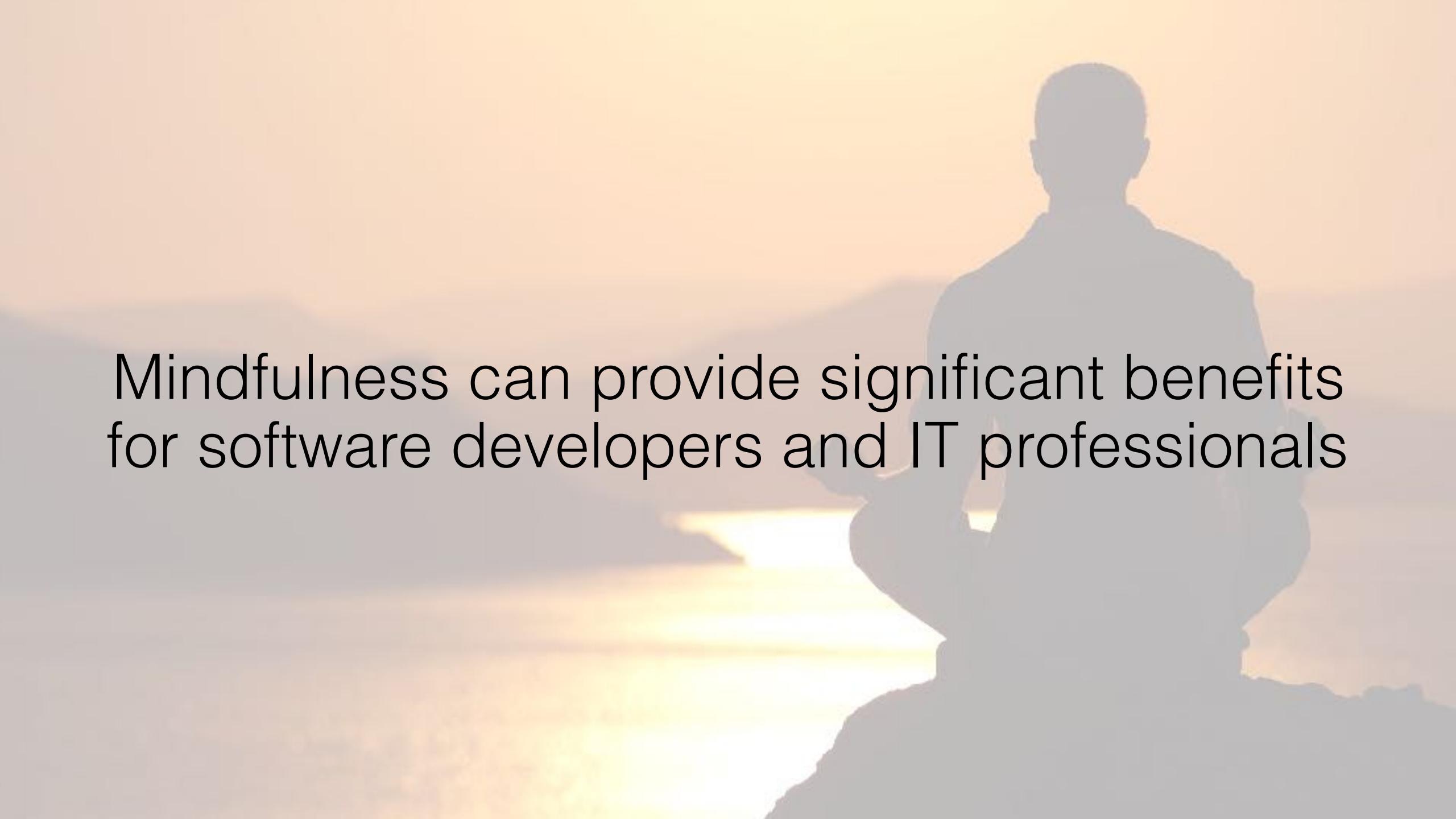
Concentration

Non-judgement

Egolessness

Compassion

Sustainability

A photograph of a person sitting cross-legged in a meditative pose, with their hands resting on their knees. They are wearing a light-colored shirt and dark pants. The background is a warm, hazy sunset or sunrise over a landscape with hills or mountains. The overall atmosphere is peaceful and contemplative.

Mindfulness can provide significant benefits
for software developers and IT professionals

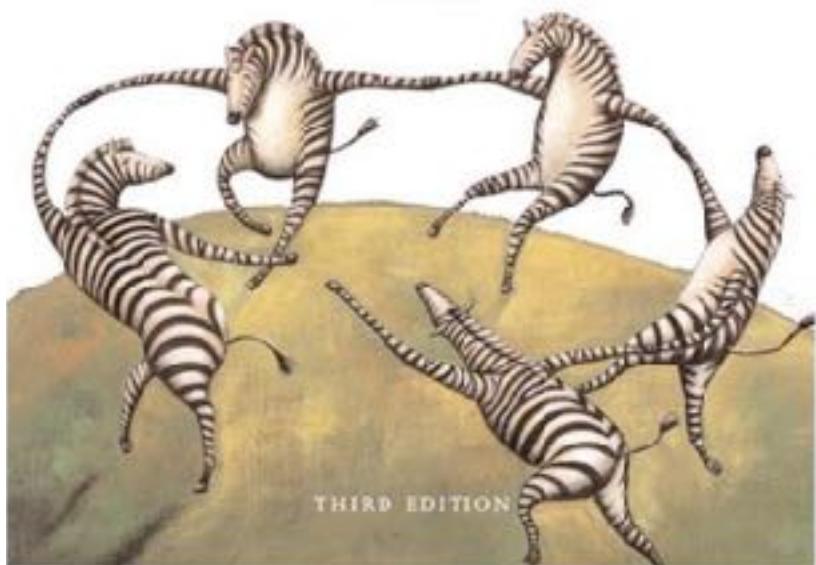
Where to Go Next

ROBERT M. SAPOLSKY
Author of *A Primate's Memoir*

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Diseases, and Coping—Now Revised and Updated

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—Oliver Sacks



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THE ART OF LIVING

VIPASSANA MEDITATION

AS TAUGHT BY

S. N. GOENKA



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It is possible to be in mental,
physical, or emotional pain
but to not be suffering.

Suffering is how we
respond to pain.

Thank You!

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