

Cognitive Health and Optimizing Memory Function

Digital Guide





Intro

The Sacramento Promise Zone has partnered with Samuel Merritt University to host a bimonthly *mind, body, & spirit* webinar series that features medical professionals sharing information focused on improving health outcomes and eliminating disparities.

This digital guide offers the valuable information from the webinar series in a convenient, accessible, and printable format. Just like the webinars themselves, the guide is completely free to download, re-upload, and share with others. We encourage you to share it with all of your networks, family, and friends. Together, we can make an impact on the health disparities that our communities face.

For more information, please visit the official website <u>here</u>.

Presenter

Dr. Barb Puder

Associate Professor and Chair of the Basic Sciences Department, Samuel Merritt University



Dr. Barb Puder is an Associate Professor and Chair of the Basic Sciences Department at Samuel Merritt University, Oakland, CA. She has a Ph.D. in neuroscience from Northeastern Ohio University's College of Medicine (NEOMED) and Kent State University in Ohio. She teaches medical neuroscience courses to students in various Samuel Merritt University programs.

In addition to teaching, Barb has developed neuroscience community outreach programs designed for grades K-12 and the community entitled "Get to Know Your Brain!" These brain programs train SMU students to educate community participants regarding the brain and its functions by using age appropriate language and hands-on activities. Approximately 1000 students and adults attend these educational programs each year.

Contact: bpuder@samuelmerritt.edu

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Click here to watch the presentation!

Did you know that your whole body communicates when you touch something?

The systems in the image below are connected to relay sensory information from

brain to body, and also from body to brain.



The Brain Controls:

- Muscle movement
- Your heart rate
- Digestion
- Vision
- Hearing
- Taste
- Immune Response
- Emotions
- Behaviors
- Learning and Memory
- Who we are!

"Even though a lot of our neural pathways are the same in all of us, we do have neural pathways that are unique in each one of us. That's what makes us all different and unique beings."



Neurons can send signals up to 200 miles per hour.

We are born with 200 BILLION neurons but by the time we are an adult we have 100 billion neurons. If neurons don't make connections with other neurons, they will die.

Different parts of the brain have different functions

The frontal lobe controls movement and is involved in decision making, personality, moods, and emotions.

The parietal lobe receives and processes our sense of touch.

The occipital lobe is our vision center. Everything we see is processed in this area.

The temporal lobe receives auditory information. It also hosts our hippocampus which largely supports learning and memory functions.

A Major Brain Lobes Fostral Composite Lobes Canada

Neuroanatomy

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"[Plasticity] is the ability of neurons to make these little yellow triangles (dendritic spines) so we can keep information that's really important to us, so we can use it later."

How can we learn and remember better?

Use these tips and tricks to create dendritic spines and strengthen neural pathways when learning new information.

- Activate your motor and visual skills: Draw it! Touch it! Move your body!
- Say the concept out loud use those verbal and auditory skills!
- Review new concepts daily. Doing so tells your brain that this information is important and you need to generate strong neural pathways to remember the information.
- Review new information immediately after learning it. Attend class and then recap with a friend.
- Get 7 to 8 hours of sleep each night.
 Getting adequate sleep rids your brain of toxins.



- 5. Reduce your stress levels practice gratitude.
- Exercise regularly. Exercise increases blood flow to the brain, providing oxygen and nutrients to our neurons.
- Eat a diet rich in omega 3s and low in processed sugar.
- Drink water. You should drink approximately half of your body weight in ounces per day.
- 9. Get out in nature!
- Try new things travel, meet new people, play a musical instrument, join a sports team.

Additional Resources

Click here to learn more about Neuroscience.





The Dana Foundation is committed to advancing our understanding of health and disease in the brain through research grants and public outreach. Click their logo above to learn more.



Click this logo to read about advancing anatomical science through research, education, and professional development.

Special Thanks



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Hannah Penner Sustainability Coordinator