



Committed to Making Brains Better.

Collaborate. Advocate. Research. Educate.

Ways to Love Our Brains and Maximize Our Health

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The Brain Center of
Green Bay



Disclaimer

This scientific information is presented for your knowledge to assist you in making appropriate decisions regarding your health in conjunction with your health care providers. This is not meant to be a substitute for your healthcare. The Brain Center of Green Bay and it's staff are NOT your doctors or other health care providers. Any treatment should be discussed with your healthcare provider(s).

Our Work



The Brain Center of Green Bay is a community resource dedicated to helping people maximize their brain health and wellness throughout life.



C-Collaboration



A-Advocacy

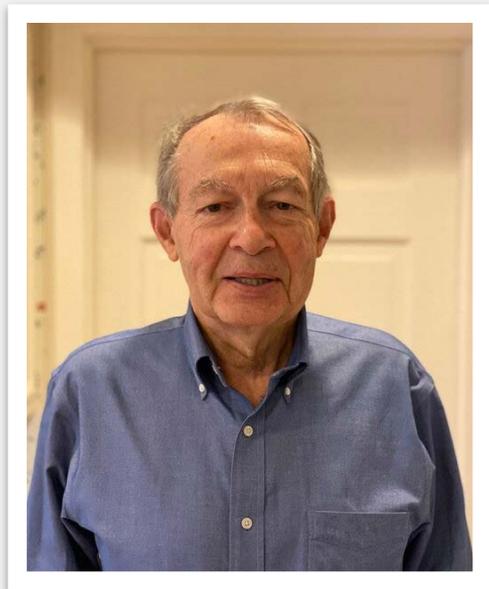


R-Research



E-Education

How did I get into this?



**Dr. Rolf
Lulloff**

- Born & raised in Dodgeville, Wisconsin
- Physician (MD) graduate of University of Wisconsin
- Strong family history of **ALZHEIMER'S DISEASE (AD)**
- 56 1/2 years of marriage to a wonderful lady who had **PARKINSON'S DISEASE (PD)** for more than 44 years plus
- Personal experiences as a practicing Physician/Orthopedic Surgeon with how injuries and diseases affect patients bones, joints, muscles, nerves but also affect their brains
- Observing the Expertise of specific athletes and musicians and how a healthy lifestyle can reward us with improved longevity and quality of life

Today we will talk about:



How we can use Neuroplasticity in our amazing brain to be of help in dealing with normal health and ageing and Neurodegenerative Diseases (NDD)



Ann and my personal experiences as we learned how to deal with the challenges of Parkinson's Disease - PD



Using Parkinson's Disease as an example of how to deal with the challenges of aging and neurological conditions, diseases and injuries.



Help us learn and understand the WHATs (we can do), the WHYs (we should do it), and the HOWs (we can do it) to maximize Brain Health for all of us.

Definition of Neuroplasticity

- Neuroplasticity is the ability of the brain to reorganize its operation in response to
 - New information sources
 - New functional needs and/or
 - New communication pathways

Neuroplasticity is the process underlying all learning, training and rehabilitation.



Examples of Neuroplasticity

- Healthy Neuroplasticity
 - Normal child development
 - Learning a language
 - Learning to walk
 - Learning a sport
 - Learning to play the piano
 - Learning to learn

Stages of Neuroplasticity



Prenatal through Early Adulthood – high ability/potential



Through later Adulthood – lower ability/potential



In Response to Injury, Illness, Degenerative Disease or other neurological conditions

Parkinson's Disease & Neuroplasticity



What is Parkinson's Disease?



PD is a progressive neurodegenerative disease involving many areas of the brain, and other areas of the nervous system throughout the body



Resulting in significant motor impairment



And many other neurological symptoms often with cognitive impairment and mood disorders.



Parkinson's Disease Impairments

- Motor (tremors, rigidity, bradykinesias, poor balance - falling)
- Later loss of fine motor control of hands (brushing teeth, personal hygiene, use of kitchen utensils)
- Early sensory loss (smell, taste, position sense, visual)
- Early gastrointestinal dysfunction (constipation)
- Later chewing, swallowing difficulties
- Later urinary control problems
- Lack of motivation, Cognitive dysfunction, executive function, memory, judgement, apathy, fatigue
- Depression, anxiety, panic attacks
- Autonomic Dysfunction (postural hypotension – even with loss of consciousness and fainting), (supine hypertension – even with prolonged unresponsiveness, deep sleep)



Classic Symptoms of Parkinson's Disease

- Tremors ('Shakes')
- Rigidity ('Stiffness')
- Bradykinesia ('Slowness')
- Balance issues ('inStability')

OUR CHALLENGING JOURNEY WITH PD

(and how it relates to Neuroplasticity)
(and applies to aging and other Neurological Disorders)



1970's – 1980's

- 1976 (age 36) - Anosmia – the rather abrupt loss of sense of smell
- Late 1970's/Early 1980's – Panic Attacks
- 1970's and Beyond
 - Visual disturbances
 - Diplopia (double vision)
 - Oscillopsia (difficulty focusing)
- Mid-to-late 1980's - Intermittent but significant musculoskeletal pain especially shoulders, hips, low back (bursitis like symptoms)
- Late 1989 – formal PD diagnosis



Nonmotor Symptoms of Parkinson's Disease

- Mood disorders
- Cognitive impairment
- Motivational impairment
- Memory problems
- Sensory problems
- Visual problems
- Intestinal problems

1990's

- The need for medication
- L-Dopa (Sinemet)
- Dopamine agonists





The goods and the bads of medication for Parkinson's Disease

- Early effectiveness
- Effective only for symptom control
- Doesn't treat the causes of the PD
- Variable unpredictable responses as the disease progresses
- Side effects (such as dyskinesias) increase with disease progression



2000 - present

- poor judgement
- poor balance
- The combination of these two often leads to FALLS



And When We Least Expected It

Ann fell

A decorative graphic consisting of a grid of blue dots on the left side of the slide, transitioning into a solid blue horizontal bar at the bottom left.

From 6-11 years ago – 4 major falls

- Three broken ribs
- Left hip fracture requiring surgery
- Skull fracture with subdural hematoma
- Severe concussion

- In the last 5 years only one significant fall (without injury)
- Until late January 2020 when fell while sitting and sustained a concussion without any apparent damage



And When We Least Expected It

Ann's low back hurt



The back pain led to

- Disabling pain
- Inability to move
- Incapacity
- Neurological disability
- Five major spine surgeries, all of which worked
 - taking care of the major back problem until the
- Next back problem occurred (leading to temporary major paralysis that was completely corrected)



And whereas these things had previously occurred,
we acted to prevent them

Ann fell prevent – intensive manual assistance

or

Ann's low back hurt prevent – postural control

or

She choked while eating prevent - use smoothies

or

She got progressively thinner reverse – use smoothies

or

She couldn't chew or swallow trained her – how to swallow smoothies



Where does this lead?

- The loss of independence, needing much more assistance



We Must Remember

- Most, if not all the problems that arise in the person with PD are the fault of the disease and are not the fault of the person.



Those of us who don't have PD but are involved because of family members, friends or patient's PD

- **Must try to see and understand PD through the patient's eyes (brain) and not through our own**



There are answers to the challenges/obstacles of Parkinson's Disease

- First and foremost, are constant attention and “aggressive management” of those challenges and obstacles.
- Ongoing Experienced Neurological Care
- Ongoing Specialty Rehabilitative Care (Physical Therapy, Occupational Therapy, Speech Therapy)
- Organizational Educational and Support Groups / Programs (such as Wisconsin Parkinson's Association, Health Care)
- Excellent information source on PD is the publication “Every Victory Counts” from the Davis Phinney Foundation
- Individualized Ongoing Caregiving Support as Needed and it often is!!!



FALLING IS NEVER ALLOWED –
NEVER!!! NEVER!!!



Judgement/cognitive lapses must be
delicately but effectively
overridden.



All caregivers, family and friends must be flexible to the minute by minute, hour by hour and day by day variations in the symptoms and manifestations of the Parkinson's Disease (PD) patient and the needs for flexibly dealing with them.



Slowness of all mental & physical processes is major and progressive with Parkinson's Disease



Effectively dealing with Parkinson's Disease Requires

- Love and understanding – **BUILD AND MAINTAIN TRUST**
- Physical and emotional support
- **SHARE THE CHALLENGES**
- Education and guidance
- Physical exercise
 - ADL's, PT, OT, Speech therapy
- Mental exercise and stimulation
- Aggressive dietary and nutritional management
- Appropriate Medication
- The ongoing delicate balancing of rest and physical activity
- **PATIENCE**
- **AND THESE APPLY TO HELPING/DEALING WITH MOST NEUROLOGICAL DISEASES**



Vital Activities of Daily Living - (ADLs)

- Walking, Standing
- Sitting, Standing
- Getting into and out of bed
- Using the toilet
- Bathing
- Dressing

- With PD, some areas of the brain (and their connections) are permanently malfunctional (such as the basal ganglia)
- And many areas of the brain are relatively normal.
- This is where NEUROPLASTICITY comes in.
- We need to maximize the functions of the unaffected areas of the brain – even training those areas of the brain to take over some of the poorly working areas of the brain

We need to minimize and/or reverse (if possible) the abnormal negative functioning of the affected areas of the brain

Applying Neuroplasticity in Parkinson's Disease



Teach the brain how it is going to work



Deny reinforcing the bad habitual movement patterns that are dictated by the PD afflicted parts of the brain



As seen with ADL's

Walking, sitting, moving, reaching, etc.



STRESS (emotional and physical) can be devastating to the health of the brain (especially to the basal ganglia) in PD.



ILLNESS AND/OR INJURY can be a major short term and occasionally long term set back to one with PD.



FATIGUE will interfere with attempts to/benefits of exercise.



REST is as important as **EXERCISE**. TRY TO FIND THE RIGHT BALANCE BETWEEN THE TWO

Treatments for the patient with Parkinson's Disease



Neurological
evaluation & care



Appropriate
medications



And **INTENSIVE**
LIFESTYLE CARE

GOALS FOR HEALTH AND WELLNESS

- Maximize our overall health and especially our brains health and function
- Prevent disease/disability
- Delay the onset of disease/disability
- Minimize disease/disability severity
- Slow, stop, and/or reverse disease/disability progression
- Cure the disease/disability
- Adapt to , accept, and challenge the disease/disability
- We can't prevent aging but we can minimize many of the effects of getting older
- Enjoy life (improve the quality of life!!)
- Help others

AND KNOWING OURSELVES BETTER



HELPS US DECIDE WHAT WE NEED TO IMPROVE OUR BRAIN HEALTH NOW AND IN THE FUTURE



HELPS US UNDERSTAND OUR NEEDS



HELPS US UNDERSTAND IF AND WHEN WE NEED HELP IN DETERMINING OUR NEEDS



HELPS US UNDERSTAND WHERE AND WITH WHOM WE CAN SEEK EDUCATION AND ASSISTANCE

Home Exercise Equipment

1. Sturdy Captain's Type Chairs With Arm Rests
2. Sturdy Kitchen and Bathroom Counters
3. Stairways with Sturdy Handrails on Both Sides

Types of Physical Exercise (Many overlaps in exercising)



Aerobic exercise (Cardiovascular exercise)

From light to
moderate to more
intense

Walking /Prancing/
Jogging / Running
Hiking / Climbing
Exercise bicycle /
Bicycling Outdoors
Swimming
Skiing



Strengthening Exercises

Calisthenics
Weight Lifting
Exercise Machines



Stretching / Flexibility Exercises



Balance Training



Yoga / Tai Chi / Dance / Exercise Classes



Basic exercises for seniors including those with Parkinson's Disease

- Aerobic (cardiovascular) exercise – walking, prancing, exercise bike
- Balance Exercise – sitting balance, standing balance - posture control movements
- Repetitive Chair Sitting / Standing
- Active strengthening exercises
- Quad sets, straight leg raises
- Standing toe/heel raises with partial squats
- Active Upper extremity movements
- Swallowing, speech training, sucking with a straw



Demonstration of Exercises

General Guidelines

1. Have medical clearance especially if there is any doubt about your ability to do these exercises.
2. Falling is NEVER allowed.
3. Have guidance and help when you start to do these exercises.
4. If any exercises hurts, and if it continues to hurt, don't do it.
5. Start gradually and build yourself up slowly. (For example: Complete fewer reps per day and gradually build up the number of repetitions per day).
6. Technique is critically important.
7. Mix your exercise with enough rest (and variety in your exercise helps avoid injury)

To Summarize:

- Take charge of your life
- Know yourself (are you diabetic, overweight, too thin, hypertensive – remember we are all different and so are our needs are as well)
- Be appropriately physically active for you, keep safely moving
- Be cognitively active, use your brain, train it and stimulate it
- Be socially involved & active, including Spiritually active as needed,
- Practice good nutrition (omega 3 polyunsaturated fatty acids as in salmon, herring, avocados, eggs, coconut and olive oils, flavonoids as in fruit and colorful veggies, ketogenic diet, avoid glutens and minimize grains, eat healthy pasture raised proteins – as with chicken, lamb, beef and eggs). Fine tune your nutrition for your body, your brain
- Minimize stress in your life and get adequate sleep/rest
- Avoid toxins & poisons such as insecticides and weed killers
- Eliminate bad habits

USE IT OR LOSE IT HAS TO BE ONGOING TO BE MAXIMALLY BENEFICIAL



What did Ann and I achieve in this 44 year journey with her Parkinson's Disease?

- An 80 ½ year life lived at home
- A 56 ½ year happy marriage filled with great times, many travels with family and friends. Seeing and watching our 3 children grow, graduate from college including professional careers, marry and have families of their own
- Having our children provide us with 8 healthy grandchildren presently ages 12-21 with three already in college
- Many wonderful friendships and community activities
- Maintaining a very strong vibrant personality and spiritual life
- All of this while challenging the PD and not allowing the nasty disease to define her
- Ann's strong legacy lives on to help others

Contact Us



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Brain Center of Green Bay

Thank
You!

Questions?





Other health factors often seen with Brain Disorders

- Diabetes (Type 2), Insulin Resistance
- Obesity
- Coronary Artery Disease
- Chronic Life Stress
- Certain Infectious Diseases
- Toxic Exposures
- Head Trauma

MAJOR FACTORS AFFECTING OUR HEALTH



WE ARE ALL DIFFERENT – SOMETIMES THAT MAKES A DIFFERENCE - SOMETIMES IT DOESN'T



OUR GENES ARE DIFFERENT



OUR ENVIRONMENTAL EXPOSURES ARE DIFFERENT



THE TIMING OF THOSE EXPOSURES ARE DIFFERENT

The guidelines for brain health are dependent upon:



G - GENETICS : what we have inherited from our parents



E - ENVIRONMENTAL INFLUENCES : events, exposures, occurrences, illnesses, etc that we have experienced



T - TIMING: when these influences have occurred



AND HOW OUR BODY AND BRAIN HAVE ADAPTED TO THE INFLUENCES OF OUR G E T S



SOME OF THESE INFLUENCES ARE “AUTOMATIC” AND SOME OF THESE INFLUENCES CAN BE UNDER OUR CONTROL