

# Advanced Biomedical Research and Innovation

## Human Umbilical Cord Stem Cells – The Clinical Findings, Therapeutic Approaches and Imaging Findings of Pain Relief

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#### **Abstract**

Human Umbilical Cord Mesenchymal Stem Cells have become an increasingly useful and important modality in treating a multitude of orthopedic, rheumatologic and neurologic conditions. Treating patients with pain refractory to surgical or medical therapies is a niche in stem cell therapy with great potential. Over the past 14 months, 85% of our treated patients are experiencing some level of pain relief after receiving stem cell therapy. Of these patients, close to 70% have experienced profound improvement in clinical function (eg. Range of motion, ability to use stairs) and pain relief. In addition to overall clinical improvements, our patients' imaging results have demonstrated decreased joint degeneration over a 14 month time period. Part of this success can be attributed to a combination of patient characteristics, imaging findings and physical exam findings which will be discussed in this paper. More, case-studies involving post-traumatic neurologic issues and pain syndromes without current effective treatments, including RSD (Reflex Sympathetic Dystrophy) and CRPS (Chronic Regional Pain Syndrome) have seen dramatic clinical improvements in our clinic which have decreased the need for pain medication and may be more cost-effective pain management regimen. This paper will discuss our clinical findings, therapeutic approaches, imaging characteristics before and after stem cell therapy, as well as case studies with complex pain syndromes involving multiple therapeutic approaches.

Keywords: Umbilical Cord Stem Cells; Post-operative pain; Cost-effective; Refractory pain; CRPS; RSD; Orthopedic Pain; Joint degeneration; Pain syndromes.

### **Biography**

David Capaldi is a graduate of St. George's University School of Medicine and has completed years of training in residencies of General Surgery at Nassau County Medical Center in New York and Diagnostic Radiology at John T. Mather Memorial Hospital and Stony Brook University Hospital in New York. His diverse training also includes a B.S. in Pharmacology and Toxicology and an MBA in pharmaceutical business from the University of the Sciences in Philadelphia.



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