

Erev YK 5780 _ October 8, 2019

Rabbi Debbie Stiel

Judaism is Good for our Brains!

Until maybe 30 years ago, scientists believed that the brains of adult humans were fully formed, finished, basically static. ...More recent research has shown that our brains are always changing, adapting, building new synapses and letting old unused ones deteriorate. There is a plasticity to our brain that we have only begun to really understand in the last few decades. A top neuroscientist at Harvard Medical School said, ‘ “plasticity is the normal ongoing state of the nervous system throughout our life span.” Our brains are constantly changing in response to our experiences and our behavior, reworking their circuitry with each sensory input, motor act, association, reward signal, action plan or shift of awareness.’ (p. 31 Shallows).

So tonight I want to ask the question, “is Judaism good for the brain?” I believe brain research suggests that YES, Judaism is in fact very good for our brain – and by extension for our life. Now we could have many, many reasons for believing that Judaism is good for us. It may give us a connection to God, provide good morals, offer a strong community, imbue us with a sense of hope and joy, instill a healthy way to deal with adversity, and answer some of life’s big questions. But I think it should not go unnoticed that science is now able to document some of the benefits of religious practice and faith. So let’s delve into our brains, science and Judaism.

Nicholas Carr in a book titled, *The Shallows: What the Internet is Doing to Our Brains* points to scientific studies that show that our brains are changed by our time spent on the internet. A review of more than 50 studies on the effects of different

types of media on people's intelligence and learning ability (p. 141) showed that "every medium develops some cognitive skills at the expense of others." (The author goes on to say...) Our growing use of the Net and other screen-based technologies has led to the "widespread and sophisticated development of visual-spatial skills...but our new strengths go hand in hand with a weakening of our capacities for the kind of "deep processing" that underpins "mindful knowledge acquisition, inductive analysis, critical thinking, imagination and reflection." As we have moved from spending time reading books to more time spent on the internet, our brains have become better at scanning, skimming, and multi-tasking. But, our ability to think deeply and creatively is being hampered.

I want to suggest that Jewish values and Jewish practices are a good counter-balance or partial corrective to this change in our activity and thus in our brains. Jews have valued study and deep thinking for centuries. Long before the majority of the world was teaching reading skills to the masses, Jews raised up literate children and taught them to grapple with very complicated rabbinic material. For example, it has never been our way simply to memorize Torah verses – but rather we study them, analyze ideas, pick apart words and debate complex competing halachic arguments. All of this, we now know, builds our brain's ability for critical thinking and sustained learning.

I would argue, based on the finding in these studies, that to this day, our Jewish supplemental schools are helping our kids' brains. We teach our kids a second alphabet and language, and we work with them on analyzing and studying different religious texts, beliefs, values and concepts.

Similarly, look at the adult learning offerings we have here. We offer three different levels of Hebrew learning. Yes, you too – no matter what your level of Hebrew knowledge, could be here on Sunday mornings, encouraging your brain to

grow! We have numerous classes that definitely enrich our intellectual capacities- the Talmud class and Kabbala, the monthly book group, the Middot Va'ad, and the TaNaCh study – and the new class in Jewish Intellectual History that will begin this month.

While I don't know of any scientific study that has been done on the effect of Judaism on the brain, I do think it absolutely makes sense to extrapolate that if careful textual study and grappling with philosophical concepts is good for cognitive development, then Judaism's strong focus on learning and study will help grow these synapses of the brain.

The book, *The Shallows: What the Internet is Doing to Our Brains*, also delves into the effect of repeated actions and emotions on the brain. Since the brain is malleable, actions we do repeatedly etch their neuropathways more firmly over time. The author, Nicholas Carr, points out that even “purely mental activity can alter our neural circuitry” (p. 32 *Shallows*). In a fascinating study, people were taught a simple song to play on piano. They were then divided into two groups. It was found that those who sat at a piano for 2 hours a day over a 5 day period and were told to imagine playing the song exhibited precisely the same changes in their brains as those who had actually played piano during that time. The brain had changed in response to action that took place purely in their imagination. As particular circuits in our brain strengthen through the repetition of physical or mental activity, they begin to transform that activity into a habit (p. 34). The author wrote, “the chemically triggered synapses that link our neurons program us, in effect, to want to keep exercising the circuits they've formed. Once we've wired new circuitry in our brain, we long to keep it activated.”

What we think about affects our brains. Carr goes on to say that it has been found that the more someone concentrates on his/her mental afflictions ranging from

depression to tinnitus the deeper those symptoms are etched into his neural circuits (p. 35).

The opposite is also true- that when we concentrate on positive emotions these carve themselves into our brains. In a neurological experiment conducted at the UCLA, brain activity was measured as subjects were induced to feel gratitude by receiving gifts. The areas of the brain showing increased activity were the anterior cingulate cortex and medial prefrontal cortex—which are the areas associated with moral and social cognition, reward, empathy, and value judgment. This led to the conclusion that **when we feel grateful**, it encourages a positive and supportive attitude towards others and a feeling of relief from stressors.

Judaism teaches us to wake up each morning with a prayer of gratitude for life and then to fill our day with such prayers. And then we end the week with a calming, uplifting, peaceful, prayerful day. This focus on the positive literally changes our brain and makes continued positive emotions more likely to be experienced.

A new field called neurotheology has begun to look at the positive impact that religious thoughts have on the brain (Dr Andrew Newberg). Brain scans are showing that for religious people, when we turn to God repeatedly in times of difficulty for strength or calm or comfort or insight – those calming effects build on themselves each time we do that.

Lastly, there is more and more evidence that our brains' resilience and ability to slow deterioration can be helped by certain activities. Specifically, Dr Sara Lazar, a neuroscientist at Harvard Medical School, studied the impact of mindfulness meditation on brain structure. In this type of meditation, one practices paying attention to the present moment. If you have ever tried this, you know how difficult it can be. That is why it is a “practice.” It definitely takes a lot of practice.

Our brains are normally filled with a lot of chatter. In mindfulness meditation, one works on paying attention to the present moment – often by focusing on the breath. And when one finds one’s mind wondering, one refocuses on the breath – without becoming judgmental of the wandering mind. This does several things: it trains the mind to be able to focus attention, it develops a meta awareness – that is being able to notice quickly what we are thinking about, and it helps us develop compassion – as we are kind to ourselves in this practice. People who practice this form of meditation find over time that it decreases anxiety and stress and improves their mood.

What scientists now know is that meditation leads to your brain being calm during meditation. What may be more surprising is that it also leads to it being more calm after meditation. And perhaps most surprising is that this calm leads to changes in brain structure. Dr Lazar’s studies of the brain – comparing new meditators with a control group that did not meditate- showed internal, structural, neurobiological benefits from mindfulness meditation. The people who meditated had less gray matter in the part of the brain that encourages fight or flight (showing the impact of the reduced stress) and more gray matter in areas of the brain that assist learning and memory. Remarkably, after only 8-weeks these significant changes could be detected.

Usually, the front half of the brain shrinks with age, but it has been found that meditation has an anti-aging effect. Comparing a control group and a group who meditated, those who meditated did not have the decrease in IQ or the decrease in their frontal cortex structure that the control group had. Perhaps most surprising, you don’t have to give up your job and spend hours meditating to get these results. Meditating just 15 minutes a day had a lasting benefit.

This is another offering we have at Temple that is good for the brain! Did you wonder why Temple has a monthly meditation group? Now you know! We do it because the meditation practice is enriching for the mind, body and soul. But perhaps you are thinking that meditation is not very Jewish. I would disagree. There is a tradition that the rabbis used to wait an hour before praying in order to be able to pray better. What were they doing? Probably their own version of meditation. Torah tells us that the priests took 7 days separated from everything else before being consecrated as priests (Leviticus). I would imagine that they were concentrating deeply during that time. Our tradition encourages us to find times of focus— after all we are the ones who have as our watchword of our faith – Sh'ma – listen. And we have the story of Elijah finding God in the still small voice. These are just some of the connections between Judaism and mindful meditation.

So join us! It is often easier to keep up a practice like meditation when you have a group of people to meet with and learn from. And three wonderful features of our meditation group are that we are exposed to different types of meditation (none of them anti-Jewish) and we meditate with a wonderful, supportive and varied group of people. And it is free! Many of David Chall's yoga friends join us for this group. I don't know why we don't have 50 Temple members coming! I hope you will consider joining us for our monthly meditation.

So these are a number of ways that Judaism is good for you and your brain that you may not have known:

- 1) Jewish textual learning – of which we have several options - leads us in deep thought and analysis that is good for brain development.
- 2) Prayer, Shabbat, and Judaism's uplifting messages help us to develop calm and emotionally positive responses in our brain.

3) Meditation calms the mind, strengthens the brain's ability to focus, and helps our frontal cortex.

In this new year, I hope some of these reasons will encourage you to spend more time with us here.

May it be a healthy and uplifting year for us all.

Shana tova!!

Notes:

Dr Sara Lazar: <https://www.youtube.com/watch?v=m8rRzTtP7Tc>

Dr. Andrew Newberg: <https://www.youtube.com/watch?v=6IAzPWS1Yhc>