

**Sivananda Ashram Yoga Center**

**June 16, 2017**

## **Brain Care as Self-Care**

### **S-1 Title**

### **S-2 Emerging Philosophy of Self Care**

There is an emerging shift in philosophy about brain care as self care. I learned about this shift from macro to micro first from Ashley Bush Davis and her book *Simple Self Care for Therapists*; which is a wonderful resource for anyone, by the way.

1-a. Macro: Big tools, big practices. Vacation. Exercise - hike in nature, work out in gym. Friendships and nurturing social connections - lunch, dinner, tea, support group. Experiences that nurture and restore.

1-b. Micro – small tools, small practices. Stretch your body once an hour. Check-in with self throughout the day – How am I doing? Self-compassion break. Objects we look at regularly – photos of loved ones, affirmations on a calendar, regulate and relax nervous system.

Macro practices, big tools, may take time and money; external resourcing to resource internally.

Micro tools are available more easily, more of the time, and can work more effectively because they operate precisely how the brain operates – little experiences, in the moment, repeated again and again and again to install in the brain as a resource over time, eventually even becoming a new way of being.

In other words, it can be better to meditate ten minutes a day, every day, than to meditate for an hour on the weekend. It can be better to pause and notice and register a positive pleasant moment, 30 seconds, 6 times a day, than to spend 30 minutes reviewing positive experiences of the week. Both are fine, but the brain changes steadily in repeated increments, and creating these micro tools and micro habits, “little and often” are the best gift of self care we could give ourselves.

You may have experienced benefits of both.

### **S-3        How to Replenish Human Brain**

Here’s a list of what we’ll explore briefly this afternoon:

How to Replenish Human Brain

Exercise-Movement

Sleep-Rest

Nutrition

Learning something new

Laughter-Play

Create with Your Hands

Hang out with healthy brains

Top three, exercise, sleep, nutrition are priorities for physical care of brain. The rest are essential for the good functioning of the brain. All are essential to maintain the neuroplasticity of brain - the capacity to generate new neurons, link them up in new circuitry, create new mental and psychological resources for our resilience and well-being.

As we learn about these various lifestyles tools to nourish and replenish the brain, you may know of practices yourselves for each of these, please share, I'm always learning and incorporating. At end of the afternoon I'll ask you to commit to implementing at least one of these practices 3 times a day for 30 days - no magic number in neuroscience, but brain does learn from repetition, small practices repeated again and again and again.

## S-4      **Exercise-Movement**

### **Macro**

A lot of research lately on the importance of vigorous physical exercise for the brain, and for good reason.

Whatever is good for the heart is good for the brain. Exercise is required to maintain health of brain;

Blood carries oxygen and glucose; are fuel

BDNF - brain's growth hormone: new neurons, stronger connections, myelinate faster;

BDNF in hippocampus, memory center, can reverse memory decline in elderly; reduce depression, reverse physical shrinkage of brain; improve memory and integration of functioning overall

Signals dopamine, serotonin, endorphins - feel good

Stress hormone cortisol binds to BDNF, why kills brain cells, runaway stress drives depression, disrupts serotonin, dopamine, social interaction

Exercise as powerful an anti-depressant as Prozac

Exercise is anti-inflammatory (underlying most diseases)

Protects telomeres on ends of chromosomes (like plastic tabs on ends of shoelaces to keep from unraveling); prevents copying errors; protects against all disease

Turns on genes linked to longevity; 2400 twins active and sedentary, active brains are 10 years younger (SAM)

Any movement (30 min/5 times/week; 20 min/3 times/week.)

Bilateral - EMDR

**Micro** - Movement

Christine Carter's better than nothing workout (3 minutes)

Anat Baniel - sitting is the new smoking

Kaiser poster - woman carrying groceries, Life is a gym.

Move once every hour – wake up brain out of fatigue

Study of hotel maid; told work was exercise; showed physical benefits of exercise

yoga, chi gong – move energy; sense and savor walk

Feldenkrais, neuro-movement, slow, subtle movement, wake up, re-wire - re-map brain

Eye exercise - fixed distance focus on screens, look to horizon, my experience writing book, walk, look at trees, neighbor, Swiss watchmakers, window to mountains, survey horizon

## **S-5      Sleep-Rest**

Sleep not just absence of consciousness. Sleep is a different consciousness. (Secret Life of Sleep, Kat Duff). Essential (evolution)

Every function in body is affected by sleep, Affects genes, inflammation, immunity, metabolism, circadian rhythm especially brain. How we cope with stress, how quickly we process information, how organize and store memories

## **Macro**

8 hours - housekeeping, clears neurotoxins and detritus  
reset nervous system,  
organize memory/storage; consolidate learning

Sleep deprivation is catastrophic; 5-6 hours for 1 week, same level of cognitive impairment as if legally drunk.

Without sleep, less PFC, less impulse control, doubles recovery from depression

We don't need to become better people; we just need to become better rested - Kelly McGonigal

Two kinds of sleep:

REM-activates SNS-dreams

Slow wave, deep sleep - activates PNS, no dreams, deep peace of enlightenment

Deep non-REM sleep is what is restorative. Children - lots. Adults - 20% of sleep. Over 50 years of age, sometimes 0%

How to get there: sleep hygiene

Reduce stress; reduce stressing; news fast, media diet

Cuddle, resource with OT

Go to bed, get up at same time, even on weekends

Dark, cool, quiet room, only sleep and making love

No caffeine, alcohol after 6pm

Shut down TV/devices one hour before sleep

Yoga nidra - Richard Miller

## Micro

Nap - 20 minutes, 2pm-4pm

SAM - micro sleep - brain shuts down for fraction of a second, even though we think we are fully awake

mini-meditate: stop for 10 breaths, soak in peacefulness of slow, gentle breathing, sense of being present, alive, preciousness of this moment.

take a recess, a mental break,

## S-6 Take Mental Breaks

Focus on thinking about something else – positive is good -

Switch the channel, Skillful Distraction – 3 minutes

Talk to someone else – relational regulation; resonant is good

Move-walk somewhere else – nature is good

nature stats This is your brain on nature.

Fatigue of switching: Brain operates in two modes: focused – tasks, attention to detail; default more spacious, daydreams, reveries, in the zone. Brain a happy camper in either mode.

What brain doesn't like is switching, especially switching among many tasks, multi-tasking. Takes metabolic energy to do the switching, especially on computer, too long time on

computer, brain goes into fog; need the break to stop switching, focus on one thing, reset brain.

(Normally would do digital rant here, but this year entire Friday morning workshop recovering from digital addiction, for clients but for ourselves as well, so save that.)

## **S-7      Nutrition**

macro – eat – fuel to body and brain. eat healthy!

MIND diet, Health Mind Cookbook, sharpagain.org

To prevent, reduce, reverse Alzheimer's

- vegetables, leafy greens, nuts, berries, beans, whole grains, fish, poultry, olive oil, one glass of red wine/day
- Omega-3's in fish nutrient most associated with brain health

Controversy and contradictions - Michael Pollan - eat real food, mostly plants, not very much;

More protein (neurotransmitters), more water, (flushes toxins, keeps cells alive) less sugar, less carbs (Perlmutter Grain Brain neurotoxins), less calories, less caffeine/alcohol (timing and volume); ironic, brain is 60% fat, do need fat. Do need Omega-3

supplements, not enough in diet anymore. Microbiome 100 trillion microbes in human body; extract nutrients, protect immune system, enhance brain function (processed food, antibiotics)

So sorry! Harm reduction; obesity directly impacts cognitive functioning and longevity; SAM Alzheimer's = Diabetes III. Sharpagain.org (toxins in mercury in fillings)

micro – brain is social brain; cook for other people; eat with other people; savor what you are eating, eat a raisin meditation, eat one meal a day without doing something else at the same time (may be macro) (Lee (Toronto) coffee at beginning of therapy, meditate and savor)

## **S-8 Learn Something New - Curiosity**

**Macro:** (requires **integration** of different brain functions)

Build cognitive reserve; delay onset of Alzheimer's  
learn to play a musical instrument (one neural cluster in auditory cortex dedicated to processing music)

learn to speak a foreign language

these two reduce risk of Alzheimer's by 50%

SAM cognitive reserve July-August 2016

Higher education delays onset of ALZ by 4 years

## MUSIC:

heightens positive emotions through dopamine

reduces stress - heart rate and cortisol levels (singing to antidote road rage)

can be more powerful than medication in recovering from surgery, reduces pain, increases immunity

Alive Inside documentary

## Cognitive reserve

According to studies done by Tracy Shors, a neuroscientist at Rutgers University:

“A colossal number of brain cells, hundreds to thousands, are born each day but most die within weeks unless the brain is forced to learn something new. “Learning rescues these new cells from death. Then more neurons revive and sprout connections to their brethren. The harder the task, the more survivors.”

learn to play juggle or play chess

try a new recipe

drive a new way to work

visit a new city on the weekend

Brain Power: Improve Your Mind as You Age,  
Michael Gelb

Micro: curiosity = enthusiasm, stay engaged, stay interested, stay amazed

Improves memory, increases longevity by 5 years

## **S-9      Laughter-Play**

Physiological mechanism; reduce stress, increase catecholamines, (dopamine and norepinephrine) mind brighter

Play stretches imagination, comfort with unknown, uncertainty, creativity rejuvenates brain; longevity and memory

macro – have a good time at a family gathering or dinner with friends or a birthday party

dinner conversation; tell family stories/lore: best predictor of academic success; more than time in school, time doing homework, time in sports, time in church, across SES

schedule a play date – creative, cultural event with friends – or a silly date – swimming with your grandchildren

join a laughing yoga class; acting; improv

micro – watch a 4-minute video on Happify Daily

Greater Good Science Center

## **S-10      Create with Your Hands**

Knitting, woodworking, quilting

- Deep brain stimulation; meta-sensory cortex
- Flow state reduces stress
- Focus reduces worry, rumination
- Creativity evokes parallel psychological well-being

## **S-11      Hang out with healthy brains**

Social interaction essential for physical health and emotional well-being. For many reasons, today 1/2 American have zero close friends

**Macro:** participate in a conference, a support group, book club, a choir, a cycling group

[Dan Siegel: could stay home and read the book]

Do a gratitude practice at family dinners

Cozolino; Lieberman

**Micro:**

Send text or email of gratitude, acknowledgement, appreciation to friend or co-worker; good business management now; don't wait until end of year review; send appreciation every day; make it 80% of someone's review.

## **Q&A**

### **S-12      The Impact of Digital Technology on Neuroplasticity**

There is both an upside and a downside to our increasing dependence on our digital devices for communicating with our fellow human beings - texting, emailing, facebooking, tweeting on the extended brains of our smartphones and computers.

We can text to schedule a meeting while we're walking down the hall, we can stay in touch with family and friends when we or they are far away, we can send vacation photos or birthday photos or adopting a new puppy photos in the real time of those precious moments, we can find a restaurant or gas station or hotel or hospital while we're driving to it, we can google statistics on the use of our devices or look up journal articles or download a meditation in a matter of seconds.

But there is a downside to our dependence on digital technology that researchers are beginning to pay attention to, collect data about, analyze the implications of, and communicate those

implications and raise questions for our larger society in books, magazines, journal articles.

When I was a young girl, if I behaved myself while sitting in the dentist's chair, I would get a lollipop. This was before researchers discovered the causal link between sugar-plaque-tooth decay. It used to be so cool to smoke cigarettes, before researchers discovered the causal links between smoking-lung cancer and teeth falling out of the mouth.

I want to review some of the important research findings about the impact of the social-digital revolution on relationships and suggest that the over-use of our devices may be a game-changer of neuroplasticity as well.

1. First we look at 5 key impacts of digital technology on time, attention, relationships, emotions and empathy, and self-awareness.

## **S-13      Time**

You can easily google the latest stats on how many people are on their devices, how often and when.

For instance:

\* American adults spend 33 hours/week on devices - that does include computers for work - 30% of their waking time. They check their cell phones on average every 6.5 minutes

\* Teenagers, now called screenagers, spend 7.5 hours a day in front of a screen, almost 50% of the time they are awake, more time than on any other activity except sleeping. One quarter of American teenagers are on a device within 5 minutes of waking up.

\* Children 2-6 years of age spend 2-4 hours/day on screens.

\* in 2016, half a million people died in car accidents attributed to driving while texting

And while we are doing all of this connecting and communicating, what are we NOT doing? Young children not playing with other dis on the playground, or riding bikes or playing ball or playing dress-up or playing peekaboo. Older children not playing sports or camping or dancing or reading a book. (We retain more of what we read when we read a physical book that has weight and heft and real pages to turn, using our kinesthetic learning as well as cognitive. Students retain more when they take notes by long-hand than when they take notes on a laptop.)

Adults not playing with their children or playing with each other, not daydreaming, not soul searching, or working on projects that demand depth or concentration, not having the

meaningful conversations that also require depth and concentration.

It's true that word processing on a computer or researching on the internet can save us a lot of time but we also have to ask ourselves and our clients, what else are we/they using our/their precious time for?

[Can use apps for meditating; can listen to podcasts of teachers from all around the world.]

## **S-14      Attention**

Cal Newport, professor of computer science Georgetown University TED talk quit social media, book Deep Work. Brain not wired for rapid and repeated shifting of attention. Takes metabolic energy to shift, every shift, email text tweet back to a work project or answer question from our kid as you respond to a co-workers' email. After 60-90 minutes of that, brain goes into fatigue, brain fog. Can't think clearly or creatively any more. With each shift in multi-task mode, there's decreased performance and an increase in errors. Can't focus for 3-4 hours on a project. Reduction in capacity to concentrate can be permanent. Lose capacity to distinguish irrelevant from relevant.

[training in mindfulness, focused attention, could literally be the best counter-point to loss of attention and concentration.]

Victoria Dunckley, child psychiatrist in Los Angeles, noticed an upswing in her patients' diagnoses of ADHD, bi-polar, autism, etc. in the last ten years that coincided with the increase in our culture of time spent on electronic screens. She hypothesized that still developing and vulnerable brains of children and teenagers cannot process the overstimulation of digital and media bombardment. Young brains have more difficulty modulating their emotions and arousal levels when stressed. So she developed a 4-week digital fast protocol for families, no devices anywhere in the family for a month, and noticed among her 500 patients in her research study a 50% decrease in symptoms across all psychiatric and diagnostic categories. [Reset Your Child's Brain]

We may have some protection against such a sharp decrease in focused attention, we do concentrate attention on client hour at a time, but I notice writing second book now, on days designated for writing I write longhand) I cannot go on email first thing in the morning or attention becomes fragmented, easily distractible, not sustained creative flow. may turn on computer to edit my writing later, but I have to protect blocks of time from interruption or they disintegrate.

## **S-15      Resonant Connections - Resonant Relationships**

Yes, Facebook, Face time skype allow us to stay in touch with people far away or rediscover people we knew long ago. People can feel much more connected, communicate more easily, more efficiently, with a text or a tweet.

But Sherry Turkle, professor of psychology at MIT and early observer of the impact of digital technology on relationships, finds that the style of relating to people now is much more superficial, what she calls pancake style, rather than cathedral style of perhaps fewer but deeper conversations with people. Illusions of companionship without demands of friendship. We all have our preferences for how we want to connect and communicate with others, but the shortcut handle of 1,000 friends on Facebook, but no real close friends is really becoming truer and truer for more and more people.

I taught a workshop at Kripalu last year, all clinicians or academics or professionals of some kind and I mentioned statistics I had seen in Scientific American Mind while traveling there, 50% of American adults report having zero close friends, down from 2 close friends just 5 years ago. I shared that, and two people came up to me, one a psychiatrist, the other a dietician, to confide in me that they were part of that 50%. That was true for them. No longer any close friends.

This is particularly disturbing among young people who spend 7 hours every day texting and tweeting but who feel more lonely and isolated than before or even feel badly about themselves

when they compare themselves to other people's posts on facebook, all very carefully crafted and polished for public consumption. Young people don't see the doubts and angst of other people like them; it all looks like MTV. Cyber-bullying is a tragic extension of that.

Education psychologist Catherine Steiner-Adair addresses this in *The Big Disconnect*, young children do feel the pain of all the adults in their life being on their devices, no time to play or eat or read together. The child feels less important to mommy than the phone, which is impossible for a very young brain to comprehend but it does process the feelings of rejection and neglect. (And parents do struggle with guilt and heartache, too, no question.)

## **S-16      Decreased Empathy**

This can lead to what Sherry Turkle and other researchers have noted, less capacity for empathy, less capacity to tolerate messy emotions, less interest in other people's feelings, less compassion for other people's feelings. People choosing protective distance over vulnerable closeness. So much of what we try to do in therapy is help clients get in touch with their feelings, tolerate and accept and learn to manage difficult feelings, learn to use their brains and pick up the emotional signals of others accurately, assess safety-comfort or danger-toxicity in relationship. Too much time on devices, clients lose

this capacity, young people may not even know it's a capacity that's missing.

[positive pro-social emotions may be best counter-point to growing reluctance/capacity to be with and work with messy emotions, ours or other people's.]

### **S-17      Less self-awareness**

Unfortunately, the ability to even be aware of what capacities might be diminishing is also diminishing. People are becoming less comfortable with solitude, less tolerant of boredom, less able to simply reflect, introspect, daydream. More superficial in relationship to others but also to self. So much stimulation every nanosecond, hardly any time left for brain to consolidate all the learning of the day into long-term memory. We hope therapy is a sanctuary where this kind of self-inquiry and self-awareness is prized and protected. But I'm curious to hear what you experience in your own session in this regard.

[Mindfulness training, open spacious awareness, may increase skill, interest, and capacity to be in default mode network of brain.]

### **S-18      Assessment of Addiction**

Does all this diminishment of relationality, emotionality, self-reflection, diminished capacities of focused attention and flow mean people are addicted to technology?

We depend on digital devices for our work and our connections. We use them and need them for everything, so fast, so convenient. When does dependency tip into addiction?

If we take a traditional definition of addiction, repeated, even compulsive use of substance or activity for pleasure and reward, inability to refrain from turning to that substance or activity for reward and pleasure, inability to find pleasure and reward in other substances or activities, withdrawal from activities or people not related to that source of pleasure and reward, pursuit of that substance or activity even when it causes harm to self and others - could the compulsive behavior of checking our phones every 6.5 minutes or the interrupting of a personal conversation to check a text or email or not letting our child or spouse interrupt us when we are on Facebook - mean we're addicted?

Possibly.

The brain does release dopamine, the neurotransmitter of both anticipation and pleasure and reward, whenever it hears the ping of email or phone call or text. There is a rush of pleasure, "I'm connected! I'm wanted! I'm loved!" That's not just psychological; that's neurological. You can see in your clients

or yourself the compulsion to answer, to find out, and get that instant gratification.

And certainly computer scientists do know that video games and social media and apps are *designed* to be addicting. To reward the user's attention while providing more and more stimulation and novelty to keep the user's brain hooked. Attention engineers use the same principles that gambling casinos in Las Vegas use to keep people craving the next ping, the next possible reward.

And of course, as with any addiction, the substance or activity helps us avoid some other pain - loneliness, social awkwardness, boredom. As people spend more time communicating through emojis and less time connecting with people's emotions in satisfying, nourishing ways we actually lose our capacities to find that nourishment in deep connection and have the willingness to hang in there through the messy emotions and painful ruptures to get to the repair and the resonance again.

I think something that makes it very difficult to talk with clients about the downside of the digital dependency is not just their resistance or their defensiveness, but our own ambivalence. Everyone uses devices all the time, and for very good reasons. So asking our clients to re-consider the use of their devices could be seen by them or us as the pot calling the kettle black.

S-19      image of brain

## Discussion

Discussion, 3 people, 5 minutes each.

What are you noticing? Self, family, friends, colleagues, clients.

What are you most concerned about?

Large group de-briefing

Groups of 3, different 3, 5 minutes each.

When do you see dependence turn into craving or reduced ability to do without? When do you see resistance, defensiveness, ambivalence to viewing dependency as addiction? What concerns you most?

Large group de-briefing

S-20      **solutions** I've seen so far to reduce the impact of our digital devices on our relationships and on our brains have proposed reducing the use of our devices. Less time spent on screens. A digital detox, an electronics fast.

That's a challenge because the reliance on screens for information and logistics is so commonplace, so ubiquitous, and so supported by our culture. It's the expectation that anyone you would want to reach would be accessible 24/7. And there's the fear of "what if there's an emergency?" It may take a large

cultural shift like now restaurants and hotels and planes prohibit smoking, or now you can find healthy organic food to eat more easily. We may need a waking up and a questioning and a paradigm shift in the larger culture about computers in classrooms, etc.

But the now, the solutions tend to focus, at the personal level, on reducing the WHEN and the WHERE and then the WHO.

## **When**

Of course, there could be a digital vacation anytime. And that means not using any devices for a specific block of time. To not use any devices for an entire day or an entire weekend. To set aside a digital-free block of time every weekend - Saturday morning or Sunday evening.

Everyone certainly recommends refraining from or prohibiting others from going on any device for 30 minutes in the morning to enter the day, maybe even eat breakfast, in a more present focused way. And of course any deliberate refraining from using our devices could evoke a lot of reactions that might be interesting to explore.

It's highly recommended by everyone to turn off all devices at least 30 minutes before going to bed, preferably 60 minutes, to reduce the over-stimulation of the brain so that it knows it's time

to, it has permission to, turn itself off and go to sleep. Important to help children begin to slow down by reading a book or playing a game rather than watching TV or playing a video game before going to bed.

Many people I know now, especially people who DO want to focus on deep work for any length of time, have designated times when they check their emails or turn on their phone - twice a day, 4 times a day, but the rest of the time the devices are OFF, at least the ping is off. No distractions or interruptions. Amazing how much work can get done!

## **Where**

The restrictions on WHEN relate to the restrictions on WHERE. Many families have to impose restrictions - NO devices at meals. No devices in the dining room, kitchen, or in the car. Travel time is time to talk.

## **Who**

And the WHO. Catherine Steiner-Adair in the Big Disconnect: if parents want to be able to enforce restrictions on their children's use of devices, they have to be willing and able to restrict their use of devices around the children. Play time, transportation time, watching a soccer game or dance class are device-free zones. Like therapy or workshops are a device free

zone. My clients are always very apologetic when their phone goes off in session, but it's a different session if the devices are turned off and can't interrupt.

## **Interventions**

For my *individual* clients, I suggest a periodic “digital detox” - a vacation from devices for one to three days. (At least turn off the ping on the computer and phones so they can work on a project for 2-3 hours without interruption. We need to both rest and energize the brain by focusing on (flowing with) one project at a time for a significant stretch of time.) Trying to comply with such a suggestion can be very diagnostic, bringing to conscious awareness all manner of fear, shame, anxiety, loneliness, etc., that can be addressed in the therapy, even if the attempted digital detox lasts only two hours.

For *couples*, I assign (require) homework of carving out time, at least 10 minutes to start, where they sit face to face with each other, television off, cell phones and computers off (preferably left in a different room) and talk with each other eye to eye, voice to voice, heart to heart about *anything*. The 7% content of the words is not really as important as the 93% nonverbal communication and resonance.

Because the brain learns best “little and often,” small experiences repeated many times, it's more productive for brain

and behavior change for my couples to talk with each other 10 minutes a day everyday than to talk together for one hour on the weekend. (Doing both, even better). The physical proximity to activate the neuroception of the social engagement system can generate-recover experiences of safety-trust-love in the relationship.

For *families*, I recommend a modified digital fast, carving out spaces where use of all digital devices is prohibited - the dining room, the kitchen, the car, so that family members actually talk with each other while sharing the activities of daily family life. And carving out time, half a day on the weekend or one full weekend a month, where pleasurable and nourishing family activities like picnics, camping, playing board games or badminton, playing with the dog, can be rediscovered.

For *everyone*: powering off all devices and media thirty minutes before going to bed (60 minutes is better for the body's circadian rhythm) and allowing 30 minutes to wake up in the morning and engage with the day and the real people in our lives before we turn the devices on again.

Discussion, groups of three; five minutes each. What have you tried? What would you be willing to try? What would the obstacles be to trying?

## **S-21      Brain Care as Self Care**

## EXERCISE: Integrate Take-Aways

Take one moment, reflect, discern, what one practice coming this morning, could you commit to doing, 3 times a day for 30 days, when you go home, or even begin to practice here at PN.

Groups of 3, share, go around reflect, large group. Do this in groups of 3 so you get to hang out with healthy brains, learn something new, maybe moments of laughter, have people to share a meal with, go for a walk to the lake with.

## **Closing meditation**

## **S-22 Linda info**