**Electrical Stimulation Device for Motor Function Recovery**

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**Compensation**

State of The Art

Current technology: EMS or FES
- Localized stimulation
- Only target peripheral nerves
- Low rate of success

Current technologies are: functional electrical stimulation (FES) and electrical muscle stimulation (EMS). Both target only the peripheral nerves, no brain or spinal cord concomitant activation. Both represent focal type of stimulation that—in opposite to dipolar stimulation—does not take the advantage of nervous system natural ability to augment its performance.

**Breakthrough**

Three Protocols to Strengthen Motor Pathway (No Implant Required)

Patient treatment: opposite side
Strengthening

Same side Strengthening

Cross spinal cord strengthening: arm to arm

**Successful Human Trials**

Before

Life in a wheelchair
Patient Cannot Walk

Treatment: 6 sessions of dipolar stimulation over two weeks (30 minutes / session)

= Mobility!

After

SHE CAN WALK!!

14 Year Old with Cerebral Palsy

**4 Trials**

Patient 1: Erb’s palsy patient indicated more control and strength and improved posture following 3 sessions.

Patient 2: Erb’s palsy patient indicated more control of his arm

Patient 3: cerebal palsy indicated the ability to go up and down stairs (20 steps).

Patient 4: Cerebral palsy patient showed complete reduction of tipping toe walking.

**Compelling Opportunity**

Terms

1. Disruptive breakthrough
2. Highly effective
3. Demonstrated & Ready to go
4. No technological barriers
5. Low cost / High margin
6. Proprietary; PCT patent pending

$4B total US market (2008) with 30% annual growth rate!!

**Target Market**

P.T. for Most Neuromuscular Conditions:

1. Cerebral palsy.
2. Spinal cord injury
3. Multiple sclerosis
4. Peripheral nerve injury
5. ALS
6. Stroke

Plus...

7. Conventional P.T.
8. Athletic

**Business Model**

Direct Sales or OEM to Market Segments:

1. Medical Offices
2. Hospital Clinics
3. Private P.T. Offices
4. Chiropractic offices
5. Home Care

• Sports-related:
• Conditioning
• Strengthening

**Team**

Zaghloul Ahmed
Physical Therapist and Neuroscientist.
Assistant Professor at the College of Staten Island.
Near 20 years experience in Physical Therapy Practice.
Recognized expert in Spinal Cord Injury

Andrzej Wieraszko
Neuroscientist and Device Designer
Professor at the College of Staten Island
Over 25 years research experience on CNS and PNS
Over 80 publications