

A FIVE-STEP CONVERSATION GUIDE FOR CARE PLANNING

01

Examine the Why and Check Bias

What needs to change? What might happen if nothing changes? What do I know about the situation? What might I need to know more about? What kinds of feelings is this bringing up for me?

02

Logistics Planning

Plan the who, what, when, and where of your conversation. Map out what the primary objective is, who will do what, and try to stick to it. As much as possible, try to pick a time that you know everyone will be alert and engaged-not tired or distracted.

03

Start the Conversation

Go slow, lead with curiosity rather than judgment. Try to focus on strengths, common goals, and long-held values. Avoid common pitfalls like “FACT BLASTING” or “too much information (TMI)”!

04

Know When to Stop

Watch for signs of agitation, anxiety, or anger (including in yourself). Very rarely will everything be accomplished in one session. End on a high note or with a pleasant event. (Ice cream, anyone?)

05

Now What?

Are there any action items? Who is going to be responsible for them? Are there any providers or services that you'd like to pull in? Schedule a time to check in and evaluate how your plan is working.



Human services with **you** at the center



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IT'S NEVER TOO LATE:

MOVEMENT | MINDSET | AGING BRAIN

CASE DEVRIES





SO THERE I WAS...

THE SCIENCE

NEUROGENESIS:

NEW NEURONS BEING FORMED.

**WE DO THAT THROUGH REGULAR AEROBIC EXERCISE, STRENGTH TRAINING ,
LEARNING NEW SKILLS, GOOD SLEEP AND A NUTRIENT DENSE DIET.**

**NEUROGENESIS IS PROOF THAT YOUR BRAIN IS BUILT TO GROW, ADAPT
AND CREATE NEW POSSIBILITIES.**

THE SCIENCE

NEUROPLASTICITY:

THE BRAIN'S ABILITY TO **CHANGE , ADAPT AND REORGANIZE ITSELF** BASED ON WHAT YOU REPEATEDLY DO, THINK, LEARN AND EXPERIENCE.

YOUR BRAIN STRENGTHENS NEURAL PATHWAYS THAT YOU USE OFTEN AND CAN WEAKEN PATHWAYS THAT YOU USE LESS. THAT'S WHY PRACTICE MATTERS SO MUCH AND CHANGING HABITS IS HARD.

**REPETITION + ATTENTION + CHALLENGE + RECOVERY = STRONGER BRAIN
PATHWAYS**

THE SCIENCE

COGNITIVE RESERVE:

IS THE BRAIN'S BUILT IN RESILIENCE.

**THE STRONGER IT IS, THE BETTER YOUR BRAIN CAN ADAPT TO AGING,
STRESS OR INJURY.**

AGE $\neq$ DESTINY

YOU'RE ONLY AS OLD AS YOUR BRAIN BELIEVES YOU ARE.

**WHEN WE CREATE NEW GROOVES THE BODY FOLLOWS SUIT AND
QUALITY OF LIFE INCREASES.**

MOVEMENT

MOVEMENT

WHAT SHOULD WE DO?

CARDIOVASCULAR END.
STRENGTH
BALANCE

COORDINATION
AGILITY
ACCURACY
SPEED

POWER
FLEXIBILITY
STAMINA

10 GENERAL PHYSICAL SKILLS OF CROSSFIT

REPETITION + ATTENTION + CHALLENGE + RECOVERY = STRONGER BRAIN
PATHWAYS

MOVEMENT

WHY DOES MOVEMENT MATTER TO THE AGING BRAIN?

INCREASES BLOOD FLOW

MOVING GETS YOUR HEART
PUMPING. A STRONG HEART
HELPS KEEP YOUR BRAIN
HEALTHY

IMPROVES BRAIN PLASTICITY

YOUR BRAIN CAN LEARN,
CHANGE, AND ADAPT.
MOVEMENT HELPS IT DO THAT
MAINTAINS OUR INDEPENDENCE

SHARPEN YOUR BRAIN

MAKE MOVEMENT A GAME!
MOVE + THINK + LEARN NEW
THINGS

IMAGINE IF WE REMOVED YOUR ABILITY TO:

SQUAT TO THE TOILET

TAKE THE STAIRS

CARRY GROCERIES

OPEN A JAR

GET OUT OF A CAR

MOVEMENT

HOW SHOULD WE MOVE?

PARTICIPATE IN ACTIVITIES

WALKING
STRETCHING
ROWING

BIKING
SWIMMING
JOGGING

**BY LIFTING HEAVY THINGS
PROPERLY**

STAY STRONG SO YOU BUILD AND
MAINTAIN BODY ARMOR SO YOU CAN
CONTINUE TO DO WHAT YOU LOVE.
GO PLAY

THIS IS YOUR LIFE. WE WANT YOU TO
MAXIMIZE IT AND HAVE FUN WHILE
YOU DO IT.

CONTINUING TO LEARN

NEVER STOP MOVING.
CHALLENGE YOURSELF.
CREATE NEW PATHWAYS.

MINDSET

REMEMBER WHEN WE SAID THIS?

YOUR ONLY AS OLD AS YOUR BRAIN BELIEVES YOU ARE.

MINDSET

THE STORY WE TELL OURSELVES ABOUT OURSELVES

AND THOSE STORIES BECOME OUR REALITY

MINDSET

DO THESE SOUND FAMILIAR?

“I CAN’T DO THAT, I’M TOO OLD.”

“I’M TOO OLD TO LEARN SOMETHING NEW.”

“I MISSED MY WINDOW.”

**THIS MINDSET IS EXACTLY WHAT SCIENCE AND NEUROPLASTICITY
“CREATING PATHWAYS” CHALLENGES.**

MINDSET

~~"I CAN'T DO THAT, I'M TOO OLD."~~

~~"I HAVEN'T LEARNED THAT YET."~~

~~"I'M TOO OLD TO LEARN SOMETHING
NEW."~~

~~"LEARNING NEW THINGS KEEPS ME
YOUNG."~~

THE MOST COMMON ONE:

~~"I MISSED MY WINDOW."~~

~~"MY WINDOW FOR GROWTH IS STILL OPEN."~~

MINDSET

ABRACADABRA

MINDSET

ABRACADABRA

**WITH MY WORDS I CREATE OR WITH MY WORDS I STRONGLY
INFLUENCE.**

MINDSET

“PEOPLE MY AGE SHOULDN'T LIFT HEAVY THINGS”

THEY STOP LIFTING

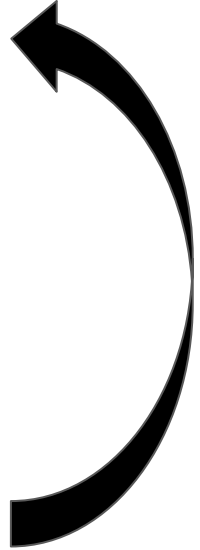
STRENGTH DECREASES

DAILY TASKS GET HARDER

THEY MOVE LESS

THEIR WORLD SHRINKS

**THEIR MINDSET IS REINFORCED IN A NEGATIVE
WAY**



MINDSET

IT'S TIME TO FLIP THE SCRIPT



MINDSET

“PEOPLE MY AGE CAN LIFT HEAVY THINGS”

THEY ARE TAUGHT TO LIFT PROPERLY

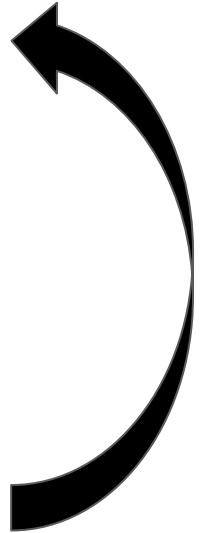
STRENGTH DECREASES SLOWER OR EVEN INCREASES

DAILY TASKS GET EASIER

THEY MOVE BETTER

THEIR WORLD EXPANDS

**THEIR MINDSET IS BEING REINFORCED IN A POSITIVE
WAY**



4 M'S OF A BULLETPROOF BRAIN



MOVE



BE ACTIVE EVERYDAY



MUSCLE



STRENGTH TRAIN CONSISTENTLY



MASTER



KEEP LEARNING DIFFICULT THINGS



MINGLE



STAY CONNECTED



I AM ONLY ONE

BUT I AM ONE

I CAN'T DO EVERYTHING

BUT I CAN DO SOMETHING

AND THAT WHICH I CAN DO

I OUGHT TO DO

AND THAT WHICH I OUGHT TO DO

BY GOD'S GRACE I SHALL DO

I'M ONLY AS BIG AS MY CHALLENGE

-FROSTY WESTERING



SO HERE YOU ARE...

CASE DEVRIES

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Sep 5, 2026

BBS - Dona Murphey - Prognosis

Meeting records  Transcript  Recording

Summary

Educational presentation on dementia care strategies, communication barriers, and the critical importance of emotional validation.

Dementia Progression and Challenges

Caregivers must prioritize disease stages over specific diagnoses due to symptom convergence. Early identification helps manage significant communication barriers and cognitive decline.

Caregiving Dynamics and Adaptation

Cultural factors and past relational history significantly impact care delivery effectiveness. Caregivers should adapt communication by using non-verbal cues and slowing speech patterns.

Emotional Validation and Strategy

Validation of emotions proves more effective than factual correction during distress. Sensory tools help preserve patient agency and dignity throughout the caregiving process.

Next steps

- ☐ [Dona Murphey] Email presentation: Provide the presentation slides to interested attendees via email.

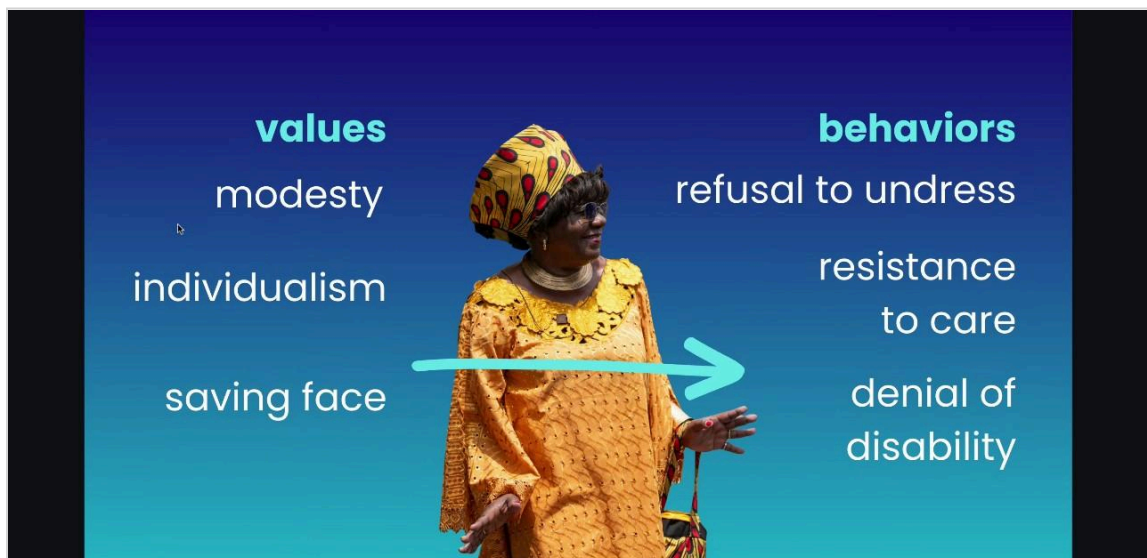
Details

- **Meeting Technical Setup:** The PNW Home For Life Foundation and Dona Murphey coordinate to establish the audio and visual connection for the presentation, which includes adjusting the physical seating arrangement to ensure all participants are visible ([00:02:04](#)).
- **Speaker Background and Experience:** Dona Murphey introduces herself as a neurologist, neuroscientist, and family caregiver, noting that they currently support three family members with various forms of dementia, including Alzheimer's, Lewy body, vascular, and frontotemporal dementia ([00:11:00](#)).

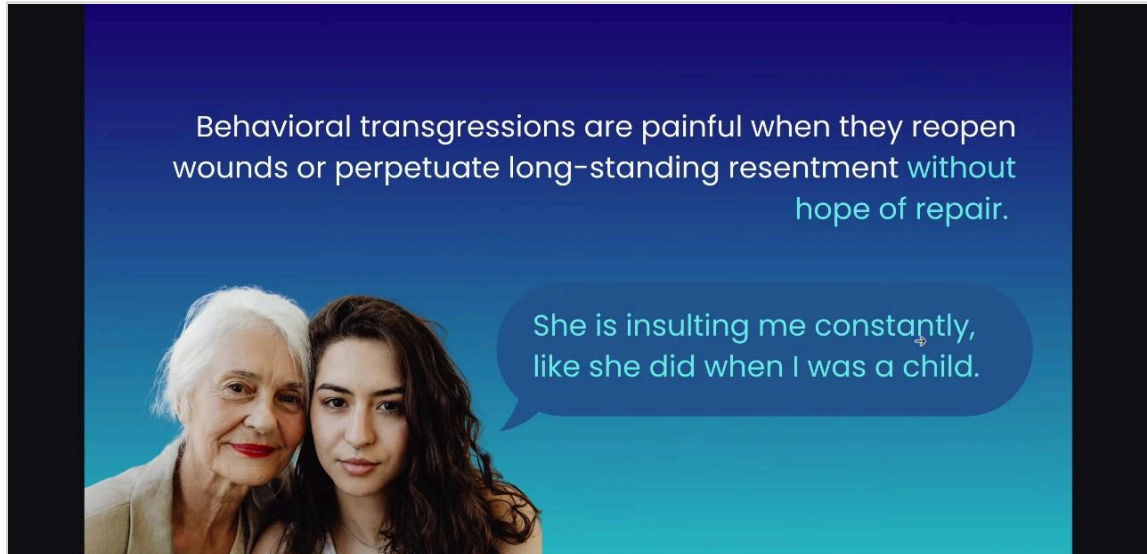


- **Understanding Dementia Progression:** Dona Murphey explains that while early diagnosis helps identify specific challenges associated with different dementia types, the symptoms often converge as the disease progresses and brain cells are lost, making the stages of the disease—mild, moderate, and severe—a critical framework for understanding care needs ([00:11:53](#)) ([00:25:20](#)).

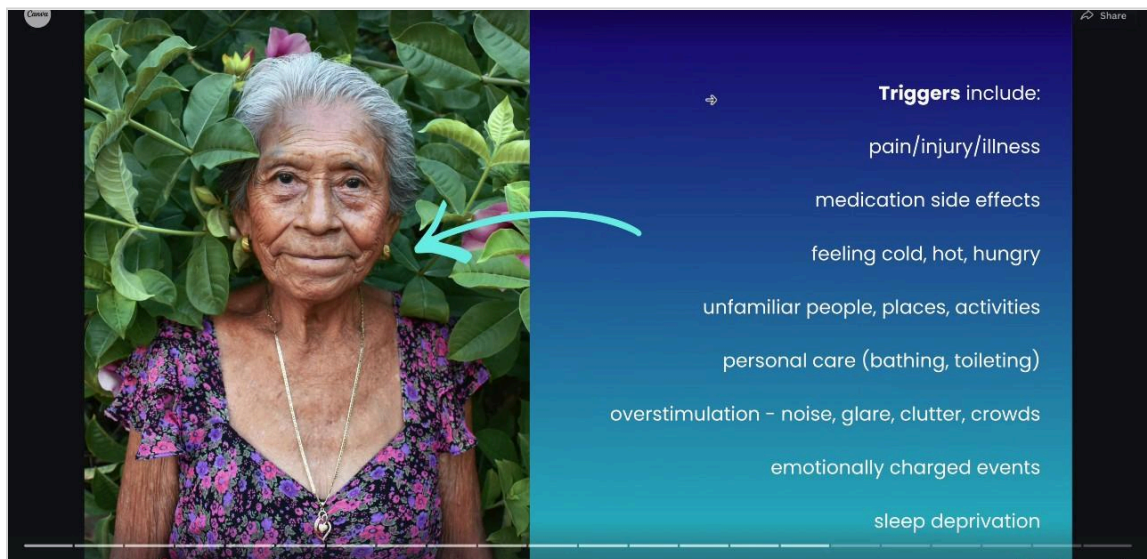
- **Communication Challenges in Dementia:** Through a video demonstration, Dona Murphey illustrates the significant communication barriers caused by dementia, including auditory processing errors, memory lapses, spatial distortions, and the misperception of the physical environment, such as interpreting shadows as holes ([00:14:39](#)).
- **Prevalence and Statistics:** Dona Murphey notes that approximately 10% to 15% of people with mild cognitive impairment transition to dementia annually after their mid-60s, and by their 80s or 90s, about one-third of the population is impacted by dementia ([00:24:06](#)).
- **Cultural Influences on Caregiving:** Dona Murphey emphasizes that cultural values and expectations—such as modesty, individualism, filial piety, and language preferences—heavily influence how care is received, resisted, or interpreted, and they advise that ignoring these cultural factors can exacerbate caregiver stress ([00:26:42](#)).



- **Relational Dynamics:** Dona Murphey highlights that the caregiver-patient relationship, whether it was historically contentious or highly reciprocal, profoundly impacts current communication, noting that caregivers may experience grief and resentment when they cannot resolve past relational conflicts or when the ability to connect with their loved one diminishes ([00:34:44](#)).



- **Environmental and Physical Triggers:** Dona Murphey outlines potential behavioral triggers that caregivers should monitor, including unmet physical needs like hunger, pain, or temperature sensitivity, as well as medication side effects, overstimulation, and unfamiliar environments ([00:39:32](#)).



- **Communication Adaptation Strategies:** Dona Murphey suggests several adaptive strategies for when a loved one with dementia begins to speak less, including slowing down the pace of speech, using short sentences and simple words, maintaining eye contact, using non-verbal cues like touch, and employing redirection techniques ([00:43:52](#)).

- **Emotional Processing and Care Planning:** Dona Murphey explains that emotional processing remains intact even as cognitive functions like speech decline, and they advocate for holistic care plans that address the wellbeing of both the individual with dementia and the caregiver ([00:49:42](#)).
- **Audience Q&A: Redirection and Validation:** Following a story from the PNW Home For Life Foundation about using simple phrases to redirect a loved one, Dona Murphey advises focusing on validating the underlying emotion behind a statement rather than arguing over its factual accuracy, which can escalate distress ([00:53:37](#)).
- **Audience Q&A: Sensory Tools and Agency:** Dona Murphey recommends using sensory inputs—such as offering a cold drink or a scent—to interrupt perseverative behaviors, and both they and the PNW Home For Life Foundation agree that preserving the individual's sense of agency and dignity is a primary goal in caregiving ([00:55:40](#)).

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Sep 5, 2026

BBS - Libby Lewis - Loneliness

Meeting records  Transcript  Recording

Summary

Educational seminar defined loneliness as a biological alarm signal and offered strategies for fostering meaningful social connection.

Biological Definition of Loneliness

Loneliness functions as a biological fire alarm signal indicating a lack of connection rather than a personality flaw. Chronic isolation triggers systemic inflammation and cognitive decline similar to serious physical health risks.

Social Nervous System Mechanisms

The vagus nerve regulates social engagement and physical calm, often disrupted by medical conditions like Parkinson's disease or hearing loss. Strengthening vagal tone through breathing and humming helps move the body toward openness.

Practices for Active Connection

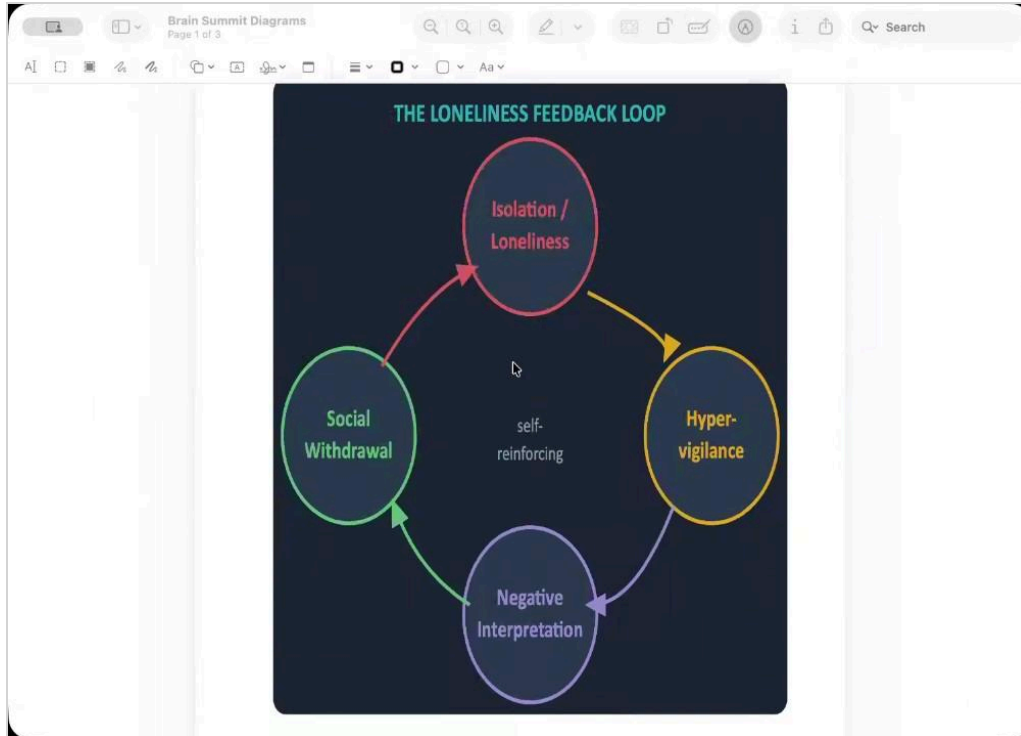
Prioritize high-quality relationships and small, daily acts of engagement to combat isolation. Actively naming feelings of loneliness serves as a non-prescription tool to restore internal balance.

Next steps

- ☐ [PNW Home For Life Foundation] Distribute Resources: Guide participants to the provided handouts and contact details for Libby Lewis.

Details

- **Meeting Setup and Introductions:** PNW Home For Life Foundation and Libby Lewis managed logistical preparations, including camera setup and coordinating room transitions ([00:00:34](#)). Libby Lewis introduced the primary topic of the meeting, which focused on the intersection of brain health and social connection, and noted the speaker's role as a speech-language pathologist in Anacortes ([00:02:01](#)).
- **Definition of Loneliness:** Libby Lewis defined loneliness as a biological signal from the body rather than a personality flaw or mood. The speaker explained that feeling lonely is akin to hunger or thirst, serving as a "fire alarm" for the brain that warns of a lack of safety or connection ([00:12:15](#)) ([00:15:38](#)).
- **Health Impacts of Loneliness:** Referencing research by neuroscientist Julianne Holt-Lunad, Libby Lewis stated that chronic loneliness is as dangerous as smoking 15 cigarettes a day and poses a greater health risk than obesity ([00:13:56](#)). The speaker explained that social pain registers in the brain in the same way as physical pain ([00:15:38](#)). Prolonged loneliness leads to elevated cortisol levels, sleep disruption, systemic inflammation, and a weakened immune system, which are linked to cognitive decline, heart disease, and faster aging ([00:17:19](#)).
- **The Loneliness Feedback Loop:** Libby Lewis detailed the "loneliness feedback loop" model developed by researcher John Cacioppo ([00:18:54](#)). The cycle begins with isolation, which triggers hypervigilance—a state where individuals interpret neutral surroundings as threatening ([00:20:19](#)). This leads to negative interpretations of social interactions and defensive behavior, which results in further social withdrawal and increased isolation ([00:21:26](#)).



- **Biological Benefits of Connection:** When individuals experience genuine connection, the brain's reward system activates and releases natural opioids, which helps lower cortisol and blood pressure ([00:22:40](#)). Libby Lewis emphasized that quality of connection is more significant than the quantity of interactions. Positive, meaningful connection supports immune health, cognition, and mood ([00:24:06](#)).
- **Individual Connection Needs:** Libby Lewis differentiated between introverts and extroverts, noting that while the need for connection is universal, the methods for achieving it vary by person ([00:25:39](#)). The speaker referenced Vivek Murthy's book, **Together**, to highlight that loneliness should be treated as a signal to seek connection rather than a source of shame ([00:26:49](#)).
- **Polyvagal Theory and the Social Nervous System:** Libby Lewis explained Steven Porges' polyvagal theory, which identifies the vagus nerve as a key component of the "social nervous system" ([00:28:16](#)). The vagus nerve helps regulate the body's state; while the sympathetic nervous system drives fight, flight, and freeze responses, activating the vagus nerve helps transition the body into the parasympathetic nervous system, promoting calm and openness to social engagement ([00:29:51](#)).

- Barriers to Connection:** Libby Lewis identified that various medical conditions can disrupt the channels of connection. Parkinson's disease can reduce facial expression and vocal warmth, while hearing loss and aphasia from strokes can make communication effortful, leading to social withdrawal ([00:32:34](#)). Cognitive decline also impacts an individual's ability to track conversation, which may result in further isolation ([00:34:06](#)).
- High-Risk Groups:** Libby Lewis highlighted three groups at high risk for isolation: those with medical conditions, the aging population, and caregivers. For individuals with chronic medical issues, symptoms often drive isolation, and friends or family may withdraw due to discomfort ([00:35:47](#)). Aging individuals frequently experience a loss of social roles, reduced mobility, and bereavement, which decrease their layers of connection ([00:37:20](#)).
- Caregiver Isolation:** Caregivers are at high risk of isolation, often existing on a "two-person island" where their own social world shrinks as their responsibilities grow ([00:38:42](#)). Libby Lewis noted that the caregiving role is a "genuine health intervention," meaning that maintaining connection is vital for the caregiver's own physical and mental health ([00:40:21](#)).
- Techniques for Increasing Vagal Tone:** To proactively combat isolation, Libby Lewis recommended training the social nervous system through physical techniques that increase vagal tone. The speaker suggested slow, diaphragmatic belly breathing—inhaling through the nose and exhaling through pursed lips—as well as humming, singing, or reading aloud to stimulate the vagus nerve ([00:41:37](#)).
- Prioritizing Quality Relationships:** Libby Lewis advised attendees to focus on the quality of relationships rather than quantity ([00:44:20](#)). The speaker encouraged participants to identify individuals who provide a sense of being known and to practice offering that same warm, attentive, and patient presence to others ([00:45:36](#)).
- Daily Practices for Engagement:** Libby Lewis advocated for being proactive about connection by performing small, daily acts, such as making eye contact, offering a greeting, or joining a group. The speaker emphasized that naming one's feelings of loneliness to oneself or others is an effective way to stop the cycle of isolation and rebalance internally ([00:47:01](#)).

- **Reflective Exercise and Closing:** Libby Lewis led a brief exercise for the audience to reflect on a moment of genuine connection. The speaker concluded that the mere anticipation or memory of connection can shift inflammatory markers and lower cortisol, demonstrating that social interaction serves as an effective, non-prescription cure for the disease of loneliness ([00:49:35](#)).
- **Q&A and Session Conclusion:** In the final minutes, a participant requested additional techniques for fostering connection ([00:52:02](#)). Libby Lewis suggested making small gestures, such as giving compliments, offering a pat on the shoulder, or simply initiating conversations with strangers, as ways to extend connection ([00:53:01](#)). The meeting concluded with closing remarks and instructions for attendees to contact the speaker for further information ([00:55:07](#)).

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LONELINESS IS A BRAIN DISEASE

The Neuroscience of Social Isolation — and Why Connection Is as Measurable as Blood Pressure
Libby Lewis, MA, MEd, CCC-SLP · Breakthrough Speech · Anacortes, WA · 360-230-8010 · breakthrough-speech.com

"Loneliness serves a vital function of warning us when connection, vital to our survival, is lacking. If we can respond to loneliness as we do with hunger and thirst, instead of surrendering to it, we might be able to reduce its duration and negative effects and improve the quality of our lives."

— Vivek Murthy, *Together* (2020)

THE NUMBERS

- Chronic loneliness is as dangerous as smoking 15 cigarettes a day — and more dangerous than obesity
- 1 in 4 adults reports significant loneliness
- Loneliness ≠ being alone — it is the subjective experience of disconnection
- The brain cannot distinguish social pain from physical pain

WHAT LONELINESS DOES TO THE BRAIN & BODY

- Activates the brain's threat and pain centers (same as physical injury)
- Elevates cortisol — the body's primary stress hormone
- Disrupts sleep, impacting memory, processing speeds, etc.
- Triggers systemic inflammation linked to cognitive decline, heart disease, and weakened immunity
- Creates a self-reinforcing feedback loop: isolation → hypervigilance → withdrawal → more isolation

WHAT CONNECTION DOES FOR THE BRAIN & BODY

- Activates the brain's reward system — releases natural opioids
- Lowers cortisol and blood pressure
- Reduces systemic inflammation
- Improves sleep quality
- Supports cognitive function and memory
- Strengthens immune response
- Improves mood, sense of purpose, and quality of life

CONNECTION IS BIGGER THAN WORDS

Our social nervous system reads safety and connection through signals we often don't notice consciously:

- Facial expression — genuine warmth vs. polite neutrality
- Vocal tone & prosody — the melody of a warm voice registers differently than a flat one, even when the words are identical
- Eye contact — brief, genuine eye contact activates the social nervous system
- Shared rhythm — moving, laughing, breathing, or singing together synchronizes nervous systems
- Physical proximity — sitting beside someone registers as a safety signal
- Small, consistent signals of presence are neurologically more powerful than grand gestures

WHO IS AT HIGH RISK

People Who Are Aging

- Loss of roles, independence, and loved ones narrows the social world
- Retirement and mobility changes remove layers of daily connection
- Bereavement compounds over time

People Living with Medical Conditions

- Symptoms drive isolation: word-finding difficulty, memory changes, and communication challenges lead to embarrassment, fear, and withdrawal
- Friends may pull away when they don't know what to say
- The cruelest irony: the conditions that most need connection most impair the ability to connect

Caregivers

- Caregiving is one of the loneliest experiences a person can have — you are constantly with someone and yet profoundly alone
- Caregiver health outcomes mirror the loneliness research: elevated cortisol, disrupted sleep, inflammation, higher rates of depression and cognitive decline
- The two-person island: when caregiver and care recipient become each other's primary social contact, both are at risk
- Your warm, genuine presence is a measurable health intervention — not a luxury

WHAT WE CAN DO

Train Your Social Nervous System

- Slow, diaphragmatic breathing calms the threat system — try 3 slow breaths right now
- Humming, singing, and reading aloud stimulate the vagus nerve and strengthen social engagement

Prioritize Depth Over Breadth

- One or two deep relationships are neurologically more protective than many superficial ones
- Depth is more accessible than breadth — even for people whose world has contracted

Everyday Practices

- Name it — acknowledging loneliness reduces its power; shame keeps it hidden
- Use your voice warmly — tone and prosody are connective tools, not just delivery
- Make genuine eye contact — brief, real, and one of the most underused tools we have
- Share sound — music, reading aloud, or singing together synchronizes nervous systems even when conversation is hard
- Be proactive — reach out before isolation sets in; small and regular beats grand and occasional

KEY REFERENCES & RESOURCES

Cacioppo, J.T. & Patrick, W. (2008). **Loneliness: Human Nature and the Need for Social Connection.**

Eisenberger, N.I. (2012). The pain of social disconnection: Examining the shared neural underpinnings of physical and social pain. *Nature Reviews Neuroscience*, 13(6), 421–434.

Holt-Lunstad, J., Smith, T.B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality. *Perspectives on Psychological Science*, 10(2), 227–237.

Murthy, V. (2020). **Together: The Healing Power of Human Connection in a Sometimes Lonely World.**

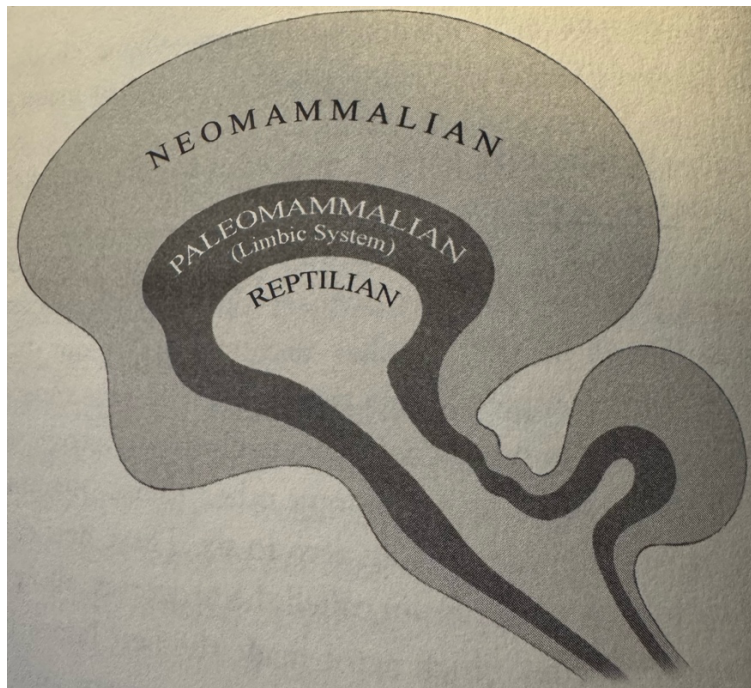
Porges, S.W. (2011). **The Polyvagal Theory: Neurophysiological Foundations of Emotions, Attachment, Communication, and Self-Regulation.**

Holt-Lunstad, J. (2017). The potential public health relevance of social isolation and loneliness: Prevalence, epidemiology, and risk factors. *Public Policy & Aging Report*, 27(4), 127–130.

LONELINESS IS A BRAIN DISEASE -- Diagrams

The Neuroscience of Social Isolation — and Why Connection Is as Measurable as Blood Pressure

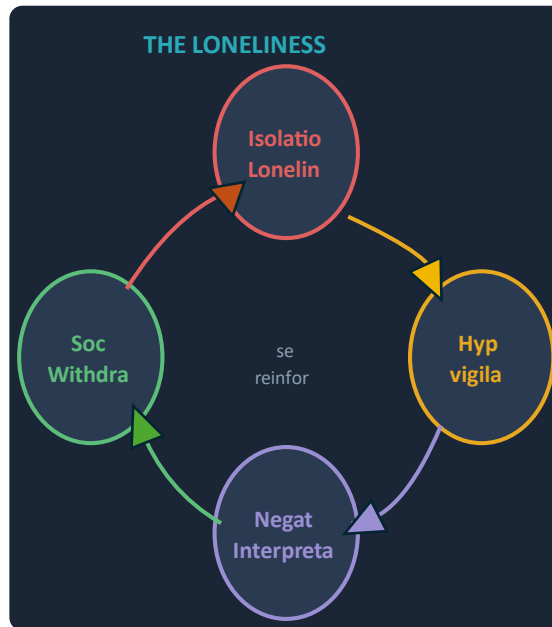
Libby Lewis, MA, MEd, CCC-SLP · Breakthrough Speech · Anacortes, WA · 360-230-8010 · breakthrough-speech.com



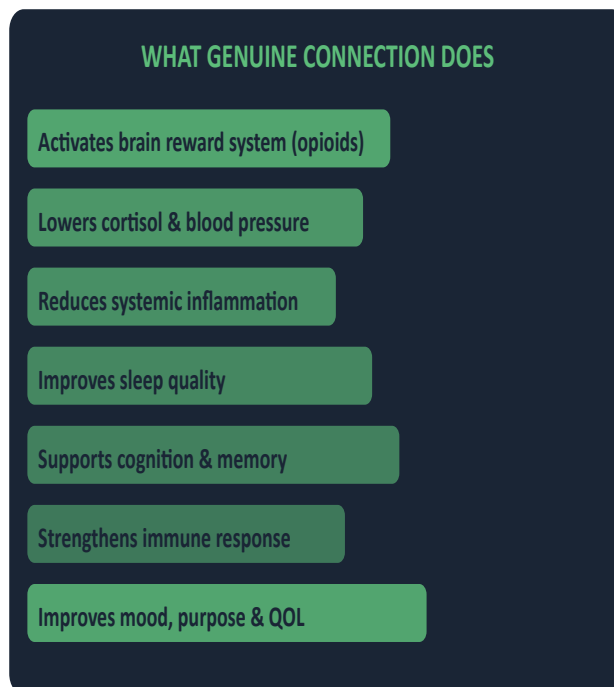
Parts and Function of the Human Brain:

1. **Reptilian Brain:** Responsible for our autonomic (automatic) systems – heartbeat, breathing, body temperature, digestion, etc. – that keep us alive.
2. **Paleomammalian Brain (Limbic System):** The fight/flight/freeze control center, responsible for constant awareness and determination of danger vs safety.
3. **Neomammalian Brain:** This is what separates humans from all other creatures – the ability to reason, problem-solve, and self-regulate – and to monitor and control the limbic system. When functioning properly, this allows us to override our limbic system's default “protect-at-all-costs” mode, reason whether or not we are truly in danger, and act accordingly with intention.

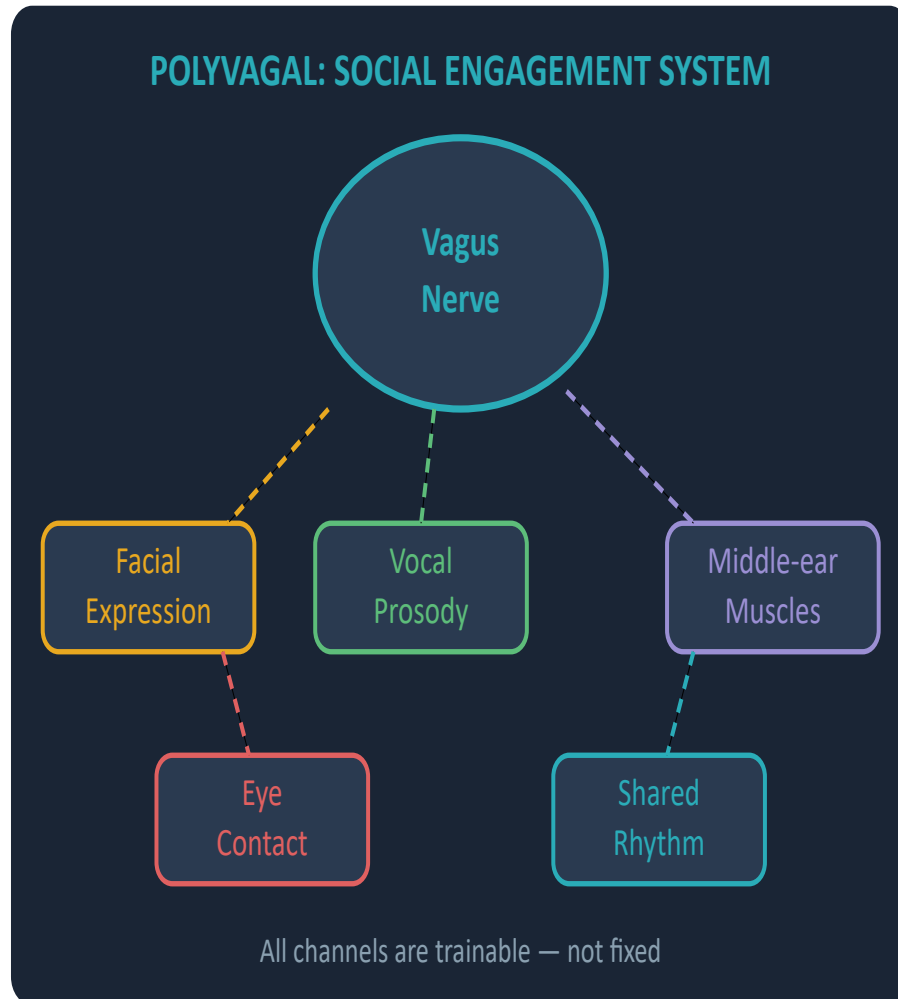
When we are lonely/excluded, the paleomammalian brain (limbic system) activates, telling us that we are in danger and need to fight, flee, or freeze – initiating hypervigilance. If our self-regulation skills are not strong (i.e., neomammalian brain), we start to interpret even benign interactions with others as threatening, which causes us to exude negativity, driving others away and driving ourselves further into isolation. However, by strengthening our self-regulation skills (e.g., discerning actual vs assumed intentions and actions of others), we can become more appropriately (vs hyper-) vigilant, open ourselves to connection, and prevent or overcome loneliness → preventing or reducing chronic and systemic health problems.



Result: ↑ cortisol · disrupted sleep · systemic inflammation · weakened immunity — same profile as chronic stress. **Over time:** linked to cognitive decline, heart disease, faster aging. These can be measured in blood, saliva, and tissue samples.



John Cacioppo (2008)



Polyvagal Theory: We have a built-in social nervous system that reads safety and connection through signals we barely notice consciously. It is always listening, even when we're not, through 5 channels innervated by the vagus nerve.

To improve your “vagal tone” (sense of calm and openness to others, and ultimately connection), practice activities that engage these areas, such as:

- Using warm and pleasant facial expressions and vocal intonations
- Making eye contact with others
- Humming, singing, and/or listening to music, either on your own or with others
- Breathing from the diaphragm and/or in rhythmic patterns (e.g., box breathing)

Steven Porges (2011)

Medication and Memory: Polypharmacy and the Older Adult

Presentation Summary • Virginia Simnad, M.D. • PNW Home for Life Foundation

For educational purposes only — not a substitute for professional medical advice. Always consult your physician or pharmacist about your own medications.

1. Taking Many Medications: The Good, the Bad, the Complex

- Polypharmacy — regularly taking multiple medications — is increasingly common among older adults in the U.S.
- It drives more ER visits, hospitalizations, and overall healthcare use.
- It raises morbidity (hip fractures, loss of independence, malnutrition) and independently increases all-cause mortality.
- Direct costs run into the billions annually for treating preventable adverse drug events; indirect costs include nursing home placement, home health, and caregiver burden.

2. How Brain Chemicals (Neurotransmitters) Shape Memory and Brain Function

- Neurotransmitters (acetylcholine, dopamine, serotonin) relay signals that support thought, memory, and behavior; **acetylcholine** is central to attention and memory encoding.
- The brain's regions must fire in precise sync; stress from medications or inflammation throws this timing “out of sync” and can trigger delirium.
- Drug sensitivity rises with age: liver/kidney clearance slows, the blood-brain barrier loosens, and cognitive reserve shrinks — from brain injury, dementia, Parkinson's, stroke, or hardening of the brain's blood vessels.

3. Why Medications Can Cause a Downward Spiral

- **Case — “The Silent Fog”:** Sam Citizen, 78, stable on a few chronic medications, is prescribed oxybutynin (an anticholinergic) for bladder symptoms. Within days he develops fluctuating confusion, hallucinations, and personality change — a reversible delirium, not dementia.
- **The stacking effect:** several low-risk medications combined — plus age, chronic disease, and organ changes — can push a vulnerable brain past its limit; timing of a new drug or dose change is often the key clue.
- **The prescribing cascade:** a medication side effect is mistaken for a new medical problem, prompting another unnecessary prescription.
 - **Case — Arthur:** 78, healthy and active, starts a GLP-1 medication for blood sugar/heart health while already on a blood pressure drug and a water pill. Mild nausea cuts his fluid intake, and the three medications combine to shut down his kidneys, requiring emergency hospitalization.
 - **The lesson:** any new medication affecting appetite, digestion, or fluid balance means all current medications should be reviewed together; a “sick-day plan” should specify which medications to pause during illness.

4. Sudden Confusion vs. Long-Term Memory Decline

- **Delirium:** a sudden, fluctuating change in attention and awareness — often reversible once the cause is treated.
- **Mild Cognitive Impairment (MCI):** a subtle, chronic decline beyond normal aging that doesn't significantly disrupt daily life.
- **Dementia:** a progressive, chronic decline that severely impacts daily function and independence.

- Delirium triggers include inflammation from major stress (surgery, infection, injury), low oxygen, electrolyte imbalance, and sleep loss — in an already-stressed brain, even one dose of a brain-affecting medication can be the tipping point.

5. Which Drug Classes Pose the Greatest Risk

- **Anticholinergics** (oxybutynin, tricyclic antidepressants, older antihistamines) — block acetylcholine and can trigger acute confusion.
- **Benzodiazepines** (e.g., clonazepam) — sedation, mental slowing, higher fall risk.
- **Dopamine agonists** (Parkinson's/movement-disorder drugs) — impulse-control problems, hallucinations, sudden daytime sleep attacks.
- **Blood pressure medications** — reduced brain blood flow, drops in pressure on standing, and some carry added anticholinergic effects.
- **Opioids** — slow the CNS, disrupt sleep, and their side effects are often mistaken for cognitive decline.
- **Corticosteroids** — confusion and mood swings rise sharply above 80 mg/day; even modest doses can affect older, less-resilient brains.

6. Checking Medication Safety: Guidelines, Supplements, and Herbs

- The AGS **Beers Criteria** flags medications that may be inappropriate for older adults.
- The Beers Criteria doesn't cover herbals or supplements — clinicians use resources like NatMed Pro or Stockley's Herbal Medicines Interactions instead.
- Ginkgo biloba can alter liver enzymes and change drug levels; St. John's Wort can push serotonin to unsafe levels with certain antidepressants.
- THC/cannabis can cause confusion and paranoia, and raises delirium risk when combined with other sedating medications.

7. Speaking Up and Staying Safe: Tips for Patients and Families

- Do a “brown bag” review: bring every prescription, OTC drug, and supplement to a doctor or pharmacist for reconciliation.
- Ask at every visit: “Which medications are truly necessary, and what can we safely stop or reduce?”
- Favor “start low, go slow”, with a clear plan to monitor for side effects and a set review date.
- Use one main pharmacy so dangerous interactions can be caught automatically.
- If sudden mental changes occur, seek emergency evaluation — common causes include infection, stroke, heart attack, head injury from a fall, and medications; ask about any new drug, dose change, or supplement in the last two to four weeks.

Stay vigilant: drug clearance changes with age, and polypharmacy toxicity can creep up with new health concerns or acute illness.