Psychology and Nutraceutical Support – Webinar 1

Insomnia and Anxiety

Presented by:

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and Cynthia Hunefeld ND. Dip Med Herb, Dip Clin Nut
FxMed - who we are?

• Functional and Integrative Medicine Ltd (FxMed), was established in 1999 and is a privately owned, Napier based company with staff nationwide.

• We aim to bridge the gap between allopathic medicine and nutraceutical medicine to create an integrative model of healthcare.

• FxMed source globally, cutting edge and research based nutraceutical products.

• We offer a range of functional tests to NZ and Australian based Practitioners.

• We would like to be your partner – providing clinical solutions, support and quality education.
FxMed – How we support practitioners?

Technical Support Team

• Supported by qualified Naturopaths, Herbalists, Nutritionists.

• Provide product information, resource sheets and help with any technical questions.

• Interpretation of functional test results.

Practitioner Consultant

• Practitioner consultants nationwide.

• Regular meetings and training sessions to practitioners on products and functional testing.
Brands we represent

THORNE RESEARCH
Pure Ingredients, Trusted Results, Worldwide™

pure encapsulations®

XYMOGEN®

Metabolic Maintenance

Researched Nutritionals®
solutions for life

NORDIC NATURALS®

gaia HERBS®

RLC LABS®

www.fxmed.co.nz
Why a Practitioner Brand For Supplements?

- **Quality** - Raw ingredients have to meet extremely high purity standards.

- **Correct dosage** of ingredient per capsule/tablet.

- **Label & Product** contains the correct herb – identification, testing of ingredients.

- **Active vitamins & minerals** – Increased bioavailability.

- Providing innovative, high-quality, research-based nutritional supplements.

- Labs fully comply to GMP, FDA, TGA regulations
Topics covered today

• Insomnia

• Anxiety
There are 3 types of insomnia

• **Transient insomnia** – which typically last for no longer than 1 week and is often triggered by a stressful event.

• **Short-term insomnia** – That can last up to 6 months.

• **Chronic insomnia** – Which lasts longer than 6 months.
Chronic sleep deprivation results in:

- Memory loss
- Insulin Resistance
- Increased Blood Sugar
- Elevated Cortisol
- Systemic Inflammation
- Disrupted Immunity
- Impaired Thyroid Hormone Profile
- Increased Blood Pressure
- Elevated Lipids
- Elevated Homocysteine
Neurotransmitters involved sleep

- Histamine
- Dopamine
- Norepinephrine
- Serotonin
- Glutamate
- Orexin
- Acetylcholine
Serotonin

- Neurotransmitter involved in several important functions in the body such as; emotions, moods, memory, appetite and thermoregulation.
- An important neurotransmitter in regulating sleep and waking.
- Serotonin is involved in arousal and keeping the higher brain functions operating during waking.
- Serotonin deficiencies have been linked to depression, anger, OCD, sleep disturbances, irritable bowel syndrome and many other emotional and physical disturbances.
Magnesium
Magnesium

• Magnesium is a nutritional cofactor for neurotransmitter serotonin.
• A magnesium deficiency is very common.
• Farming methods; rapid growth of foods, chemical fertilizers, pesticides, fungicides are depleting our soil.
• Refining of food tends to reduce magnesium levels.
• The body uses magnesium for over 300 enzymatic reactions which makes it a pretty important mineral.
How does magnesium act on the nervous system?

• Magnesium has an effect on several neurobiological mechanisms.
• Major influence on our stress response as it directly influences the hypothalamic-pituitary asrenocortical (HPA) axis.
  – which is responsible for directing the release of stress hormones.
• Magnesium can assist by modulating the effects on both gamma-aminobutyric acid (GABA) and \( N \)-methyl-D-aspartate (NMDA) expression.
  – which can help the nervous system relax.
• Human studies show that this effect can be beneficial in promoting sleep and reducing symptoms of both anxiety and depression.
Signs & Symptoms
Magnesium Deficiency

- Insomnia
- Mental confusion
- Irritability, nervousness
- Muscle cramps, restless leg syndrome, eyelid twitching
- Headaches
- Premenstrual syndrome (PMS)
- Depression
- Increased sensitivity to stress
- Cardiovascular symptoms such as an increase in blood pressure, palpitations and irregular rhythm
Pure Encapsulations – Magnesium Liquid

- Contains highly bio available magnesium citrate.
- With added B6 (which works with mg in many enzyme systems) and also supports intracellular accumulation of magnesium.
- Great tasting liquid formula.
- 1 tsp = 215mg of magnesium citrate
Dosage:

• 1 teaspoon daily
• Sleep support - Take before bed

Interactions:

• Adverse effects from magnesium supplementation are rare, supplementation can cause loose stools.
Mg2+ reduces ACTH secretion and enhances spindle power without changing delta power during sleep in men - Possible therapeutic implications. H. Murck, A. Steiger

This study looked at the effect of Mg^{2+} on sleep electroencephalogram (EEG) and nocturnal hormonal secretion in men.

- Ten normal controls were given 3g of Magnesium Sulfate IV between 2030 hours and 2100 hours, followed by 0.5 g Magnesium Sulfate IV per hour until 0700 hours or placebo IV according to a randomized schedule.
- The sleep EEG was recorded from 2300 hours to 0700 hours.
- Blood samples were taken from 2000 hours to 0700 hours for analysis of:
  - plasma corticotropin (ACTH), cortisol, growth hormone, prolactin and melatonin.
- The sleep-EEG showed a significant increase in the third sleep cycle, but delta power was unchanged throughout the night.
- ACTH concentration was suppressed between 2200 hours and 0700 hours.
- No changes in cortisol, growth hormone prolactin or melatonin release were found.

The findings are consistent with the assumption that Mg^{2+} has GABA_A agonistic or NMDA antagonistic effects on sleep and nocturnal hormonal secretion and hence may be useful in controlling depressive symptoms and seizures.
Magnesium deficiency induces anxiety and HPA axis dysregulation: Modulation by therapeutic drug

- Since there is evidence that Mg\(^{2+}\) modulates the hypothalamic-pituitary-adrenal (HPA) axis, we tested whether enhanced anxiety-like behaviour can be reliably elicited by dietary Mg deficiency and whether Mg deficiency is associated with altered HPA axis function.
- Compared with controls, Mg deficient mice did indeed display enhanced anxiety-related behaviour in a battery of established anxiety tests.
- The enhanced anxiety-related behaviour of Mg\(^{2+}\) deficient mice was sensitive to chronic desipramine treatment in the hyponeophagia test and to acute diazepam treatment in the open arm exposure test.
- Mg\(^{2+}\) deficiency caused an increase in the transcription of the corticotropin releasing hormone in the paraventricular hypothalamic nucleus (PVN), and elevated ACTH plasma levels, pointing to an enhanced set-point of the HPA axis.
- Chronic treatment with desipramine reversed the identified abnormalities of the stress axis. Functional mapping of neuronal activity using c-Fos revealed hyper-excitability in the PVN of anxious Mg\(^{2+}\) deficient mice and its normalisation through diazepam treatment.
- Overall, the present findings demonstrate the robustness and validity of the Mg\(^{2+}\) deficiency model as a mouse model of enhanced anxiety, showing sensitivity to treatment with anxiolytics and antidepressants. It is further suggested that dysregulations in the HPA axis may contribute to the hyper-emotionality in response to dietary induced hypomagnesaemia.

Valerian

*(Valeriana officinalis)*

- A herb that can support in both reducing anxiety, depression and insomnia.
- Promotes the ability to initiate sleep and enhance sleep quality.
- Valerian stimulates neurotransmitters (that causes relaxation) to release, which acts in combination with valerian's regulatory effect on the nervous system to cause relaxation.
Valerian: Improved sleep without the Hangover
(Bone, K. 2001)

Comparison between short term and long term use of Valerian to promote sleep.

- Randomized, double-blind, placebo-controlled, cross-over study. Sixteen patients (4 male, 12 female) with previously established insomnia were included in the study.
- The main inclusion criteria were reported primary insomnia, which was confirmed by polysomnographic recording, and the absence of acute diseases.
- During the study, patients underwent 8 polysomnographic recordings: 2 recordings (baseline and study night) at each time point when the short- and long-term effects of placebo and valerian were tested. The target variable of the study was sleep efficiency.
- Other parameters describing objective and subjective parameters such as sleep quality, morning feeling, daytime performance, sleep latency (time to fall asleep) and sleep period time, were assessed.
- After a single dose of valerian, no effects on sleep structure and subjective sleep assessment were observed. After multiple-dose treatment, sleep efficiency showed a significant increase for both placebo and valerian in comparison with baseline polysomnography. However, there were significant differences between valerian and placebo for parameters describing slow-wave sleep (SWS).
- In comparison with the placebo, slow-wave sleep latency was reduced after administration of valerian (21.3 vs. 13.5 mm respectively, \( p < 0.05 \)). The SWS percentage of time in bed was increased after long-term valerian treatment in comparison to baseline (9.8 vs. 8.1% respectively, \( p < 0.05 \)). A remarkable finding of the study was the extremely low number of adverse events during the valerian treatment periods (3 vs. 18 in the placebo period). The authors concluded that treatment with a valerian extract demonstrated positive effects on the sleep structure and sleep perception of insomnia patients and can therefore be recommended for the treatment of patients with mild psychophysiological insomnia.
Passionflower
(*Passiflora incarnata*)

- A herb for anxiety support.
- Can assist in calming the mind.
- Reduces the body's fight or flight response.
- Indicated for general nervous agitation, including inability to sleep due to an overactive mind.
- Its mechanism of action works in harmony with the body and helps in the stimulation of GABA release.
- In higher dosages, it acts as a mild sedative to promote sleep without having side effects such as drowsiness in the morning.
Research – *Passionflower*

- 36 out-patients with a diagnosed anxiety disorder compared the use of Passionflower with a placebo and the use of 30mg of Oxazepam.
- The results showed that both the Passionflower and Oxazepam were effective in the treatment of anxiety.
- However the Oxazepam showed to impair the participants job performance significantly.
- On the other hand, Passionflower did not show any adverse affects and has the added benefit that when it is used in a sleep formula does not cause the feeling of a hangover in the morning.
Double-blind, placebo controlled investigation of the effects of Passiflora incarnata (Passion flower herbal tea on subjective sleep quality.
(Ngan A., Conduit R. 2011)

• This study featured a double-blind, placebo-controlled, repeated-measures design with a counterbalanced order of treatments (passionflower vs placebo tea), separated by a 1 week ‘washout’ period.
• Forty-one participants (18–35 years) were exposed to each treatment for a week, whereby they consumed a cup of the tea and filled out a sleep diary for 7 days, and completed Spielberger's state-trait anxiety inventory on the seventh morning.
• Ten participants also underwent overnight PSG on the last night of each treatment period. Of six sleep-diary measures analyzed, sleep quality showed a significantly better rating for passionflower compared with placebo ($t(40) = 2.70, p < 0.01$).
• These initial findings suggest that the consumption of a low dose of *Passiflora incarnata*, in the form of tea, yields short-term subjective sleep benefits for healthy adults with mild fluctuations in sleep quality.
Other herbs

**Lemon balm – Melissa officinalis**
- Main actions: Carminative, Spasmolytic and Mild Sedative.
- Indications: Insomnia, Anxiety, Irritability, Depression, Nervous dyspepsia.

**California poppy – Eschscholzia californica**
- Main action: Anxiolytic, Mild Sedative, Analgesic, Hypnotic
- Indications: Insomnia, Anxiety, Emotional Stress, Muscle tension, Pain.

**Lavender - Lavendula angustifolia**
- Main actions: Carminative, Spasmolytic, Antidepressant, Anxiolytic.
- Indications: Insomnia, Anxiety, Nervous Dyspepsia, Excitability.
Gaia Herbs – Sleep & Relax

Clinical Indications & Dosage

- Slows down an overactive mind
- Promotes a calm, relaxed mental state
- Promotes a healthy sleep cycle

**Dosage:** 2 to 3 capsules one to two hours before bed

Avoid in pregnancy or lactating
Promote “Sleep hygiene”

• Exercise – Morning or afternoon, avoid strenuous exercise 4 hours prior to bed.

• Avoid stimulants late in the day and in the evening; caffeine, alcohol, nicotine

• Establish a relaxing routine prior to bed.
  – Help to slow the body down
  – A hot bath
  – Relaxing body stretches or gentle yoga
  – Breathing exercises, mindfulness exercises
  – Remove all stimulating activities before bed such as electronic devices, no television, phones, ipads
  – Avoid large meals prior to bed
Anxiety happens when you think you have to figure out everything all at once. Breathe. You’re strong. You got this. Take it day by day.

Karen Salmansohn
Anxiety Disorders

• Excessive and persistent nervousness, fear, irritability and worrying and can coincide with insomnia.

• Many clients report a array of physical symptoms such as:
  – palpitations, fatigue, headaches, shortness of breath and muscle tension.

• Numerous causes of why someone is experiencing anxiety.
Clinical Experience

Patients presenting to clinic with symptoms of anxiety
• Have inconsistent dietary patterns
• Experienced the most severe symptoms in the late morning or afternoon when they felt hungry.

Why...
• The fall in blood sugar levels around these times can trigger a release in epinephrine and norepinephrine and result in a fight or flight response in people that are prone to anxiety.
• Eating healthy and regularly can help balance blood sugar levels and provide ongoing support to people with anxiety.
An amino acid derivative that acts as an inhibitory neurotransmitter, preventing or reducing certain nerve signals.

It controls nervous signals in the retina and the central nervous system, so insufficient GABA usually causes anxiety and even epileptic seizures.
L-Theanine
L-Theanine

• It has been shown to have a deeply relaxing effect, thereby reducing stress and anxiety without any sedating side-effects.

• Modifies key neurotransmitters involved in mood, attention and memory.

• Theanine appears to play a role in the formation of GABA – a neurotransmitter that acts like a “brake” during times of runaway distress.
• Under circumstances of prolonged acute or chronic stress;
  – the autonomic nervous system and the hypothalamic-pituitary-adrenal axis become chronically activated.

• The result is a cascading imbalance of neurotransmitters and stress hormones. The impact of this type of sustained imbalance can be;
  – mood disturbances, behaviour problems, anxiety symptoms, difficulty concentrating, and sleep disturbances.
**Relaxation Support**

- Clinical evidence shows an increase in alpha brain wave activity after theanine administration.

**Nervous System Support**

- It has also been shown to support healthy neurotransmitter function.
- Increases GABA (gamma-amino-butyric acid), and reduces restlessness, insomnia, and other disruptive conditions.
- Increases levels of dopamine and improves mental awareness.

**Premenstrual Support**

- In a clinical test, L-Theanine provided both mental and physical support for women, including moderation of occasional irritability and stress.
L-Theanine
Clinical Indications

• Anxiety
• Irritability
• Stress
• Premenstrual symptoms
Xymogen – L-Theanine
Dosage & Interactions

Dosage:
• 1-6 capsules daily, in divided doses, between meals.
• Maximum daily dose 1200mg per day.

Sleep
• 1-2 capsules before bed - helps promote relaxation.

Interactions:
• Pregnant women should avoid L-Theanine due to insufficient research on foetal development.
The oral intake of L-theanine caused a feeling of relaxation among the human volunteers examined. These observations led us to conduct experiments on the effects of the administration of L-theanine on brain waves.

- Eight female university students were selected as volunteers. Four of them were ranked as Grade I (the highest anxiety) and the remaining four as Grade V (lowest anxiety) in an investigation done by the manifest anxiety scale method.
- An oral administration of 200 mg of L-theanine dissolved in 100 mL of water resulted in the generation of alpha-electric waves in the occipital and parietal regions of the subjects brains. The emission intensity of alpha-brain waves (integrated as a function of investigation times and area) was significantly greater in the Grade I than that of Grade V.
- These results indicate the possibility for L-theanine to be applied to foods and beverages as a new functional food ingredient for its relaxation effect.

Studies – L-Theanine

• Neurological and Brain Support Human studies suggest that within 40 minutes of oral administration, L-theanine positively affected alpha waves in the brain, a phenomenon indicating relaxation.

• An eight-week, randomized, double-blind, placebo-controlled study, based on the premise that L-theanine “possesses neuroprotective, mood-enhancing, and relaxation properties,”

• A double-blind counterbalanced study suggested that oral L-theanine positively influenced heart rate and salivary IgA levels, attenuated sympathetic nervous system activation, and positively supported individuals’ normal response to stress.

• In examining L-theanine’s effect on cognition, a randomized, double-blind, placebo-controlled study of 91 subjects suggested that individuals taking a combination of L-theanine and green tea extract experienced significant increases in theta waves in several areas of the brain, indicative of increased cognitive alertness.
Ashwagandha
Ashwagandha – *Withania somnifera*

- Ashwagandha is a herb that is been used medicinally for a centuries.

- It has many actions, generally used as a synergistic extract instead of one active component, which is usually the case in prescription drugs with an added benefit that it has little to no side effects.

- It does work very effectively and the strength of its anxiolytic effects are comparable with drugs like Lorazepam.
Ashwagandha

• Referred to as “Indian ginseng” and in Ayurvedic medicine is used as an adaptogen, which increases one’s ability to cope with stress, while conserving energy.

• Ashwagandha enhances the body’s ability to deal with stress on a physical and psychological basis. It helps restore vitality in those suffering from overwork or nervous exhaustion.

• Ashwagandha plays a role in strengthening the immune system. It can be useful for individuals under chronic stress or illness, including cancer, improving both physical energy and mental outlook.

• In Sanskrit it is suggested that one who ingests Ashwagandha can attain the strength and vitality of a horse.
Ashwagandha and Nervous system

• Its mechanisms of actions on the nervous system are mainly due to the effect of withanolides on the GABAergic signaling pathways and (NMDA) expression which help the nervous system to relax without causing a feeling of drowsiness.

• This herb tends to modulate instead of significantly increasing or decreasing neurotransmitters.

• It has been observed to improve memory and reduce oxidative stress.
Ashwagandha and Anxiety

Stress and anxiety:

• “Clarifies the mind, calms and strengthens the nerves, and promotes sound restful sleep”.

• Ashwagandha has shown a definite anti-stress effect and is supportive to the adrenal glands. Research supports that Ashwagandha may balance cortisol levels in the body.

• Ashwagandha promotes an increase in the neurotransmitter (GABA) in the brain. GABA inhibits excitation in the brain, as too much excitation can lead to anxiety, restlessness, irritability, insomnia. The outcome is therefore relaxation and suppression of anxiety.
Clinical Indications - Ashwagandha

- Stress acute or chronic
- Anxiety
- Fatigue
- Debility, nervous exhaustion especially due to stress
- Cognitive and neurological disorders
- Used as a general tonic for disease prevention and for those under stress e.g.. Athletes, Soldiers, Abuse victims, Elderly
- Emaciation and anaemia, especially in Elderly and children
- Convalescence after acute illness or extreme stress
- Impotence due to reduction in vitality e.g. stress
- Chronic diseases especially those marked by inflammation e.g.. connective tissue diseases.
- May have some preventative action against cancer, especially the whole plant or the leaves.
Dosage:
- 1-3 capsule daily, with or between meals

Interactions:
- Mild depressant effect on the CNS so patients should avoid alcohol, barbiturates or other sedatives while being treated.
- Pregnant or Lactating women should avoid.

- A human study which included people with anxiety disorders
- Showed that taking 300mg of Withania extract twice per day together with counseling showed a 56% reduction in the symptoms of anxiety within the duration of 8 weeks.
- This was compared to a group of people who received only counseling and in comparison they only had a 30.5% reduction of their symptoms.
The present study investigated the anxiolytic and antidepressant actions of the bioactive glycowithanolides (WSG), isolated from WS roots, in rats. WSG (20 and 50 mg/kg) was administered orally once daily for 5 days and the results were compared by those elicited by the benzodiazepine lorazepam (0.5 mg/kg, i.p.) for anxiolytic studies, and by the tricyclic anti-depressant, imipramine (10 mg/kg, i.p.), for the antidepressant investigations. Both these standard drugs were administered once, 30 min prior to the tests. WSG induced an anxiolytic effect, comparable to that produced by lorazepam, in the elevated plus-maze, social interaction and feeding latency in an unfamiliar environment, tests. Further, both WSG and lorazepam, reduced rat brain levels of tribulin, an endocoid marker of clinical anxiety, when the levels were increased following administration of the anxiogenic agent, pentylenetetrazole. WSG also exhibited an antidepressant effect, comparable with that induced by imipramine, in the forced swim-induced 'behavioural despair' and 'learned helplessness' tests. The investigations support the use of WS as a mood stabilizer in clinical conditions of anxiety and depression in Ayurveda.
Successful treatment of OCD with a micronutrient formula following partial response to Cognitive Behavioral Therapy (CBT): A case study

Patient dx OCD an 18-year-old male with OCD who first underwent cognitive behavioral therapy (CBT) for a 1-year period with a modest response his OCD had shifted from severe to moderate.

Within a year, his anxiety had deteriorated back to the severe range and he now had major depression.

He then entered an ABAB design trial using a nutritional formula consisting mainly of minerals and vitamins (together, known as micronutrients).

After 8 weeks on the formula, his mood was stabilized, his anxiety reduced, and his obsessions were in remission.

The treatment was then discontinued for 8 weeks, during which time his obsessions and anxiety worsened and his mood dropped.

Reintroduction of the formula again improved the symptoms. This case illustrates the importance of considering the effect micronutrients have on mental illness.

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<th>Product</th>
<th>Size</th>
<th>Stress</th>
<th>Anxiety</th>
<th>Insomnia</th>
<th>Fatigue/Nervous Exhaustion</th>
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<th>Depression</th>
<th>Neurotransmitter Imbalance</th>
<th>Memory &amp; Concentration</th>
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- **Blue cells**: Highly Recommended
- **Gray cells**: Recommended
Summary

First address sleep
• Gaia Herbs - Sleep & Relax
• Pure Encapsulations - Magnesium
• Xymogen - L-Theanine

Reduce anxiety symptoms
• Xymogen - L-Theanine
• Pure Encapsulations - Ashwagandha

Refer to Product by condition chart for further information
Next webinar

• How we cope with that stress can make the difference in how it will affect us physically, mentally and emotionally.

• Research has shown that malnutrition plays a key role in how we deal with stress and the development of depression.

• Discover how high quality supplements can be of support to help keep the balance.
FAQS

END OF PRESENTATION