

## Patients affected by Neurogenic Bowel Dysfunction

## Who has Neurogenic Bowel Dysfunction?

Neurogenic bowel dysfunction (NBD) is a condition associated with injury to the nerves controlling the bowel. The most common patients with NBD are spinal cord injury (SCI), multiple sclerosis (MS), spina bifida, and stroke. The occurrence of NBD within these patient populations varies but affects individuals in a physically and socially debilitating ways. Further, those patients suffering from complications of their primary condition have additional comorbidities.

	Dysfunction Description	Typical Patient	Approximate Population in US	Chronic Complications
Spinal Cord Injury (SCI)	Damage to any part of the spinal cord or nerves at the end of the spinal canal which often results in permanent changes in strength, sensation, and other bodily functions <sup>1</sup>	• Average age of 35.6 at injury, predominantly male (>78%) <sup>2</sup>	294,000 <sup>3</sup>	<ul> <li>Respiratory<sup>1</sup></li> <li>Pressure Ulcers<sup>2</sup></li> <li>Bowel &amp; Bladder Management<sup>1</sup></li> </ul>
Multiple Sclerosis (MS)	Chronic, unpredictable, abnormal immune response directed against the central nervous system (brain, spinal cord, and optic nerves) <sup>4</sup>	<ul> <li>Diagnosed between 20-50 years of age<sup>6</sup></li> <li>Most common Caucasian with some occurrence in other ethnicities<sup>6</sup></li> <li>2-3x more common in women<sup>5</sup></li> </ul>	~1 Million US Residents <sup>6</sup>	<ul> <li>Muscle Stiffness or Spasms<sup>7</sup></li> <li>Paralysis<sup>7</sup></li> <li>Mental Challenges<sup>7</sup></li> <li>Depression<sup>7</sup></li> <li>Epilepsy<sup>7</sup></li> <li>Bowel &amp; Bladder Management<sup>6</sup></li> </ul>
Spina Bifida	Neural tube defect, "cleft spine", which results in damage to the spinal cord and nerves which may result in physical and intellectual disabilities <sup>7</sup>	• Infant diagnosis	166,000 <sup>8</sup>	<ul> <li>Walking &amp; Motility Problems<sup>10</sup></li> <li>Orthopedic Complications<sup>10</sup></li> <li>Cerebral Fluid<sup>10</sup></li> <li>Bowel &amp; Bladder Management<sup>9</sup></li> </ul>
Stroke	Clot or rupture of blood vessel(s) providing nutrients & oxygen to the brain resulting in various levels of loss of brain and nervous system function <sup>10</sup>	<ul> <li>75% of strokes occur &gt;65 years of age<sup>11</sup></li> <li>Higher rates of occurrence in African-Americans<sup>12</sup></li> </ul>	~7 Million <sup>13</sup>	For severe stroke: <sup>14, 15</sup> • Brain edema & seizures • Mental illness (depression) • Pressure Sores • Paralysis • Recurrent stroke • Bladder (UTI) & Bowel Management

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