

# Preface

Severe neurological injury, including traumatic brain injury, spinal cord injury, and stroke, can have devastating consequences. There are currently no reparative therapies for neurological injury, with most treatments designed to limit secondary damage. The idea that exogenous stem and progenitor cells have the potential to promote a reparative response to injury is now supported by pre-clinical data, prompting early translational studies using progenitor cell therapies. To that end, this text explores the unique aspects of neurological injury and focuses on the critical translational issues of cell delivery: routes of administration, types of progenitor cells (alone and/or in combination), timing of delivery, and adjuncts to promote cell engraftment/survival/effectiveness. Finally, measuring the effects of transplanted cells and cell tracking is explored in several chapters.

Even while compiling this monograph, the paradigms of how cell-based therapeutics affect neurological injury have been changing. Mechanisms that seemed reasonable and well-supported are being re-examined, and this necessarily drives the movement toward various clinical trial plans. The earliest clinical trials are beginning, and as this monograph goes to press, Phase 2 studies in TBI and stroke will begin. The developments in the field may ultimately offer realistic hope for improvement in patients with severe injuries, and the work on these vexing problems will be the key to unlocking future treatments.



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