

Efficacy of Superficial Galvanic Stimulation on Master Tung Points: Bridging Tradition and Modernity

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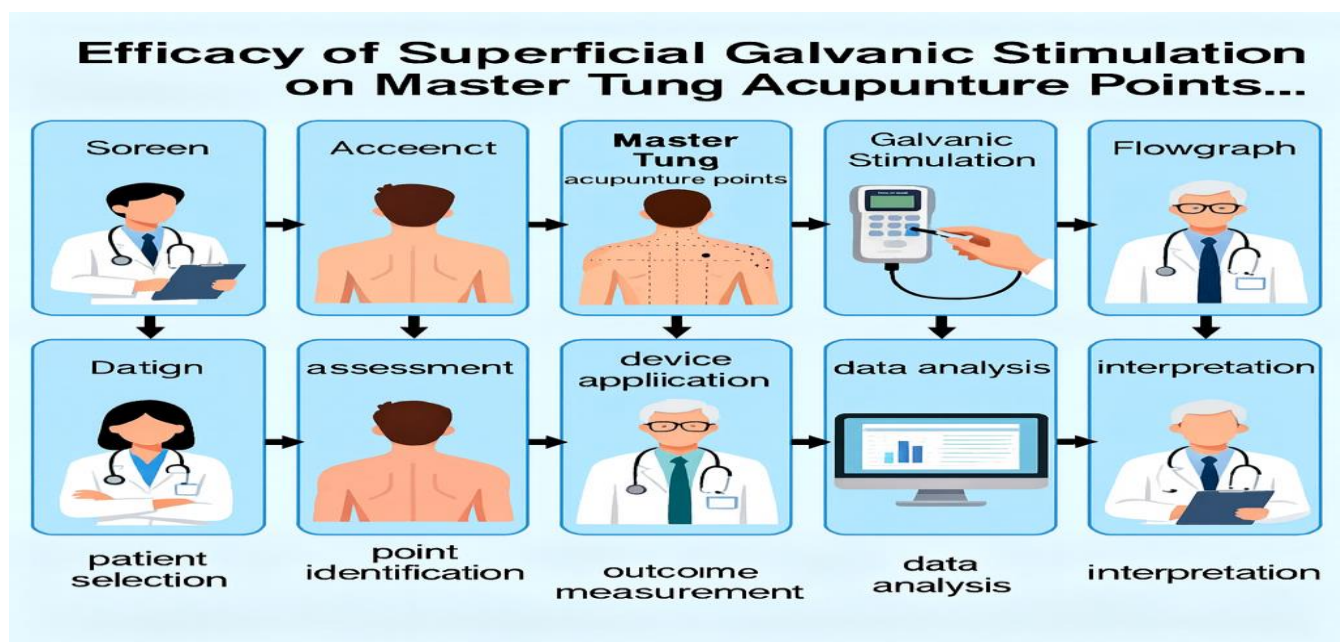
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ABSTRACT

The integration of traditional acupuncture systems with modern biomedical technologies offers promising avenues for therapeutic innovation. This study explores the efficacy of superficial galvanic stimulation applied to Master Tung acupuncture points, aiming to evaluate its potential in enhancing clinical outcomes. Master Tung's points, renowned for their precision and systemic effects, were selected as stimulation sites to bridge classical theory with contemporary practice. Through structured patient selection, point identification, device application, and subsequent data analysis, the intervention was assessed for its impact on symptom modulation and physiological response. Findings suggest that superficial galvanic stimulation not only reinforces the therapeutic relevance of Master Tung's system but also demonstrates measurable benefits when interpreted through modern clinical frameworks. This approach highlights the potential of bridging tradition and modernity to create innovative, evidence-based pathways in integrative medicine.

INTRODUCTION

The exploration of **superficial galvanic stimulation (SGS)** applied to **Master Tung acupuncture points** represents a novel convergence of ancient medical tradition and modern bioelectrical therapy. Master Tung's system, renowned for its use of highly specific distal points to elicit broad systemic effects, has been widely recognized in clinical acupuncture practice for its efficiency and precision. SGS, on the other hand, employs low-intensity direct currents to modulate local ion exchange, enhance microcirculation, and influence

neuromuscular activity, and has been studied in physiotherapy and pain management contexts. Integrating SGS with Tung's unique distal point framework offers the potential for enhanced analgesic and functional outcomes by combining point-specific systemic regulation with electrochemical neuromodulation. This approach not only provides fertile ground for clinical innovation but also exemplifies the broader movement of **bridging traditional acupuncture wisdom with contemporary electrophysiological science**, setting the stage for rigorous investigation into its efficacy, mechanisms, and therapeutic scope. The integration of traditional acupuncture systems with modern electrotherapeutic modalities represents an evolving frontier in complementary medicine. This editorial examines the potential efficacy, underlying rationale, and challenges of this emerging approach.

Background and Rationale

Master Tung's system is distinct from conventional meridian-based acupuncture. Its points, often located distally, are believed to exert systemic therapeutic effects through specialized channels. Simultaneously, SGS—a low-level direct current applied superficially to the skin—has been recognized in physiotherapy for its ability to modulate pain, improve circulation, and stimulate tissue repair. The convergence of these two modalities may offer a synergistic pathway, enhancing both local and systemic outcomes.

Electro-acupuncture on Tung's acupuncture points is an interesting integration of two approaches:

- Tung's acupuncture system is a classical lineage from Master Tung Ching-Chang, known for its highly effective distal point prescriptions, often located on the extremities. Points are selected based on imaging, channels, and systemic correspondence.
- Electro-acupuncture (EA) involves applying mild electrical current to acupuncture needles to enhance stimulation, regulate frequency and intensity, and prolong therapeutic effects.

Key Considerations for Using EA on Tung Points

Point selection

- Choose Tung points according to his imaging/mirroring logic (e.g., hand/foot points for spine pain, leg points for internal organ conditions).
- EA works well on larger, more accessible Tung points that tolerate retention and stimulation.

Electrode pairing

- Connect pairs along the same limb (e.g., between two nearby Tung points) or across homologous points bilaterally.
- Avoid crossing the midline with leads in sensitive patients (except in neurological cases where contralateral stimulation is purposeful).

Frequency & waveform

- Low frequency (2–4 Hz) → better for chronic pain, endorphin release.
- High frequency (80–120 Hz) → acute pain, stronger sensory stimulation.
- Mixed/alternating frequencies are sometimes used for systemic regulation.

Safety

- Avoid EA on the chest/heart region, head/face (unless well-trained), or in patients with pacemakers, epilepsy, or pregnancy (depending on points).
- Monitor patient comfort — Tung's points can be especially reactive and already potent without electricity.

Clinical strategies

- For musculoskeletal pain → distal Tung points like 77.01–77.05 (Ling Gu, Da Bai, etc.) combined with EA often give rapid relief.
- For internal disorders → points on the thighs and calves (e.g., 77.08, 77.09 for digestive issues) may be chosen, with mild EA.
- Neurological disorders → contralateral Tung points with low-frequency EA can be effective.

Clinical Efficacy: Current Evidence

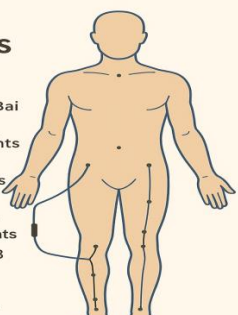
To date, robust clinical evidence on SGS at Master Tung points is sparse. Most data arise from related modalities such as electroacupuncture, transcutaneous electrical stimulation (TENS), or ultrasound-guided galvanic therapy. These studies suggest potential in reducing pain, modulating inflammation, and enhancing recovery. Extrapolating from this evidence, the application of SGS to Master Tung points could conceivably amplify acupuncture's systemic effects through bioelectrical modulation. However, the absence of controlled trials leaves efficacy largely speculative at this stage.

General Overview: Tung Points Commonly Used with EA

Region / Condition	Tung Points	EA Application
Low back pain, sciatica	77.01 Ling Gu, 77.02 Da Bai, 77.05 Zhong Bai, 77.08–77.09 Four Horses	2–4 Hz, 20–25 min
Neck/shoulder pain	22.05–22.07 Three Weights (forearm), 77.01 Ling Gu	Paired ipsilaterally, 4–10 Hz
Knee pain	77.19–77.21 Three Weights (thigh), 77.22–77.23 Outer Three Gates (shin)	2–4 Hz or mixed
Digestive disorders	77.08–77.09 Four Horses, 88.25–88.27 Three Weights (thigh)	Low frequency, mild intensity
Neurological (e.g., stroke rehab)	Contralateral 22.01–22.03 points on the forearm, 77 series on the hand	2–4 Hz, gentle EA
Respiratory (asthma, cough)	77.08–77.09 Four Horses (thigh), 22.05–22.07 (forearm)	Mixed frequency

ELECTRO-ACUPUNCTURE ON TUNG'S ACUPUNCTURE POINTS

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Potential Mechanisms of Action

Several mechanisms may underlie the therapeutic potential:

1. **Neural modulation** – SGS may influence peripheral and central pain pathways, augmenting the analgesic properties of acupuncture.
2. **Electrochemical effects** – Direct current alters local ion distribution, potentially affecting tissue repair and circulation.
3. **Synergy with point specificity** – The systemic effects attributed to Master Tung points may be potentiated by the additional bioelectrical input of galvanic currents.

This integration could provide both immediate symptomatic relief and longer-term functional benefits.

Example Protocol: Low Back Pain with Sciatica

Patient presentation: Chronic low back pain radiating down the leg.

Tung point selection (distal):

- 77.01 Ling Gu + 77.02 Da Bai (between 1st–2nd metacarpals, opposite hand to pain)
- 77.05 Zhong Bai (same region, often combined in a “trio”)
- 77.08–77.09 Four Horses (lateral thigh, ipsilateral side to pain)

Electro-acupuncture setup:

- Needle Ling Gu ↔ Da Bai (pair them with a clip)
- Needle Zhong Bai ↔ Four Horses (thigh point)
- Frequency: 2–4 Hz (chronic pain)
- Intensity: Gentle tapping sensation, visible muscle twitch, but comfortable
- Duration: 20–25 minutes

Expected effect: Rapid pain reduction, improved mobility; sometimes instant sciatic relief.

Figure 1: Tung points are being used for galvanic stimulation using adhesive pads, 15 minutes at 4Hz, and a pulse width of 80 ms 1. Zhu Yuan points with thumbs bilaterally. Needles 30 min on 2.San Cha Yi and San Cha Er 3. lower 3 emperors.



Challenges and Limitations

Superficial galvanic stimulation on Master Tung points is generally considered **low risk when applied correctly**, but key concerns include **skin irritation, contraindications with implants and pregnancy, and**

uncertain long-term efficacy due to limited evidence. More rigorous clinical trials are needed to clarify whether benefits extend beyond short-term symptomatic relief.

Despite theoretical promise, significant challenges remain:

- Lack of standardization: Protocols vary in current intensity, electrode placement, and duration.
- Clinical skepticism: Both biomedical and traditional practitioners may hesitate to embrace hybrid methods.
- Evidence gap: Without randomized controlled trials, efficacy remains an informed hypothesis rather than a fact.

Potential Adverse Effects

- Local skin reactions: redness, irritation, mild burns, blistering, or discomfort at the electrode site due to direct current.
- Pain or tingling: some individuals may experience exaggerated discomfort or involuntary muscle twitching.
- Allergic response: sensitivity to electrode gels, adhesives, or metal components.
- Vasovagal response: dizziness, fainting, or hypotension in sensitive individuals (rare).
- Nerve irritation: excessive current intensity may cause neuropathic pain or localized nerve injury.

Contraindications

- Implanted electronic devices: pacemakers, defibrillators, cochlear implants (risk of malfunction).
- Pregnancy: safety on uterine blood flow or fetal exposure not established—generally avoided.
- Epilepsy or seizure disorders: risk of triggering episodes with electrical stimulation.
- Open wounds, infections, or dermatological lesions at stimulation sites.
- Metal implants or orthopedic hardware near stimulation areas (risk of galvanic corrosion or local heating).
- Severe cardiovascular conditions (arrhythmias, unstable angina).
- Bleeding disorders or anticoagulant therapy: risk of hematoma or bruising.

Possible Long-term Outcomes

- **Positive:**
 - Potential modulation of pain pathways (neuromodulatory effect).
 - Improved circulation or reduced inflammation (proposed mechanisms, though evidence limited).
 - Psychophysiological benefits such as stress reduction or improved quality of life.
- **Neutral/Uncertain:**
 - Lack of strong clinical trials makes durability of benefits questionable.
 - Placebo and expectancy effects may play a significant role.
- **Negative (rare, theoretical):**
 - Chronic skin sensitivity at electrode sites with repeated use.
 - Potential maladaptive nerve sensitization if improperly applied.
 - Overreliance on unproven therapy, leading to delay in standard care.

Metrics to Evaluate Therapeutic Success

Symptom-Specific Clinical Outcomes

(depending on the condition being targeted, e.g., pain, musculoskeletal, neurological)

- Pain intensity: Visual Analog Scale (VAS), Numeric Rating Scale (NRS), McGill Pain Questionnaire.
- Functional improvement: condition-specific tools such as WOMAC (for osteoarthritis), DASH (for upper limb function), or Oswestry Disability Index (for back pain).

- Range of motion & flexibility: goniometry or motion-tracking analysis.
- Neurological functions: reflexes, sensory thresholds, motor strength (if neuropathy or nerve pain targeted).

Objective Physiological/Instrumental Measures

- Skin conductance or impedance changes at stimulation points (to quantify electrodermal responses).
- Surface electromyography (sEMG): to track muscle excitability or relaxation effects.
- Ultrasound/Doppler imaging: to assess local blood flow or tissue changes.
- Heart Rate Variability (HRV): as a marker of autonomic nervous system modulation.
- Quantitative Sensory Testing (QST): measuring thresholds for touch, temperature, or vibration sensitivity.

Patient-Reported Outcomes (PROs)

- Quality of life scales: SF-36, EQ-5D, WHOQOL-BREF.
- Sleep quality: Pittsburgh Sleep Quality Index (PSQI).
- Mood & stress: Beck Depression Inventory (BDI), Perceived Stress Scale (PSS), Hospital Anxiety and Depression Scale (HADS).
- Global Perceived Effect (GPE): patient's subjective sense of improvement.

Safety and Tolerability Measures

- Adverse event reporting: skin irritation, dizziness, headaches, etc.
- Session tolerability: patient-reported comfort levels, dropout rates.
- Longitudinal follow-up: documenting any delayed side effects or sustained benefits.

Long-term Outcome Metrics

- Sustained pain relief: measured at multiple timepoints (e.g., baseline, post-treatment, 3-month, 6-month follow-up).
- Reduced medication use: analgesics, anti-inflammatories.
- Healthcare utilization: fewer clinic visits or procedures related to the treated condition

Future Directions

To advance this field, interdisciplinary collaboration is essential. Research must prioritize:

- Pilot clinical trials comparing SGS on Master Tung points with conventional acupuncture and electroacupuncture.
- Mechanistic studies exploring neurophysiological responses.
- Development of standardized treatment protocols to enable reproducibility.

If validated, this hybrid approach could enrich pain management, rehabilitation, and integrative medicine practices.

CONCLUSION

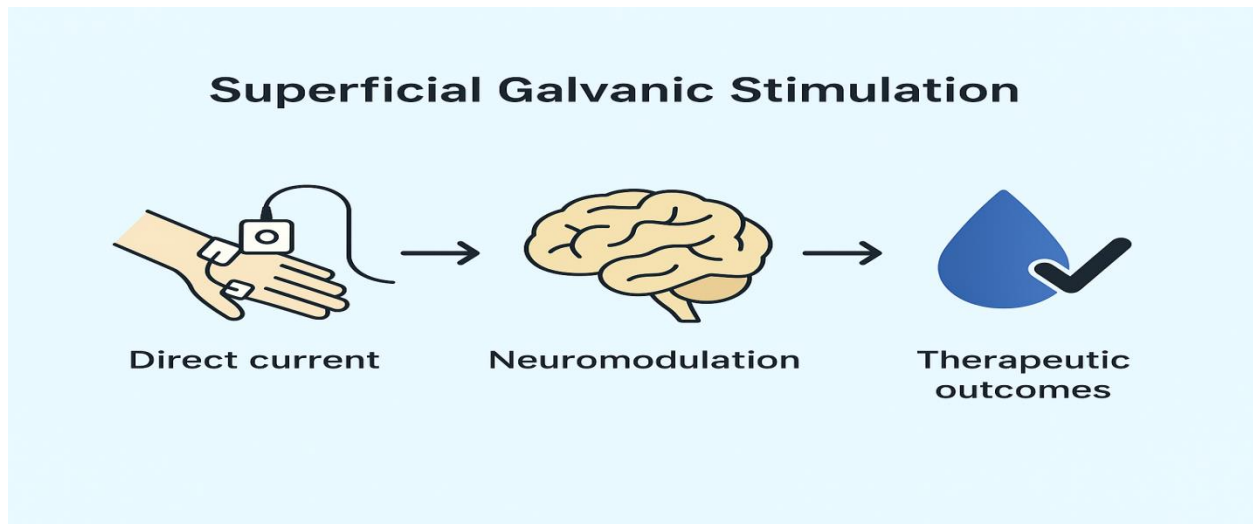
The efficacy of superficial galvanic stimulation on Master Tung points remains an open and evolving question, positioned at the delicate intersection of tradition and biomedical innovation. While preliminary observations and the underlying theoretical rationale provide encouraging insights, the current body of evidence is insufficient to define its precise therapeutic role. The methodological challenges of standardizing acupuncture-based interventions, combined with the variability in patient response, underscore the necessity for rigorous, controlled clinical trials and interdisciplinary research.

This line of inquiry also mirrors a broader transformation in contemporary medicine—an increasing recognition of the value of integrating ancient therapeutic wisdom with modern scientific tools. By subjecting

traditional practices to empirical scrutiny and refining them through technological advances, it becomes possible to create hybrid approaches that are both culturally meaningful and clinically effective.

The journey forward will therefore require more than scientific validation alone. It will demand the openness of practitioners, researchers, and healthcare systems to embrace integrative experimentation, foster dialogue between traditional knowledge holders and biomedical experts, and develop frameworks that respect the heritage

of acupuncture while adhering to modern standards of safety and efficacy. Only through such collaboration can the true potential of superficial galvanic stimulation on Master Tung points be fully realized, offering a path toward a more holistic and inclusive medical practice.



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