THE ADHD-FIBROMYALGIA OVERLAP

BY CLAIRE-ELIZA SEHINSON







THE INTERSECTION OF FIBROMYALGIA AND ADHD

Stray et al. Behavioral and Brain Functions 2013, 9:18 http://www.behavioralandbrainfunctions.com/content/9/1/18



RESEARCH

Open Access

Motor regulation problems and pain in adults diagnosed with ADHD

Liv Larsen Stray 1.2°, Øistein Kristensen¹, Martha Lomeland¹, Mette Skorstad¹, Torstein Stray and Finn Full Tønnessen³

80% adults diagnosed with ADHD experience chronic and widespread pain compared to 17% neurotypicals

ADHD Neurodevelopmental

condition

Pain Medicine 2018; 19: 1825–1831 doi: 10.1093/pm/pnx275



MUSCULOSEKELTAL SECTION

Original Research Article

Screening for Adult ADHD in Patients with Fibromyalgia Syndrome

Roland van Re Meyer, FCFP(S MPraxMed,* an (Psych)[†] 45% of Fibromyalgia patients meet criteria for a diagnosis of ADHD

(dopamine, norepi, GABA & serotonin pathways),
Brain fog & executive Fx problems
Genomic variants in NT
transporters & receptors,
Neuroinflammation,
IBS and GI issues (Interoception),

Mood disorders,
Chronic Fatigue & burnout
Altered sensory processing
(visual, auditory & pain etc),
Trauma / PTSD,

Sleep difficulties,

Mitochondrial dysfunction,

Hypothyroid / Hashimotos,

Neurotransmitter dysregulation

Limbic system overactivity,
Cell danger response,
Hypermobility spectrum /EDS
Nutritional deficiencies,
Atopy & intolerances

Toxic exposures

FIBROMYALGIA Adult onset syndrome

Neurobiological differences:

Structural, Chemical & Functional

- Delayed developmental pace & volume
- Neurotransmitters: dopamine, norepi
- Prefrontal Cortex, Cerebellum

Executive functioning challenges:











working memory

management

planning & prioritising



regulation





focus & attention



task initiation



decision making







impulse control

WHATIS ADHD?





Causes:

Genetic: 80%, hundreds of genes Other: epignetic, TBI, environmental

Inhibition and impulse control:



- Hyperactivity or "inner restlessness"
- Inhibition of thoughts (intrusions), words (interrupting), laughter
- Behaviours: risk taking, binge-eating, spending
- 20-30% meet criteria for tic disorder

WHAT ELSE IS ADHD?



Interest-based nervous system

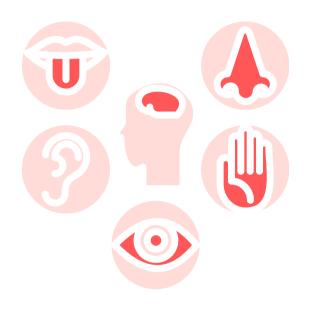
(vs Importance based - societal systems)

- Hyperfocus
- Novelty
 Urgency
 Challenge/co-op,
 Passion
- "Spiky profile"



Limbic system driven

- Navigates world through how we feel, rather than how we think
- Emotional dysregulation (70%)
- Impacts HPA axis



Altered interoception and sensory processing

- Less able to "filter"
- Sensory anxiety / overload
- Perceptual differences
- **Processing** differences (i.e. Alexithymia)
- Emotional sensitivity & Rejection sensitivity dysphoria (RSD)



Internal / External phenotypes

- M:F child 5:1, adult 1:1
- Sex differences
- Higher masking
- Traits missed due to: gendered & cultural stereotypes
- Hormones i.e. oestrogen "neurosteroids" impact neurotransmitters especially dopamine

HEALTH DISPARITIES

Mental health

"IT'S RARELY JUST ADHD"

47% have an anxiety disorder

4-fold increased risk depression

5-fold - substance use disorder

9-fold - bipolar

Higher suicidality, disordered eating, rates of PMDD

Multiple neurodivergence:

> Up to **40%** are dyslexic

Autism (AuDHD) **50-70%** overlap

Life expectancy

reduced by 16-21 yrs

Higher risk of a wide range of co-occurring chronic physical illnesses



Neuroscience & Biobehavioral Revie

Available online 5 May 2023, 105209

In Press, Journal Pre-proof (?) What's this?

Anxiety, mood, and substance use disorders in adult men and women with and without Attention-Deficit/Hyperactivity Disorder: a substantive and methodological overview

Catharina A. Hartman ^a Q M, Qi Chen ^b, Berit Skretting Solberg ^{c d}, Ebba Du Rietz ^b,

STUDY PROTOCOL

The associations between ADHD, pain, inflammation, and quality of life in children and adolescents—a clinical study protocol

Nóra Kerekes¹, Sara Lundqvist₀^{2,3}, Elke Schubert Hjalmarsson^{3,4}, Åsa Torinsson Naluai⁵, Anne-Katrin Kantzer⁶, Raina Knez₆^{3,7}*

- 1 Department of Health Sciences, University West, Trollhättan, Sweden, 2 Child and Adolescent Psychiatry, Queen Silvia Children's Hospital, Gothenburg, Sweden, 3 Institute of Neuroscience and Physiology, Sahlgrenska Academy at the University of Gothenburg, Gothenburg, Sweden, 4 Department of Physiotherapy, Queen Silvia Children's Hospital, Sahlgrenska University Hospital, Gothenburg, Sweden, 5 Institute of Biomedicine, Sahlgrenska Academy at the University of Gothenburg, Gothenburg, Sweden, 6 Child and Adolescent Psychiatry, NU Hospital Group, Trollhättan, Sweden, 7 Department of Pediatrics, Skaraborg Hospital, Skövde, Sweden
- * rajna.knez@gu.se

Increased pain-conditions affecting quality of life:

Widespread pain Migraines & headaches TMJ, Joint and muscle pain Migrating pain*



MASKING CAMOUFLAGING

"unconscious or conscious effort to hide and cover one's own self from the world, as an attempt to accommodate others and coexist"

Jenara Nerenberg, Divergent Mind

Increases rates of anxiety, depression, burnout and suicidality (5)



- People pleasing "fawning"
- Memorising scripts learning jokes to precision, rehearsing answers
- Ruminating over past events/replaying conversations, overanalysing
- Pretending to have the same preferences or interests as others
- Internalised ableism (esp late diagnosed)
- Fixating on social cues and appropriateness copying people from TV
- Hiding sensory discomfort or pain
- Using substances to cope
- Meltdowns/shutdowns in private but not in public
- Internalising: skin picking, chewing insides of mouth, sitting on hands, rocking on chair, doodling, playing with hair

WHAT IS FIBROMYALGIA?



Multi-symptomatic condition affecting the whole body.
Characterised by widespread pain, fatigue and cognitive dysfunction



Executive Fx difficulties "Fibro-fog", memory and attention deficits - associated with ↑ slow wave activity in frontal lobe



Predominantly **females** - 2:1 ratio -sex differences in nociception



"Central allodynia" – altered central (brain-based) pain processing mechanisms

Many contributing factors incl:



- Immune dysfunction
- Microglial activation
- † adverse life events
- ↑ oxidative stress
- Mitochondrial dysfunction
- Abnormal neurochemicals:
 ↑ substance P, ↓ serotonin and GABA,
 abnormal cathecholamines
 (dopamine, norepi, epi)



Limbic system **hypervigilence** and "emotional sensitivity"



High rates of mood disorders preceding FM onset by years

Co-occuring illness:

- Hypothyroid
- Sleep disorders
- IBS & IBD

• CFS

• POTS/OI

Refs (16)(17) (18)(19)(20)

Anxiety

WHAT ELSE IS FIBROMYALGIA?

Brain (fibro) fog)

Poor sleep

Fatigue

Widespread allodynia (high pain sensitivity)

IBS

Limbic system hypervigilance **Thyroid dysfunction**

Hypermobility spectrum & EDS

Undiagnosed Neurodivergence

Isolation

Anxiety Depression

> Alexithymia & Interoception difficulties

Subclinical immune dysfunction MCAS/HIT **Autoimmunity Chronic infections Undiagnosed Lyme**

Helper roles in society **People pleasing Fawning** High masking roles in society i.e. teacher, healthcare

Trauma & PTSD CELL DANGER RESPONSE

> Sensory and emotional dysregulation

Mycotoxins & Biotoxins

Exhaustion & burnout

ND-family members

Migraines & headaches

PMDD

Mitochondrial dysfunction

SIBO, dysbiosis & gut inflammation

Personality traits:

- Empaths, Helpers
- High-masking: putting the needs of other people above yours

Interoception & Sensory processing:

- Emerging evidence suggests FM is not just pain specific. **Generalised multisensory** sensitivity that predisposes to pain-specific profile (6)
- Higher levels of Alexithymia which worsens the impact of pain on quality of life (7)

Interoception, perceptual and & sensory differences



ADHD
Neurodevelopmental
condition

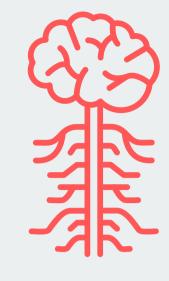


Hypermobility
Spectrum & Ehler's
Danlos

THE INTERSECTION

Sleep difficulties,

Mitochondrial dysfunction, Hypothyroid / Hashimotos, **Neurotransmitter dysregulation** (dopamine, norepi, GABA & serotonin pathways), Brain fog/ Executive Fx problems Genomic variants in NT transporters & receptors, Neuroinflammation, IBS and GI issues (Interoception), Mood disorders, Chronic Fatigue & burnout Altered sensory processing (visual, auditory & pain etc), Trauma / PTSD, Limbic system overactivity, Cell danger response, Hypermobility spectrum /EDS Nutritional deficiencies, **Atopy & intolerances Toxic exposures**



Neurodivergent burnout

FIBROMYALGIA
Adult onset
syndrome

Immune
dysfunction &
neuroinflammation



INTEROCEPTION & SENSORY PERCEPTION

Awareness of internal state

Homeostatic
Discomfort in
visceral organs,
Hunger/Thirst,
Fullness/Satiety
Breath
Sleepiness
Heartbeat
Toileting needs

Core temperature

Muscle tension

Awareness of impact of external stimuli on self

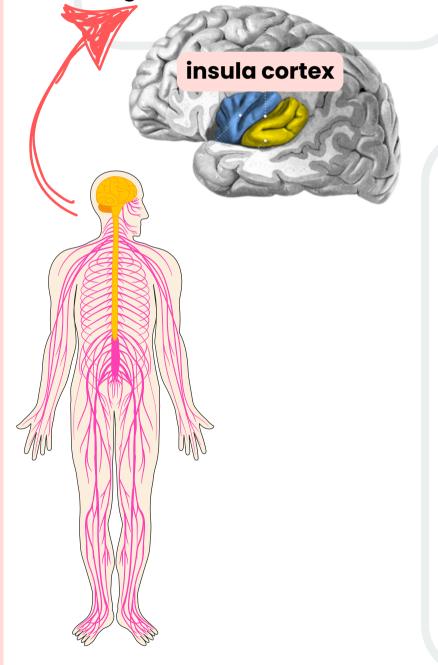
Noises
Air pressure
Smells
Textures
Visual
Touch
Pattern
Temperature
"Emotional tone"
Electromagnetic
fields

Feelings and emotions

Anger, **Safety,** Boredom, Fear, Joy, Energy, Disgust etc

Refs (21)(22)(23)

Past experience
Cultural factors
Social environment
Expectations about
consequences (i.e. of
danger & pain)
Beliefs, knowledge & logic
Cognitive & emotional states



Sensory input

from body

Eat NOW!

Move your body /stim

Toileting urge

Change body position

Reduce sensory input

Breathe
....etc...

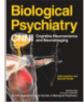
urge, thought or adaptive behaviour to promote comfort and regulate needs.

Reflexive motor action,





Biological Psychiatry: Cognitive Neuroscience and Neuroimaging



Volume 3, Issue 6, June 2018, Pages 501-513

Review

Interoception and Mental Health: A Roadmap

Sahib S. Kha
Paul W. Dave
Richard D. L
Stephen Opp
Lawrence P.
Nancy Zucke

erception

Paul W. Dave Volume 53, Issue 4, April 2024, Pages 276-286

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Article



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Fibromyalgia is linked to increased subjective sensory sensitivity across multiple senses

Chloe Rafferty and Jamie Ward (D)



Psychological Bulletin

© 2023 American Psychological Association ISSN: 0033-2909 2023, Vol. 149, Nos. 5-6, 311-329 https://doi.org/10.1037/bul0000391

Child Maltreatment and Alexithymia: A Meta-Analytic Review

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Department of Psychology, Stanford University

² Department of Psychology, Leipzig University

Alexithymia refers to difficulties identifying and describing one's emotions. Growing evidence suggests that alexithymia is a key transdiagnostic risk factor. Despite its clinical importance, the etiology of alexithymia is largely unknown. The present study employs meta-analytic methods to summarize findings on the role of one hypothesized antecedent of adult alexithymia, namely child maltreatment. We obtained effect size estimates from 99 independent samples reported in 78 unique sources that reported both child maltreatment history and adult levels of alexithymia. These studies involved a total of 36,141 participants. Using correlation coefficients as our effect size index, we found that child maltreatment was positively related to overall adult alexithymia (r = .23 [.19, .27]). Notably, emotional abuse (r = .18 [.13, .23]), emotional neglect (r = .21 [.16, .26]), and physical neglect (r = .18 [.15, .22]) were the strongest

- Neurodivergent individuals and those with Fibromyalgia have higher rates of interoceptive difficulties
- Interoception difficulties are linked to statistically higher rates of: anxiety, depression, eating disorders, substance addictions and chronic pain
- Higher rates of Alexithymia in ADHD (41.5%) – linked to impulsivity. Autism (40-65%)
- Fibromyalgia & childhood trauma.
- FM patients experience higher subjective sensory sensitivity, pervasive across all senses compared to controls w/ a stronger association with hypersensitivity, especially noticeable in pain.

Refs (21)(6)(25)(26)(27)

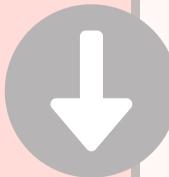
Faculty of Psychology, Clinical Child and Adolescent Psychology, Technische Universität Dresden Department of Psychology and Cognitive Science, Adam Mickiewicz University

⁵ Paul Baerwald School of Social Work and Social Welfare, The Hebrew University of Jerusalem

Clinical manifestations of interoception difficulties

- unable to describe symptoms in a way that healthcare providers expect
 - vague descriptions/unable to distinguish i.e. "I feel poisoned"
 - unusual descriptions "my insides are vibrating" "tongue feels too big" "bees in my knees"
- unable to locate symptoms onto anatomical place on body
- unable to use linear scales to grade symptoms
- unable to identify early signs of discomfort/distress
- reduced cues for hunger/tiredness/satiety etc
- slower processing time to answer questions, esp. feelings based
- masking: "fawning", rehearsing answers, scripting – avoiding RSD, wanting to "get it right"

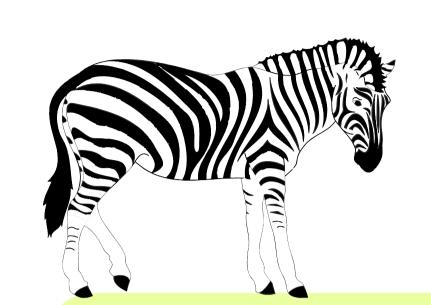
- Becoming increasingly sensitized to foods, chemicals, supplements and environmental factors not immunologically mediated*
- PMDD cellular sensitivity to hormone changes
- Lab tests don't match clinical presentation*
- Awareness of visceral organs/where food is in gut etc
- Chronic migraines and headaches may be related to emotional /sensory overload (interoception) or air pressure /other ppls emotions (exteroception)
- IBS (unexplained/ Tx Resistant)*
- MCAS
- Restrictive diet, sensory food preferences & aversions, ARFID
- Extreme herxheimer or re-exposure reactions not sufficiently alleviated by withdrawing the supplement/med
- Unstable blood glucose (> headaches, irritability)
- Using **food to stim** (regulate) or "dopamine chasing"
- Related to EDs -esp Binge Eating or Bulimia Nervosa
- Dehydration
- **Disordered breathing** patterns
- Late presentations of conditions i.e. stomach ulcers, IBD
- Sudden emergency i.e. twisted bowel, ruptured appendix
- Repeated unexplained injuries (proprioception related)
- Unexpected *burnout*, exhaustion
- May present/mistaken for Borderline/ other personality disorders - common misdiagnosis in women



Hypermobility Spectrum and Ehlers-Danlos Syndrome

- Recent research "hEDS 10 x more common than previously thought, affects 1 in 500"
- **HSD and hEDS:** 6x more likely to be **ADHD**, 7x autistic
- Up to 81% of CFS &
 Fibromyalgia pts are
 hypermobile and 18% EDS
- **EDS:** group of inherited connective tissue disorders affecting collagen
- 13 types hEDS most common (no genetic biomarker)
- Collagen 30% protein in body

Refs (28)(29)(30)





Lack of Beighton Scale points = No EDS

hEDS CHARACTERISTICS

Poor proprioception and spatial awareness Unexplained stretch marks

Unexplained /easy bruising

Pelvic floor issues

GI issues including motility, swallowing, bowel emptying Rectal and urinary floor prolapse or general incontinence Dental crowding (high or narrow plates)

Long fingers and long arm span to height ratio

Heart issues or orthostatic intolerance

Unusually soft velvety skin

Piezogenic papules (herniations of fat through the skin)

> Front Psychiatry. 2022 Feb 2:12:786916. doi: 10.3389/fpsyt.2021.786916. eCollection 2021.

Joint Hypermobility Links Neurodivergence to Dysautonomia and Pain

Jenny L L Csecs ^{1 2}, Valeria Iodice ^{3 4}, Charlotte L Rae ⁵, Alice Brooke ^{1 2}, Rebecca Simmons ⁶, Lisa Quadt ^{1 2}, Georgia K Savage ^{1 2}, Nicholas G Dowell ^{1 7}, Fenella Prowse ^{1 8}, Kristy Themelis ^{1 9}, Christopher J Mathias ^{3 4 10}, Hugo D Critchley ^{1 2 6}, Jessica A Eccles ^{1 2 6}

Affiliations + expand

PMID: 35185636 PMCID: PMC8847158 DOI: 10.3389/fpsyt.2021.786916

Abstract

Objectives: Autism, attention deficit hyperactivity disorder (ADHD), and tic disorder (Tourette syndrome; TS) are neurodevelopmental conditions that frequently co-occur and impact psychological, social, and emotional processes. Increased likelihood of chronic physical symptoms including fatigue and pain, are also recognized. The expression of joint hypermobility, reflecting a constitutional variant in connective tissue, predicts susceptibility to psychological symptoms alongside recognized physical symptoms. Here, we tested for increased prevalence of joint

Editorial Fibromyalgia

The Links Between Fibromyalgia, Hypermobility and Neurodivergence

Clive Kelly, 1,2 Ren Martin3 and Vadivelu Saravanan4

1. James Cook University Hospital, Middlesbrough, UK; 2. Newcastle University, Newcastle, UK; 3. Adolescent Autism Unit, Middlesbrough, UK; 4. Queen Elizabeth Hospital, Gateshead, UK

DOI: https://doi.org/10.17925/RMD.2022.1.1.3

ibromyalgia and joint hypermobility are common coexisting conditions among younger females that are often accompanied with additional features of autonomic dysfunction. Mental health is frequently impacted with these conditions and an association with neurodivergence has been recently established. Neurodivergence is also prevalent among close relatives. Reasons for this association are poorly understood, although genetics, adverse early life experiences and autoimmunity all contribute. Pharmacological responses may differ in neurodivergence, while psychological support requires adaptation for individual sensitivities. Screening patients with fibromyalgia and hypermobility for neurodivergent traits and vice versa may facilitate diagnosis and management.

Keywords

Fibromyalgia, hypermobility, autism, neurodivergence, pain, dysautonomia, rheumatology, hypermobile Ehlers— Danlos syndrome (hEDS) Fibromyalgia (FM) is defined as widespread musculoskeletal pain and tenderness, in the absence of another explanation. Poor sleep, fatigue and pain are all associated with FM. Diagnostic criteria are well defined,¹ and the prevalence of FM appears to be steadily increasing, with patients presenting at progressively younger ages. Experience suggests that most patients are female, and FM accounts for a significant number of rheumatological referrals to secondary care.²

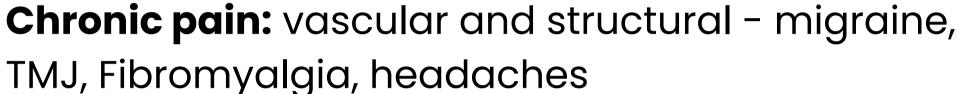
HSD & EDS related clinical conditions



Mood disorders: imaging shows larger fear processing centres in brain



Dysautomonias: including POTS/OI





Cardiovascular: tachycardia, mitral valve prolapse, poor circulation (of O2, nutrients etc)



Structural integrity: airways (sleep apnoea), barriers (gut, BBB), interstitial cystitis



Gut: IBS, refractory SIBO, histamine intolerance, swallowing/chewing/feeding difficulties, peristalsis (constipation)



Reproductive health: Survey in AFAB – fertility issues 43%, miscarriage 54.5%, heavy periods 50.6%, painful intercourse 74.2% ref (31)



Immune: MCAS, autoimmunity, allergies

HSD/EDS Nutrition considerations: where to start



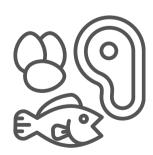
Increase blood volume:

Electrolytes, saltstick (chews)
Increase fluid but *not without* electrolytes



Reduce burden on digestive system - food draws blood flow to gut- away from head & other organs

- Smaller meals little and often
- Modified textures (if chewing/slow digestion an issue) - could be situational!
- Reduce inflammatory food burden
- Digestive enzymes + HCL



Mitigating blood sugar fluctuations

Eating higher protein and reducing intake of high-glycemic



Breathwork for dysautonomia:

i.e yoga nidra, pursed lip breathing, 7/11

Avoid hyperventilation-style breathing exercises

Personalisation: Testing

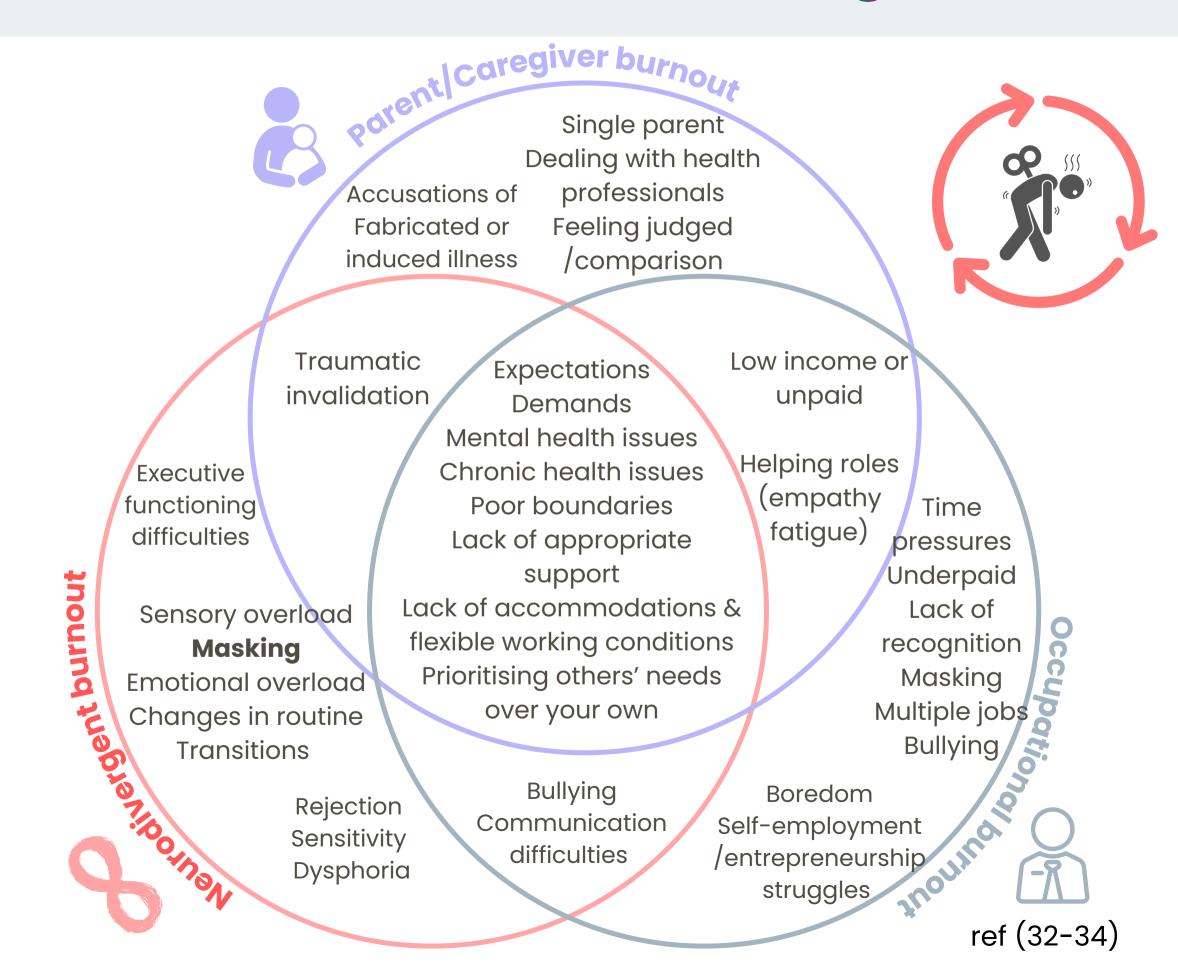
- NutrEval/ Metabolomix+ **
- GI Effects / SIBO breath test
- Endo+
- Methylation panel/ Genomics

Ensure optimal levels of:

- COQ10 & Vitamin C (collagen formation)
- Sulphurs
- Support with herbal adaptogens i.e.
 Astragalus, Ashwagandha, Albizia
- Gut integrity: glutamine, zinc carnosine, vitamin A, probiotics
- Physical therapist/Specialist Physio with a good understanding of hEDS

Follow: SEDS CONNECTIVE, Dr Jessica Eccles
EDS ECHO society

Neurodivergent burnout



Characterised by

- 1. Chronic pervasive exhaustion not alleviated by rest
- 2. Reduced tolerance / resilience
- 3. Loss of abilities (especially executive functions + masking)
- 4. Lack of joy in things you previously enjoyed
- 5. Increased sleep issues or unrefreshing sleep
- 6. Intrusive thoughts lower mood or preoccupations about suicide
- 7. Demand avoidance
- 8. Using food, susbtances or alcohol to cope or switch off
- 9. Exacerbation in pain, IBS/GI issues
- 10. Detachment and depersonalisation

Neurodivergent burnout & dysautnomia

Drivers of ND burnout

- Masking added layer of effort/stress
- Interoception difficulties missing body's cues for self care
- Hyperfocus/time blindness- impacts diurnal rhythm, sleep hygiene, forget to eat/self-care
- People pleasing unable to set boundaries or not knowing what they are
- Overscheduling tendency to overcommit, or overwork as unable to be still mentally or physically
- Internalised Ableism/expectations feeling like you "should" be able to what other people can including nutrition!
- Paradoxical traits: ADHD needs (i.e. seeking novelty) clashing with autistic (needing routine)
- Perfectionism: having a loud inner critic
- Sensory issues overload = exhausting ref (32-34)

Tests & indicators:

- Low HRV (vagal tone)
- Cortisol Awakening Response
- Adrenal Stress Index

Support considerations

- Pacing
- Reducing demands and
 expectations coaching/psych*
- Support vagal tone
- Outsourcing Exec Functions
- <u>Building interoceptive & emotional</u> awareness
- Adaptogens
- "Stress nutrients": C, B5, Fe, Mg, Zn
- Electrolytes and BS-stabilising diet

BALANCING DIET & LIFESTYLE MEDICINE WITH NEURODIVERGENT NEEDS



4

Mold Infections Biotoxins

3

Support elimination "Build up systems" i.e. immune, structural

2

Digestion + absorption Replete nutrients Sleep and nervous system

healing state -----

Psychological safety, vagal tone Sensory needs, interoceptive awareness Reduce burden (remove)

BALANCING DIET & LIFESTYLE MEDICINE WITH NEURODIVERGENT NEEDS



4

Mold Infections Biotoxins

3

Support elimination "Build up systems" i.e. immune, structural

2

Digestion + absorption Replete nutrients Sleep and nervous system

healing state --

Psychological safety, vagal tone Sensory needs, interoceptive awareness Reduce burden (remove)

- Diet & Lifestyle interventions vs Executive function difficulties & insufficient spoons
- Standard assessments vs perceptual + interoceptive differences

(consider alexithymia, aphantasia etc)

- Testing (often not validated on ND individuals) vs Interpretation in ND-context
- Power imbalances: clinician as gatekeeper of tests, knowledge, meds etc vs patient autonomy (safety!)
- Removal of toxins, food groups vs safe/same foods (sensory + psychological safety), just eating enough

Other considerations

- Thought intrusions about test results (especially Lyme, CIRS, Mycotoxins)
- Expect slower changes
- Personalised + Fx Medicine must also include neurotype!

Building Interoceptive awareness

"understanding body language" including:



- Hunger signals how do you know you're hungry?
- Tiredness remember ADHD fatigue might not "look" like neurotypical tiredness.
- Discomfort/pain what signals or sensations do you experience?



Sensory safety

Under what conditions do you feel safe or give your body signals of safety?

- Food characteristics (safe foods) or food routines?
- Environment: for eating, resting, socialising etc <u>Noisli app (soundscapes)</u>
- Knowing your sensory profile, triggers, preferred input.
- People & community



Understanding and honouring your neurotype

- Psychoeducation & shared experiences
- Self advocacy & working w/ ND-affirming provider





Pacing systems & prioritising rest

- Reducing demands + expectations
- Pacing mental, emotional + physical activity
- Identifying values and pacing self-care accordingly
- Outsourcing Executive Functions: chatGPT &
 Goblin tools (break down tasks & ambiguous communication), support from other people
- Scripting difficult responses: saying "no", or asking for help
- Helps to create boundaries and prevent future burnout episodes

Self-regulation

- Regulating or grounding in your preferred way (stimming, videogaming, movement)
- Self havening EFT (Tapping)
- Breathwork
- Vagus nerve support i.e. Sensate
- Co-regulation with a person, pet or <u>Purrble</u>

Resources

Interoception resources

How We Feel app: low interoception/ Alexithymia My body sends a signal: interoceptive awareness (children)

<u>Level-up</u> alternative descriptors for symptoms

<u>Progressive Muscle Relaxation</u> Biofeedback

<u>Interoception curriculum</u> by Kelly Mahler

Workbooks - selfguided or practitioner guided

Neurodivergent nervous system workbooks -by Dr Neff (Neurodivergent insights)

Neurodivergent Friendly Book of DBT skills -Sonny Jane Wise (Lived Experience Educator)

Information about neurodivergent health

My blog for articles and advocacy on chronic illness, mental health and resources for ND-folk

Advocacy in healthcare

The Double Empathy Problem in Medicine - Claire-Eliza Sehinson and Dr Megan-Anna Neff.

<u>All Brains Belong -</u> Advocacy documents, layman explanations of ND complex health issues, community

PEACE Pathway Healthcare <u>Communication</u> passport & other editable resources (i.e. sensory profiling)

Further training for practitioners

RDs for Neurodiversity ND-affirming training for nutrition & helping professions

Therapeutic Nutrition Complex case management for fatigue-related illness

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