

Botanicals for cognitive and emotional health

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Hi – I'm Viv and here are the slides I delivered at Vitafoods 2024, Geneva, exploring the science behind the use of herbs for cognitive and emotional health.

This deck contains all of the information presented, some information on what claims could be made, and the full references for 40 articles.

Enjoy!

And do contact me if you have any questions or if you would like to have similar literature updates created.

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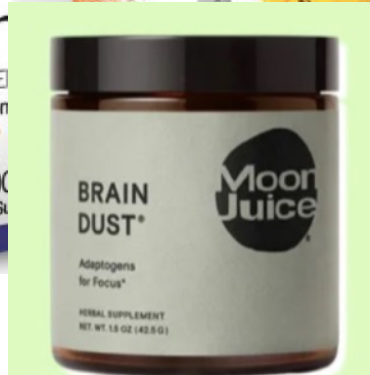
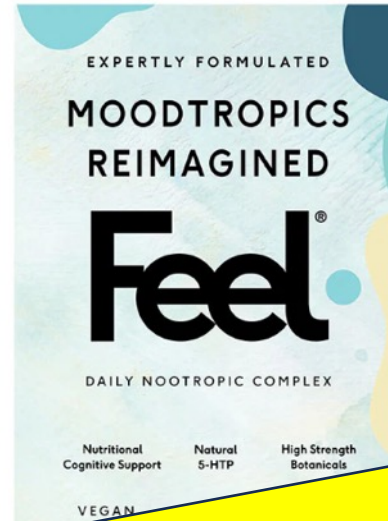
Brain health global challenges

- Globally, over 55 million people have **dementia** with 10 million new cases each year. With global aging, the problem will rise (the numbers of people over 60 years is set to double by 2050).
- **Cognitive impairment** affects around 20% of older people and significantly affects quality of life (not dementia).

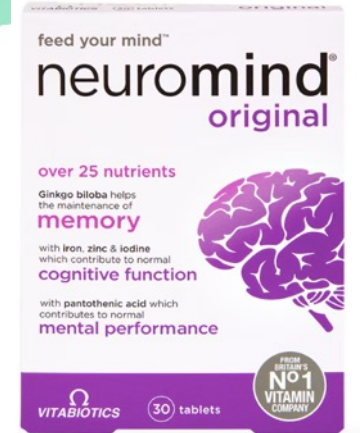
- Globally, 5% of adults suffer with **depression** (250 million) with rising numbers of antidepressant prescriptions.
- Mental health issues are rising in young people, with risk of self-harm and suicide.
- Mental ill-health is the highest cause of long-term workplace absence.



Nootropic Brain Boost



Fantastic products but
confusing for consumers



low mood



sleep

Many innovation choices
for manufacturers



thinking



Caffeine

GABA

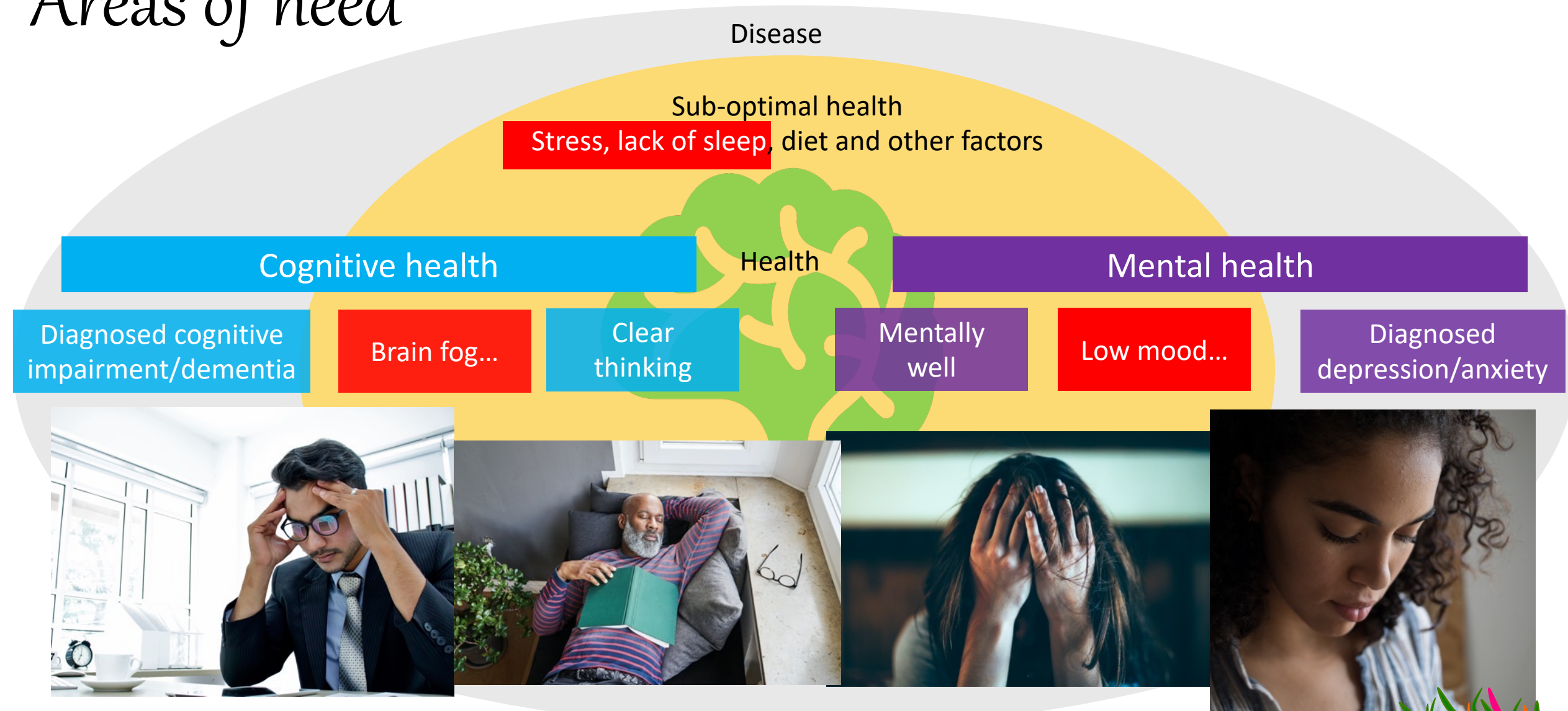
adaptogen

stress

Vitamin B12

nootropic

Areas of need





Botanicals to support cognitive health



Brahmi
Bacopa monnieri



Lion's mane
Hericium erinaceus



Ashwagandha
Withania somnifera



Mint
Mentha Piperita

Ayurvedic and herbal approach

Enhance the mind, brahmi, gotu kola, ashwagandha, nutmeg, sage, rosemary

Human studies (well researched)

Systematic reviews

- **Ashwagandha** 5 RCT, up to 1000mg 12 weeks, improved cognitive function in healthy and impaired groups (Ng 2020)
- **Brahmi** 9 RCT, up to 600mg 24 weeks, improved cognitive function in healthy and impaired groups (Kongkeaw 2014)
- **Guarana** 8 RCT, up to 500mg, small improvement in cognitive function (Hack 2023)
- **Ginkgo extract** 9 RCT, improved cognitive function (Hort 2023)
- **Saffron** 46 RCT, saffron on par with cognition, depression and anxiety drugs (Han 2024)
- **Turmeric** 6 RCT, improved cognition (Zhu 2019)

Randomised controlled trials (RCT)

- **Lions mane** improved cognition and perceptions of happiness (La Monica 2023)
- **Cordyceps sinensis and Ganoderma lucidum (Reishi)** no effect on cognition (Tsuk 2017)
- **Panax Ginseng and Ginkgo** improved memory and cognitive functions (Kennedy 2001)
- **Peppermint oil** improved some cognitive tasks and reduced mental fatigue (Kennedy 2018)
- **Rosemary** water RCT, 250mls in healthy adults, improved cerebrovascular effects during a cognitive task (Moss 2018)



Botanicals for mental health - mood



Ginkgo biloba



Echinacea angustifolia



Rosemary
Salvia rosmarinus



Turmeric
Curcuma longa

Ayurvedic and herbal approach

Awaken mind, clear stagnation, regulate liver, turmeric, ginger, gotu kola, brahmi, gotu kola, tulsi, ashwagandha

Human studies (well researched)

Systematic reviews

- **Ginkgo** 21 RCT, up to 8 weeks, reduced symptoms of depressions (multiple tests) (Lin 2024)
- **Gotu kola** 6 RCT, improved mood scores but not cognition (Puttarak 2017)
- Turmeric 10 RCT, reduced depression symptoms (Wang 2021)

Randomised controlled trials

- **Rosemary** 500mg rosemary for 4 weeks, reduced anxiety and depression, and improved sleep quality (Nematollahi 2018)
- **Echinacea angustifolia** extract up to 40mg, improved mood and emotional wellbeing scores but not anxiety (Lopresti 2021)
- **Rhodiola** patients with mild anxiety, 400 mg Rhodiola rosea tablet (Vitano®) for 14 days, improved self-reported, anxiety, stress, anger, depression and mood (Cropley 2015)
- Need a rosemary systematic review!



Relieving stress - anxiolytic



Ayurvedic and herbal approach

Calm nervous system, calm vata, tagarah (Indian Valerian), brahmi, gotu kola, licorice, almonds

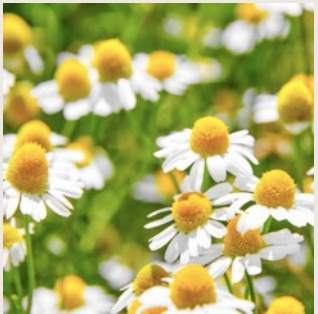
Human studies (**well researched**)

Systematic review

- **Lavender** 38 RCT , people with anxiety disorder, reduced anxiety and blood pressure, inhalation most effective route (Kim 2021)
- **Ashwagandha** 12 RCT, reduced stress and anxiety (Akhgarjand 2022)
- **Chamomile** 12 RCT, insomnia and anxiety patients, up to 2000mg for 26 weeks, improved sleep and improved Generalised Anxiety Disorder score but not anxiety as a symptom (Hieu 2019)

Randomised controlled trial

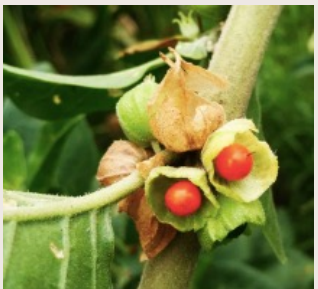
- **Tulsi** 1200mg tulsi extract daily for 6 weeks, reduced forgetfulness, sleep problems, exhaustion, and reduced total stress symptom score (Saxena 2012)



Chamomile
German and common



Tulsi
Ocimum tenuiflorum



Ashwagandha
Withania somnifera



Lavender
Lavandula angustifolia

Supporting sleep



Chamomile
German and common



Valerian
Valeriana officinalis



Crocus/saffron
Crocus sativus



Lavender
Lavandula angustifolia

Ayurvedic and herbal approach

Calm nervous system, tagarah (Indian valerian), nutmeg, ashwagandha, brahmi, gotu kola, passion flower, valerian, lime flower, oat flowering tops, hops

Human studies (well researched)

Systematic reviews

- **Chamomile** 12 RCT, insomnia and anxiety patients, up to 2000mg for 26 weeks, improved sleep and Generalised Anxiety Disorder score but not anxiety symptoms (Hieu 2019)
- **Lavender** oil (Silexan) 515 participants, 80 mg, up to 10 weeks, improved sleep quality and reduced nocturnal waking (Guadagna 2020)
- **Ashwagandha** 5 RCT, up to 600mg for 12 weeks, healthy participants plus those with insomnia (Cheah 2021)
- **Saffron** 5 RCT, 28 mg extract daily up to 8 weeks, improved duration and quality of sleep (Sadat Rafiei 2023)
- **Valerian** 10 RCT up to 1600mg per day for 8 weeks, inconsistent results on sleep (Shinjyo 2020). (2024 RCT using standardized extract saw improvement in sleep Chandra 2024).

Relieving fatigue

- **Panax ginseng** (SR) 10 RCT, improvements in fatigue scores and heart rate recovery tests (Arring 2018)

Menopause health



Orange
Citrus sinensis



Maca
Lepidium meyenii



Crocus/saffron
Crocus sativus



Lavender
Lavandula angustifolia

Lemon balm improved quality of life in menopause women (Shirazi 2021 RCT)

Fennel improved some menopause symptoms but not mood (Lee 2021 SR)

Maca improved blood pressure and depression symptoms, but no hormonal or blood metabolic biomarker changes (Stojanovska 2015 RCT)

Both Lavender and bitter orange (1000mg for 8 weeks) improved depression in menopause women (Kamalifard 2017 RCT)

Saffron herbal tea reduced depression symptoms and improved happiness scores in post menopause women (Delam 2023 RCT)

Understanding microbiota and inflammation connections to the brain



Rosemary
Salvia rosmarinus



Turmeric
Curcuma longa



Brahmi
Bacopa monnieri

Brahmi, turmeric and rosemary-based supplement improved aspects of cognition (speed of processing) and modified microbiota species in older adults (Wrightman 2023)

Turmeric improved mood state and reduced systematic inflammation in adults (Uchio 2021)

Both of these effects could be linked to herbal polyphenol composition.

Herbs are essential for supporting brain health



- An array of plant and fungi materials support brain health and many are well researched.
- Products exploit the aromatic properties of herbs – chamomile and saffron tea, or lavender and rosemary oils.
- Clear benefit areas (consumer need areas) are – Cognition, mental health, stress-busting and sleep-inducing herbs.
- Opportunities are to support menopause, aging brain, mental health in young people, stress in the workplace.
- (Claims in the EU could utilise authorised health claims, on-hold botanical claims or use Traditional Herbal Registration).
- Research is exploring gut and metabolism-brain axes – also areas where herbs have a tremendous impact.

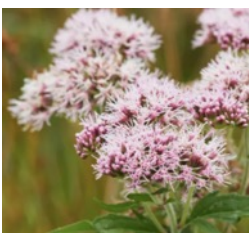


Making health claims

The next slide reviews the health claim possibilities in the EU / UK through using authorized health claims (many supplements contain B vitamins or iodine to produce a brain health claim).

There are on-hold botanical claims that are unauthorized, and with good science to back the herb, some manufacturers use these.

There is Traditional Herbal Registration (THR logo) which can be used on herbs that have longstanding traditional use in a specific country, which requires consistent high quality herbs, so often difficult to achieve.



EU claims landscape

Cognition

- EU Authorised health claims e.g. Iodine, Vitamin B6, Vitamin B12, Zinc
- No THR registered herbs (traditional use)
- On hold claims:
 - Nervous system support: Ashwagandha, Bacopa, Cardamom
 - Optimal mental and cognitive activity: Turmeric

Anxiety

- EU Authorised health claims e.g. Iodine, Vitamin B6, Vitamin B12, Vitamin C
- THR registered herbs: Stress relief: Passion flower, Rhodiola rosae roots, Lavender oil
- On hold: Nervous system support: Ashwagandha, Bacopa, Cardamom

Mood

- EU Authorised health claims e.g. Iodine, Vitamin B6, Vitamin B12, Thiamine, Niacin
- THR registered herbs:
 - Relief of low mood: St John's wort, Lemon balm, Lavender oil, Passion flower, Rhodiola rosea root
 - Menopause/premenstrual mood: Black cohosh, Agnus castus fruit
- On hold: Nervous system support: Ashwagandha, Bacopa, Cardamom

Sleep

- EU Authorised health claims e.g. Folate, Iron, Magnesium, Melatonin, Phosphorus, Thiamine, B12...
- THR registered herbs
 - For sleep: Valerian, Passionflower, Hops, Verbena root
 - For fatigue: Damiana leaf, cola seed, saw palmetto fruit
- On holds:
 - Sleep: Chamomile (Matricaria recutita), Lavender, Limeflower, Mint, Nettle, Shatavari, Tulsi, Valerian
 - Vitality/energy: Ceylon cinnamon, ginger, Korean ginseng, Passiflora, Yerba mate



Background statistics (slide 3)

Dementia. <https://www.who.int/news-room/fact-sheets/detail/dementia#:~:text=Key%20facts,nearly%2010%20million%20new%20cases.>

Cognitive impairment.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7709591/#:~:text=This%20systematic%20review%20reports%20that,53.97%20per%201000%20person%2Dyears.>

Workplace. <https://www.cipd.org/uk/about/press-releases/workplace-absences-highest-over-decade-new-report/>

Depression. <https://www.who.int/news-room/fact-sheets/detail/depression>

Rising antidepressant use. <https://www.statista.com/chart/28358/antidepressant-consumption-daily-doses-per-100-population/>

Young people's health. https://www.youngminds.org.uk/about-us/media-centre/mental-health-statistics/?gad_source=1&gclid=CjwKCAjw5v2wBhBrEiwAXDDoJTlrvxLfVHF6qyKx1Iqaa3nWRVJvJ3R5TDbkBG77s1Pm5wMzupAhWRoCU9MQAvD_BwE

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Thank you!

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