

## ***Why Can't We Use Our Own Stem Cells to Heal Our Bodies?***

by Berkley Bedell, Foundation for Alternative and Integrative Medicine ([www.faim.org](http://www.faim.org))

### **Multiple Sclerosis**

Multiple sclerosis (MS) is a chronic, often disabling disease that makes its appearance during young adulthood or early middle age. MS attacks the central nervous system (CNS), which is made up of the brain, spinal cord, and optic nerves. Symptoms may be mild, such as numbness in the limbs, or severe, such as paralysis or loss of vision. The body's own defense system attacks myelin, the fatty substance that surrounds and protects the nerve fibers in the central nervous system. The nerve fibers themselves can also be damaged. It is thought to be an autoimmune disease.

Since the typical age of onset is between 20 and 25, the total lifetime economic impact is greater than the cost of other disabling neurologic conditions including Alzheimer's disease and stroke. The patient cost of treating MS is high. One prescription drug, Novartis AG (NOVN) by Gilenya, is priced at \$48,000 per year. An analysis of healthcare claims data from more than 10,000 patients with MS found that prescription drugs accounted for 75% of direct healthcare costs.<sup>1</sup> In addition to drug expense, average annual cost per person for high management level was \$12,870, based on analysis of 4,634 hospital cases (mean age 48 years, 73% female). At discharge, 36% required inpatient sub-acute care, rehabilitation or home care. The typical cost per moderate episode was \$1,847 and mild episode \$243.<sup>2</sup> The majority of patients initially have a form of MS described as "relapsing-remitting", which manifests as a series of exacerbations followed by periods of partial or complete remission, and 30–50% of those will have progressive symptoms within the first ten years.<sup>3</sup> With such a variance in conditions, healthcare costs for each MS patient will vary, but adding cost of management plus drugs costing as high as \$48,000 per year, it would appear that each patient may experience expenses of between \$48,243 and \$60,870.

Autologous adult stem cell (AASC) treatments range from \$15,000 to \$20,000. The reparative stem cells help with myelin sheath repair. In our report we have given the example of the 50 year old man's success using AASC therapy, with no further need for prescriptions drugs. He was about to enter a full time care facility. Now he is living a normal life and resumed his career as a golf instructor. Considering only the prescription savings, the system could save up to \$28,000 per patient (\$48,000 for Gilenya less \$20,000 for treatment).

It is believed that, currently, there are approximately 250,000 to 350,000 people in the United States with MS diagnosed by a physician.<sup>4</sup> Approximately 15,000 new diagnosis occur each year. The average

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<sup>1</sup> Prescott JD, Factors S, Pill M, Lev GW. Descriptive analysis of the direct medical cost of multiple sclerosis in 2004 using administrative claims in a large nationwide database; *J Manag Care Pharm* 2007; 13: 44-52.

<sup>2</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC201004/>

<sup>3</sup> Runmarker B, Andersen O. Prognostic factors in a multiple sclerosis incidence cohort with twenty-five years of follow-up. *Brain*. 1993;116:117–164. [[PubMed](#)]

<sup>4</sup> [http://www.ninds.nih.gov/disorders/multiple\\_sclerosis/detail\\_multiple\\_sclerosis.htm#193353215](http://www.ninds.nih.gov/disorders/multiple_sclerosis/detail_multiple_sclerosis.htm#193353215)

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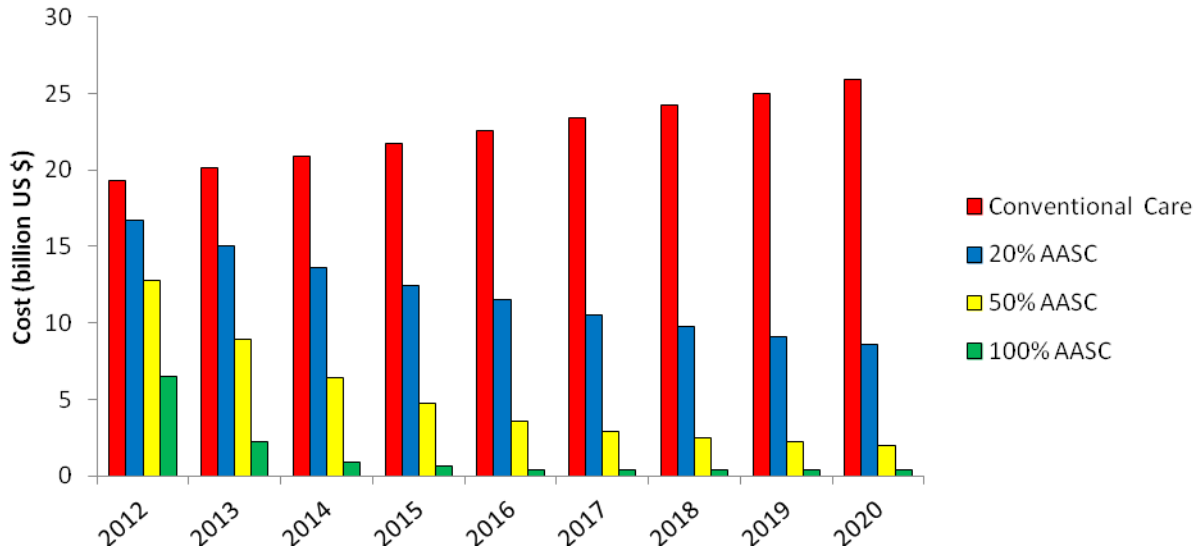
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annual cost savings on management and drug therapy over 9 years would be \$11 billion annually if 20% of the patients received AASC therapy; \$17 billion annually if 50% of the patients received AASC; and \$21 billion annually if 100% received AASC therapy. (This is calculated figuring AASC cost of \$18,500, conventional care at \$55,000, with an increase in diagnosis of 15,000 per year and calculating for a 70% success rate of AASC)

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### Cost of Multiple Sclerosis



Year	Conventional Care	20% receiving AASC	50% receiving AASC	100% receiving AASC
2012	19	17	13	7
2013	20	15	9	2
2014	21	14	6	1
2015	22	12	5	1
2016	23	12	4	0
2017	23	11	3	0
2018	24	10	3	0
2019	25	9	2	0
2020	26	9	2	0
total cost	203	107	46	12

\*all numbers in billion dollars

Calculated: conventional care \$55,000 per patient

AASC treatment \$18,500 per patient

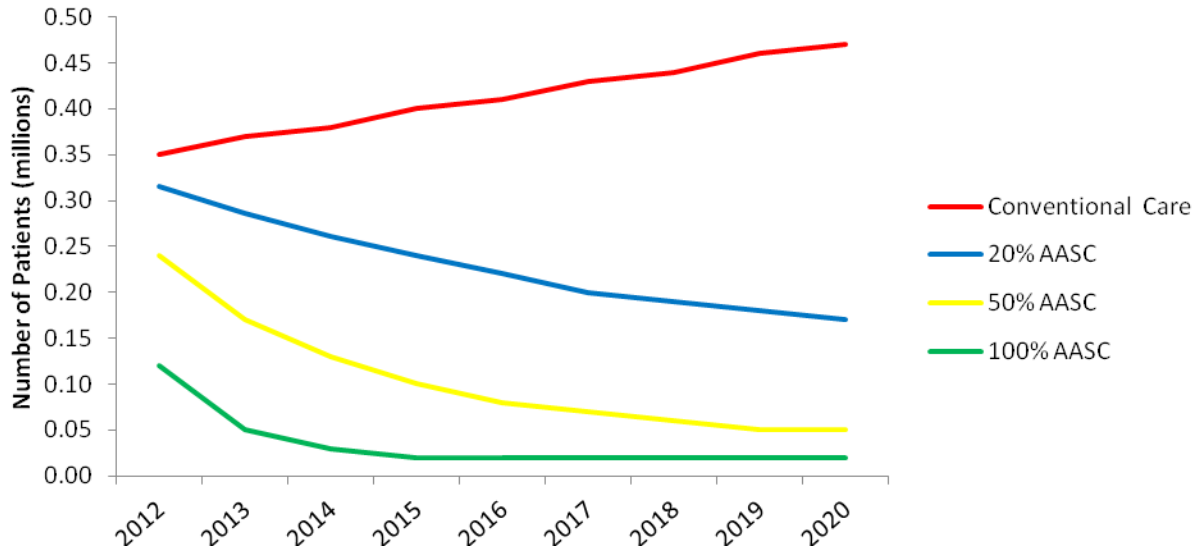
AASC success rate: 70%

Increase of 15,000 cases per year

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**# of Multiple Sclerosis Patients**



Year	Conventional Care	20% receiving AASC	50% receiving AASC	100% receiving AASC
2012	0.35	0.32	0.24	0.12
2013	0.37	0.29	0.17	0.05
2014	0.38	0.26	0.13	0.03
2015	0.40	0.24	0.10	0.02
2016	0.41	0.22	0.08	0.02
2017	0.43	0.20	0.07	0.02
2018	0.44	0.19	0.06	0.02
2019	0.46	0.18	0.05	0.02
2020	0.47	0.17	0.05	0.02

\*all numbers in millions of patients

AASC success rate of 70%