Natural Science Therapy for ALS

by Steve Spiegel

Introduction

Based on a breakthrough in unifying eastern and western neuroscience, naturopathic theory now explains ALS, ALS Reversals documented by Duke Neurology, and methods for duplicating Reversals. While "applied science" and the general public ignore anomalies (incongruousness like ALS Reversals) because they are rare and seem inconsequential, "theoretical science" focuses on anomalies because investigating them promotes most scientific breakthroughs. Eminent biologist William Bateson is famous for the classic science adage directing scientists to "treasure exceptions because they teach the general rule." Unfortunately, ALS researchers predominately ignore Reversals or challenge their credibility because they are confusing; Reversals are based on an array of unconventional therapies and researchers do not know where to begin investigating them. Theoretical science research is far more difficult than applied science research that investigates ALS based on accepted science (established tools) in hopes that small incremental advances will promote a better general understanding. The funding of medical science research also supports applied science through specific research grants rather than supporting theoretical science with grants for brainstorming hypotheses about Reversals. Regardless, Reversals deserve full consideration; Duke Medical School is a well-established conservative institution that is validating them and science theory implores the focus. Consistently, NINDS Director Dr. Gubitz supports an expanded investigation of ALS Reversals; it is unfortunate that researchers are not following standard science protocols. It is unscientific that Dr. Bedlack is the only researcher investigating Reversals and further unscientific that no one is investigating his critically important assertion that reduced stress ("a positive attitude") is causing them.1

The "mental health" of reduced stress promoting the physical health of ALS Reversals is a paradox for western medical science that investigates them separately. Astonishingly, a new naturopathic theory based on unifying eastern and western neuroscience explains this paradox of "mental health" impacting physical health. Natural Science Therapy for ALS is a function of a classical paradigm shift in understanding natural science theory from a predominately western perspective to a unified eastern and western neuroscience perspective (explained through a short, linked thesis). Eastern medical science is more integrative of "mental health" theory and better addresses the central power of stress to cause health problems. Separating mental and physical health is culturally accepted western science that unfortunately obscures an understanding of their interaction. Natural Science Therapy is a paradigm shift to better natural science theory but is difficult to understand from a western medical perspective;

it is difficult to understand social influences that skew science theory. Popular neuroscience theory is a classical paradigm; it is a complete world view supported by terms with interrelated connotations and contexts that reinforce the status quo.² Although unifying eastern and western neuroscience is a function of a different perspective of basic accepted natural science theory, it is nevertheless difficult to imagine an entirely different world view. Western scientists have difficulty accepting unified neuroscience because they identify strongly with their western culture and foundational science, but they are not criticizing it because it is basic accepted natural science theory.

Natural Science Therapy for ALS explains ALS as "somaticized stress" and ALS Reversals as reversed symptoms from reduced stress ("a positive attitude"). ALS symptoms are currently understood as horrifically pathological — a terrifying biological malfunction; understanding symptoms as natural somaticized stress reduces the stress driving symptoms and thereby reverse symptoms. Explaining ALS as somaticized stress may seem absurd from a western medical perspective because Natural Science Therapy is based on a far more inclusive understanding of stress. It is difficult to suspend belief in the "conventional wisdom" of a massive quantity of complex, ambiguous and disjointed information about ALS to consider a unified naturopathic perspective of documented Reversals. Over the course of their lives, humans are socialized into developing "instincts" about health that typically serve them well; we learn to "read" our bodies. Unfortunately, learned western "instincts" generally mislead ALS sufferers into believing that their symptoms are a biological failing and that stress cannot possibly have enough power to cause their ALS muscle problems. Understanding ALS as somaticized stress may be especially difficult for ALS sufferers after a diagnosis affirms well-established fears about muscle problems that doctors only eventually affirm. But separating mental and physical health obscures a wide myriad of medical maladies; Natural Science Therapy explains the power of conscious and subconscious stress to cause the ALS syndrome.

This treatment is a function of human rationality — the ability to understand ALS and Reversals (ALS anomalies) from a pure natural science perspective. ALS Reversals express reduced stress; they are extremely rare because it is rare that anyone with an ALS diagnosis can truly experience stress reduction or a sustained positive mental attitude. The predominance of ALS sufferers facing the dreaded disease with "a positive attitude" are concealing their real fears to relieve the fears of others; an ALS diagnosis is naturally isolating and depressing. Treating ALS with a naturopathic "brain exercise" may initially sound like an outlandish con but the science is real and there will never be compensation sought for this treatment. ALS symptoms are somaticized stress that can be reversed with the reduced stress of understanding the real natural science of stress, the misdirection of conventional ALS research science, and a comprehensive explanation of Reversals.

Section One of Natural Science Therapy for ALS identifies and explains the common element of the therapies promoting ALS symptom reversals documented by Duke Neurology through ALSreversals.com. This initial section affirms and explains Dr. Bedlack's mystifying assertion that reduced stress (a positive mental attitude) reverses ALS symptoms. Section Two explains the naturopathic theory of what seems absurd — ALS Reversals based on reduced stress. This section explains real natural science theory and a true natural science perspective of ALS and stress ("stress" is herein broadly construed to describe negative emotions; emotional distress, strain, or tension).3 Section Three moves from the brain science of ALS somaticized stress to explaining the misdirection of conventional research science. ALS research science has constructed an entire world built upon a faulty premise of ALS being a biological malfunction; this section deconstructs this western conventional wisdom. Thereafter, Section Four through Section Six explain how to reverse ALS symptoms based on pure natural science theory explaining the common thread of ALS Reversals. These three sections explain ALS in terms of three different types of natural, stress-induced muscle problems, and explain methods for reversing each. Section Four explains how to reverse ALS muscle tension problems with cramping and twitching; Section Five explains how to reverse ALS muscle weakness problems ("limb onset ALS" type symptoms); and Section Six explains how to reverse ALS muscle coordination and movement problems including problems with facial expressions, speech and swallowing ("bulbar onset ALS" type symptoms). This program is FDA approved by definition since it is not a food, nor drug, nor invasive. The Conclusion to Natural Science Therapy for ALS reviews this free breakthrough naturopathic treatment.

(Natural Science Therapy for ALS is an alternative treatment that is offered as a complementary program to reduce skepticism and promote peace of mind during trials consistent with its focus on stress reduction. Moreover, testing this treatment in conjunction with all conventional medical therapies will promote trials by reducing barriers. Thus the disclaimer at the bottom of the homepage is true: this ALS treatment is not intended to substitute for professional medical advice.)

Section One: Assessing Documented ALS Reversals

After documenting (60) ALS Reversals, Dr. Bedlack has the astonishingly correct impression that reduced stress ("a positive attitude") reverses ALS symptoms.¹ A few people with the terrifying prognosis have thereafter experienced reduced stress for a wide variety of unusual reasons and subsequently reversed their symptoms; most Reversals appear to be full recoveries. While there were at least ten documented cases of ALS Reversals prior to Dr. Bedlack investigating them, Dr. Bedlack is the first to follow conventional science protocols that focus on them.⁴ Dr. Bedlack speculates about whether the positive attitude is prior to diagnosis or following symptom reversal but fails to consider the rare instances of reducing stress after an ALS diagnosis (and before

symptom reversal). Reversals are as rare as the ability to feel genuine sustained stress reduction with an ALS diagnosis rather than faking a positive attitude to comfort loved ones. Dr. Bedlack advocates that reduced stress is the common element of ALS Reversals but cannot understand this attribution because researchers do not understand the science/neuroscience of stress (broadly construed).

Dr. Bedlack began studying Reversals after confronting a paradox: a quadriplegic ALS sufferer (Nelda Buss) fully documented her disease and complete recovery that she attributed to "healing energy" (reduced stress)." Dr. Bedlack does not understand how regular sessions with a charming "confidence man" (including some hands on physical therapy) reduced stress for Ms. Buss. Consistently, the other fifty-nine documented ALS Reversals similarly credit reduced stress (a positive attitude) for promoting symptom reversal. Most Reversals further credit their reduced stress to some form of unconventional therapy with only a few attributing the reduced stress to conventional therapies that subsequently lost support. While all ALS Reversals attribute their success to reduced stress, most attribute their reduced stress to personalized "functional medicine", 10,11,12,13,14,15,16,17,18,19 philosophical spirituality, 20,21,22,23,24,25 or theological spirituality. Co.27,28,29,30,31,32,33 (Unfortunately, only a few of the Reversals have been identified by Dr. Bedlack beyond Nelda Buss so references are included based on their apparent credibility. Please contact us through the homepage link if you believe that any of our references lack credibility.)

Although all ALS Reversals are based on the reduced stress of atypical personal histories, Evy McDonald's story of reversing her ALS symptoms best explains this common denominator.³⁴ Evy McDonald was dying from ALS when she decided to shed bitterness about her past and her prognosis, and embrace a love for humanity at the end of her life. During her "final days" as a quadriplegic ALS patient, Evy happily embraced community service over the phone, but to her surprise, her symptoms slowly began reversing until full recovery.³⁴ The common denominator of the therapies attributed to ALS Reversals is experiencing reduced stress in the face of the ghastly prognosis. ALS Reversals are rare instances of ALS sufferers experiencing sustained reduced stress for a wide variety of unusual reasons, and Evy's story proves it.

Dr. Bedlack is following conventional science protocols by researching Reversals but his singular focus on mimicking the AIDS vaccine model has promoted little progress and he is beginning to seek greater complexity. Dr. Bedlack is now turning to Australian scientists for more abstract science to address Reversals.³⁵ Unfortunately, this is consistent with conventional western neuroscience research that is more comfortable with complexity and complex science than with seeking simplicity and simple hypotheses consistent with elemental natural science theory. Following natural science theory that seeks simpler explanations of the environment is difficult when the drive for unique doctoral theses pushes research into complexity — investigating obscure details. Natural science theory seeks simplicity while western research science is

increasingly comfortable with complexity (and is now envisioning ALS as an umbrella term for a multitude of genetic and environmental subtypes). Dr. Bedlack is not thinking "outside the box" of complexity to follow true natural science theory that seeks parsimony (Occam's razor, simplicity) — the most basic principle of science. A naturopathic perspective of a unified natural science explains ALS as somaticized stress rather than a terrifying disease and Reversals as expressing reduced stress.

The stories of ALS Reversals describe reduced stress reversing symptoms but also describe stress initiating ALS symptoms. ALS sufferers leading numerous ALS organizations describe unusual stress preceding initial symptom onset: McFinn Lovere (EverythingALS.org) was experiencing financial ruin; Brian Wallach (IAMALS.org), Ed Rapp (AnswerALS.org) and Gwen Petersen (HerALSstory.org) were transitioning to new, high-pressure jobs; and Eric Stevens (AxeALS.org) was transitioning to married life. Consistently, initial symptoms of ALS often directly express problems with stress relief: Lovere's ALS symptoms started with hand muscles central to abating financial ruin, Wallach's symptoms started in hand muscles central to typing for employment, Rapp's symptoms started in leg muscles that previously provided stress relief through jogging, and Stevens' symptoms started in upper body muscles central to financially supporting his new family as a firefighter. Moreover, ALS sufferers have regularly identified stress from emotional trauma as "triggering" their ALS, 36,37 although these reports are generally ignored by doctors because they contradict the established disease narrative.³⁶ Natural Science Therapy contends that ALS is somaticized stress: stress causes ALS muscle problems and reduced stress reverses the symptoms.

ALS is somaticized stress defined similarly to "somatic symptom disorder" by the Mayo Clinic: "Somatic symptom disorder is characterized by an extreme focus on physical symptoms — such as pain or fatigue (or weakness) — that causes major emotional distress and problems functioning... You often think the worst about your symptoms and frequently seek medical care, continuing to search for an explanation even when other serious conditions have been excluded. Health concerns may become such a central focus of your life that it's hard to function, sometimes leading to disability." ³⁸ The definition of ALS is identical to the definition of somatic symptom disorder except for a single omitted sentence that addresses how the "reaction to the symptoms is not normal." The false assumption of ALS being a biological malfunction obscures the reality of natural somaticized stress.

ALS research science is not following standard science protocols that focus on anomalies like ALS Reversals for breakthroughs; instead, researchers predominately ignore or disparage Reversals in defense of their own research. Although reduced stress reversing symptoms may make little sense to ALS researchers, established science protocols implore a focus on these ALS anomalies. Consistent with NINDS Director Dr. Gubitz's advocacy, Reversal research deserves far more consideration and resources. The western medical science investigation into ALS provides a massive

quantity of complex, ambiguous and disjointed support for conventional theory, but natural science seeks reductionism and our naturopathic explanation is comprehensive. Natural Science Therapy for ALS advocates duplicating documented symptom reversal success through the reduced stress of understanding ALS as natural somaticized stress rather than symptomatic of a terrifying disease.

Section Two: A Unified Natural Science Perspective of ALS

Natural Science Therapy for ALS advocates that current medical science theory does not understand the power of stress (broadly construed) to impact physical health. ALS symptoms are somaticized stress that worsens through misunderstanding the symptoms as expressing a ghastly biological malfunction. Conventional western wisdom assumes ALS expresses a terrifying disease, and without a better explanation, the stress causing symptoms increases and thereby worsening symptoms. In contrast, this naturopathic thesis contends that it is the natural emotional distress of a terrifying ALS prognosis of slow paralysis to suffocation that kills most ALS sufferers within five years. A "glass coffin" describes the terror of living with ALS but hardly addresses the typically constant emotional pain and suffering that withers; stress kills far beyond heart attacks.

The somaticized stress of the ALS syndrome is an increasingly accepted health problem of emotional distress expressed as a physical medical malady. Somaticized stress commonly references heart attacks, headaches, digestion problems, and high blood pressure but the list is becoming extensive and should include ALS. Stress is a broad over-reaching problem for health; western health care fails to understand the power of stress to impact a wide myriad of medical maladies. Natural Science Therapy advocates that ALS is part of an entire class of medical maladies increasingly suspected of being somaticized stress — caused by stress and reversed with reduced stress. Natural Science Therapy advocates that stress is a major health problem beyond the muscular system; it causes problems for the nervous system, respiratory system, circulatory system, digestive system, and integumentary system. Stress causes most problems with heart disease, strokes, brain aneurysms, seizures, brain aneurysms, ulcers, migraines, chronic pain (including fibromyalgia), tinnitus, aphasia, primary visual agnosia, stress skin rashes, Telogen effluvium (hair loss), dysuria (frequent urinating), stuttering, diaphoresis (excessive sweating), Crohn's disease, and asthma (to name a few). Stress also causes most "mental health" problems including problems with anxiety and depression. Scientific reductionism implores consideration of whether ALS is part of a multitude of medical maladies widely considered to be somaticized stress caused by stress and reversed with reduced stress. Elemental science theory implores a focus on commonality of symptoms rather than a focus on differentiating between them; seeking commonality is reductionist — the goal of science. Based on breakthrough naturopathic theory, Natural Science Therapy contends that conventional

neuroscience research fails to understand the power of stress to negatively impact health in a wide variety of ways. Stress is an overriding problem for health; it can cause muscle problems described together as ALS.

Natural Science Therapy for ALS advocates that symptoms are understandable in terms of three different types of natural muscular expressions of somaticized stress: stressinduced muscle tension, stress-induced muscle weakness (consistent with "limb onset ALS"), and stress-induced muscle movement and coordination problems including problems with facial expressions, swallowing and speech (consistent with "bulbar onset ALS). Understanding how ALS muscle weakness naturally expresses stress is central to understanding all three categories of ALS symptoms. Sensing muscle exertion while feeling stressed naturally produces related/associated feelings of aversion and weakness. Stress causes negative feelings that are naturally understood (interpreted) as weakness when associated with efforts to activate muscles (and can compound over time). Emotions affect personal perspectives of the world: stress negatively impacts a world view. Consistent with how moods differ after an unusually exhausting workday compared to after a good night's sleep, stress colors our perception of our experiences. In contrast to confidence that promotes related/ associated feelings of strength, stress and fear promote related feelings of weakness. The power of stress to affect perception is directly related to the intensity of the stress, and few experiences (besides an ALS diagnosis) can elicit as much stress as unexplained ALS symptoms.

Stress initially causes muscles to produce less power rather than have less capability; unfortunately for ALS sufferers, it is human nature to reduce activity of muscles considered diseased. ALS muscle weakness initially expresses stress but thereafter also expresses the natural weakness of inactive muscles from reduced activity (extended rest, "favoring" them). All body tissues atrophy from disuse; when ALS sufferers reduce use/activity of muscles considered pathologically weak from ALS, they naturally promote atrophy in muscle tissue and related messaging motor neurons. ALS research identifies both muscle tissue and related nervous tissue atrophy, and since muscle tissue is otherwise proven healthy, conventional wisdom assumes that malfunctioning motor neurons are causing both symptoms. In contrast, Natural Science Therapy contends that ALS is natural somaticized stress and that "ALS neural diagnostic biomarkers" identify natural nervous tissue atrophy from reduced muscle activity. Resting ALS weak muscles might have short-term logic to conserve body energy if ALS was a disease like cancer but inactive muscles naturally promote muscle weakness, and naturally atrophy. It is astonishingly unfortunate that medical science focuses on ALS symptoms as pathological while ignoring basic, accepted health care protocols that address health problems caused by inactivity. ALS muscle weakness expresses stress and human nature that reduces activity of muscles considered pathologically weak until the muscles and their related messaging neurons naturally atrophy.

The stress that initiates and sustains ALS is substantially environmental; this confuses ALS research science because stress is not understood as an environmental "toxin" or "pathogen." Nevertheless, consistent with environmental toxins and only consistent with environmental toxins, environmental stress has caused numerous epidemics of ALS. Most notably, an epidemic of ALS raged for a couple decades after WWII on Guam; until recently, "Guamanian ALS" lingered as a basic classification of ALS together with "Familial ALS" and "Sporadic ALS." Newer epidemics of ALS have been documented near Mascoma Lake in New Hampshire, 39 in the French Alps, 40 at Kelly Air Force Base 41 and more generally in the military, 42,43 among Italian soccer players.45 and NFL players.45 More importantly, an epidemic of conjugal ALS in southeastern France narrows toxins to different specific households and therefore clearly implies environmental stress as causation. 46 Although the different environments of ALS epidemics have been exhaustively investigated and have discouraged researchers, epidemiological and etiological investigations are wrong to discount ALS epidemics (and label them "hot spots" or "clusters"). Accepted science theory advocates that epidemics prove environmental etiology; ALS research science should be focusing on the environmental toxin of stress.

Understanding ALS as somaticized stress explains two important areas of ALS research: the widely varying rate of ALS symptom progression (from under six months to well over a decade) and trends in ALS diagnoses. Natural Science Therapy explains ALS as a natural expression of stress; consistently, the rate of ALS symptom progression is a direct function of the intensity of personal stress. The intensity of stress experienced from an ALS diagnosis differs with personal perspectives about issues like the value of living and living with increasing disabilities, the circumstances of care and quality of life, the acceptance of personal hygiene care managed by others, and the financial impact of ALS care on others. Thus my athletic friend (Ron Adams) who was the kind of person tormented by the thought of bankrupting his family with his ALS care, died within six months of diagnosis. If the stress is extreme from trauma, ALS kills "rapidly." 36 Conversely and consistent with reduced stress reversing ALS symptoms, less stress also slows or stops the progression of ALS symptoms. Since actively addressing the horrific disease generally promotes a more positive attitude, ALS generally progresses much slower for ALS activists. And if a person becomes the most loved scientist in the world while an ALS quadriplegic (think Stephen Hawkings), the related positive attitude can stop disease progression for decades. While the intensity of stress affects the rate of symptom progression, trends of ALS diagnoses reflect the social (environmental) nature of stress. ALS disproportionately affects the military 41,42,43 and athletes^{44,45} because physical ailments are generally more stressful for those who disproportionately identify with their physical skills (and rely more upon them). Natural Science Therapy explains the rate of ALS symptom progression as a function of personal stress and trends in diagnoses as functions of environmental stress.

Stress causing ALS may seem absurd to western medicine that considers stress to be a "mental health" issue, but less so to eastern medicine. Eastern medicine better understands that stress directly impacts health; eastern doctors often ethically delay fatal prognoses assuming that the related stress will hasten outcomes. Western medicine lags far behind eastern medicine in understanding the impact of conscious and subconscious stress on health, but it is evolving. The number of US doctors of osteopathic medicine (addressing stress and "mental health" far more than traditional medical doctors) has increased radically in recent years. Nevertheless, western medical science is slow to understand the critical impact of stress on health; it is also slow to accept the importance of including an eastern medical science perspective in health care. The short, linked thesis *Unifying Eastern and Western Neuroscience* provides scientific support for this naturopathic program.

Natural Science Therapy for ALS explains documented Reversals and methods for duplicating their success through breakthrough naturopathic theory based on a true natural science perspective of symptoms — "hard science." Natural Science Therapy contends that conventional ALS research science does not understand the power of stress to cause health problems. Natural Science Therapy further contends that current ALS research science has an unscientific embrace of complexity that is inconsistent with the basic tenets of the philosophy of natural science (the most basic principle of natural science theory). It is natural (normal) to feel stress from stressful experiences and stressful life circumstances in our stressful society, and natural (normal) to feel weak when stressed: somaticized stress is natural. In the near future, there will be a cultural awakening to health care theory that falsely promotes a Pollyanna perspective of personal and environmental stress. This program implores the reader to suspend belief in an entire western world of complex, ambiguous and disjointed conventional wisdom about ALS and consider a naturopathic brain exercise based on rational thinking and real natural science. (Healthy skepticism about this treatment is addressed through a homepage link.) Natural Science Therapy is a comprehensive explanation of ALS symptoms as natural expressions of stress that can be reversed through the reduced stress of understanding them as natural rather than ghastly pathological.

Section Three: Assessing Conventional ALS Research Science

Scientists investigate anomalies like ALS Reversals for breakthroughs but ALS researchers find Reversals incoherent (like all anomalies until understood) so they disparage them. Unlike the HIV anomalies of "elite controllers" that evidenced the genetics based therapy of the AIDS vaccine, therapies attributed to Reversals do not evidence genetic etiology. ALS Reversals have no common genetic defect; consistently, Dr. Bedlack correctly assesses that reduced stress ("a positive attitude") is the common element. ALS Reversals confuse western medical science because researchers do not understand the science of stress and consider the investigation of

stress to be a "mental health" issue rather than addressing it directly. Since stress is considered a "mental health" problem rather than a physical health problem, even Dr. Bedlack is hesitant to investigate his own assertion about what is causing Reversals. Consistently, ALS researchers are predominately comfortable ignoring Reversals, doubting their legitimacy, or considering them "mimics." While other diseases may have some common symptoms, there are no diseases that mimic ALS and include progressing to near death and then reversing to full health. ALS research science has documented Reversals and the principal investigator's assertion about what is causing them but no one is following conventional science protocols by investigating. Reversals are ALS anomalies that implore investigation; anomalies appearing incoherent should be the assumption rather than a criticism.

Without a naturopathic understanding of the power of stress to cause health problems, ALS research science is "heading down the wrong path." Researchers understand that healthy muscle tissue is dying from atrophy and thereby falsely assume a biological malfunctioning of nervous tissue messaging. While this may seem like a logical assumption, assumptions can be especially problematic in research science. The ALS syndrome is *assumed* to be a biological malfunction so although it presents as natural atrophy, researchers can only imagine a malfunctioning of the natural process. ALS research science pathologizes natural expressions of stress and natural reactions to pathologized symptoms of stress based solely on symptoms and eliminating *certifiable* diseases.⁴⁷ Conventional wisdom about ALS supports cultural expectations with a massive quantity of complex, ambiguous and disjointed information but this naturopathic treatment is comprehensive.

Although only 5-10% of ALS is attributed to genetic etiology, the conventional wisdom of ALS research focuses on genetics and correlating specific mutated genes with ALS. But as a classic science adage attests, "correlation does not imply (prove) causation": mutated genes are correlated with ALS but do not cause it. ALS researchers assume ALS is be a biological failing and thereby assume that mutated genes affecting the functions of one of the multiple failing neural pathways is causing the failure. Based on the false assumption of biological disease, researchers began locating families with histories of unusually high incidences of ALS and scanning their DNA looking for mutated genes impacting a failed ALS neural pathway. In the nineties, ALS researchers began identifying familial patterns of mutated genes affecting one of the failing neural pathway and describing the mutated genes as etiology. During the subsequent thirty years, researchers have identified twenty more mutated genes affecting failing neural pathways from the most common ones to less and less common ones. Unfortunately, identifying mutated genes with ALS often promotes the syndrome in family members through a a "self-fulfilling prophecy" based on a natural fear of the disease. While drugs addressing mutated genes in a failing neural pathway may temporarily strengthen the related pathway and extend life a few months, current drug therapies are not addressing ALS etiology. ALS genetic investigations are discovering less and less impactful correlations among a small minority of sufferers but researchers continue to believe that ALS is significantly genetic in origin.

ALS genetic research is based on an erroneous assumption of biological malfunctioning while unified natural science theory explains ALS symptoms as natural somaticized stress. Stress naturally causes ALS muscle tension problems, ALS muscle weakness and ALS muscle behavior problems; there is no underlying biological malfunctioning. Consistently, there are no diagnostic neural biomarkers for ALS during initial symptom onset because there is no underlying biological disease. ALS biomarkers document natural neuronal atrophy and the atypical situation of multiple neuronal functions failing simultaneously. 48 The failure of multiple neural pathways simultaneously. (neuroinflammation, oxidated stress, mitochondrial dysfunction, and disrupted intracellular transport and autophagy) describes natural neuronal death and not a biological failing. Consistently, it is problematic that ALS research science investigates each of the multiple pathways separately without addressing the critical question of how they relate. 49 The six FDA approved drug therapies may extend life for a couple more months of ALS misery but are not addressing ALS etiology. The long history of failures of broadly heralded ALS trials has caused frustration for many researchers with some contending that the bar for successful ALS trials has been lowered in response. 50,51,52 Consistently, EU standards are higher for the acceptance of drug therapies: Rituzole is the only drug therapy currently authorized for ALS in Europe. Natural Science Therapy for ALS explains the unusual simultaneous failure of multiple neural pathways while conventional research does not address this significant confusion. Electromyography can document motor neuron degeneration and death with "ALS neural biomarkers" but cannot identify etiology.

Natural Science Therapy advocates that ALS sufferers should challenge conventional western medical wisdom about ALS with rational thinking and logical deductions from accepted natural science theory. Natural Science Therapy contends that ALS symptoms are somaticized stress that are reversible through the reduced stress of understanding them as natural rather than ghastly pathological. A western medical perspective creates an entire world of complex, ambiguous, disjointed science upon the false premise of ALS being a biological failing but this naturopathic explanation is better science. Not only does our naturopathic science challenge the complexity of ALS research science with a simpler and more reductionist program but it is also comprehensive. Natural Science Therapy explains three categories of muscle problems as natural expressions of stress: ALS muscle tension problems with cramping and twitching, ALS muscle weakness problems ("limb onset ALS" type symptoms), and ALS muscle coordination and movement problems ("bulbar onset ALS" type symptoms). Based on a pure natural science foundation for understanding how stress causes muscle problems, the following three sections explain the three types of ALS symptoms

and methods for reversing each.

Section Four: Reversing ALS Muscle Tension Problems

ALS research science should follow conventional science protocols with ALS muscle tension problems and investigate Dr. Bedlack's assertion that reduced stress (a positive attitude) somehow reverses ALS symptoms. Our naturopathic therapy advocates that the emotional tension of conscious and subconscious stress naturally causes muscle tension that naturally causes muscle fatigue that naturally causes cramping, twitching (fasciculation), and a short range of motion. Medical science understands cramping and twitching from muscle fatigue as somaticized stress; it is accepted as natural and common until the problem is allowed to persist and worsen unabated whereupon it is pathologized. Medical science considers cramping and twitching as natural from muscle fatique related to over-exertion but hardly considers muscle fatique from stationary muscle tension caused by stress. This is problematic because muscles fatigue far more easily from static exertion (tension) than active exertion (movement) where muscles are flexing through a range of motion. Unfortunately, consistent with a medical science understanding that muscle tension following muscle strains hinders recovery time, muscle tension from continuing stress perpetuates cramping and twitching. Unusually frequent, intense and uncomfortable muscle cramping and twitching express the natural emotional tension of somaticized stress — not malfunctioning biology.

Miserable ALS cramping and twitching muscles express muscle fatigue; while heating pads and muscle relaxants may assist, stress reduction should be the primary medical recommendation. Stress naturally causes ALS muscle tension that naturally causes cramping and twitching; they are reversed with reduced stress especially from understanding them as natural rather than ghastly pathological; regular stretching and full range of motion activity assist.

Eastern medicine better understands the medicinal value of stress reduction and stretching, and frequently prescribes naturopathic therapies that promote relaxation and stretching. Eastern medicine has advocated relaxation therapy in the form of hot baths and meditation for well over a millennium. Relaxation therapy is valuable for addressing stress; relaxation therapy includes meditation, yoga, hot baths and spas, sweat lodges and saunas, massages, progressive muscle relaxation and deep breathing techniques, Tai Chi, Qigong, acupuncture and hypnosis. Relaxation therapy and stretching are therapeutic for muscle tension problems; western medicine would be wise to be more respectful and inclusive of eastern medicine.

Among ALS muscle tension problems, hand cramps are often easy to explain as natural somaticized stress especially for ALS sufferers who work with their hands (including writing, typing and woodworking). Working with hands while stressed or intensely

focused obscures awareness of muscle tension that causes fatigue; relaxation and stretching should be an obvious medical recommendation. Difficulty with common hand fine motor skills (including managing buttons) also initiates ALS muscle tension problems especially when they symbolize other difficulties. Consistent with hand cramps, tripping is another problem that is often easy to explain with naturally tight muscles: as people age and their leg muscles get tighter and weaker, the habitual effort to clear obstacles needs readjustment. Instead of identifying tripping from tight and/or aging muscles as symptomatic of a biological disease, it should instead serve as a reminder to "pick up your feet", and stretch and exercise regularly.

ALS muscle tension problems with cramping and twitching are physical expressions of stress that are reversed with reduced stress especially from understanding them as natural. Unfortunately, understanding cramping and twitching is difficult in a medical science environment that addresses stress as a "mental health" problem separate from physical health. Scientific truth is empowering: our naturopathic therapy advocates embracing human rationality to understand ALS as natural somaticized stress and thereby reduce the stress driving symptoms. ALS muscle tension problems with cramping and twitching are somaticized stress reversed with reduced stress; regular stretching and relaxation therapy are helpful.

Section Five: Reversing ALS Muscle Weakness Problems

Besides pathologizing natural, stress-induced muscle tension problems, ALS also pathologizes the somaticized stress of ALS muscle weakness (consistent with "limb onset ALS"). Sensing muscle exertion while feeling stressed promotes related feelings of weakness; stressful thoughts are aversive and understood as weakness when stimulating muscles to activity. Stress initially causes muscles to function poorly without reduced physical capability; unfortunately, it is human nature to reduce the use of muscles when sensing a pathological problem. ALS muscle weakness initially expresses stress but thereafter also expresses the natural weakness of inactive muscles. ALS research science assumes ALS muscle weakness expresses biological malfunctioning while ignoring the reduced muscle activity that naturally weakens all muscles. ALS researchers are generally focused on an assumed biological disease without considering whether ALS symptoms promote inactivity that naturally causes related muscle and nervous tissue atrophy. When addressing the scourge of ALS, doctors forget the medical science mantra of "use it or loose it"; ALS neuronal biomarkers document "disuse atrophy" — a failure of functional medicine. Moreover, associating stress with an area of the body strengthens related neural pathways and thereby naturally reinforces negative sensations. ALS muscle weakness is reversed with reduced stress especially from understanding symptoms as natural rather than terrifyingly pathological.

ALS muscle weakness is reversed with reduced stress and assisted by consciously resisting the tendency to rest muscles wrongly considered biologically diseased. It is unfortunate that the fear of pathological ALS muscle weakness naturally promotes reduced muscle usage/activity that naturally weakens all muscles; creating a different response of physical activity is therapeutic. Sensations of ALS muscle weakness promotes a natural reaction of reduced muscle activity; human rationality should override this problematic human nature for ALS sufferers.

The main prescription for ALS muscle weakness should be stress reduction to promote physical activity but an exercise program may also be helpful. Unfortunately, ALS muscle weakness can cause activity and exercise to feel overwhelmingly difficult because the feelings of weakness are real regardless of the lack of an underlying biological malfunctioning. If it is not increasingly stressful, pushing through with exercise can be valuable consistent with the basic principles of functional medicine. Physical therapists generally focus on health problems caused by inactivity so they can be valuable assets in establishing habitual exercise programs supported by ALS physicians. ALS doctors generally value exercise for health but worry that overexertion harms the body's ability to fight ALS symptoms because they consider ALS a disease like cancer. Physical therapists can be especially valuable in promoting physical activity and safe exercise programs without setbacks while alleviating physician concerns about exhaustion. 53,54,55,56

While general health is often "heart health", symptoms of ALS muscle weakness may be directly addressed with targeted exercises. Conventional ALS research science generally advocates that strengthening exercises are either beneficial for ALS sufferers or not harmful as long as the exercise is not extreme or exhausting (or tears muscles). 53,54,55,56 Strengthening exercises can be valuable in rebuilding strength in muscles considered pathologically weak and thereby promote confidence in our therapy program through reversing concerning symptoms. While the sensation of ALS muscle weakness may linger, objective evidence of ALS weak muscles becoming stronger should evidence a therapeutic lack of underlying biological disease. If it is not increasingly stressful, Natural Science Therapy generally advocates short, intense exercise "spurts" to rehabilitate weakening ALS muscle groups (starting gradually). An "exercise spurt" is herein defined as exercise lasting only a few seconds after stretching for a couple seconds. Physical therapists should alleviate physician concerns about habitual programs of frequent strengthening exercise spurts straining muscles or harming "core body energy." The principal investigator may have additional suggestions that trial participants may consider while designing physical activity and exercise habits supported by their physical therapists.

In our social world, it can be difficult to challenge conventional western medical science and accept the real brain science of stress especially when feeling stressed, but scientific truth is empowering. Our naturopathic therapy advocates embracing human

rationality to reverse ALS muscle weakness through understanding symptoms as natural somaticized stress rather than terrifyingly pathological. This is consistent with documented ALS Reversals experiencing a wide variety of rare, unusual experiences of reduced stress and thereby reversing their symptoms. ALS muscle weakness is somaticized stress reservable with reduced stress; being active, exercising (unless it increases stress), relaxation therapy and stretching are helpful.

Section Six: Reversing ALS Muscle Coordination and Movement Problems Including Problems with Facial Expressions, Speech and Swallowing

Besides pathologizing natural, stress-induced muscle tension and muscle weakness problems, ALS also pathologizes the somaticized stress of ALS muscle problems with fluid movement and facial expressions, speech and swallowing. Some "bulbar onset ALS" symptoms directly express stress with fearful facial expressions considered pathological based on a lack of understanding the power of stress. However, most bulbar onset ALS symptoms express stress interfering with "normal" swallowing and speech. Swallowing is a predominately subconscious behavior learned during infancy that is produced with "mindless intent." Stress naturally causes swallowing problems with its powerful impact on subconscious thinking. Stress affects behavior: it distracts from a subconscious "train of thought" and thereby causes problems with any wellcoordinated movement. Well-coordinated behaviors are directed by subconscious thinking through *mindless intent* without mindfulness about how specific muscles flex to produce specific behaviors.⁵⁷ Speech is another behavior that is mostly directed by subconscious thinking; stress is a subconscious distraction that causes strained, garbled, slurred, and/or measured speech. Word selection, formation, articulation, and volume all function "normally" through subconscious thinking and function poorly when distracted by stress. Swallowing and most speech are subconscious behaviors; mindfulness cannot promote "normal" swallowing nor fluid speech. Unfortunately, the somaticized stress of ALS facial expression, speech and swallowing problems worsen with the additional stress of being considered terrifyingly pathological.

Besides problems described as "bulbar onset ALS", Natural Science Therapy also addresses other ALS coordination and movement problems. Basic coordinated behaviors including balancing, walking, buttoning shirts, hand writing, and grasping objects are all habitual behaviors produced by subconscious trains of thought that can be distracted and/or interrupted by stress. Balance is an especially subconscious behavior since most neural information about balance is channeled through the limbic system rather than directly into the cerebral cortex. Thus, while falls can cause injuries, they also can cause a fear of falling that causes balance problems from stressful distractions that mindfulness cannot remedy. Moreover, tripping can be a movement

problem as well as a tight muscle problem; clearing objects requires coordinated movements that can easily be distracted by stress. Here again, while tripping can cause injuries, tripping can also cause a fear of tripping that can distract subconscious thinking about clearing objects and a normal gait. Furthermore, a normal subconscious grip on objects can easily be distracted by stress and cause problems maintaining a grasp. (Conversely, in contrast to distracted behavior, great athletic performances of fine motor skills are often described as "unconscious" and based on "muscle memory" referencing subconscious thinking *uninterrupted* by mindfulness.) ALS movement and coordination problems are somaticized stress; they express stressful distractions from subconscious thinking that mindfulness cannot remedy.

To promote fluid body movements, ALS sufferers should understand that behaviors learned during infancy were relegated to subconscious thinking though mindless intent and that mindfulness cannot produce fluid body movement. ALS sufferers should seek to return to behavior based on mindless intent while trying to ignore stressful distractions. ALS sufferers should consider promoting mindless intent with (safe) "active play"; entertainment can "distract from stressful distractions" for better movement coordination at any activity level. Combining music with movement consistent with abstract dance may also promote distracting from stressful distractions. A virtual reality headset may further be valuable in distracting from stress especially the substantial stress of witnessing one's own "diseased" movements. Witnessing personal coordination problems deemed pathological often becomes a distressful focus that worsens symptoms. The principal investigator may have helpful suggestions about promoting mindless intent as well as general ideas about addressing ALS coordination and movement problems.

In a social world that *assumes* stress is a "mental health" issue separate from brain science, it can be difficult to understand the hard science of stress and its impact on behavior. But scientific truth is empowering: our naturopathic program advocates embracing human rationality and reversing ALS muscle coordination and movement problems with the reduced stress of understanding the real science of somaticized stress. Understanding ALS coordination and movement problems as natural rather than ghastly pathological will reduce the stress driving symptoms. As stress abates and symptoms lose their stressful connection to a dreadful fatal disease, more fluid movement will slowly reestablish. This is consistent with documented ALS Reversals who reestablished normal movement and muscle coordination with reduced stress based on a wide variety of unusual personal experiences. ALS coordination and movement problems are somaticized stress reversed with reduced stress; distracting from stress and relaxation therapy are helpful.

Conclusion

In the near future, there will be a cultural awakening to western health care theory that promotes a Pollyanna perspective of environmental stress and its impact on health. Naturopathic theory now explains ALS symptoms as somaticized stress and documented Reversals as reversing symptoms with reduced stress ("a positive attitude"). ALS research science pathologizes natural expressions of conscious and subconscious stress and natural reactions to pathologized symptoms of stress based solely on symptoms and eliminating certifiable diseases.⁴³ Current "diagnostic ALS biomarkers" are correlated with ALS symptoms but do not prove causation consistent with the old science adage that "correlation does not imply (prove) causation." In contrast, ALS epidemics prove environmental stress causes symptoms and investigations of Reversals imply that reduced stress reverses symptoms. Natural Science Therapy for ALS explains how stress naturally promotes feelings of weakness and other ALS symptoms based on true natural science — "hard science." Moreover, basic natural science theory implores a research focus on the commonality of ALS symptoms in contrast to popular ALS research science that focuses on differentiating between symptoms. For those with a basic understanding of the life sciences, a short linked thesis unifies eastern and western neuroscience for better foundational science theory. Natural Science Therapy explains the ALS syndrome as somaticized stress and Reversals as expressing reduced stress consistent with Dr. Bedlack and Duke Neurology's assessment of Reversals.

Natural Science Therapy for ALS explains methods for reversing the three types of stress-induced ALS muscle symptoms: 1) muscle tension problems with cramping and twitching, 2) muscle weakness problems (consistent with limb onset ALS), and 3) muscle coordination and movement problems including problems with speech and swallowing (consistent with bulbar onset ALS). First, ALS muscle tension problems are reversed with reduced stress especially from understanding them as natural (rather than symptoms of a ghastly biological failing); stretching and relaxation therapy are helpful. Second, ALS muscle weakness problems are reversed with reduced stress especially from understanding the sensations as natural; being active, exercising (unless it increases stress), relaxation therapy and stretching are helpful. Lastly, ALS muscle coordination and movement problems including problems with speech and swallowing are reversed with reduced stress; seeking "mindless intent" and "distracting from stress" are helpful (as well as relaxation therapy and stretching). While the neural pathways that associate stress with specific ALS symptoms may become well-established and cause symptoms to linger, symptoms will abate without stress driving them. The three different types of ALS symptoms are somaticized stress affecting muscles; they are reversed with reduced stress especially from understanding them as natural.

(Note: This treatment focuses on stress reduction but also supports best functional

medicine practices concerning diet, rest, and as much exercise as comfortable.)

Natural Science Therapy for ALS may initially be difficult to understand from a western medical perspective but accepted science theory implores a focus on Reversals and unified natural science theory explains them. Our free, complementary naturopathic treatment is a comprehensive explanation of the ALS syndrome, ALS Reversals, and methods for duplicating Reversal; it is based on hard science and deserves testing. Consistently, this website seeks volunteers who value science, logic, and rational thinking to coach through trials. Since our program is a brain exercise, it is FDA approved by definition; it is safe and complementary to all other ALS therapies as explained in the protocols link. And since Natural Science Therapy supports "healthy scientific skepticism", logical concerns about an unconventional therapy are addressed through the skepticism link. It should be noted that the principal investigator would be glad to discuss this complementary ALS treatment with any ALS physician. If you are interested in more information about the real science of ALS and ALS Reversals, this ALS treatment, or free coaching through our therapy program, please let us know through the contact link.

Let's Beat ALS... Now!

References

- 1) Bedlack, Richard (November, 2022). *ALS Reversals: An Update for 2022* (EverythingALS.org lecture), https://www.youtube.com/watch?v=TKBkx3gJ41Q (1:22:17 > 1:24:00 referenced).
- 2) Kuhn, T. (1962). The Structure of Scientific Revolutions, University of Chicago Press.
- 3) NIH staff (August, 2015). Positive Emotions and Your Health, NIH News in Health, https://newsinhealth.nih.gov/2015/08/positive-emotions-your-health#:~:text=Research%20has%20found%20a%20link,sugar%20levels%2C%20and%20longer%20life
- 4) Bedlack, R. (February, 2024). 2024 ALS Reversals Update, EverythingALS.org lecture, https://www.youtube.com/watch?v=vz44vdFEV-Q (Minutes 18:18 > 18:48 Referenced)
- 5) Morgan, Debra (November, 2019). ALS Research Offers Hope for Those Diagnosed with Deadly Disease (Nelda Buss reversal), *WRAL*,
 - https://www.wral.com/als-research-offers-hope-for-those-diagnosed-with-deadly-disease/18783766/
- 6) Thiessen, Marc (January, 2017) The Man Who Beat Lou Gehrig's Disease (Ted Harada reversal), Washington Post, https://www.washingtonpost.com/opinions/the-man-who-beat-lou-gehrigs-disease/2017/01/03/5cf898e4-d1b4-11e6-945a-76f69a399dd5 story.html
- 7) Gelbfish, Ezriel (July, 2012). Orthodox Rabbi May be First ALS Patient Cured by Israeli Drug (Refoel Shmulevitz reversal), *The Algemeiner*,
 - https://www.algemeiner.com/2012/07/05/orthodox-rabbi-may-be-first-als-patient-d-by-israeli-drug/
- 8) Staff article, (August, 2019). Fort Smith Man in ALS Clinical Trial, Symptoms Dramatically Improved, *KARK News*, (Mark Bedwell Reversal), https://www.kark.com/news/local-news/fort-smith-man-in-als-clinical-trial-symptoms-dramatically-improved/
- 9) Kapetaneas, John (August 8, 2019). Great Strides in ALS Research 5 years after Ice Bucket Challenge Broke the Internet, *ABC News*, (Thurman Maynard reversal),
 - https://abcnews.go.com/US/great-strides-als-research-years-ice-bucket-challenge/story?id=64842018
- 10) Mangelsdorf, Inge (June, 2017). Healing of Amyotrophic Lateral Sclerosis: A Case Report, *NIH*, https://www.ncbi.nlm.nih.gov/pubmed/28641283 11) Tedone, Vincent, et al. (September, 2015).

- 11) The Deanna Protocol: Hope For ALS and other Neurological Conditions (Deanna Tedone-Gage reversal), Paradies Publishing.
- 12) Manchester, Mark & Healing Advocates (March, 2020). *Manchester ALS Reversal* (Mark Manchester reversal), https://healingals.com/manchester-als-reversal/
- 13) Shackel, Steven (July, 2014). *My Story* (Steven Shackel reversal), https://healingals.com/steven-shackel-1/
- 14) Sherry, Stephen & Healing Advocates (April, 2020). *Stephen Sherry Update 2020* (Stephen Sherry reversal), https://healingals.com/stephen-sherry-update-2020/
- 15) Cherry, Kim (2024). *ALS Winners The Road to Recovery* (Kim Cherry reversal), https://www.alswinners.com/
- 16) Swinnard, Derek & Healing Advocates (January, 2018). *ALS Since 1997 Still Golfing in 2018* (Derek Swinnard reversal), https://healingals.com/derek-1997/
- 17) Osborn, Warren (January, 2019). *Warren Osborn's ALS Journey* (Warren Osborn reversal), https://healingals.com/warren-osbornes-als-journey/
- 18) Smith, R.A. (2024). David Atkinson Story and ALS (David Atkinson reversal), *Barr Products*, http://www.baar.com/atkinson.htm
- 19) Cummins, Cathy (June, 2017). *Cathy Cummins lives a full life despite ALS diagnosis* (Cathy Cummins reversal), https://healingals.com/cathy-cummins-lives-a-full-life-despite-als-diagnosis/
- 20) Loyd, Alexander & Ben Johnson, (September 10, 2013). *The Healing Code: 6 Minutes to Heal the Source of Your Health, Success, or Relationship Issue, Balance.* (Ben Johnson reversal)
- 21) Bishop, Steven (February, 2014). Lucky 13!, *ALS Living- the Bishops Perspective* (Steven Bishop reversal), https://www.youtube.com/watch?v=b GeJFXvX8
- 22) Brown, Joyce & Healing Advocates (May, 2017). *Joyce Brown ALS Reversal Over 30 Years*, (Joyce Brown reversal), https://healingals.com/2017/05/
- 23) Ember, Lazarus & Healing Advocates (May, 2021). *Ember's ALS Reversal Protocol* (Lazarus Ember reversal), https://www.youtube.com/watch?v=lnK-44tsXHc
- 24) Bianchetti, Alejandro & Healing Advocates (July, 2020). *Alejandro's ALS Reversal* (Alejandro Bianchetti reversal), https://healingals.com/alejandros-als-reversal/
- 25) McCrea, Dawn (2024). *Energy Healing Strategies*, (Dawn McCrea reversal) https://energyhealingstrategies.com/my-healing-journey-through-als-and-back-again/
- 26) Blevins, Allison (March, 2018). Obedience Leads to Healing (Richard Daddona reversal), *Assemblies of God*, https://news.ag.org/News/Obedience-Leads-to-Healing
- 27) Lovere, McFinn (2019). ALS Reversal McFinn, (with Healing Advocates), (McFinn Lovere reversal), https://www.youtube.com/watch?v=jZKfoFTnx w
- 28) LaCarter, J.J. (August, 2014). I was Healed from ALS (J.J. LaCarter reversal), *Houston's First Baptist Church*, https://houstonsfirst.org/news-stories/i-was-healed-from-als
- 29) Yu, He (August, 2014). The Story of an ALS (Lou Gehrig's Disease) Survivor [Wang Zhiyuan reversal], *Minghui*, http://en.minghui.org/html/articles/2014/8/31/2776p.html
- 30) White, Ron (June, 2003). Army Major Healed of ALS! (Ron White reversal), *Archive.com*, https://web.archive.org/web/20150302062207/http://www.choicesforliving.com/spirit/part4/alshealing.htm
- 31) Jetter, Judy (2024). I Was Healed Of ALS (Judy Jetter reversal), *Vineyard USA*, https://vineyardusa.org/library/vineyard-stories-i-was-healed-of-als/
- 32) Williams, Monique (May, 2017). EXCLUSIVE: Local Pastor Opens Up about ALS Battle (Monique Williams reversal), *WRDW*,
 - http://www.wrdw.com/content/news/The-Real-ALS-Challenge-423728894.html
- 33) Bustetter, Pete (October, 2022). Wendy Moore: Wrestling Lou Gehrig (Wendy Moore reversal), *CBN* https://www1.cbn.com/700club/wendy-moore-wling-lou-gehrig
- 34) McDonald, Evy & Healing Advocates (September, 2017). *Despite Evy McDonald's 1980 ALS Diagnosis, She Lives a Normal Life* (Evy McDonald reversal),

- https://healingals.org/alsreversals/evy-mcdonald/
- 35) Bedlack, Richard (November, 2022). ALS Reversals: An Update for 2022, https://www.youtube.com/watch?v=TKBkx3gJ41Q (54:30 > 57:40 Referenced).
- 36) Rothstein, Jeff (June, 2020). Journey to Answer ALS with Ed Rapp & Jeff Rothstein, MD PhD,

 Answer ALS, https://www.youtube.com/watch?v=lgUZQp6RpVk (1:07:50 > 1:10:40 referenced)
- 37) Cudkowicz, Merit (December, 2021). *New Therapies for ALS*, an EverythingALS.org video, https://www.youtube.com/watch?v=zstStaJ5JFc
- 38) Mayo Clinic Staff, (2024). *Somatic Symptom Disorder*, https://www.mayoclinic.org/diseases-conditions/somatic-symptom-disorder/symptoms-causes/syc-20377776
- 39) Konkel, Lindsey (December, 2014). Are Algae Blooms Linked to Lou Gehrig's Disease? *Scientific American*, https://www.scientificamerican.com/article/are-algae-blooms-linked-to-lou-gehrig-s-disease/
- 40) Lagrange, L. et al. (August, 2021). An Amyotrophic Lateral Sclerosis Hot Spot in the French Alps Associated with Genotoxic Fungi, *NIH*, https://pubmed.ncbi.nlm.nih.gov/34216974/
- 41) CBS Staff (January, 2002). Are Toxins at Air Force Base to Blame for Lou Gehrig's Cases? *CBS News* https://www.cbsnews.com/news/are-toxins-at-air-force-base-to-blame-for-lou-gehrigs-cases/
- 42) Tai, Hongfei (August, 2017). Military Service and the Risk of Amyotrophic Lateral Sclerosis: A Meta-Analysis, *NIH*, https://pubmed.ncbi.nlm.nih.gov/28864407/
- 43) Beard, John (October, 2014). Military Service, Deployments, and Exposures in Relation to Amyotrophic Lateral Sclerosis Etiology and Survival, NIH, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4325667/
- 44) Chio, Adriano (August, 2009). ALS in Italian Professional Soccer Players: The Risk Is Still Present and Could be Soccer-Specific, *NIH*, https://pubmed.ncbi.nlm.nih.gov/19267274/
- 45) Nordqvist, Christian (September, 2012). Professional Football Players Have Higher ALS and Alzheimer's Death Risks, *Medical News Today*, https://www.medicalnewstoday.com/articles/249912
- 46) Corcia, Philippe (April, 2003). A Clustering of Conjugal Amyotrophic Lateral Sclerosis in Southeastern France, *JAMA*, https://jamanetwork.com/journals/jamaneurology/fullarticle/784028
- 47) Ajroud-Driss, Senda (March, 2020). Clinical Management for ALS: Diagnosis, Treatment and Clinical Trials, *Les Turner Foundation*, https://www.youtube.com/watch?v=AHv7Mc2cQ-c (4:05-52 referenced)
- 48) Kalb, Robert (March, 2020). Overview of ALS: Pathophysiology, Mechanism & Science of Treatment, Les Turner ALS Foundation, https://www.youtube.com/watch?v=9RIHO6HyPlw (5:52>6:08 ref.)
- 49) Katz, Jonathan (March, 2022). Thoughts on Clinical Trials from the Perspectives of an ALS Center Director, *EverythingALS.org videos*, https://www.youtube.com/watch?v=FTct-0K80IU (9:00>11:10 referenced)
- 50) Bryson, Steve (August 7, 2023). Neurologists frustrated with ALS treatments now on market: Study, *ALS News Today,*
 - https://alsnewstoday.com/news/neurologists-frustrated-with-als-treatments-now-on-market-study/
- 51) Rosenfold, Jeffrey (June 28,2023) Updates in ALS/MND 2023: Challenges and Opportunities, EverythingALS.org video, https://www.youtube.com/watch?v=q2dwBEMaP60&t=1721s, (24:25 > 28:40 referenced).
- 52) Lowe, D. (March 8, 2024). An ALS Drug Fails. Again. *Science*, https://www.science.org/content/blog-post/als-drug-fails-again
- 53) Meng, L. (September, 2020) Effects of Exercise in Patients With Amyotrophic Lateral Sclerosis: A Systematic Review and Meta-Analysis, NIH. https://pubmed.ncbi.nlm.nih.gov/32452880/
- 54) Rogers, M. (November, 2019). *ALS and Exercise: What the Science Says*, National Federation of Professional Trainers, https://www.nfpt.com/blog/als-and-exercise-what-the-science-says
- 55) Greenwood, F. (September, 2020). *Exercise and ALS: Some of the Latest Research*, ALS Therapy Development Institute, https://www.als.net/news/excercise-and-als-some-of-the-latest-research/
- 56) Gang, Jonathan (January 10, 2024). ALS Mimics: Diseases that Must Be Ruled Out When Diagnosing ALS, ALS Therapy Development Institute, https://www.als.net/news/als-mimics/.
- 57) Burgoyne, A.P. & Hambrick, D.Z. (August, 2021). Sometimes Mindlessness Is Better Than Mindfulness, *Scientific American*,

https://www.scientificamerican.com/article/sometimes-mindlessness-is-better-than-mindfulness/.