



# Ayurvedic Ingredients for Healthier Foods



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**Seminar on**

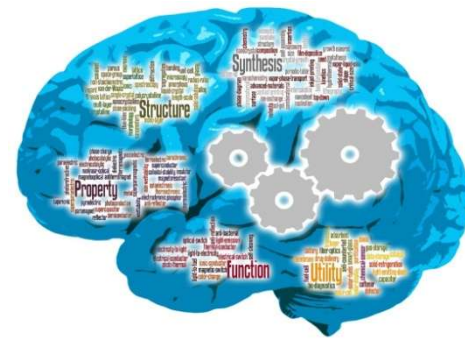
**"Exploring Wholesome Ingredients for Holistic Health"**

**On Friday 18th October 2019**

**At Hotel Kohinoor Continental, Andheri (E), Mumbai.**

**Organized by PFNDAI**

# Ayurveda's Vision for Resourcing Remedial Substance



*Nanaushadhi bhutam Jagati Kinchit dravyam Upalabhyate I  
Tam Tam Yuktam Artham Cha Tam Tam Abhipretya II  
(Charak Su. 26-12)*

“There is no substance in the world which cannot serve as a remedy through comprehensive understanding and intelligent application”.

*Sarvam dravyam panchabhautikam asminnarthe*



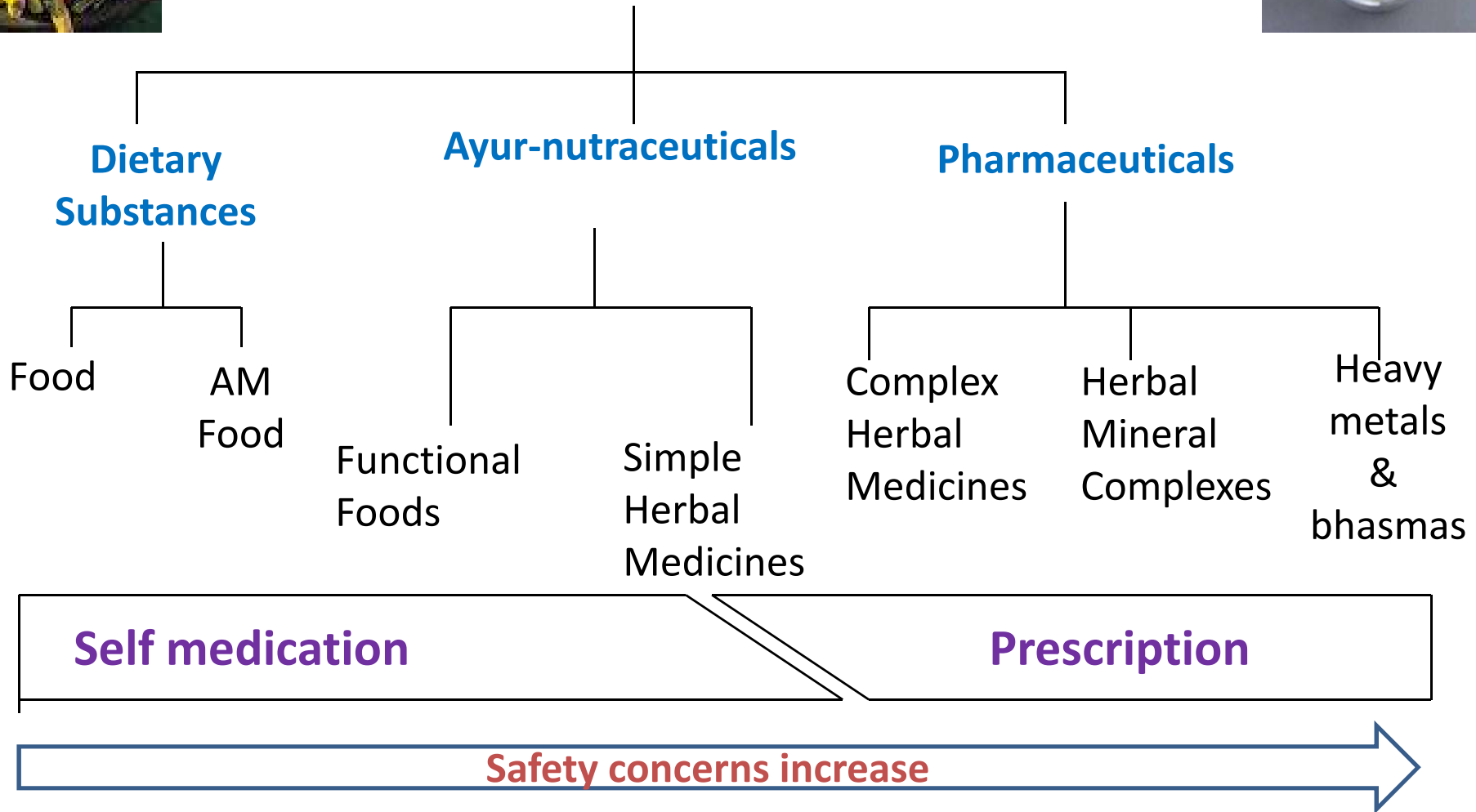
**Fundamental Concepts: Panchamahabhuta and Tridosha**



# Spectrum of Ayurvedic Ingredients for Healthcare



*(Compounds of Herbal, Mineral & Animal source)*



**Ayur-Pharmaceuticals / Ayur-Nutraceuticals**



# Health - Disease : Spectrum

*Shat-kriya-kala* : Six progressive stages of disease  
& scope of its reversal at every stage



Tri-Dosha (Vata - Pitta - Kapha)

Pro-disease

Pre-disease

Disease

Sanchaya → Prakopa → Prasara → Sthanasamshraya → Vyakti → Bheda

Biorhythms

Prashama

Health Protection & Disease prevention healthcare products

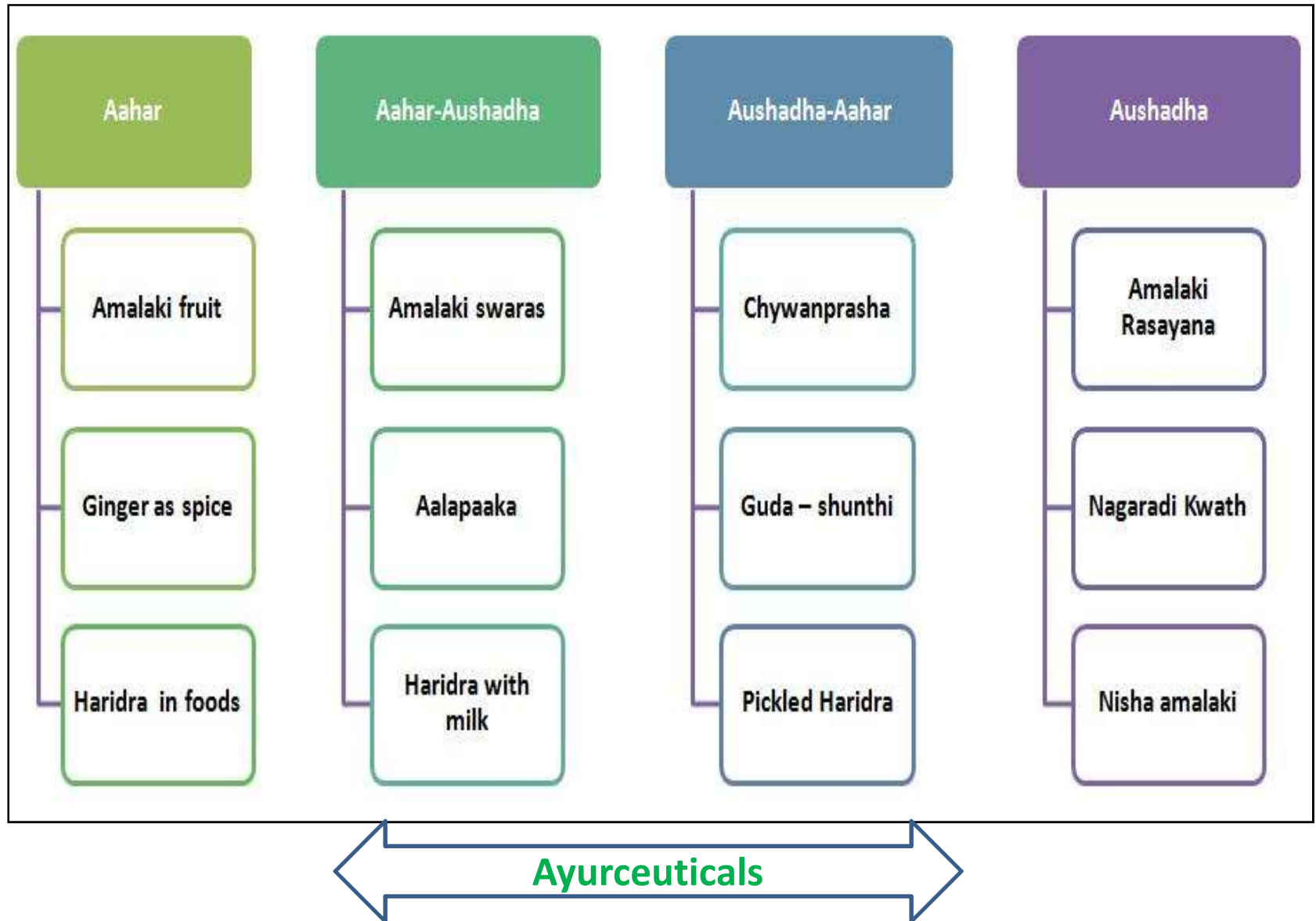
Disease Management Therapeutics & Complementary Healthcare products

Distinguishing role of Healthcare products

# Ayurvedically Modified Food(AM Food)

Food Substance	Modification	Used for
Grains	Roasting of grains	Easy digestion
Milk	Add pippali & boil	Respiratory ailments
Water	Add coriander seeds, cumin & boil	Burning micturition
Tea	Add cinnamom	High lipids
Mango pulp	Add dry ginger	Prevention of diarrhea
Tea	Add mint, basil, tea grass	Acute cold & cough
Chappati	Use of castor oil to make dough	Joint pains
Butter milk	Add crushed garlic	Anti-flatulent
Porridge	Water soaked ahaleev/Halim seeds cooked with porridge	Lactation and Laxation

# Ayurvedic Ingredients: Usage Flexibility



# Traditional Ayurceuticals

Traditional Product	Main Botanical	Common Indication
Chyavanprash	<i>Phyllanthus emblica</i>	Respiratory problem
Ashwiniprash	<i>Benincasa hispida</i>	Depressive disorders
Bilwavalehya	<i>Aegle marmelos</i>	Chronic diarrhea
Shunthipaak	<i>Zingiber officinale</i>	Chronic dysentery
Gulkand	<i>Rosa × centifolia</i>	Acid-peptic diseases
Panha	<i>Mangifera indica</i>	Sunstroke & Burning
Moravala	<i>Phyllanthus emblica</i>	Hyperacidity
Kokum sharbat	<i>Garcinia indica</i>	Lipid disorders & Urticaria
Dinkladdu	<i>Edible Gum</i>	Galactogogue
Methiladdu	<i>Trigonella foenum-graecum</i>	Backache

**Novelty, Innovation, Applicability, Acceptability**

# Formal Regulations for Herbs and Botanicals as Health Foods

- **India:** Food Safety and Standards Act 2006, **FSSAI** 2016, regulation enforcement  
1<sup>st</sup> Jan 2018  
**Schedule IV (List of botanical ingredients) (N=400)**  
(Majority from Ayurvedic Pharmacopeia)  
**Schedule VI (List of Nutraceutical ingredients) (N =24+187)**
- **USA:** The Dietary Supplement Health and Education Act of 1994 (**DSHEA**), ODI, NDI
- **Korea:** Health functional food Act (**HFF**) – 2004, generic and product-specific
- **Japan:** Foods for Specified Health Use (**FOSHU**) in 1991, Foods with Health Claims', in April 2001
- **Europe:** European Food Safety Authority (**EFSA**) was set up in January 2002 (The Herbal Directive 2004/24/EC was adopted to facilitate the placing of traditional herbal medicinal products)

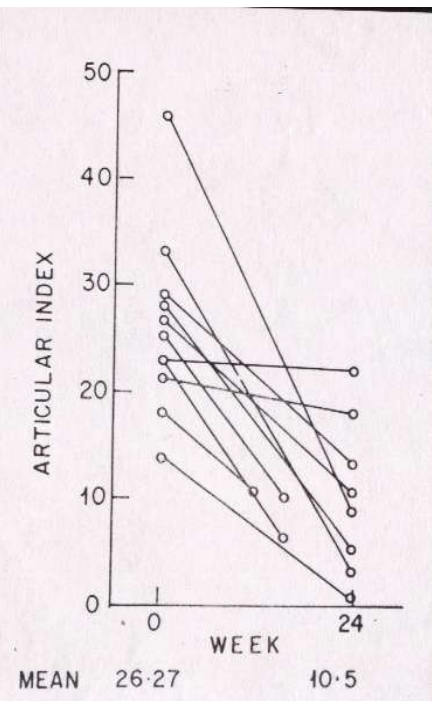
**Evolving sector, Teething problems**

# Ayurvedic Ingredients in Schedule IV & VI

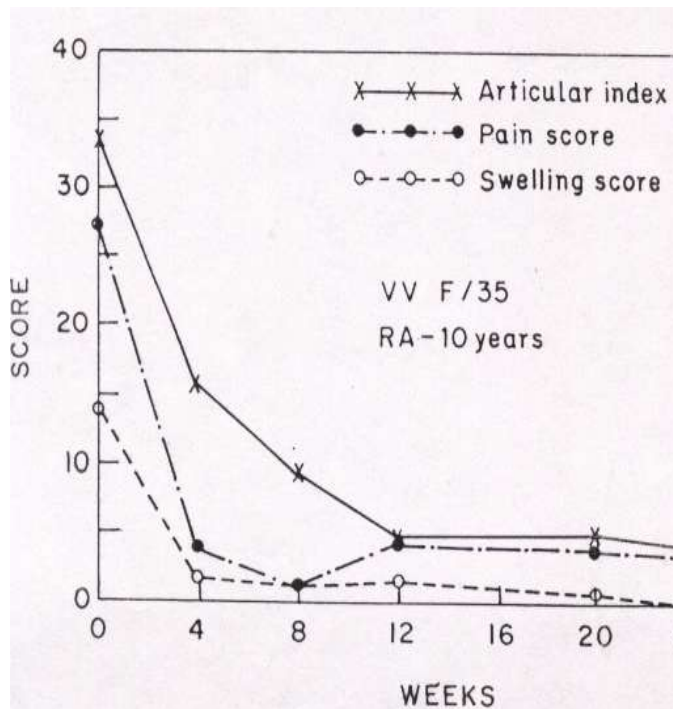
Ingredients	Parts	Permitted Range/day
<i>Commiphora wightii</i>	Oleoresin	2-4 gms
<i>Boswellia serrata</i>	Oleoresin	2-4 gms
	Gum resin extract (Total Boswellic acids/11-keto-beta boswellic acids)	250-1500mg
<i>Glycyrrhiza glabra</i>	Root and Stolon	5-10 grms as powder
<i>Mucuna pruriens</i>	Roots	10-20 gms
	Pod	20-30 gms as vegetables
	Seed	5-10 gms
<i>Sida cordifolia</i>	Whole plant/extract	10-30 gms
	Seed	3-5 gms
<i>Withania somnifera</i>	Root	3-6 gms as powder
	Extract	0.5-1 gm
Glucosamine sulphate	Glucosamine	2500-5000 mg
Glucosamine hydrochloride		1500 – 3000 mg



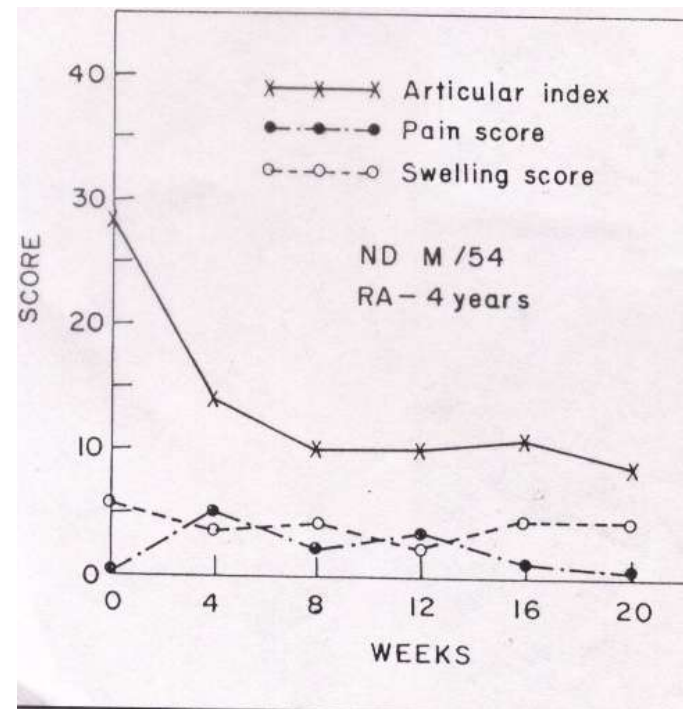
# Yograj Guggulu in Rheumatoid Arthritis



Seropositive RA



Dose escalation



Steroid withdrawal

Open labeled, 24 weeks, n = 26,

Yograj Guggulu dose range 3 to 6 gms (i.e. Guggulu 1.5 to 3gms)

**FSSAI Schedule IV (Guggulu: Dose range 2 to 4gms)**

# Clinical Profile of Adverse Events

<b>System</b>	<b>Alleged Adverse Drug Reactions (ADR)</b>	<b>No.</b>
Gastrointestinal	Epigastric burning, sour eructation, pain in abdomen, loose motions, bleeding P/R, perianal pain, stomatitis, excessive hunger, epigastric heaviness	12
Dermatological	Localised itching, maculopapular eruptions, generalised itching	6
Central Nervous	Giddiness, bilateral hands numbness, hot flushes, weakness of legs, heaviness of head	6
Genito-urinary	Burning micturation	1
Musculoskeletal	Joint stiffness	1
Miscellaneous	Burning of eyes, sweating	3

**ADR in 19/225 patients (8.4%), Guggulu formulations dose range 2-4 gms/day**

**i.e. Guggulu dose 1–2 gms**

Raut A.A et al. J. of NIMA, July 2002

# Maternal Treatment with Guggulu (1 gm x 3 P.O.) & Infant's Rejection of Breast milk



Guggulu therapy	Event	Comments
Day 1	-	-
Day 2	Baby rejected mother's milk when awake	Resorted to thumb sucking for the 1 <sup>st</sup> time
Day 3	Continued to reject breast milk, increased irritability, rejected expressed breast milk	Increased intake of water
Day 4	Intake reduced even during sleep	Mother tested milk; it was bitter
Discontinued therapy		
Day 5	Still irritable, marginal improvement in milk acceptance	Thumb sucking persisted
Day 6 & 7	Further improvement in milk acceptance during sleep	Irritability
Day 8	Accepted milk while awake	

## Guggulipid for the Treatment of Hypercholesterolemia

### A Randomized Controlled Trial

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**G**UGGUL IS AN EXTRACT FROM the resin of the mukul myrrh tree (*Commiphora mukul*). The medicinal use of guggul dates back to 600 BC, when it was used for obesity, atherosclerosis, and various inflammatory conditions.<sup>1,2</sup> The plant sterols E- and Z-guggulsterone are believed to be the bioactive compounds.<sup>2,3</sup> Recent research indicates that guggulsterones are antagonists of the farnesoid X receptor (FXR)<sup>4,5</sup> and the bile

**Context** Herbal extracts from *Commiphora mukul* (guggul) have been widely used in Asia as cholesterol-lowering agents, and their popularity is increasing in the United States. Recently, guggulsterones, the purported bioactive compounds of guggul, have been shown to be potent antagonists of 2 nuclear hormone receptors involved in cholesterol metabolism, establishing a plausible mechanism of action for the hypolipidemic effects of these extracts. However, there are currently no published safety or efficacy data on the use of guggul extracts in Western populations.

**Objective** To study the short-term safety and efficacy of 2 doses of a standardized guggul extract (guggulipid, containing 2.5% guggulsterones) in healthy adults with hyperlipidemia eating a typical Western diet.

**Design** Double-blind, randomized, placebo-controlled trial using a parallel design, conducted March 2000–August 2001.

**Participants and Setting** A total of 103 ambulatory, community-dwelling, healthy adults with hypercholesterolemia in the Philadelphia, Pa, metropolitan area.

**Intervention** Oral, 3 times daily doses of standard-dose guggulipid (1000 mg), high-dose guggulipid (2000 mg), or matching placebo.

**Main Outcome Measures** Percentage change in levels of directly measured low-density lipoprotein cholesterol (LDL-C) after 8 weeks of therapy. Secondary outcome measures included levels of total cholesterol, high-density lipoprotein cholesterol (HDL-C), triglycerides, and directly measured very low-density lipoprotein cholesterol (VLDL-C), as well as adverse events reports and laboratory safety measures including electrolyte levels and hepatic and renal function.

**Increase LDL, No change in TC, TG & HDL:  
Ethnic-Genetic, Diet-Life style, Obesity-subset, Product-issue**

# Adverse experiences of a Volunteer on Ashwagandha (*Withania somnifera*)

- Unusual increase in libido
- Unusual increase in appetite
- Hallucinogenic effects  
(Feeling of flying in air during meditation)
- Vertigo
- *Withania somnifera* is known for its CNS active properties
- Anxiolytic, antidepressant, and neuro-protective activity  
(demonstrated in clinical/experimental studies )
- Ashwagandha is known to be aphrodisiac

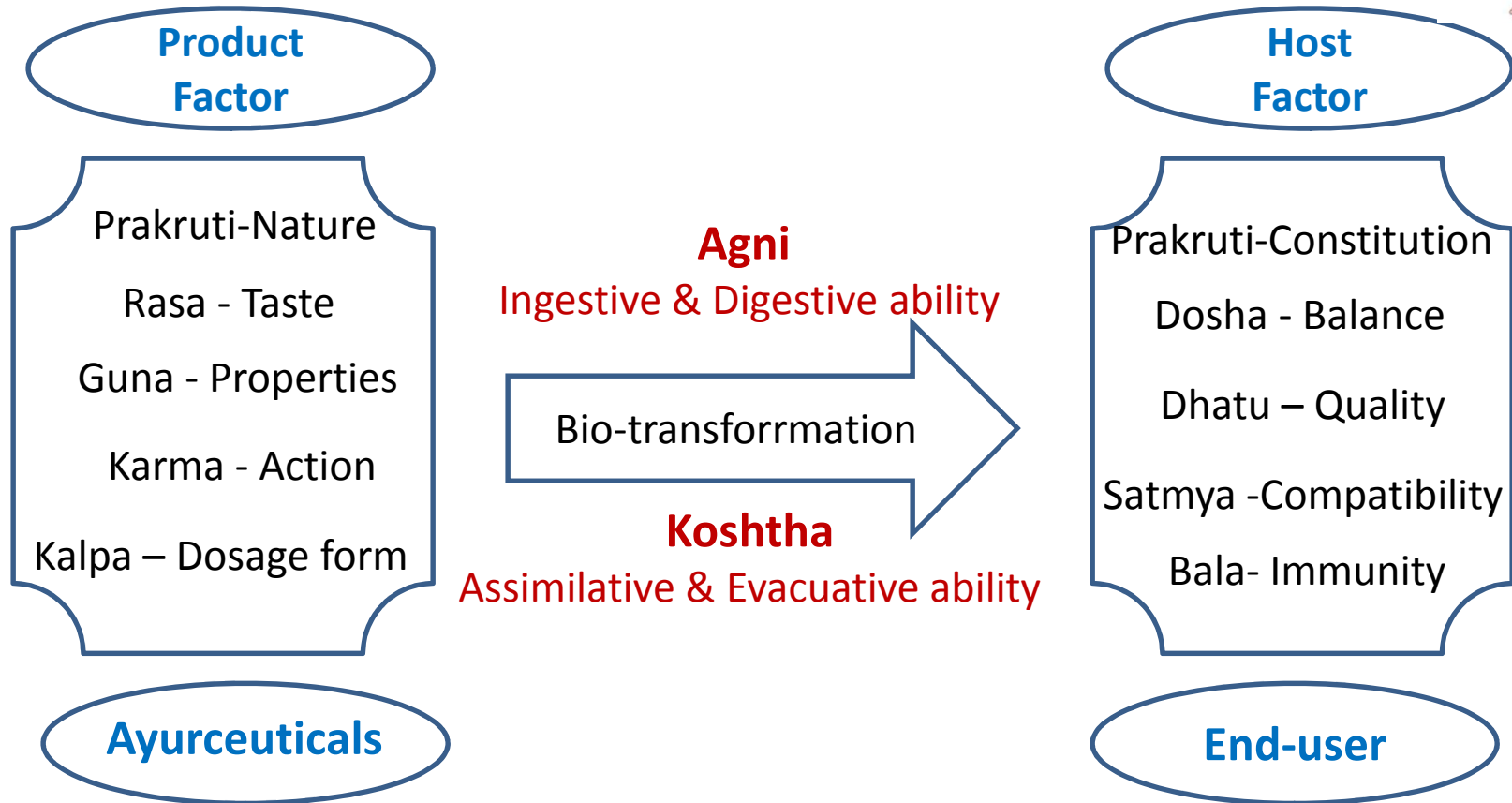
**Ashwagandha aqueous extract:  
Derived from 6gms root powder  
Divided in two doses per day**

**Average Therapeutic Dose:  
Root powder: 2 to 3 gms/day  
FSSAI schedule IV: 3 to 6 gms/day**





# Determinants of Ayurvedic Ingredients



**Sub-stratification of OTC – Ayurceuticals is Desirable At Product development and Dietetic practice level**

# Summary and Conclusion

- The spectrum of Ayurvedic ingredients spans over simple food substance to the complex mineral or metallic preparations.
- Healthcare product inspired from wisdom of Ayurveda and gainful inputs from nutraceuticals may be differently identified as Ayurceuticals.
- FSSAI and AYUSH are the two important agencies who determine the fate of food products and Ayurvedic products respectively.
- It is desirable that these two prominent agencies join hands together with effective application of nutritional sciences and advances of food technology.
- Such an integrated approach should reinstate the renaissance spirit in medicinal foods to facilitate health empowerment to the community at large.

# Acknowledgements

*“Na cha aharasamam kinchit bhaishajyamupalabdhat  
Shakyate api annamaatrena narah kartum niraamaya  
Bheshajonopapannopi niraharo na shakyate  
tasmata bhishagbhi **aharo mahabhaishajyamuchyate**”  
(Kashyap)*



**Thank You**