1. Define the Research & Practice Focus

Before acquiring equipment, clearly define what your lab aims to study. Common focus areas include:

- Meditation and cognitive responses
- Mantra and sound resonance studies
- Physiological and stress markers during Vedic practices
- Biofield and subtle energy correlations
- Yoga/Pranayama impact assessment
- Ayurvedic diagnostics and biomarker integration

2. Lab Physical Infrastructure

Essential physical spaces and environmental controls:

- Meditation rooms: soundproof, temperature and humidity control, dimmable lighting
- Participant prep and assessment areas
- Control & data analysis room with computers and secure storage
- Ventilation, air purification, and clean flooring

3. Core Scientific Measurement Tools

Objective measurement of physiological and cognitive responses:

🧠 **Brain Activity Monitoring:**

- EEG (Electroencephalography) — 16+ channels for brainwave recording
- Portable EEG headsets — Emotiv, Muse (field studies)

• Neurofeedback systems — for training specific brain states

💓 **Cardiorespiratory Tools:**
• ECG / HRV monitors — heart rate and variability
• Respiration belts — breathing analysis
• Pulse oximeters — oxygen and pulse data

💆 **Muscle & Skin Response:**
• EMG — muscle activity and relaxation patterns
• GSR — emotional and physiological arousal measurement

👁 **Behavioral & Cognitive Tools:**
• Eye tracking — focus and attention
• High-speed video — motion and posture analysis
• Cognitive test stations — reaction time, accuracy tracking

4. Biofield & Subtle Energy Instruments (Exploratory)

These tools are exploratory but useful for subtle energy and consciousness studies:
• Kirlian photography / GDV (Gas Discharge Visualization)
• Biofield measurement systems
• Magnetometers and scalar wave detectors
• Dowsing instruments (pendulums, lecher antennas)

5. Data Acquisition, Processing & Software

🎛 **Data Acquisition Systems:**
• Multi-channel DAQ systems — synchronize all biosignals (EEG, ECG, EMG,

GSR)

- High-speed sampling with time synchronization
- Secure and encrypted data storage

🧠 **Software Tools:**

- MATLAB / Python (NumPy, SciPy, MNE) — signal processing
- LabVIEW — hardware integration
- SPSS / R — statistics
- Neurofeedback and video analytics tools

6. Audio/Visual & Sensory Equipment

Vedic sound and mantra research requires:

- High-fidelity speaker system
- Professional microphones
- Audio recorders
- Noise-cancelling headphones

7. Environmental Monitoring Tools

Ensure controlled and reproducible conditions:

- Temperature and humidity sensors
- Air quality (CO_2, particulate monitors)
- Light lux meters

8. Subject Assessment, Surveys & Questionnaires

Collect qualitative and quantitative participant data:

- Stress inventories
- Mindfulness scales
- Cognitive performance tests
- Self-reported experience logs

9. Data Security & Ethical Compliance

Adhere to research ethics standards:

- Informed consent and voluntary participation
- Secure, encrypted data handling
- Institutional Review Board (IRB) approvals
- Compliance with local and international data protection norms

10. Staffing & Roles

Role	Responsibility
Lab Director / Principal Investigator	Overall leadership, research integrity, funding management
Research Assistant / Technician	Equipment operation, data collection, calibration
Psychologist / Behavioral Scientist	Survey design and interpretation

Data Analyst / Statistician	Signal processing and analytics
Sound Specialist	Mantra sound quality and recording accuracy
Meditation / Yoga Facilitator	Guide Vedic practices safely and consistently

11. Suggested Setup Tiers (Budget-Based)

🟢 **Basic Setup (₹1–4 lakh):**

- Portable EEG (Emotiv/Muse)
- HRV + pulse sensor
- Laptop + analysis tools
- Quiet meditation room

🔵 **Intermediate Setup (₹5–15 lakh):**

- Research-grade EEG system
- ECG + GSR + respiration belt
- DAQ system
- Audio setup

🔴 **Advanced Setup (₹15–50+ lakh):**

- Full physiological suite (EEG/ECG/EMG/GSR)
- Eye tracking + GDV systems
- Environmental controls
- Multiple practice rooms

12. Example Workflow

1. Participant consent and baseline surveys
2. Attach sensors (EEG, ECG, GSR, respiration)
3. Conduct Vedic session (meditation/mantra)
4. Record physiological and behavioral data
5. Post-session interviews
6. Data synchronization and analysis
7. Secure storage and reporting

13. Optional / Exploratory Tools (Advanced)

- GDV / Kirlian cameras
- Biofield scanners
- Scalar field or torsion detectors
- Dowsing instruments (for qualitative studies)