Ayurveda - A Complement to Modern Dietetics

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Syracuse University
Objectives

• Describe the cosmic principles of Ayurveda as it relates to human physiology, food and dietary behaviors

• Compare and contrast Ayurvedic approaches to chronic disease with conventional medical approaches

• Summarize the potential applications of these principles to optimize digestion, detoxification thereby restoring balance or homeostasis
THE CHRONIC DISEASE EPIDEMIC
Factors Fueling the Epidemic of Chronic Disease

- Poverty
- Aging
- Nutrition & food supply
- Environmental toxicity
- Socio-economic; cultural beliefs, attitudes
- Genetic influences
- Lifestyle (Physical activity, Stress)
- Insurance

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SEEKING ALTERNATE PARADIGMS
Diseases/Conditions for Which CAM Is Most Frequently Used Among Children - 2007

- Back/Neck Pain: 6.7%
- Head or Chest Cold: 6.6%
- Anxiety/Stress: 4.8%
- Other Musculoskeletal: 4.2%
- ADHD: 2.5%
- Insomnia: 1.8%

10 Most Common Therapies Among Children - 2007

- Natural Products: 3.9%
- Chiropractic & Osteopathic: 2.8%
- Deep Breathing: 2.2%
- Yoga: 2.1%
- Homeopathic Treatment: 1.3%
- Traditional Healers: 1.1%
- Massage: 1.0%
- Meditation: 1.0%
- Diet-Based Therapies: 0.8%
- Progressive Relaxation: 0.5%

NIH Classification of CAM Therapies
National Center for Complementary and Alternate Medicine
INTEGRATIVE NUTRITION
Integrative Nutrition

Brings together the best of CAM and conventional nutrition practices

Recognizes the human capacity to heal

Acknowledges personal beliefs, socio-cultural factors along with genetics, environment

Accepts the patient’s participatory role in the healing process

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Ayurveda - A Complementary Medical Approach

• A personalized, person-centered approach to health and healing.

• Why is the knowledge of this ancient healing system important to health care professionals including dietitians?
Promotion & Development of Ayurveda

Ayurveda
Yoga & Naturopathy
Unani
Siddha
Homoeopathy

THE
AYURVEDIC
PHARMACOPOEIA
OF
INDIA

PART - II
VOLUME- I
First Edition
(FORMULATIONS)

GOVERNMENT OF INDIA
MINISTRY OF HEALTH AND FAMILY WELFARE
DEPARTMENT OF AYURVEDA, YOGA & NATUROPATHY, UNANI, SIDDHA
AND HOMOEOPATHY (AYUSH)
NEW DELHI

Traditional Knowledge Digital Library
Representative Database of 1200 Ayurvedic, Unani and Siddha Formulations

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All Indian Institute of Ayurveda

Indian Medicinal Plants Database

Search Database

About Database

The first version of this database correlates 7263 botanical names with around 1,00,000 vernacular names of plants entities in nine different languages. It also includes > 5000 plant images of medicinal plants and appropriately linked to the proper botanical names. Read more...

Search in Ayurveda

Search in Siddha

Search in Unani

Search in Homeopathy

Search in Folk

Search in Sowa-Rigpa

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Ayur-veda-Mother of Traditional Medicines

• Ancient, indigenous holistic system dating back to the 9th century B.C.
• Teachings were transmitted orally but eventually recorded in the Vedas in the form of hymns.
  - Rig Veda (67 medicinal plants)
  - Atharva Veda (293 medicinal plants)
Descriptions of Ayurveda

• **Samhitas** - Ayurveda texts of healing and longevity
  - Charaka Samhita (900 B.C)
  - Sushruta Samhita (600 B.C.)

• **Ashtanga Hridaya**: Eight divisions of medicine; dietetics an integral component

• **Indian Materia Medica**: Therapeutic formulations

• Utilizes various modalities- diet, yoga, herbal preparations to restore harmony or balance.
Consciousness — Purusha

- Consciousness or mindfulness of our internal and external environments
Mindful Research

Beyond Medications and Diet: Alternative Approaches to Lowering Blood Pressure: A Scientific Statement From the American Heart Association.

Health benefits of emptying the mind: rediscovering meditation.
Humans are Tied to Their Environments (Pancha-mahabhutas)

- **Solidity, stability**
  - “Prithvi”

- **Transformation**
  - “Agni”

- **Liquidity**
  - “Jala”

- **Movement**
  - “Vayu”

- **Ether (emotions and thoughts)**
  - “Akash”

- **Emotion**

**Earth (skeletal) Solid**

**Water (plasma, blood, urine, sweat, saliva, mucus)**

**Fire (metabolism, and thermogenesis)**

**Air (movement)**

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Attributes Within Pancha-mahabhutas

- Hot/cold
- Wet/dry
- Heavy/light
- Gross/subtle
- Dense/flowing
- Static/mobile
- Dull/sharp
- Soft/hard
- Smooth/rough
- Cloudy/clear
The five elements and the 20 attributes are categorized into three “doshas”- energy forces.
<table>
<thead>
<tr>
<th>Dosha- Selected Features</th>
<th>Vata Dosha (Space+ Air)</th>
<th>Pitta Dosha (Fire+ Water)</th>
<th>Kapha Dosha (Water+ Earth)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body frame</td>
<td>Thin</td>
<td>Medium</td>
<td>Broad</td>
</tr>
<tr>
<td>Weight gain</td>
<td>Resistant</td>
<td>Fluctuating</td>
<td>Tendency to gain weight</td>
</tr>
<tr>
<td>Food &amp; Beverage intake</td>
<td>Frequent, variable, irregular</td>
<td>Intense hunger</td>
<td>Low digestive capacity</td>
</tr>
<tr>
<td>Metabolic capacity</td>
<td>Irregular</td>
<td>Fast</td>
<td>Slow</td>
</tr>
<tr>
<td>Disease resistance &amp; healing</td>
<td>Poor</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>Cellular functions</td>
<td>Cell division, Signaling, Movement; Cognition</td>
<td>Metabolism, Energy balance, Immunity</td>
<td>Anabolism, Growth, Storage, Stability</td>
</tr>
<tr>
<td>Disease Predisposition</td>
<td>Arrhythmias, Developmental, Neurological</td>
<td>Ulcer, skin diseases, bleeding disorders</td>
<td>Obesity, Diabetes, cardiovascular</td>
</tr>
<tr>
<td>General Qualities</td>
<td>Cold, Dry, Clear, Quick</td>
<td>Hot, Moist, Sharp, Oily</td>
<td>Cold, Wet, Heavy, Soft, Dense, Oily, Slow</td>
</tr>
</tbody>
</table>

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The 3 Doshas produce 7 different body types (Prakritis) (Genotype): Vata, Pitta, Kapha, Vata-Kapha, Vata-Pitta, Pitta-Kapha and Vatta-Pitta-Kapha thus contributing to phenotypic diversity.

Prakriti imbalance results in Vikruti characterized by disease.

Doshic proportions are determined at conception and influenced by:
- Epigenetic determinants
- Parental health, age at time of conception
- Intra and extra-uterine environment
- Diet, stress, lifestyle, environmental pollutants, maternal gut microbiota are some additional factors

AyuSoft: Prakriti assessment tool
- www.ayusoft.cdac.in
Biochemical Individuality & Disease Susceptibility

- Pilot Gene studies reveal striking differences between Dosha types
  - at the level of biochemical parameters, expression of genes involved in disease development and efficiency of drug metabolism with Pitta types being fast metabolizers compared to other types.

- Disease Susceptibility
  - Kapha individuals particularly males to cardiovascular disease shown in ancient texts has been validated in small samples by the higher incidence of abnormal lipid profiles and serum uric acid levels, high levels of LDL, reduced pro-thrombin time and low expression of genes related to fibrinolysis.
  - Vatta-Pitta constitutional sub-type prone to Rheumatoid Arthritis
  - Pitta individuals had higher expression of genes related to higher hemoglobin levels- more prone to oxidative stress; 78 genes that were differentially expressed among the 3 groups were linked to chronic diseases of metabolic origin.
Ayurveda Genomics

Whole genome expression and biochemical correlates of extreme constitutional types defined in Ayurveda.

Prasher B, Negi S, Aggarwal S, Mandal AK, Sethi TP, Deshmukh SR, Purohit SG, Sengupta S, Khanna S, Mohammad F, Garg G, Brahmacari SK; Indian Genome Variation Consortium, Mukerji M.

Genomics and Molecular Medicine, Functional Genomics Unit, Institute of Genomics and Integrative Biology, CSIR, Delhi, India. bhavana.p@igib.res.in

Classification of human population based on HLA gene polymorphism and the concept of Prakriti in Ayurveda.

Bhushan P, Kalpana J, Arvind C.

Interdisciplinary School of Health Sciences, University of Pune, Pune, India. bhushan@unipune.ernet.in

Traditional Medicine to Modern Pharmacogenomics: Ayurveda Prakriti Type and CYP2C19 Gene Polymorphism Associated with the Metabolic Variability.

Ghadke Y, Joshi K, Patwardhan B.

Bioprospecting Laboratory, Interdisciplinary School of Health Sciences, University of Pune, India.
Objective: Association of Prakriti with CVD, inflammatory markers, and Insulin resistance using Prakriti assessment tool (AyuSoft)

Subjects: 300 males > 25 years of age with coronary artery disease; physical, biochemical measurements conducted.

Results:
- Dyslipidemia, HOMA-IR in Kapha Vata individuals
- Tc, LDL, TG, VLDL, inflammatory markers higher in Vata Kapha individuals
Mental states: Guna- Satvik, Rajasic, Tamasic

Charaka says “The mind, soul and the body form the three pillars, on which not only the human beings existence rests, but also that of the world”

Mukherjee P.K et al. J of Ethnopharmacology, 2012
Concept of Health in Ayurveda

“A healthy individual as one whose appetite and digestive capacity is optimal, whose **Doshas** are in balance, **Dhatus** and **Strotas** (principles and channels supporting tissues e.g. blood) and **Malas** (excretory products) are functioning normally and whose **Gunas** (mind), body and senses are in bliss”

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Concept of Disease in Ayurveda

Food as an environmental input

Poor GI health; im-balanced lifestyles
Inefficient intermediary metabolism and liver function

Stress; increased glucocorticoids & catecholamines

Deranged metabolism- "Agni"

"Ama"- Toxic accumulation
Decreased immunity (Ojokshaya)

Excess (Vriddhi)

Kshaya (Deficiency)

Disrupts physiology
Disease manifests

Aggravation, accumulation of Dosha imbalance; migration from GI system and localization in distant organ systems e.g. arthritis in joints

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Physiological Determinants of Disease

Agni-Digestive capacity

Ama-Metabolic Wastes

Digestion of Ama before Panchakarma therapies can be done

Body type +
Aging, Gut health, Food-Quality
Quantity, Timing, Food Components

Strength and Activity

Immature or incomplete digestion by-products
Timing of meals
Premature consumption of water and food
**Inflammation - A Common Thread**

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*Cancer, inflammation, and insights from ayurveda.*

Sumantran VN, Tilly G.
Department of Biotechnology, Indian Institute of Technology Madras, Chennai 600 036, India.

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*A transcriptional signature and common gene networks link cancer with lipid metabolism and diverse human diseases.*

Department of Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Boston, MA 02115, USA.

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*Variations in DNA elucidate molecular networks that cause disease.*

Rosetta Inpharmatics, LLC, Merck & Co., Inc., 401 Terry Avenue North, Seattle, Washington 98109, USA.

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**Ancient Concept of Diabetes (Progression of Madhumeha)**

- Excess intake of dairy, sugar, fresh grains; lack of exercise; psychological stress; Kapha
- Low “Agni” (digestive – metabolic processes; low “Ojas” - maintains immunity & vitality)
- Accumulation, aggravation, migration & localization of “Ama” (toxins & metabolic products; Pitta)
- Hyperglycemia/hypoinsulinemia

**Modern Concept of Diabetes**

- Genetic Predisposition due to defects in sperm or ovum; negative intra-uterine environment
- High calorie, unhealthy diet & lifestyle; disturbed macronutrient metabolism; obesity, glycosuria; proteinuria
- Inflammatory, hepatic, gallbladder complications; Free radical insult
- Metabolic disturbances with loss of immunity; progresses into insulin dependent disease; Metabolic syndrome
- Macro and micro-vascular complications

**Epigenetic changes can accentuate underlying genetic predispositions**

**Type 1 Diabetes**

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## Modern and Ayurvedic Concepts of Cancer

<table>
<thead>
<tr>
<th>Medicines’ earlier concepts of cancer</th>
<th>Ayurvedic concepts of cancer</th>
<th>Evidence supporting ayurvedic concepts of cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer results from sequential genetic events which lead to uncontrolled cell growth and resistance to cell death.</td>
<td>Cancer results when abnormal interactions between Prakriti (genotype) and environmental factors vitiate the Doshas and impair immunity.</td>
<td>Abnormalities besides aberrant cell growth and cell death cause cancer. Epigenetic regulation, diet, environmental factors, and immunity affect phenotypes.</td>
</tr>
<tr>
<td>Most cancers arise due to sporadic mutations in specific tissues, and spread to other organs.</td>
<td>Interaction between vitiated Doshas and weak tissues (Dhatu) manifests as cancers of specific organs.</td>
<td>Shared molecular pathology between cancer and metabolic syndrome.</td>
</tr>
<tr>
<td>High-fiber diets associated with lower risk of heart disease and cancer. Inflammation process was not linked to cancer.</td>
<td>Links between improper diet, digestion, metabolism, inflammation, and disease. “Ama” maybe a novel biomarker for early inflammation.</td>
<td>Chronic inflammation actively promotes all stages of carcinogenesis.</td>
</tr>
<tr>
<td>Chemotherapy or radiotherapy are not selective for cancer tissue. These therapies also destroy normal tissue and have severe side effects.</td>
<td>Therapies indirectly target cancer tissue by eliminating vitiated Doshas, rejuvenating Dhatu, and restoring immunity.</td>
<td>Anti-inflammatory and antidiabetic drugs indirectly destroy cancer tissue. Immunotherapy. Cancer vaccines.</td>
</tr>
</tbody>
</table>
Treatments - How does Ayurveda differ from Conventional Medicine

Similarities

-Surgery with treatment with plant based drugs
-Targets inflammatory molecules e.g. NF K B

Differences

-Whole plant extracts
-Preparations prescribed with accompaniments e.g. ginger or cumin water, tulsi extracts
-Takes into account behavioral, physiological, psychological effects of drugs
Ayurveda- Lifestyle Interventions

Meditation
Mindfulness
Breathing exercises
Yoga asanas

What is eaten Guru or Laghu
How much is eaten
When food is eaten
Source of food
Preparation methods

Daily regimens
Seasonal regimens
Rasayana - Herbal mixtures
Panchakarma: Purification therapies

Herbal Formulations for infectious and chronic diseases


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INTEGRATION OF DIET- "AHAAR"
Food as Medicine in Ayurveda

- As a primary mode of treatment
- Physiological conditions e.g. lactation
- Specific disease conditions
- Precursor for specific treatments e.g. Panchakarma
- Preparation of Rasayanas
- Adjuvant to other treatments

AHAAR
“What to eat”; “How much to eat”
“When to eat”

• Food quality, quantity, kind, source, season and taste. Freshness and seasonality are important.

• “One third of the stomach should be filled with solid food; one third with liquid and one third should be left empty for proper movement of Doshas in the digestive processes”.

• The Dosha qualities of foods can be used therapeutically to restore physical and mental balance. e.g. Bitter, astringent foods can reduce Pitta Dosha; plant based diets contribute to a Sattvik mind.

• Food preparation, consumption according to gender and life-cycle needs are emphasized. e.g. Rasayanas (herb mixtures) in early life can mitigate genetic predispositions, restore health and boost immunity.

• Food avoidance is a reduction in quantity and frequency not abstinence.

• Emphasis on daily judicious use of spices and herbs that are proven sources of phytochemicals and antioxidants. Synergistic food and herbal combinations using various plant components are used for their broad range of therapeutic properties.

• Meal time is important. e.g. A large, healthy mid-day meal when pitta (digestive capacity) is greatest with a lighter breakfast and evening meal.

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### Taste to Balance Dosha

Foods tastes that support one’s Prakriti are favored and those foods that will undermine it are avoided.

<table>
<thead>
<tr>
<th>Taste</th>
<th>Vata</th>
<th>Pitta</th>
<th>Kapha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sweet</strong>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar, Milk, Butter, Rice, Bread</td>
<td>↓</td>
<td>↓</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Sour</strong>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yogurt, Lemon, Cheese</td>
<td>↓</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Salty</strong>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salt</td>
<td>↓</td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Pungent</strong>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spices, Pepper, Ginger</td>
<td>↑</td>
<td>↑</td>
<td>↓</td>
</tr>
<tr>
<td><strong>Bitter</strong>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spinach, Other greens</td>
<td>↑</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td><strong>Astringent</strong>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beans, Walnuts</td>
<td>↑</td>
<td>↓</td>
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</tr>
</tbody>
</table>

E.g. Sweets decrease or pacify Pitta while salty foods increase Pitta. If Pitta Dosha is aggravated then increase sweet while decreasing salty foods.

## Major Food Qualities and Prakriti

<table>
<thead>
<tr>
<th>Food Quality</th>
<th>Vata</th>
<th>Pitta</th>
<th>Kapha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dry</strong>- beans, potatoes, barley, corn</td>
<td>↑</td>
<td>↑</td>
<td>↓</td>
</tr>
<tr>
<td><strong>Cold</strong>- beverages; raw foods</td>
<td>↑</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td><strong>Light</strong>- corn, spinach, millet, barley etc.</td>
<td>↑</td>
<td>↑</td>
<td>↓</td>
</tr>
<tr>
<td><strong>Heavy</strong>- table sugar</td>
<td>↓</td>
<td>↓</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Oily</strong>- Dairy, meat, fatty foods</td>
<td>↓</td>
<td>↓</td>
<td>↑</td>
</tr>
<tr>
<td><strong>Hot</strong>- Beverages, warm cooked foods</td>
<td>↓</td>
<td>↑</td>
<td>↓</td>
</tr>
</tbody>
</table>
Pancha-karmas

Vamana - Emesis
Virechana - Purgation
Vasti - Enemas
Asthapana - Medicated enemas
Nasya - nasal medication
Rakta Moksha - Blood letting
Rasa-yanas for Rejuvenation
## Identification

**Botanical name:** *Eclipta alba* Hassk. = *Eclipta prostrata* (L.) L. (Asteraceae)

**Habit:** Herb

**Sanskrit name:** Kēśaranjana, Markava

**Vernacular names:** Bhangra (Hindi), Garuga (Kannada), Kayyōnī (Malayalam), Kasalankanni (Tamil), Guntagalagaraku (Telugu)

**Part used:** Whole plant, preferably fresh

## Chemical composition

- Coumestan derivatives, wedelolactone and diethylwedelolactone, ecliptal, eclabosaponins, sterols and triterpenoids, flavonoids, alkaloids and polypeptides

## Properties

- **Bhavaprakāśa Nighantu, Gudūchyādi varga, 240**

  - **Taste (Rasa):** Bitter (Tikta) and pungent (Katu)
  - **Property (Guṇa):** Light (Lağhu) and dry (Rūksha)
  - **Potency (Veerya):** Hot (Ushna)
  - **Post digestive effect (Vipāka):** Pungent (Katu)
  - **Actions (Karma):** Alleviates vitiated Kapha and Vata doshas (Kapha-Vatahara)
Significant Rejuvenative Action (Rasāyana Karma)

Cures dyspnoea and cough (Śvāsa-Kāsa)

Cures eye disorders (Nētrarōga)

Promotes immunity and strength (Balya)

Cures skin disorders (Kushta)

Cures anemia and liver disorders (Pāndu - Kāmala)

Promotes hair growth (Kēśya)

Relieves toxins (Āma)

Cures worm infestation (Krimi)

Traditional Formulations
Bhrngarājādya Taila, Nilībhriṅgādi Taila, Markava Rasāyana
### Promotive and Curative Recipes

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Promotes hair growth (Kēsyā)</td>
<td>2</td>
<td>Rejuvenative, immune booster (Balya)</td>
</tr>
<tr>
<td></td>
<td>Bhringarāja oil: Prepare hair oil with 1 part of Bhringarāja paste, 4 parts of coconut or gingelly oil and 16 parts of milk. Use this oil to massage your scalp 2-3 times in a week before bath. It prevents excessive hair fall and premature graying; also promotes hair growth. (Çaraka Samhitā, Chikitsā Sthāna, 26/267)</td>
<td></td>
<td>Bhringarāja Kalka (paste): Take 5 g of Bhringarāja paste with equal quantities of powder of black sesame, Amla (Phyllanthus emblica) and sugar. Consume it once daily after meals for 30-40 days. This acts as rejuvenator. It aids in worm infestation (Krimiṛōga) and enhances immunity and skin health (Bhāvaprakāśa Samhitā, Madhyama Khanda, 8/73)</td>
</tr>
</tbody>
</table>

For scientific evidence, refer: www.iaim.edu.in/rasayana.html

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I-AIM

Institute of Ayurveda and Integrative Medicine (I-AIM), Bangalore

Website: www.iaim.edu.in
Common Ingredients in Rasayanas

Triphala are Amalaki (Indian Gooseberry), Haritaki (Indian Gallnut or Terminalia chebula), and Bibhitaki (Beleric Myrobalan or Terminalia bellerica)

Neem leaves

Amala-Gooseberry

Pippali (Piper longum)

Ashwagandha
Prakriti
Assessment Pulse
Diagnosis; and personalized assessments

Monitoring & Evaluation - To promote longevity, digestive wellness, delay ageing, guard against free radical insult

Diagnosis Dosha imbalance; classification of disease as curable, controllable, difficult to manage

Intervention - Personalized aimed at restoring balance; strategies to support Prakriti: Diet and Lifestyle

Panchakarma-cleansing therapies followed by Rasayana therapies (rejuvenation recipes, dietary regimens & health promoting behaviors)

Genetic predispositions; intra and extra uterine environment; dietary and lifestyle patterns; psychological stress factors


Personalized; meditation, seasonal & daily routines emphasized; Reduction of Doshas, Detoxification

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Case Study

- CJ- female 56 years old presented with T2DM, obesity, high BP, elevated cholesterol and sleep apnea. She does not regularly test her blood sugar skips meals, but attempts to adhere to a healthy diet including cereal for breakfast and lean protein with salads for main meals. She does crave sugary foods and consumes candy and ice cream much at night. She is attempting to change her diet to a more plant based one and is interested in learning to cook with herbs and spices. She suffers from mood swings, fatigue in the morning and late in the day. She has a high pressure teaching and administrative job that involves frequent travel. She tries to go for a walk but is unsuccessful most days but she does meditate for 15 minutes everyday.
  - BP is 160/140; wt 190 lbs BMI 34.7 and WHR 0.89
Ayurvedic Diagnosis

- Diagnosis done using Ayusoft software
  - Kapha-Vata with subtle Pitta
- Kapha dosha predominance (body stature and disease presence) with Vata sub-type (fatigue); Pitta- work habits, stress
- Dietary and Lifestyle management strategies
  - Food as primary and adjuvant mode of therapy
    - What she eats: Avoid the sugary and fat components of the diet that are heavy (Guru); cold (ice-cream) –all provoke improper digestion (Agni) and Kapha and Medha (adipose) tissue. Balance the Kapha with pungent, bitter, astringent foods; Vata with sweet, sour and salty foods: Pitta will automatically be controlled; Include grains such as barley, whole wheat rich in B-glucan, fruits such as amla or gooseberry and encourage regular use of turmeric, cinnamon, cumin, coriander, fenugreek, ginger and garlic; regular use of bittergourd, green leafy vegetables and judicious use of legumes and different types of whole grains. Decrease consumption of processed and red meats and encourage lean meat consumption. Eating fresh food that is warm will help to ease Kapha and normalize Vata. Herbal beverages consisting of sour fruits such as gooseberries with modest amount of salt.
A Menu for Kapha- Vata type

• Breakfast:
  – Fresh strawberries Puffed millet cereal in warm apple juice with a dash of cinnamon
  – 1 cup warm spiced soy milk
• Lunch:
  – Steamed brussel sprouts, leafy green and daikon with basil dressing a buckwheat grain dish
• Tea:
  – Chamomile tea or carrot celery juice with ginger
• Dinner:
  – Barley and mung bean khichidi; udon noodles with pesto; fresh radicchio leaves with fennel bulb and raspberry gel pie

Ayurveda –A life of balance by Maya Tiwari; Healing Arts Press Rochester, Vermont, 1995

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Prameha in Ayurveda: correlation with obesity, metabolic syndrome, and diabetes mellitus. Part 2--management of Prameha.

Sharma H, Chandola HM.
Center for Integrative Medicine and Department of Pathology, College of Medicine, The Ohio State University, Columbus, OH 43221, USA. sharma2@osu.edu


Hypoglycemic effect of bitter melon compared with metformin in newly diagnosed type 2 diabetes patients.

Department of Pharmacy Practice, Faculty of Pharmaceutical Sciences, Naresuan University, Muang, Phitsanulok 65000, Thailand. anjanaf@nu.ac.th

Abstract

ETHNOPHARMACOLOGICAL RELEVANCE: Bitter melon (Momordica charantia L.) has been widely used as an traditional medicine treatment for diabetic patients in Asia. In vitro and animal studies suggested its hypoglycemic activity, but limited human studies are available to support its use.

AIM OF STUDY: This study was conducted to assess the efficacy and safety of three doses of bitter melon compared with metformin.
Antioxidant

Preventive
SOD, Cat

Free radicals

Suppress radical formation

Ashwagandha-Withania somnifera
Amalaki-Emblica officinalis
Astrak-Zingiber officinalis
Katuka-Picrorhiza koreoa
Guduchi-Tinospora cordifolia
Tulsi-Ocimum sanctum

Radical scavenging

Vitamin C, Vitamin E, Carotenoids Phytonutrients

Target molecules: Lipids, sugars, proteins, DNA etc.

Break chain propagation

Aryan-Terminalia arjuna
Amalaki-Emblica officinalis
Jyotishmati-Lashuna-Allston sativum
Shatavari-Asparagus racemosus

Chain oxidation

Reconstitute membranes

Ashwagandha-Withania somnifera
Amalaki-Emblica officinalis
Astrak-Zingiber officinalis
Guduchi-Tinospora cordifolia
Tulsi-Ocimum sanctum
Lashuna-Allston sativum

Repair & de novo

Glutathione peroxidase, DNA repair enzymes

Damage

Repair damage

Disease, cancer, aging

Tulsi-Ocimum sanctum

Level of Antioxidant Action

Non-enzymatic, enzymatic and ancillary enzymes & Defense systems in vivo against oxidative damage
Case Study (Contd.)

• **Diet**
  – How much and when she eats: Small, frequent meals, consisting of warm light foods (*Laghu*) that will improve digestive “*Agni*” and also provide psycho-physiological satiety. Pay attention to adequate hydration levels.

• **Lifestyle Interventions**
  – Encourage her to continue meditation; teach her breathing exercises (*Pranayama*)
  – Herbal mixtures prescribed by reputed Ayurvedic Vaidya may provide adjuvant benefits
  – Panchakarma therapies followed by Rasayana therapies
Key Take-Away

• Ayurveda provides holistic, dietetic and life-style recommendations that emphasize a plant based diet and the use of food as medicine that can be integrated into the Nutrition Care Process.

• Dietitians can learn more about it through Integrated Nutrition programs available through the DIFM practice group of the Academy of Nutrition and Dietetics.

• Research examining the integrative role of nutrition in a milieu wherein molecular, gene, metabolic and behavior responses interact to maintain balance is warranted.

• Ayurveda’s disease etiology correlates in many ways with that of modern medicine and dietetics. Ayurveda’s therapeutic strategies may provide an affordable, complementary approach in integrative medicine and enhance culturally competent healthcare.
Selected References


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Recommended Books
THANK YOU!
QUESTIONS???