



IsoTone Online PT Clinic™

A Practitioner-Led, AI-Assisted Tele-Physical Therapy Model

Mission Statement:

The IsoTone Online PT Clinic™ delivers expert, human-led physical therapy enhanced by intelligent digital tools, empowering every patient to heal, strengthen, and thrive with personalized care—anytime, anywhere.

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Abstract

The IsoTone Online PT Clinic™ is a comprehensive, remote, practitioner-led physical therapy service integrating certified PT expertise with intelligent AI-assisted exercise monitoring. Built around the IsoTone portable resistance and physical therapy device, the Clinic delivers structured rehabilitation and strength-building programs online, utilizing real-time video supervision, condition-specific protocols, and a 24/7 AI-guided exercise avatar for continuity of care.

IsoTone's unique attributes—automatic resistance adjustment, 360-degree engagement, quantifiable effort metrics, and integrated massage and cramp-intervention functions—support safe, measurable, reproducible physical therapy. These features allow the IsoTone Online PT Clinic™ to offer evidence-informed programs across a broad spectrum of conditions, including Parkinson's disease, scoliosis, arthritis, post-operative rehabilitation, osteoporosis, vestibular decline with aging, neuromuscular coordination deficits, and thermal/massage-based interventions (e.g., cramps and soft tissue stiffness).

This Proposal outlines the clinical rationale, operational structure, technical platform, PT programs, practitioner requirements, insurance integration, and organizational components needed to operationalize the IsoTone Online PT Clinic™.

I. Introduction

1.1 Purpose of the IsoTone Online PT Clinic™

The IsoTone Online PT Clinic™ is designed to provide comprehensive, accessible, and clinically robust physical therapy to patients remotely. Through a hybrid human–AI model, patients work with licensed physical therapy practitioners via secure video sessions while engaging in structured IsoTone-based exercise programs facilitated by an intelligent AI avatar.

1.2 Rationale for Remote PT Delivery

Barriers such as limited mobility, geographic distance, chronic medical conditions, and scheduling constraints often impede access to in-person PT services. Remote PT models mitigate these barriers while maintaining clinical rigor through practitioner oversight and standardized, trackable exercise regimens.

1.3 Why IsoTone is Uniquely Suited for Online PT

IsoTone's patented resistance system automatically adjusts to the user's force, enabling safe and individualized therapeutic load without clinician-operated equipment adjustments. Its 360-degree load profile ensures continuous muscle engagement and aerobic efficiency with each squeeze and expansion movement.

IsoTone further supports tele-PT through:

- Precise motor control training for neural systems (e.g., Parkinson's, vestibular decline)
- Massage and cramp-intervention utility
- Deep tissue and lymphatic stimulation
- Posture, spine, and structural stability training
- Osteoporosis and arthritis mitigation routines

Together, these technical and physiological advantages enable PT-standard interventions delivered remotely.

II. Structure of the IsoTone Online PT Clinic™

2.1 Patient Intake Workflow

1. **Referral or self-enrollment** via secure web portal
2. **Medical & functional questionnaire** (mobility, pain levels, contraindications)
3. **Baseline movement assessment** conducted via live telehealth session
4. **IsoTone model assignment** (Lite, Basic) based on strength, safety, and diagnosis
5. **Initial program prescription** created by the licensed PT practitioner

2.2 Practitioner-Led Initial Evaluation

During the first session, the practitioner:

- Assesses posture, gait, coordination, range of motion
- Establishes safe resistance levels
- Instructs proper IsoTone handling and the six critical rules of engagement
- Demonstrates initial exercises
- Creates individualized therapy goals
- Determines appropriate safety protocols (fall risk, cardiovascular considerations, etc.)

2.3 Hybrid Care Delivery

Following the first evaluation:

- **Live PT sessions** occur weekly/biweekly or as medically indicated
- **AI-assisted daily sessions** support practice consistency
- The practitioner reviews **patient metrics**, videos, and avatar logs weekly
- Adjustments to the PT program are made based on documented progress

III. AI Virtual Assistant / Avatar System

3.1 Core Functional Capabilities

The ISO-PT Avatar™ monitors the patient using the device's camera feed and IsoTone squeezing/expanding rhythm:

- Posture/position detection
- Joint-angle estimation
- Range-of-motion monitoring
- Timing correction (equal squeeze/expand cycle reinforcing Rule 3,)
- Fatigue detection (e.g., tremor)
- Repetition counting
- Tracking of resistance patterns via force input to IsoTone's effort gauge (where applicable)

3.2 Real-Time Intervention

During AI-guided exercises, the avatar:

- Provides corrective verbal cues
- Flags potentially unsafe movements
- Slows exercise pace if form deteriorates
- Automatically adjusts repetition count or cycle duration
- Initiates cramp-intervention guidance when needed ()

3.3 Patient Engagement and Behavior Monitoring

- Motivational reinforcement
- Daily consistency scoring
- Alerts for missed sessions
- Biomechanical change logs for PT review

IV. User Interface Design

4.1 Live Practitioner Session Interface

The patient sees:

- A clean, clinical virtual environment
- Dual video: practitioner + patient
- On-screen IsoTone squeeze/expand timing guides
- Real-time overlay for form correction
- Progress dashboard with intensity metrics, rep counts, and effort gauge values

4.2 Avatar Session Interface

The simplified AI session shows:

- Avatar demonstration
- Live posture outline of patient
- Real-time alignment markers
- Audible and visual corrections
- "Heat generation" status for massage applications
- Exercise timer and rest-period countdown

V. Clinical Programs Available at IsoTone Online PT Clinic™

The Clinic provides structured PT programs for:

- **Parkinson's disease (balance, gait, tremor control)**
- **Scoliosis management (paraspinal/core strengthening)**
- **Arthritis/arteritis prevention and reduction of inflammation**
- **Motor neural network retraining**
- **Osteoporosis management (spine/posture/bone stimulation)**
- **Vestibular rehabilitation for aging populations (fall risk reduction)**
- **Cramps & neuromuscular spasm intervention**
- **IsoTone Facials (facial musculature, lymphatic flow, tension relief)**
- **Post-operative strengthening for orthopedic procedures**
- **General fitness for chronic cardiovascular/metabolic conditions**

Each program is further elaborated in Appendix 1.

VI. Offline (Self-Guided) Program with 24/7 Support

The patient receives:

- Daily exercise calendar
- "Quick 3-minute check" modules
- 24/7 access to the AI avatar
- Optional self-video submissions for practitioner feedback
- Automated reminders
- Weekly adherence reports

VII. Practitioner Oversight & Clinical Quality Assurance

Practitioners review:

- Form correction logs
- Effort metrics from IsoTone
- Frequency, consistency, performance trends
- Pain or discomfort reports
- Patient-submitted videos

They adjust:

- Exercise intensity
- Frequency
- Duration
- Safety precautions

Documentation is structured for clinical charts and insurance billing.

VIII. Data Security & HIPAA Compliance

The IsoTone Online PT Clinic™ uses:

- End-to-end encrypted video sessions
- Encrypted at-rest data storage
- HIPAA-compliant EHR system
- Secure user authentication
- Separate storage for clinical notes vs. AI logs
- Regular access audits and practitioner access controls

IX. Conclusion

The IsoTone Online PT Clinic™ merges licensed PT expertise with intelligent resistance-based training and AI-assisted monitoring to create a modern, accessible, clinically rigorous tele-PT ecosystem. Its condition-specific protocols, real-time supervision capabilities, and ISO-standard data security architecture position it as a next-generation model of remote rehabilitation suitable for partnership with health providers, insurers, and care networks.

APPENDIX 1 — PT PROGRAM SUMMARIES

A1.1 Parkinson's Disease Program

Clinical Rationale:

Parkinson's disease impairs balance, coordination, posture, and gait. IsoTone's controlled resistance improves neuromuscular precision, postural control, and core stability.

Program Summary:

Exercises include weight shifts with IsoTone activation, single-leg stance, seated squeeze-and-lift, gait patterning with step-and-squeeze, march sequences, wrist rotations, rapid movement drills, and reaction agility sets. This improves postural stability, tremor control, and motor planning.

A1.2 Severe Scoliosis Program

Clinical Rationale:

Scoliosis patients require symmetrical muscular strengthening, spinal support, and posture improvement. IsoTone's adaptive resistance supports individualized engagement.

Program Summary:

Focus on paraspinal engagement, core stabilization, flexibility, and asymmetry correction, using diagonal patterns, torso lifts, back/shoulder strengthening, and breathing-supported stability exercises.

A1.3 Arthritis / Arteritis Mitigation Program

Clinical Rationale:

Inflammation and reduced vascular elasticity contribute to arthritis/arteritis progression. IsoTone facilitates controlled resistance and circulation-enhancing massage.

Program Summary:

Includes gentle resistance cycles, lymphatic-supported massage, mobility stretches, low-impact cardiovascular IsoTone routines, and blood-flow stimulation patterns.

A1.4 Motor Neural Network Coordination Program

Clinical Rationale:

Neuromuscular systems improve through slow, precise, high-control movements. IsoTone's auto-resistance supports stable repetition.

Program Summary:

Slow 10-second squeeze and expansion cycles enhance fine motor control, reduce tremor, and improve pathway stability across repeated sets.

A1.5 Osteoporosis Prevention and Management Program

Clinical Rationale:

Strengthening the musculature supporting the spine reduces fracture risk. IsoTone provides safe, progressive, low-impact resistance.

Program Summary:

Upper-body strengthening, spine stabilization exercises, core engagement, squat and posture sets, and controlled shoulder/back routines improve bone-loading capacity.

A1.6 Vestibular Decline Program (Aging-Related)**Clinical Rationale:**

Vestibular decline leads to instability, fall risk, and slowed reaction. IsoTone encourages coordinated balance training and proprioceptive stimulation.

Program Summary:

Standing balance with arm circles, single-leg holds, weight shifts, rotational twists, controlled lunges, heel-to-toe walking, and core rotation sets.

A1.7 Cramp-Intervention & Neuromuscular Reset Program**Clinical Rationale:**

Cramps result from neuromuscular misfiring. IsoTone's high-frequency massage (3–5 strokes/sec) interrupts miscommunication loops.

Program Summary:

Immediate aggressive massage at onset, followed by heat-assisted relaxation, fiber-direction longitudinal strokes, and optional stretch integration.

A1.8 IsoTone Facials Program**Clinical Rationale:**

Facial muscles, lymphatic pathways, and superficial nerves benefit from fine massage and circulation enhancement.

Program Summary:

Low-resistance, gentle 5-per-second strokes along facial structures, warmed IsoTone application, and lymphatic drainage patterns for expressiveness and muscle tone.

APPENDIX 2 — Organizational Structure, Licensing & Insurance

A2.1 Licensing Requirements

- All clinical sessions must be conducted by state-licensed PTs or PTAs
- Telehealth practice requires compliance with state telehealth statutes
- PTs must be licensed in the patient's state
- Clinic must maintain malpractice coverage

A2.2 Organizational Structure

- **Clinical Director (PT)**
- **Supervising PTs**
- **AI/Avatar Operations Team** (non-clinical)
- **Administrative & Billing Unit**
- **Telehealth Compliance Officer**
- **IT / Cybersecurity Unit**
- **Medical Advisor (optional)**

A2.3 Insurance and Reimbursement Considerations

- Verification of patient insurance eligibility prior to initiating services
- Regular audits to ensure accurate coding and billing practices

- Ongoing staff training on payer requirements and telehealth billing updates

A2.4 Insurance Eligibility

The Clinic becomes eligible for insurance by:

- Using standard **PT CPT codes**: 97110, 97112, 97530, 97161–97163 (evaluations)
- Utilizing **telehealth modifiers** (e.g., 95, GT)
- Maintaining structured documentation of functional improvement
- Providing clear treatment plans signed by licensed PTs
- Using diagnosis-driven, medically necessary criteria

A2.5 Clinical Documentation Standards

Each patient encounter includes:

- Subjective report
- Objective measures
- Assessment of progress
- Plan of care update
- Compliance with Medicare's documentation needs

A2.6 Steps to Establish the IsoTone Online PT Clinic™

1. Register legal entity
2. Obtain PT licensure and telehealth authorization
3. Build HIPAA-compliant telehealth platform
4. Integrate AI avatar system
5. Train practitioners in IsoTone protocols
6. Implement EHR + billing
7. Begin credentialing with insurers
8. Launch limited pilot
9. Expand to full patient base and referral networks