



Lecture 70:

Ergogenic Adaptogens

Part 1

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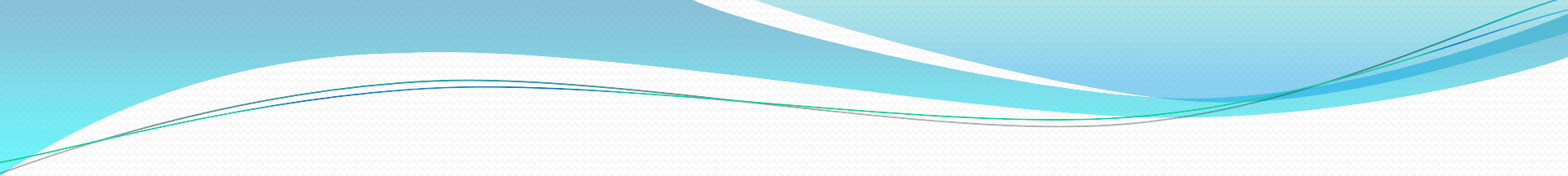
Adaptogens:

- An adaptogen is a substance or metabolic regulator that improves the body's ability to adapt to various nonspecific environmental stressors, such as heat, cold, exertion, time changes, trauma, sleep deprivation, toxic exposure, radiation, infection, fatigue, and emotional stress.
- Most adaptogens are herbs.



A substance or herb has to meet the following criteria to be labelled as an adaptogen:

- **1)** They should not cause any disturbances in normal physiological functions of the body.
- **2)** They should improve the body's resistance against environmental stressors.
- **3)** They should help normalize disordered physiological functions of the body.

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- **Adaptogens help the body cope easily with a wide variety of stresses, increase efficiency of natural healing system, and improve the body's natural resiliency and adaptability.**
 - **They could be used by both healthy and sick people.**
 - **They cannot cure or treat any diseases.**

- **Athletes benefit from adaptogens, as they face many stressors such as intense training, time changes, fatigue, and pre-competition anxiety.**
- **They help athletes speed up recovery, improve their general well-being, and support their bodies against stress.**



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- It has been suggested that adaptogens to be taken in “**cycle**”. That means you may take an adaptogen for a short period of time and then stop taking it for a while.
- This is called “***periodization of adaptogen***”, which is usually as **3 weeks continuous consumption followed by one week rest before resuming**.
- Since adaptogens are supposed to normalize physiological functions, long term consumption would least likely show extra benefits (over-normalization).

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- **Many herbs and even spices have been classified as adaptogens.**
 - **The most commonly used adaptogens by athletes will be discussed during this course.**

American Ginseng:

- Ginseng is regarded as the prototypic adaptogen, and American ginseng (**Panax quinquefolius**) is one of them.
- The plant *Panax quinquefolius* grows in the northern and central parts of the United States and some parts of Canada.
- Being very similar to Asian ginseng, American ginseng contains the **active ingredients ginsenosides**.



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Athletic Benefits of American Ginseng:

- **Improves athletic performance.**
- **Relieves mental and physical fatigue.**
- **Improves vitality.**
- **Helps athletes cope with stress easily.**
- **Helps speed recovery.**

Non – Athletic Benefits of American Ginseng:

American ginseng may be beneficial in the following conditions:

- **Chronic fatigue syndrome.**
- **Diabetes type II.**
- **Low function thyroid.**
- **Common cold.**
- **Low stamina.**

Dosage and Side Effects:

- **American ginseng can be used as dried powder in capsules or tablets, 2 – 3 grams a day, or tincture, 5 – 15 ml a day.**
- **American ginseng might cause agitation, headaches, sleeplessness, and stomach upset.**



American ginseng **should be avoided** in the following conditions:

- Along with blood – thinning medications such as warfarin.
- Impaired liver function.
- Renal failure.

Andin Ginseng:

- Its other name is “*Maca Root*” and it is a “*Testosterone Booster*” as well and we discussed it before.

Ashwagandha (Indian Ginseng):

- Ashwagandha is also known as Indian ginseng, ginseng of ayurvedic medicine, and winter cherry.
- It belongs to pepper family and its main active ingredients are **cuscohygrine, tropine, and withanolides especially withaferin A.**

Athletic Benefits of Ashwagandha:

- Improves stamina.
- Delays fatigue and exhaustion.
- Reduces risk of overtraining syndrome.
- Helps athletes recuperate faster from an intense exercise.
- Increases athletic endurance.

Non – Athletic Benefits of Ashwagandha:

- **Increases immune function.**
- **Helps cope with stressors easily.**
- **May enhance memory.**
- **May help reduce pain in osteoarthritis.**
- **Helps boost sexual drive.**
- **Useful in chronic fatigue syndrome.**

Dosage and Side Effects:

- **Ashwagandha is usually blended with other adaptogens.**
- **It is available in single formulation as well. Ashwagandha can be taken as dried root, 3 – 6 grams a day, capsules 1000 – 1500 mg a day, or tincture 5 – 10 ml a day.**
- **It may cause gastrointestinal upset in some consumers.**

Astragalus:

- It is widely used in Chinese medicine.
- Astragalus is a potent adaptogen with anti – viral, anti – inflammatory and immune – enhancing activities.



- It contains the active ingredients flavonoids, triterpene glycosides, polysaccharides, and amino acids.
- Astragalus has a mild diuretic property as well.





Astragalus Root.

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Athletic Benefits of Astragalus:

- **Boosts energy level.**
- **Supports against overtraining syndrome.**
- **Improves immune function in athletes suffering from chronic infections such as sinusitis, bronchitis, and frequent common cold.**

Non – Athletic Benefits of Astragalus:

- **Recurrent sore throat and common cold.**
- **Hepatitis.**
- **Chronic infections.**
- **Systemic lupus erythematosus (SLE)**
- **Chronic diarrhea.**
- **During radiation therapy**
- **After chemotherapy**
- **Indigestion.**
- **Chronic fatigue.**
- **Diabetes.**
- **High blood pressure.**

Contraindications of Astragalus:

Astragalus should be avoided in the following conditions:

- **Febrile conditions.** It may make the fever last longer or grow stronger.
- Along with **immunosuppressive medications.**
- **Along with lithium.** Astragalus may increase the risk of toxicity with lithium.

Dosage and Side Effects:

The recommended dosage is:

- **dried herb: 5 – 10 grams a day.**
- **capsules or tablets: 1000 – 1500 mg a day.**
- **tincture: 10 – 15 ml a day.**

Asian Ginseng (Panax Ginseng):

- **Very closely related to American ginseng.**
- **Also known as Korean ginseng and Chinese ginseng.**
- **The active ingredients in panax ginseng are ginsenosides, polysaccharides, panaxans, saponins, and vanillic acid.**
- **Panaxans are plant steroids that have blood sugar – lowering activities.**



Asian ginseng, also known as Korean ginseng and Chinese ginseng.
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Athletic Benefits of Asian Ginseng:

- May enhance athletic performance.
- Improves agility and reaction time.
- Speeds up recovery.
- Protects against overtraining syndrome.
- May improve aerobic capacity.
- Increases endurance.
- May help with idiopathic athletic diarrhea.

Non – Athletic Benefits of Asian Ginseng:

- **Erectile dysfunction.**
- **Male infertility.**
- **Diabetes.**
- **Chronic fatigue syndrome.**
- **Frequent common cold and sore throat.**
- **Infections.**
- **Menopause.**
- **Adrenal insufficiency.**
- **Lung cancer.**
- **Epilepsy.**
- **High LDL cholesterol.**

Dosage and Side Effects:

- Asian ginseng is taken as tablets or capsules **200 – 500 mg** a day or tincture 4 – 9 ml a day.
- The most common side effects of Asian ginseng are **insomnia and agitation**. They result from overstimulation especially if taken higher doses or combined with caffeine or guarana.
- Other possible side effects include anxiety, increased blood pressure, diarrhea, menstrual irregularities, headaches, stomach upset, and nose bleeding.



Asian ginseng should be avoided in the following conditions:

- **Pregnancy.**
- **Breast feeling period.**
- **History of breast cancer.**
- **Bipolar disorder.**
- **Pre – surgical period (it is recommended to stop taking Asian ginseng two weeks prior to surgery).**

Interactions:

Asian ginseng has interaction with the following medications and should be avoided taking together:

- **a)** Anti – hypertensive medications.
- **b)** Blood – thinners, such as warfarin.
- **c)** Immunosuppressive medications.
- **d)** Medications for ADHD (attention deficit hyperactivity disorder).
- **e)** Morphine.

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- **f)** Anti – diabetic medications and insulin.
 - **g)** MAOIs (monoamine oxidase inhibitors): a group of anti – depressant medications.
 - **h)** Caffeine.

Homework:

- 1) Describe the athletic benefits of Ashwagandha.
- 2) Describe the athletic benefits of Asian ginseng.



