Multiple Sclerosis Drug Study
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Conducted for:

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# Table of Contents

Background and Objectives ........................................ 3
Key Findings ....................................................... 4
Methodology ......................................................... 5
Executive Summary .................................................. 7
Detailed Findings .................................................... 16
  Profile of People with MS .................................... 17
  Use of Disease Modifying Agents ............................ 24
  Tysabri Awareness and Usage ............................... 37
  Recent Events in MS Treatment ............................... 51
Quality vs. Quantity of Life Issues: Risks Willing to Take in Order to Use Tysabri .......................... 62
Insurance Coverage Specifics ................................... 68
Demographics ......................................................... 72
Background & Objectives

Background

- The mission of the National Multiple Sclerosis Society is to end the devastating effects of MS. The Society and its network of chapters nationwide promote research, educate, advocate on critical issues, and organize a wide range of programs - including support for the newly diagnosed and those living with MS over time.

Objectives

- The objectives of this research are to better understand what level of risk people with MS are willing to take with new drugs directed at MS, their reactions to Tysabri going off and coming back onto the market, and their likelihood of using Tysabri in the future.
Key Findings

- There is significant respondent interest in having Tysabri available again for people with MS.
  - However, any re-introduction of the drug must be accompanied by detailed information from the drug company about risks and effectiveness expectations.
  - In turn, doctors must fully understand the drug company materials in order to educate their patients about these same issues.
  - In addition, testimonials from previous users would be helpful to speak to those with no prior knowledge or trial of the drug.

- On the other hand, almost one-half are unsure if Tysabri should be made available again.
  - Due to the cases of PML discovered and reported during the initial Tysabri trials, many are cautious in their opinion of Tysabri, as well as whether or not they would use the drug at all.
  - This is typically true among females, those who do not receive care at a specialized MS care facility, and are less educated.
  - An accurate test for PML would alleviate some of these fears.

- Education is the key. Those with prior awareness of the drug (50%) typically have a positive opinion of it and would use it immediately if again available.

- The FDA faces image and credibility problems with the MS population that may place it at risk that its pronouncements will fall on skeptical ears.
  - Although on the surface, it might appear positive that the FDA is equally labeled as "too liberal" or "too conservative", the fact is that an institution which is relied on heavily for objectivity and hope should get more than a third of respondents feeling it is doing a "good" or "excellent" job. In fact, 65% rate the FDA as only doing a "fair" or "poor" job.
  - Recent negative media publicity about Vioxx, a previously approved FDA drug, around the time of interviewing, may have also contributed to the rather high negative scores and respondent views.
Methodology

Interviews were completed among 810 people with Multiple Sclerosis randomly selected from Harris Interactive’s Online MS panel of 4,351 people who personally have been diagnosed by a medical doctor or healthcare professional as having Multiple Sclerosis. All respondents were from the U.S. and were at least 18 years of age.

This was an online survey, which took on average between 15 and 20 minutes to complete.

Data collection was completed between December 13 and December 19, 2005. A follow-up survey was done in which 651 respondents were re-contacted to correct a programming issue with four risk-type (Standard Gamble) questions on the survey. This follow-up was conducted between December 28, 2005 and January 17, 2006.

The initial survey had a response rate of 31.7% with 810 surveys completed. The follow-up survey had a response rate of 73.9% with 557 of the targeted 651 completing the follow-up survey.

Harriss Poll Online Panel Information

Harris Poll Online(sm) (HPOL) is a multimillion-member panel of online respondents. It is the largest database of individual double opt-in respondents in the world.

All panelists recruited have completed a “confirmed” or “double” opt-in (COI/DOI) process.

– This process requires that each registrant confirm his or her desire to join the panel by clicking on a link within an email that is sent to the registrant’s email address upon registering. If the registrant clicks on the link within the email, he or she is added to the Harris Poll Online. If the registrant takes some other action or simply deletes the email, he or she is not added to the database.
Methodology (Cont’d)

Harrris Poll Online Panel Information (Cont’d)

- Panelists have joined the Harris Poll Online through over 100 different sources.
  - Many different diverse methods are leveraged to gain panelists, including co-registration offers on partners’ websites, targeted emails sent by online partners to their audiences, graphical and text banner placement on partners’ websites, trade show presentations, targeted postal mail invitations, TV advertisements, member referrals, and telephone recruitment of targeted populations.

- Many respondents with MS belong to the Chronic Illness panel, a specialty panel within the Harris Poll Online Panel.
  - These panelists participate in a variety of different surveys and have been screened into this panel by completing the Harris online health and wellness screener. This screener captures a variety of illnesses, which must be diagnosed by a physician and/or health care provider in order to qualify for the Chronic Illness panel. Members of the Chronic Illness panel typically respond between 30-40%.

- There are 8,172 respondents in this panel with MS (self and household). Of those, 7,469 are from the United States and are 18+ years old. 4,351 have MS themselves. The other 3,118 panel members have someone in their household that has MS.

Margin of Error

- Because this is a sample, and not an actual population, an associated margin of error applies. At a 95% level of confidence, the margin of error for this sample of 810 total is +/- 3.4% or better. This essentially means that we can be 95% certain that, for any percentage result for the total sample, the “true” percentage is within +/- 3.4 percentage points of that which is actually reported.

Significant Differences

- Within this report, significant differences are reported among analytic subgroups at the 95% level of confidence and are noted by Bold percentages. Those subgroups and associated percentages that are significantly lower than what is Bold are shown in Italics.
Executive Summary

- The demographic profile of these respondents with MS generally reflects the national population of people with MS.
  - Respondents tend to be white (92%) females (75%) who are married/living with a partner (66%), about 50 years of age, not employed (58%) and live in households with an average of two people.
  - The vast majority of respondents have health insurance (92%), typically a private plan (60%), which is a managed care plan (85%) and it covers prescriptions (84%).
  - Respondents were first diagnosed on average 12 years ago and typically visit a doctor for their MS about once every three to four months.
  - Although the majority receive care in their doctor’s office (55%), more than one-third receive care at clinics that specialize in MS care (36%).
  - About two-thirds of respondents have Relapsing-Remitting MS (63%), with a similar number mentioning they are in a stable condition (69%).
  - Although the majority either occasionally or always need a support aid or wheelchair to be mobile (54%), another two in five respondents only experience mild MS symptoms (43%).
  - The majority or respondents primarily experience fatigue (78%), balance/coordination problems (73%), and numbness/tingling (64%), followed by stiffness/muscle spasms (58%), difficulty walking (57%), bladder problems (53%) and memory/cognitive problems (51%).
Executive Summary

- Whereas seven in ten respondents take some type of symptomatic medication to relieve MS symptoms (71%), fewer (58%) take a DMA.
  - As can be expected, those with Progressive MS are significantly more likely to take symptomatic medications (82%), as well as those who have more physical restrictions (82%).
  - DMAs are significantly more likely to be taken by younger respondents (under age 55-66%), who have been more recently diagnosed (past 5 years-72%), and receive care at clinics that specialize in MS care (70%). DMA users also are significantly more likely to have private health insurance (67%) with prescription coverage (64%).
  - Interestingly enough, users of both symptomatic medications and DMAs are significantly more likely to have prior awareness of Tysabri (80% and 78%, respectively).

- For the most part, DMA users report positive experiences with DMA use, with only one in ten stating they are likely to switch DMAs (12%).
  - Four in five respondents who take a DMA find it to be effective (79%) and their DMA has either met or exceeded their expectations (76%)
  - More than four in five respondents who take a DMA are satisfied with it (84%).
  - DMA users reporting these positive experiences with DMA use tend to be females with Relapsing-Remitting MS with an improving condition.
  - Those current DMA users who are likely to switch DMAs are significantly more likely to have Progressive MS (21%) and be dissatisfied with their current DMA (33%) for being ineffective (50%).
Executive Summary

- Although the vast majority of DMA users find them easy to use (82%), the majority do experience some type of side effects (55%) and have suggestions for ways to improve satisfaction with DMA use (54%).
  - The most frequently mentioned DMA side effects were flu-like symptoms/malaise (64%), followed by muscle aches/pains (49%).
  - Satisfaction with DMAs can be improved by having them be more effective (68%), more convenient to use (63%, particularly a different administration method-58%), cheaper (38%) and cause fewer side effects (36%).

- Two in five respondents who currently do not take a DMA have done so in the past (39%); typically about three years ago. Previous DMA users had stopped primarily due to the side effects experienced (47%) and have no plans to restart DMA use (47%).
  - Previous DMA users are significantly more likely to be males, under age 45, who are not employed, have Progressive MS, receive care at an MS/Neurology clinic and have prior Tysabri awareness.
  - DMAs taken in the past among current DMA non-users, are primarily Avonex (51%), followed by Betaseron (40%) and Copaxone (37%).

- Respondents who have never taken a DMA tend to be females (62%), age 55+ (67%), who are employed (76%), have Relapsing-Remitting MS (64%), in an improving/stable condition (64%) with mild symptoms (70%) and receive care at locations other than MS specialized clinics (62%).
  - Interestingly enough, these respondents are significantly more likely to be unaware of Tysabri (70%).
  - Reasons for never taking a DMA focus primarily on the respondents’ MS not being severe enough (42%) followed by their knowledge of DMA side effects (31%) and affordability issues (21%).
Executive Summary

- As many respondents were aware of Tysabri prior to the survey as were unaware of this drug (50% each).
  - Almost two in five respondents indicated they had heard of Tysabri in relation to it being a drug that had either come on or been taken off the market in the past few years (38%).
  - An additional one in ten stated they had heard of the drug when directly asked by name (12%).
  - Those aware of Tysabri were significantly more likely to be under age 55 (54%), with private health insurance (55%), live in urban/suburban areas (54%), have mild symptoms (45%), use DMAs (66%), and receive care at MS/Neurology clinics (62%). They would like to see Tysabri available again (71%) and would use it immediately or with some caution (58%).

- Respondents aware of Tysabri prior to the survey have mixed feelings about the drug (positive opinions-25%, negative opinions-26%, neutral opinions-31%), with only 6% of those aware who have ever taken it.
  - As might be expected, those with positive Tysabri opinions, as well as those with previous Tysabri use, are significantly more likely to receive care at MS/Neurology clinics (30% and 10%, respectively) and feel Tysabri should be available again (50% and 12%, respectively).
  - Among half of the respondents who had discussed Tysabri with their doctors (49%), twice as many of their doctors were felt to have positive opinions of Tysabri (45%) as negative opinions (22%). However one quarter of these respondents stated their doctor was neutral about Tysabri (26%).
Executive Summary

- Primary reasons for not taking Tysabri, among those aware of the drug, center on respondents not being part of a clinical trial (31%) and the fact that other drugs were working for them (25%), particularly DMAs.
  - Secondary mentions were related to the drug’s risk and availability (24% each).
  - Although at low levels, some respondents aware of Tysabri mention the lack of convincing information they received about the drug from doctors and the drug company (7% and 6%, respectively).
- Since there is a low base size of previous Tysabri users (3% total), caution must be taken with regard to the projectability of findings among this subgroup.
  - All previous Tysabri users involved their doctor in their choice to try this drug and for the most part were not part of a clinical trial (73%).
  - Infusions were typically administered at MS/Neurology clinics (65%) and Tysabri was used in conjunction with other drugs (50%), such as Avonex (46%) and Rebif (23%). This was by as many users as those who used Tysabri alone (46%).
  - Satisfaction with the Tysabri treatment schedule, ease of use, and site and staff administering the drug was extremely high (96%, 96% and 100%, respectively). Almost half of the Tysabri users or more were very satisfied with each of these aspects.
  - Half of the Tysabri users surveyed felt the drug had some positive effect on their MS symptoms. These positive effects were primarily related to reduced physical symptoms (19%) and increased energy levels (15%).
  - Almost all former Tysabri users stopped taking the drug involuntarily; it was removed from the market (92%). Secondary mentions for stopping use focused on price (8%) and effectiveness (8%). In addition, one in ten stopped based on their doctor’s recommendation (8%). Very few felt the drug was too risky (4%).
Executive Summary

- Respondents took notice of recent events regarding medications that were to directly help manage MS either coming on or being removed from the market in the past two to three years.
  - More than one-third of respondents were aware of recent MS drugs introduced on the market (36%) and two in five were aware of recent drugs removed from the market (41%).
  - These respondents were significantly more likely to be from urban/suburban areas, who have received care at an MS/Neurology clinic, currently use DMAs, are aware of Tysabri, have a positive opinion of it and would like to see it available again.
  - Respondents who correctly identified Tysabri as being removed from the market (85% of those aware of removals), were significantly more likely to be from urban/suburban areas (88%) and mentioned the lethal/serious drug side-effects as the reason for removal (64%).

- After being read background information about Tysabri, those who had not heard of the drug prior to this survey gave as many negative reactions (40%) as neutral reactions (39%).
  - Another one quarter gave positive reactions (25%).
    - Positive reactions were significantly higher among those who take DMAs (30%).
    - Neutral reactions were scattered among favoring its reform after further testing and other cautious behaviors especially among those employed (47%).
    - Negative reactions centered on a lack of interest in trying the drug, particularly among females (43%) and those who do not believe it should be available again (80%).
Executive Summary

- Among all respondents, one-third feel Tysabri should be made available (33%). However, almost one-half are unsure of this (48%).
  - Those feeling it should be available are significantly more likely to be males who had been aware of Tysabri, use a DMA, and are of higher income in urban/suburban areas. They also have a positive opinion of Tysabri and would use it immediately.
  - More than one-third feel they would be likely to discuss the future use of Tysabri with their doctor (36%).

- The majority of respondents (54%) state they would use Tysabri if it were again available and both they and their doctor agree it is the best treatment for their MS, although 30% would wait at least 6 months after introduction.
  - Those who would use Tysabri immediately are significantly more likely to have been aware of the drug previously, be males from urban/suburban areas, who have a Progressive condition and use DMAs.
  - Respondents who state they would never use Tysabri are significantly more likely to be those with a HS or less education and do not use DMAs.

- When asked under which circumstances respondents would use Tysabri, almost three-quarters (73%) now state they would use the drug, although under limited circumstances (62%); particularly if an accurate test for PML was available (44%).
  - However one-quarter of respondents (25%) would require not only an accurate PML test, but also additional safety data and the presence of an ineffectual treatment with current drugs.

- Those that state they would never use Tysabri are typically those with a high school or lower education.
Executive Summary

- Females are significantly more likely to be cautious in terms of Tysabri trial.
  - They are less likely to state they would use Tysabri within any time frame (51% vs. 60% male), as well as immediately (17% vs. 33% male).
  - Females are more likely to require an accurate test for PML before Tysabri usage (47% vs. 35% male).
  - They are also more likely to believe additional cases of PML might be detected among previous Tysabri users (37% vs. 28% male).

- Those with prior awareness of Tysabri and those who receive care at MS/Neurology clinics are significantly less likely to be cautious in terms of Tysabri trial.
  - They are more likely to state they would use Tysabri if available (63% and 60%, respectively), and regardless of circumstances (80% and 79%, respectively).
  - In addition, they are less likely to believe additional cases of PML will be detected among previous users (30% each).

- Analysis of the first risk-type (Standard Gamble) questions shows that in total 53% would take Tysabri even if there was some percentage chance of developing Non-Fatal PML, but only 34% would take it if there was any chance of developing Fatal PML.
  - However, the biggest finding here may be that 19% and 26%, respectively, “don’t know” if they would take it unless there is more information, knowledge and it is recommended by their personal physician.

- Analysis of the second risk-type (Standard Gamble) questions shows that overall 55% would take Tysabri to forestall any percentage increase in MS symptoms and 60% would take Tysabri to forestall any decline in quality or remaining years of life.
  - However, once again, we see the need for more education and information about Tysabri to respondents (i.e. people who have MS), and/or a personal physician’s recommendation as being key to trying the drug.
Executive Summary

- Respondents stating they would not use Tysabri or are unsure of whether they would use it under any of the circumstances presented in the risk-type (Standard Gamble) questions tend to be female, those with lower education who receive care at facilities that don’t specialize in MS care, do not use DMAs and have no previous awareness of Tysabri.

- One-third of respondents (32%) feel the FDA does a good/excellent job of protecting consumers and patients from dangerous medications.
  - Those who feel this way are significantly more likely to be positive toward Tysabri (55%), would use it immediately if available (48%), had prior awareness of the drug (36%) and currently use DMAs (36%).
  - In fact, 65% rate the FDA as only doing a fair/poor job.

- As many who believe the FDA is too lax/liberal, believe it is too cautious/conservative, with a similar number being unsure (27%, 25% and 26%, respectively).
  - Too lax/liberal was significantly more likely to be mentioned among females (29%) with lower household incomes (32%) who would never use Tysabri (44%) and have a negative opinion of it (37%).
  - Too cautious/conservative was used to describe the FDA significantly more so among those age 55+ (33%) with a worsening condition (34%).
Detailed Findings
Profile of People with MS
When First Diagnosed/Frequency of Visiting a Doctor

- Respondents were first diagnosed with MS an average of 12 years ago.
  - As can be expected, the time since diagnosed with MS increases with respondent age and disease progression.
- Respondents typically visit a doctor for their MS about once every three to four months.
  - Males are significantly more likely than females to go every four months vs. three months.
  - The frequency of visit increases as the age of the respondent increases.
  - Those respondents who have Relapsing/Remitting MS and/or do not use a DMA visit their doctors more frequently.

### Average Time Since Being Diagnosed

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Average Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 45</td>
<td>6.8 yrs</td>
</tr>
<tr>
<td>Progressive</td>
<td>13.1 yrs</td>
</tr>
<tr>
<td>Relapsing/Remitting</td>
<td>10.6 yrs</td>
</tr>
</tbody>
</table>

| Base: Total Respondents (n=810) |

### Average Time Between Doctor Visits

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Total (Mos.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than once a month</td>
<td>1%</td>
</tr>
<tr>
<td>Once a month</td>
<td>3%</td>
</tr>
<tr>
<td>Once every 2-3 months</td>
<td>20%</td>
</tr>
<tr>
<td>Once every 4-6 months</td>
<td>39%</td>
</tr>
<tr>
<td>Once every 7-12 months</td>
<td>19%</td>
</tr>
<tr>
<td>Less than once a year</td>
<td>12%</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
</tr>
<tr>
<td>Don’t see a doctor for my MS</td>
<td>7%</td>
</tr>
</tbody>
</table>

**Female**
- 3.1 mos.
**Male**
- 3.7 mos.

**Age 55+**
- 2.9 mos.
**Under 45**
- 3.6 mos.

**Do not use DMA**
- 2.9 mos.
**Use DMA**
- 3.5 mos.

**Relapsing/Remitting**
- 2.9 mos.
**Progressive**
- 3.8 mos.
Where Usually Receive Care

- More than one-third of respondents receive care at clinics that specialize in MS care.
  - However, the majority receive MS care in their doctors' office.
  - Respondents who are significantly more likely to receive care at specialized MS clinics are under 55 years of age, have been diagnosed within the past 20 years, currently take a DMA and were aware of Tysabri prior to this survey.

**Where Usually Receive MS Care**

- Doctor's office: 55%
- MS center or MS clinic: 11%
- Neurology clinic: 25%
- Under 55: 40%
- Age 55+: 27%
- Diagnosed past 20 yrs: 38%
  - Diagnosed 20+ yrs: 22%
- Use DMA: 43%
  - Do not use DMA: 26%
- Prior Tysabri awareness: 44%
  - No Tysabri awareness: 27%

Q2. Where do you usually receive your MS care?

Base: Total Respondents (n=810)
Description of MS Disease Course

- About two-thirds of respondents surveyed have Relapsing-Remitting MS.
  - These respondents were significantly more likely to be females, under age 45, to have been diagnosed in the past five years, and use a DMA.

![Pie chart showing disease course distribution]

**Best Description of MS Disease Course**

- **Relapsing-Remitting MS**
  - You have clear cut relapses or flare-ups of symptoms that are followed by either complete or partial recovery. Between relapses, your MS is stable, and there is no worsening of your symptoms or your ability to perform your usual activities.

- **Secondary Progressive MS**
  - From the beginning you had a steady worsening of your symptoms or a steady decline in your ability to perform your usual activities. The worsening may have been slow or fast, but the rate of worsening was steady. You never had any clear-cut relapses.

- **Primary Progressive MS**
  - From the beginning you had a steady worsening of your symptoms or a steady decline in your ability to perform your usual activities. The worsening may have been slow or fast, but the rate of worsening was steady. You never had any clear-cut relapses.

- **Progressive Relapsing MS**
  - You have clear cut relapses or flare-ups of symptoms that are followed by either complete or partial recovery. Between relapses, your MS is stable, and there is no worsening of your symptoms or your ability to perform your usual activities.

**Female** 68%
**Male** 49%
**Under 45** 78%
**Age 45+** 57%
**Diagnosed past 5 yrs** 74%
**Diagnosed 6+ yrs** 59%
**Use DMA** 67%
**Do not use DMA** 58%

Q4. Which definition of disease course best describes your MS?

Base: Total Respondents (n=810)
Current Condition/Activity Restriction

- More than two-thirds of respondents are in a stable condition, whereas almost one-quarter are experiencing a worsening condition.
- While two in five respondents surveyed only experience mild symptoms, the majority (54%) either occasionally or always need a support aid or wheelchair to be mobile.
  - Those not requiring support are significantly more likely to be females, under age 45, with Relapsing/Remitting MS, who would not use Tysabri immediately if available now.

**Description of Current Condition**

- **Stable** 69%
- **Improving** 6%
- **Don't know/Not sure** 2%
- **Worsening** 23%

**Activity Restriction**

- **Mild (net)** 43%
  - Mild MS symptoms, but there is no visible problem with walking
  - Mild MS symptoms that do not limit activity or lifestyle

- **Some walking (net)** 24%
  - Can walk 25 feet without support, but use support occasionally or for longer distances
  - Trouble walking, but don’t use any type of aid to help walk

- **Must have support (net)** 22%
  - Must use a cane or other support on one side to walk 25 feet; may use scooter or wheelchair for longer distances
  - Must use two canes/walker/two crutches to walk 25 feet; may use scooter or wheelchair for longer distances

- **Only form of mobility is a wheelchair** 8%

Q5a. How would you describe your current condition?

Q5c. Which of the following best describes the extent to which MS currently restricts your activity, if it does at all?
Symptoms Currently Experienced

The majority of respondents primarily experience fatigue, balance/coordination problems, and numbness/tingling, followed by stiffness/muscle spasms, difficulty walking, bladder problems and memory/cognitive problems.

- As can be expected, all symptoms were significantly more likely to be experienced by those with Progressive or worsening MS.

**MS Symptoms Currently Experiencing**

- **Fatigue**: 78%
- **Balance or coordination problems**: 73%
- **Numbness, tingling**: 64%
- **Stiffness and/or muscle spasms**: 58%
- **Difficulty walking**: 57%
- **Bladder problems**: 53%
- **Memory or other cognitive problems**: 51%
- **Pain**: 45%
- **Depression**: 42%
- **Vision problems**: 38%
- **Sexual problems**: 31%
- **Bowel problems**: 26%
- **Dizziness, vertigo**: 24%
- **Tremors**: 23%
- **Speech problems**: 17%
- **Swallowing problems**: 16%
- **Difficulty moving arms**: 12%
- **Seizures or convulsions**: 3%
- **None**: 4%

Q5b. Which of the following MS symptoms are you currently experiencing?

- Males are significantly more likely than females to experience difficulty walking, sexual problems, tremors and seizures/convulsions.
- Respondents age 45+ are significantly more likely than those under age 45 to experience balance/coordination problems and difficulty walking.

Base: Total Respondents (n=810)
Symptomatic Medications Currently Taken for MS

- Seven in ten respondents take some type of symptomatic medication.
  - As can be expected, those with Progressive MS are significantly more likely to take most of these medications, as well as those who have more physical restrictions.

Q21. What other medications are you currently taking for your MS, in addition to any Disease Modifying Agents?

**Top Symptomatic Medication Mentions**

- **Any (net)**: 71%
- Lioresal: 17%
- Neurontin: 14%
- Ditropan: 8%
- Zanaflex: 8%
- Zoloft: 8%
- Amantadine: 7%
- Klonopin: 7%
- Valium: 6%
- Prozac: 6%
- Paxil: 6%
- Detrol: 6%

- Of particular note, is that those who were previously aware of Tysabri were significantly more likely than those unaware to be taking these medications.

**Progressive** 82%
**Relapsing/Remitting** 66%
**Walking restrictions** 82%
**Mild symptoms** 58%
**Prior Tysabri awareness** 80%
**No Tysabri awareness** 62%

**Female** 8%
**Male** 4%

**Mentions under 6% not shown**

Base: Total Respondents (n=810)
Use of Disease Modifying Agents
DMAs Currently Taken

- DMAs are currently being taken by three in five respondents.
  - They are significantly more likely to be taken by younger respondents who have more recently been diagnosed and receive care at an MS or Neurology clinic.
  - In addition, respondents taking DMAs typically have private health insurance that includes prescription coverage.
  - Those with prior Tysabri awareness are significantly more likely to be taking a DMA, especially Avonex, Copaxone or Rebif.

### Disease Modifying Agents Currently Taking

<table>
<thead>
<tr>
<th>Disease Modifying Agents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>42%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
</tr>
<tr>
<td>Novantrone</td>
<td>2%</td>
</tr>
<tr>
<td>Rebif</td>
<td>7%</td>
</tr>
<tr>
<td>Betaseron</td>
<td>11%</td>
</tr>
<tr>
<td>Copaxone</td>
<td>18%</td>
</tr>
<tr>
<td>Avonex</td>
<td>21%</td>
</tr>
<tr>
<td>Some (net)</td>
<td>58%</td>
</tr>
</tbody>
</table>

#### Prior Tysabri awareness
- Diagnosed past 5 yrs: 24%
- No Tysabri awareness: 13%

#### Diagnosed past 5 yrs
- Relapsing/Remitting: 24%
- Progressive: 16%
- Prior Tysabri awareness: 31%
- No Tysabri awareness: 11%

#### Care at MS/Neuro clinic
- Care at other locations: 54%
- Care at MS/Neuro clinic: 70%
- No Tysabri awareness: 39%
- Prior Tysabri awareness: 78%
- Diagnosed past 5 yrs: 72%
- Diagnosed > 5 yrs: 53%

#### Other factors
- Under 55: 66%
- Age 55+: 43%
- Private health insurance: 67%
- Gov't assisted programs: 50%
- Have Rx coverage: 64%
- No Rx coverage: 39%
- Diagnosed past 5 yrs: 72%
- Diagnosed > 5 yrs: 53%
- Care at MS/Neuro clinic: 70%
- Care at other locations: 54%
- Prior Tysabri awareness: 78%
- No Tysabri awareness: 39%

Q6. Which of the following Disease Modifying Agents, if any, do you currently take for your MS?

Base: Total Respondents (n=810)
Evaluation of Current DMAs

- Four in five respondents who take a DMA find it to be effective and their DMA has either met or exceeded their expectations.
  - These attitudes are significantly more likely among those with Relapsing/Remitting MS, an improving condition, and who are satisfied with their current DMA.
  - In addition, females are significantly more likely to say their DMA exceeded their expectations.

Q12. How effective do you feel your current Disease Modifying Agent(s) is?
Q13. To what extent has your Disease Modifying Agent(s) met your expectations?

Base: Total Respondents who are currently taking a DMA (n=474)
Satisfaction with Current DMAs

- More than four in five respondents who take a DMA are satisfied with it.
  - Those satisfied with their DMA are significantly more likely to feel it exceeded or met their expectations, to be females, who are improving or stable with Relapsing/Remitting MS and have mild activity restriction. They are also more likely to have prescription coverage.

### Satisfaction With DMAs

- **Very satisfied**: 42%
- **Somewhat satisfied**: 42%
- **Somewhat dissatisfied**: 11%
- **Very dissatisfied**: 2%
- **Don't know/Not sure**: 4%

**Q14. How satisfied are you with the Disease Modifying Agent(s) you are currently taking for your MS?**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>86%</td>
</tr>
<tr>
<td>Male</td>
<td>77%</td>
</tr>
<tr>
<td>Rx coverage</td>
<td>85%</td>
</tr>
<tr>
<td>No Rx coverage</td>
<td>68%</td>
</tr>
<tr>
<td>Relapsing/Remitting</td>
<td>91%</td>
</tr>
<tr>
<td>Progressive</td>
<td>69%</td>
</tr>
<tr>
<td>Improving/Stable</td>
<td>91%</td>
</tr>
<tr>
<td>Worsening</td>
<td>60%</td>
</tr>
<tr>
<td>Mild symptoms</td>
<td>92%</td>
</tr>
<tr>
<td>Walking restrictions</td>
<td>78%</td>
</tr>
<tr>
<td>Exceeded/Met expectations</td>
<td>96%</td>
</tr>
<tr>
<td>Did not meet expectations</td>
<td>28%</td>
</tr>
</tbody>
</table>

Base: Total Respondents who are currently taking a DMA (n=474)
Ways to Improve Satisfaction with DMAs

- Satisfaction with current DMAs can be improved by having them be more effective, convenient to use, cheaper and cause fewer side effects.
  - Those with Relapsing/Remitting MS were significantly more likely to mention convenience and fewer side effects.

<table>
<thead>
<tr>
<th>Improving Satisfaction With DMA</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Made me feel better</td>
<td>53%</td>
</tr>
<tr>
<td>More effective</td>
<td>51%</td>
</tr>
<tr>
<td>Different administration method</td>
<td>58%</td>
</tr>
<tr>
<td>Easier to use</td>
<td>19%</td>
</tr>
<tr>
<td>Different storage method</td>
<td>12%</td>
</tr>
<tr>
<td>Less complicated</td>
<td>9%</td>
</tr>
<tr>
<td>Less expensive</td>
<td>38%</td>
</tr>
<tr>
<td>Covered by my insurance</td>
<td>9%</td>
</tr>
<tr>
<td>Fewer/less side effects</td>
<td>36%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
</tr>
</tbody>
</table>

- On the other hand, unemployed Progressive or worsening respondents with activity restrictions were significantly more likely to mention improvements in effectiveness.

- Convenience was significantly more likely to be mentioned among females, under age 45, who are employed with a HS or less education.

- In addition, price was an improvement mentioned by those with a HS or less education.

Q15. What would improve your satisfaction with your Disease Modifying Agent(s)?

Base: Total Respondents who are not very satisfied with the DMA (n=258)
Side Effects of DMAs

- The majority of respondents who take a DMA experience some type of side effects.
- The most frequently mentioned side effects were flu-like symptoms/malaise, followed by muscle aches/pains, especially among Relapsing/Remitting respondents.

<table>
<thead>
<tr>
<th>Experienced Side Effects With Current DMAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Don’t know/Not sure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top Side Effects Experienced**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flu-like symptoms/Malaise</td>
</tr>
<tr>
<td>Muscle aches/pains</td>
</tr>
<tr>
<td>Inflamed reaction at injection site</td>
</tr>
<tr>
<td>Fatigue</td>
</tr>
<tr>
<td>Pain at injection site</td>
</tr>
<tr>
<td>Headache</td>
</tr>
<tr>
<td>General weakness</td>
</tr>
<tr>
<td>Fever</td>
</tr>
<tr>
<td>Depression</td>
</tr>
<tr>
<td>Nausea</td>
</tr>
<tr>
<td>Shortness of breath</td>
</tr>
<tr>
<td>Hair loss</td>
</tr>
</tbody>
</table>

Q16. Have you experienced any side-effects or have any particular issues with your current Disease Modifying Agent(s)?
Q17. What side-effects or issues have you experienced?

**Mentions under 10% not shown

- Secondary mentions related to inflamed injection site reactions, fatigue and pain at the injection site; again especially among Relapsing/Remitting respondents.
- Side effects of injection site pain and hair loss were significantly more likely to be mentioned by females.

<table>
<thead>
<tr>
<th>Relapsing/Remitting</th>
<th>53%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progressive</td>
<td>37%</td>
</tr>
<tr>
<td>Female</td>
<td>41%</td>
</tr>
<tr>
<td>Male</td>
<td>25%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relapsing/Remitting</th>
<th>42%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progressive</td>
<td>28%</td>
</tr>
<tr>
<td>Female</td>
<td>13%</td>
</tr>
<tr>
<td>Male</td>
<td>2%</td>
</tr>
</tbody>
</table>

Q16 Base: Total Respondents who are currently taking a DMA (n=474)
Q17 Base: Total Respondents who experienced side effects with current DMA (n=259)
Ease of Taking DMAs

- The vast majority of respondents who take a DMA find it easy to do so.
  - This is significantly more likely to be mentioned by those on government assisted insurance programs, who are unemployed and very satisfied with their current DMA.

### Ease of Taking Current DMA(s)

<table>
<thead>
<tr>
<th>Top 2 Box</th>
<th>Base: Total Respondents who are currently taking a DMA (n=474)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gov't assisted program</td>
<td>90%</td>
</tr>
<tr>
<td>Private health insurance</td>
<td>80%</td>
</tr>
<tr>
<td>Not employed</td>
<td>87%</td>
</tr>
<tr>
<td>Employed</td>
<td>75%</td>
</tr>
<tr>
<td>Very satisfied with DMA</td>
<td>89%</td>
</tr>
<tr>
<td>Somewhat/Dissatisfied with DMA</td>
<td>76%</td>
</tr>
</tbody>
</table>

Q18. How easy is it for you to take your current Disease Modifying Agent(s)?
Likelihood of Switching DMAs/DMA Would Switch To

- At least one in ten current DMA users are likely to switch DMAs.
  - These are significantly more likely to be those with Progressive MS who are dissatisfied with their current DMA’s effectiveness, have no prescription coverage, and have government assisted health insurance.
  - Older respondents are significantly more likely to not be candidates for switching DMAs.

- Those likely to switch DMAs are most likely to switch to a current DMA, rather than none or wait for a new DMA to come on the market.
  - Those with Relapsing/Remitting MS and are covered by private insurance are significantly more likely to switch to a current DMA.
  - Those not employed are significantly more likely to not pick a current DMA and wait for something new.

Interestingly, those with no prior Tysabri awareness don’t know what DMA they would switch to.

Q19. How likely is it that you will switch from the Disease Modifying Agent(s) you are currently taking to another one?
Q20. Which of the following Disease Modifying Agents do you anticipate switching to?

**Likelihood to Switch DMA**

- Unlikely (net) 70%
- Likely (net) 30%
- Under 55% 66%
- Age 55+ 81%
- Dissatisfied with DMA 33%
- Satisfied with DMA 8%
- Current DMA not effective 50%
- Current DMA effective 9%
- Gov’t assisted program 16%
- Private health insurance 9%
- No Rx coverage 25%
- Rx coverage 10%
- Progressive 21%
- Relapsing/Remitting 8%

**Which DMA Would Switch To**

- Will switch to current DMA 44%
- Copaxone 13%
- Rebif 11%
- Avonex 7%
- Betaseron 6%
- Novantrone 6%
- Other 15%
- Not employed 38%
- Employed 5%
- None/Waiting for something new 27%
- Don’t know/Not sure 29%
- Private health insurance 54%
- Gov’t assisted program 24%
- Relapsing/Remitting 64%
- Progressive 27%
- No Tysabri awareness 50%
- Prior Tysabri awareness 15%

Q19 Base: Total Respondents who are currently taking a DMA (n=474)
Q20 Base: Total Respondents who are currently taking a DMA and are likely to switch to another DMA (n=55)
Among Non-current DMA Users - Prior DMA Use

- Two in five respondents who currently do not take a DMA have done so in the past.
  - This is significantly more likely among males, under age 45, who are not employed, have Progressive MS, receive care at an MS/Neurology clinic, and have prior Tysabri awareness.
- DMAs taken in the past among current DMA non-users, are primarily Avonex, followed by Betaseron and Copaxone.
  - Avonex was most likely taken by respondents receiving care at an MS/Neurology clinic.
  - Copaxone was most likely taken by respondents with Relapsing/Remitting MS who have private health insurance.
  - Rebif was most likely taken by employed respondents under age 45 who had private health insurance.
  - Novantrone was most likely taken by respondents with Progressive MS who received treatment at a MS/Neurology clinic.

**Ever Taken Any DMAs**
- Yes: 39%
- No: 59%
- Don't know/Not sure: 2%

**DMAs Taken in the Past**
- Avonex: 51%
- Betaseron: 40%
- Copaxone: 37%
- Rebif: 12%
- Novantrone: 6%
- Other: 11%
- Don't know: 3%

Q7a. Have you ever taken one of these Disease Modifying Agents for your MS?
Q7b. Which of the following Disease Modifying Agents have you taken in the past for your MS?

Q7a Base: Total Respondents who are not currently taking a DMA (n=336)
Q7b Base: Total Respondents who are not currently but have taken a DMA (n=131)
Among Non-Current DMA Users – When Last Took A DMA and Why Stopped

- Current non-DMA users, who have taken a DMA in the past, had typically done so about three years ago.
  - This was more likely to be among respondents ages 45+, in government assisted health insurance programs who were first diagnosed six or more years ago.
- The primary reason use of DMAs was stopped was due to the side effects experienced.

**When Last Took DMA**

<table>
<thead>
<tr>
<th>Time Since DMA Taken</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within past 6 months</td>
<td>11%</td>
</tr>
<tr>
<td>6 months - 1 year ago</td>
<td>11%</td>
</tr>
<tr>
<td>1-2 years ago</td>
<td>32%</td>
</tr>
<tr>
<td>3-5 years ago</td>
<td>24%</td>
</tr>
<tr>
<td>More than 5 years ago</td>
<td>21%</td>
</tr>
<tr>
<td>Don't know/Not sure</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Average Time Last Took DMA**

Total = 2.87 years

<table>
<thead>
<tr>
<th>Group</th>
<th>Time (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 45+</td>
<td>3.2</td>
</tr>
<tr>
<td>Under age 45</td>
<td>2.0</td>
</tr>
<tr>
<td>Gov't assisted program</td>
<td>3.3</td>
</tr>
<tr>
<td>Private health insurance</td>
<td>2.4</td>
</tr>
<tr>
<td>Diagnosed 6 yrs +</td>
<td>3.2</td>
</tr>
<tr>
<td>Diagnosed past 5 yrs</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**Why Stopped Taking DMA**

- Secondary mentions focused on the DMA not being effective and affordability.
- Lack of effectiveness was stated significantly more so among those needing support or a wheelchair for mobility.
- Depression was given as a reason more so among those with Progressive MS.
- Stopping DMAs due to alternative treatment methods being used was significantly more likely to be mentioned among those who were employed.

**Mentions under 10% not shown**

Base: Total Respondents who are not currently but have taken a DMA (n=131)
Among Non-current DMA Users – Reasons for Never Taking a DMA

- Reasons some respondents have never taken a DMA focus primarily on their MS not being severe enough, followed by knowledge of their side effects and affordability issues.
  - Significant differences related to these primary reasons were:
    - Mentions of their MS not being severe were more so among those with Relapsing/Remitting MS that was improving in condition with mild restriction. These respondents were typically employed with private health insurance.
    - Affordability mentions were more so among those under age 55 on government assisted programs with no prescription coverage, living in rural areas and who are unemployed.

Top Reasons For Not Taking DMAs**

- Under 55: 31%
- Age 55+: 11%
- Gov't assisted program: 27%
- Private health insurance: 6%
- No Rx coverage: 26%
- Have Rx coverage: 12%
- Rural: 30%
- Urban/Suburban: 14%
- Not employed: 27%
- Employed: 15%
- Relapsing/Remitting: 25%
- Progressive: 4%
- Improving/Stable: 23%
- Worsening: 0%
- Disease not severe enough: 42%
- Have side-effects: 31%
- Cannot afford: 21%
- In remission: 18%
- Do not like injections: 17%
- Private health insurance: 54%
- Gov't assisted program: 27%
- Employed: 62%
- Not employed: 21%
- Relapsing/Remitting: 55%
- Progressive: 11%
- Improving: 81%
- Stable/Worsening: 40%
- Mild symptoms: 62%
- Walking restrictions: 17%
- HS or less: 30%
- Some college +: 13%

Q8. What are the reasons why you have not taken one of these Disease Modifying Agents for your MS?

**Mentions under 5% not shown
Base: Total Respondents who have never taken a DMA (n=198)
Among Non-current DMA Users – Reasons for Never Taking a DMA (Cont’d)

- Interestingly enough, there were lower level mentions (about one in ten) among those who never took a DMA due to a lack of knowledge of DMAs and just never hearing about them.

**Top Reasons For Not Taking DMAs (cont’d)**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gov’t assisted program</td>
<td>27%</td>
</tr>
<tr>
<td>Private health insurance</td>
<td>8%</td>
</tr>
<tr>
<td>No Rx coverage</td>
<td>32%</td>
</tr>
<tr>
<td>Have Rx coverage</td>
<td>13%</td>
</tr>
<tr>
<td>Urban/Suburban</td>
<td>21%</td>
</tr>
<tr>
<td>Rural</td>
<td>9%</td>
</tr>
<tr>
<td>Not employed</td>
<td>27%</td>
</tr>
<tr>
<td>Employed</td>
<td>6%</td>
</tr>
<tr>
<td>Have other medical issues</td>
<td>16%</td>
</tr>
<tr>
<td>Doctor recommended not using</td>
<td>15%</td>
</tr>
<tr>
<td>Use alternative treatments</td>
<td>14%</td>
</tr>
<tr>
<td>Have no insurance</td>
<td>12%</td>
</tr>
<tr>
<td>Don’t believe they are effective</td>
<td>11%</td>
</tr>
<tr>
<td>Not employed</td>
<td>17%</td>
</tr>
<tr>
<td>Employed</td>
<td>6%</td>
</tr>
<tr>
<td>Progressive</td>
<td>19%</td>
</tr>
<tr>
<td>Relapsing/Remitting</td>
<td>5%</td>
</tr>
<tr>
<td>Walking restrictions</td>
<td>17%</td>
</tr>
<tr>
<td>Male</td>
<td>16%</td>
</tr>
<tr>
<td>Female</td>
<td>5%</td>
</tr>
<tr>
<td>HS or less</td>
<td>15%</td>
</tr>
<tr>
<td>Some college +</td>
<td>5%</td>
</tr>
<tr>
<td>Urban/Suburban</td>
<td>18%</td>
</tr>
<tr>
<td>Rural</td>
<td>8%</td>
</tr>
<tr>
<td>Care at other locations</td>
<td>13%</td>
</tr>
<tr>
<td>Prior Tysabri awareness</td>
<td>44%</td>
</tr>
<tr>
<td>No Tysabri awareness</td>
<td>11%</td>
</tr>
<tr>
<td>Never heard of any</td>
<td>8%</td>
</tr>
<tr>
<td>Never heard of any</td>
<td>8%</td>
</tr>
<tr>
<td>Insurance does not cover costs</td>
<td>8%</td>
</tr>
<tr>
<td>Have no doctor</td>
<td>5%</td>
</tr>
<tr>
<td>Gov’t assisted program</td>
<td>14%</td>
</tr>
<tr>
<td>Private health insurance</td>
<td>4%</td>
</tr>
<tr>
<td>No Rx coverage</td>
<td>21%</td>
</tr>
<tr>
<td>Have Rx coverage</td>
<td>5%</td>
</tr>
</tbody>
</table>

**Q8. What are the reasons why you have not taken one of these Disease Modifying Agents for your MS?**

**Mentions under 5% not shown**
Base: Total Respondents who have never taken a DMA (n=198)
Among Non-current DMA Users – Anticipated DMA Start/Restart Date

- The vast majority have no plans to start or restart taking a DMA or just don’t know when, if at all, they would take them.
  - Among those who would start or restart taking a DMA, the average time frame is within the next seven months.

Q11. When, if at all, do you anticipate starting or restarting a Disease Modifying Agent for your MS?

<table>
<thead>
<tr>
<th>When Plan on Starting/Restarting DMA</th>
<th>47%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never/No plans</td>
<td></td>
</tr>
<tr>
<td>Within the next year</td>
<td>4%</td>
</tr>
<tr>
<td>Within the next 6 months</td>
<td>1%</td>
</tr>
<tr>
<td>Within the next 3-5 months</td>
<td>1%</td>
</tr>
<tr>
<td>Within the next 1-2 months</td>
<td>1%</td>
</tr>
<tr>
<td>Don’t know/Not sure</td>
<td>47%</td>
</tr>
</tbody>
</table>
Tysabri Awareness and Usage
Overall Awareness

- Almost two in five respondents indicated they had heard of Tysabri in relation to it being a drug that had either come on or been taken off the market in the past few years.
  - An additional one in ten stated they had heard of the drug when directly asked by name.
  - Those aware are more likely to be under age 55, with private health insurance, live in urban/suburban areas, have mild symptoms, use DMAs, and receive care at MS/Neurology clinics. They would like to see Tysabri available again and would use it immediately or with some caution.

### Awareness of Tysabri

<table>
<thead>
<tr>
<th>Awareness of Tysabri</th>
<th>Total Tysabri Awareness 50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaided awareness (Q23/25)</td>
<td>38%</td>
</tr>
<tr>
<td>Yes (Aided awareness, Q27)</td>
<td>12%</td>
</tr>
</tbody>
</table>

- **Under 55**: 54%
- **Age 55+**: 41%
- **Private health insurance**: 55%
- **Gov’t assisted program**: 46%
- **Urban/Suburban**: 54%
- **Rural**: 42%
- **Make Tysabri available**: 71%
- **Do not/DK make Tysabri available**: 40%
- **Mild symptoms**: 45%
- **Must have support**: 59%
- **Use DMA**: 66%
- **Do not use DMA**: 27%
- **Care at MS/Neuro clinic**: 62%
- **Care at other locations**: 45%
- **Would use Tysabri immediately/wait**: 58%
- **Would never use**: 37%

---

Q22. Are you aware of any medications that have come on the market in the last two or three years that were supposed to directly help manage MS?

Q23/25. Please write in the name of that drug or drugs?

Q27. Have you heard of the MS drug Tysabri?
Opinion of Tysabri

- Among those aware of Tysabri, opinions are as likely to be positive (25%) as they are to be negative (26%).
  - In addition, one in five could not describe their opinion of Tysabri.
- Those with positive Tysabri opinions are significantly more likely to receive care at MS/Neurology clinics and feel Tysabri should be made available.

Q28. How would you describe your overall opinion of Tysabri?

Don’t know 18%

Very negative 14%
Negative 12%
Neutral 31%
Positive 16%
Very positive 8%

Care at MS/Neuro clinic 30%
Care at all other locations 20%
Make Tysabri available 50%
Do not/DK make Tysabri available 3%
Discussed with Doctor/Doctor’s Opinion of Tysabri

- Half of the respondents surveyed who were aware of Tysabri have discussed it with their doctor.
  - This was significantly more likely to be the case among respondents who live in the Northeast, have a worsening condition, currently use a DMA, and themselves have a positive opinion of Tysabri, and would use it immediately if available.

- Twice as many respondents who were aware of Tysabri and discussed it with their doctors’ state their doctors have a positive opinion of the drug as those that have a negative opinion.
  - However, one quarter of these respondents stated their doctor was neutral.

- Positive doctor opinions were mentioned significantly more so among respondents who were on government assisted programs with no prescription coverage, have a positive opinion themselves about Tysabri, want it to become available and would use the drug immediately, if so.

**Discussed Tysabri With Doctor**

- Yes: 49%
  - Northeast: 66%
  - Worsening: 61%
  - Use DMA: 53%
  - Positive Tysabri opinion: 74%
  - Would use Tysabri immediately: 67%

- No: 51%
  - All other regions: 44%
  - Stable/Improving: 45%
  - Do not use DMA: 34%
  - Neutral/Negative/DK Tysabri opinion: 41%
  - Would wait/never use: 45%

**Doctor’s Opinion of Tysabri**

- Top 2 Box
  - Very negative: 7%
  - Negative: 15%
  - Neutral: 26%
  - Positive: 28%
  - Very positive: 16%
  - 45%

**Q29. Have you discussed Tysabri with your doctor?**

**Q30. How would you describe your doctor’s overall opinion of Tysabri?**

- Q29 Base: Total Respondents who have heard of Tysabri (n=405)
- Q30 Base: Total Respondents who are aware of Tysabri and have discussed it with their doctor (n=198)
Ever Taken Tysabri

- Almost all respondents surveyed had never taken Tysabri (3% based on total respondents).
  - The few that had were significantly more likely to have care received at an MS/Neurology clinic, have a positive opinion of Tysabri, and would want Tysabri available for immediate use.

Q31. Have you ever taken the medication known as Tysabri to treat your MS?

Base: Total Respondents who have heard of Tysabri (n=405)
Reasons Why Have Not Taken Tysabri

- Primary reasons for not taking Tysabri, among those aware of the drug, center on respondents not being part of a clinical trial and the fact that other drugs were not working for them, particularly DMAs.
  - Secondary mentions were related to the drug’s risks and availability.

Q40. Why did you not take Tysabri? Base: Total Respondents who have heard of Tysabri but have not taken it (n=379)

Reasons For Not Taking Tysabri**

- Was not part of a clinical trial: 31%
- Other medications I was taking were working: 25%
- Too risky: 24%
- Was not available: 24%
- Symptoms were stable: 22%
- Had more potentially serious side-effects: 15%
- I was scheduled to begin taking it when it was suspended: 14%
- Based on my own reading and research: 13%
- Disease was not severe enough: 11%

Relapsing/Remitting: 30%
Progressive: 18%
Use DMA: 30%
Do not use DMA: 10%
Very satisfied with DMA: 43%
Somewhat/Dissatisfied with DMA: 21%

Employed: 33%
Not employed: 16%
Relapsing/Remitting: 29%
Progressive: 12%
Mild symptoms: 39%
Walking restrictions: 12%

**Mentions under 5% not shown

Base: Total Respondents who have heard of Tysabri but have not taken it (n=379)
Although at low levels, some respondents aware of Tysabri mention the lack of convincing information they received about the drug, both from doctors and the drug company.

Q40. Why did you not take Tysabri? Base: Total Respondents who have heard of Tysabri but have not taken it (n=379)

**Reasons For Not Taking Tysabri (Cont’d)**

- Could not afford it: 10%
- Didn't want to try something new: 8%
- Did not suffer relapses: 8%
- Insurance didn’t cover it: 7%
- Might not prevent my MS from getting worse: 7%
- Didn’t like the info provided by my Doctor: 7%
- Didn’t like the info provided by the drug co.: 6%
- Prefer subcutaneous or intramuscular injections: 5%

**Under $50k**: 12%
**$50k+**: 4%

**Female**: 10%
**Male**: 2%

**Worsening**: 12%
**Stable**: 4%

**West region**: 15%
**All other regions**: 4%
**Not employed**: 8%
**Employed**: 3%

**Mentions under 5% not shown**
Among Those who have Taken Tysabri – Individuals Involved in Choice

- Among the few respondents surveyed who had taken Tysabri, all of them had their doctor involved in the decision to take this drug.
  - One-third also involved family members in this decision.

**Ever Taken Tysabri**

- Yes: 6%
- No: 94%

**Individuals Involved In Choice To Use Tysabri**

- Doctor/Health Professional: 100%
- Spouse/Partner: 23%
- Other family members: 12%
- Other MS patients: 4%
- Other: 4%

*Caution: Small base

Q31. Have you ever taken the medication known as Tysabri to treat your MS?
Q32. Who was involved, other than yourself, in the choice to use Tysabri to treat your MS?

Q31 Base: Total Respondents who have heard of Tysabri (n=405)
Q32 Base: Total Respondents who have heard of Tysabri and have taken it (n=26)*
Among Those who have Taken Tysabri - Reasons Stopped

- Almost all former Tysabri users stopped taking the drug involuntarily; it was removed from the market.
  - Secondary mentions focused on price and effectiveness.
  - In addition, one in ten stopped based on their doctor’s recommendation.
  - Very few felt the drug was too risky.

**Why Stopped Taking Tysabri***

- **It was removed from the market**: 92%
- **Price (net)**: 8%
- **Did not have insurance**: 8%
- **Insurance did not cover cost**: 4%
- **Too expensive**: 4%
- **MS got worse (net)**: 8%
- **Had more relapses**: 8%
- **Became more disabled**: 4%
- **My MS progressed more or faster**: 4%
- **My MS symptoms got worse**: 4%
- **My doctor recommended that I stop**: 8%
- **Clinical trial was over**: 8%
- **No one was available to inject me**: 4%
- **It was a difficult delivery method**: 4%
- **Not available as oral/nasal**: 4%
- **It was too risky**: 4%

*Caution: Small base
Base: Total Respondents who have heard of Tysabri and taken it (n=26)*
Among Those who haveTaken Tysabri – Drugs Taken with Tysabri

- As many Tysabri users took the drug alone as those that took the drug along with other drugs.
  - Additional drugs taken were primarily Avonex, followed by Rebif.

Q33. Did you use Tysabri alone or did you use it in combination with other drugs?
Q34. Which other Disease Modifying Agents did you take with Tysabri?

Q33 Base: Total Respondents who have heard of Tysabri and have taken it (n=26)*
Q34 Base: Total Respondents who have heard of Tysabri and have taken it with other drugs (n=13)*

*Caution: Small base
Among Those who have Taken Tysabri – Participation in a Clinical Trial/Locations Where Infusions Received

- About three-quarters of respondents who previously used Tysabri were not part of a clinical trial.
- Infusions were typically administered at an MS/Neurology clinic, particularly an MS clinic.

**Part of Clinical Trial**

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<table>
<thead>
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<tbody>
<tr>
<td>Yes</td>
<td>27%</td>
</tr>
<tr>
<td>No</td>
<td>73%</td>
</tr>
</tbody>
</table>

**Location of Tysabri Infusions**

<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS/Neurology clinic (net)</td>
<td>65%</td>
</tr>
<tr>
<td>MS center or MS clinic</td>
<td>46%</td>
</tr>
<tr>
<td>Neurology clinic</td>
<td>19%</td>
</tr>
<tr>
<td>All other locations (net)</td>
<td>35%</td>
</tr>
<tr>
<td>Doctors office</td>
<td>19%</td>
</tr>
<tr>
<td>Other medical clinic or health center</td>
<td>8%</td>
</tr>
<tr>
<td>Hospital outpatient dept.</td>
<td>8%</td>
</tr>
</tbody>
</table>

*Caution: Small base
Base: Total Respondents who have heard of Tysabri and have taken it (n=26)*

Q35. Were you part of a clinical trial when you were taking Tysabri?
Q37. At what type of location were your Tysabri infusions usually given?
Among Those who have Taken Tysabri – Satisfaction with Aspects of Treatment and Use

- Satisfaction with the Tysabri treatment schedule, ease of use, and site and staff administering the drug was extremely high.
  - Almost half of the Tysabri users or more were very satisfied with each of these aspects.

Q38. How satisfied were you with each of the following while taking Tysabri?

- **Satisfaction With Drug Treatment Schedule***
  - Top 2 Box
    - Very satisfied: 42%
    - Satisfied: 54%
    - Dissatisfied: 4%
    - Very dissatisfied: 2%

- **Satisfaction With Ease of Using Drug***
  - Top 2 Box
    - Very satisfied: 31%
    - Satisfied: 69%
    - Dissatisfied: 4%
    - Very dissatisfied: 2%

- **Satisfaction With Site and Staff Administering Drug***
  - Top 2 Box
    - Very satisfied: 96%
    - Satisfied: 4%
    - Dissatisfied: 4%
    - Very dissatisfied: 2%

*Caution: Small base
Base: Total Respondents who have heard of Tysabri and have taken it (n=26)*
Among Those who have Taken Tysabri – Effects of Tysabri on MS

- Half of the Tysabri users surveyed felt the drug had some positive effect on their MS symptoms.
  - These positive effects were primarily related to reduced physical symptoms and increased energy levels.
  - Interestingly enough, one in five felt no effect from the drug and another one-third were unsure if the drug had affected their MS in any way.

### Effects of Tysabri on MS*

- **Had effect (net)**: 50%
- **Cannot describe or measure**: 23%
- **Reduced physical symptoms**: 19%
- **Increased energy level**: 15%
- **Decreased pain**: 8%
- **Improved memory/cognitive functioning**: 8%
- **Reduced rate of progression**: 8%
- **Reduced number of relapses**: 4%
- **Reduced severity of relapses**: 4%
- **Reduced length of relapses**: 4%
- **Stopped progression**: 4%
- **Other**: 12%
- **No change/No effect**: 19%
- **Don’t know/Not sure**: 31%

*Caution: Small base
Base: Total Respondents who have heard of Tysabri and have taken it (n=26)*
Among Those who have Taken Tysabri – Monthly Tysabri Expense

- About two-thirds of Tysabri users did not have any monthly out-of-pocket costs for the drug.
  - Among those Tysabri users that did have out-of-pocket costs, the average monthly expense was $175.00.

### Monthly Out-of-Pocket Expense For Tysabri*

- $1-$100: 15%
- $101-$150: 0%
- $151-$200: 0%
- $201-$250: 4%
- $251-$300: 0%
- More than $300: 8%
- Nothing: 62%
- Don't know/Not sure: 11%

### Average Monthly Out-of-Pocket Cost

- Total (including nothing) = $53.26
- Total (excluding nothing) = $175.00

*Caution: Small base
Base: Total Respondents who have heard of Tysabri and have taken it (n=26)*
Recent Events in MS Treatment
Awareness of Medications Coming on the Market in the Past Two to Three Years

- More than one-third of respondents were aware of recent MS drugs introduced on the market.
  - This is especially among those from urban/suburban areas, who have received care at an MS/Neurology clinic, currently use DMAs, are aware of Tysabri, have a positive opinion of it and would like to see it available again.
  - Those with Relapsing/Remitting MS are significantly less likely to be aware of any such drugs.

- Two-thirds of those aware of newly introduced drugs correctly identified Tysabri as one such drug and were significantly more likely to have a positive opinion of Tysabri, to be using a DMA, receive care at an MS/Neurology clinic, and would like to see Tysabri available again for immediate or cautious use.

### Awareness of Medications Introduced in the Past Two to Three Years

- **Yes**: 36%
- **No**: 39%
- **Don’t know/Not sure**: 25%

### Specific Drugs Introduced

- **Tysabri**: 65%
- **Other drugs**: 42%

Q22. Are you aware of any medications that have come on the market in the last two or three years that were supposed to directly help manage MS?

Q23. Please write in the name of that drug or drugs?
Awareness of MS Medications Taken off the Market in the Past Two to Three Years

- Two in five respondents were aware of recent MS drugs removed from the market.
  - This is especially among those who are aware of Tysabri and have a positive opinion of it; would like to see it available again, would use it immediately or with caution, use a DMA, receive care at an MS/Neurology clinic, have private health insurance in an urban/suburban area, and are females under age 55.

- More than four in five who were aware of recent drug removals correctly identified Tysabri as such a drug and were significantly more likely to live in urban/suburban areas.

**Q24.** Are you aware of any medications that have been taken off the market in the last two or three years that were supposed to directly help manage MS?

**Q25.** Please write in the name of that drug or drugs?

**Specific Drugs Removed**

- Tysabri: 85%
- Other drugs: 16%

**Awareness of Medications Taken Off the Market in the Past Two to Three Years**

- Yes: 41%
- No: 41%
- Don't know/Not sure: 18%

- Female: 43%
- Male: 35%
- Under 55: 45%
- Age 55+: 34%
- Private health insurance: 47%
- Gov't assisted programs: 37%
- Urban/Suburban: 45%
- Rural: 34%
- Care at MS/Neuro clinic: 55%
- Care at other locations: 35%

**Use DMA**
- Use DMA: 56%
- Do not use DMA: 20%

**Prior Tysabri awareness**
- Prior Tysabri awareness: 75%
- No Tysabri awareness: 8%

**Positive Tysabri opinion**
- Positive Tysabri opinion: 90%
- Neutral/Negative/DK opinion: 70%

**Make Tysabri available**
- Make Tysabri available: 64%
- Do not/DK make Tysabri available: 30%

**Would use immediately/wait**
- Would use immediately/wait: 50%
- Would not use Tysabri: 30%
Two-thirds of respondents who were aware of Tysabri’s removal from the market mentioned the lethal/serious side effects of taking the drug.

- Other mentions focused on health risks, particularly causing PML and other illnesses/disease, the safety and lack of testing of the drug, as well as negative drug interactions.

**Opinion of Why Tysabri Was Removed From Market**

- Lethal side effects/caused fatality: 57%
- Serious side effects/adverse reactions: 7%
- Side effects (unspecified): 4%
- Caused PML/leukemia/multifocal leukoencephalopathy: 5%
- Caused neurological disease: 4%
- Caused heart problems: 4%
- Caused severe illness: 3%
- Health risks/problems associated with Tysabri: 3%
- Caused AIDS: 2%
- Not enough testing prior to release: 13%
- Dangerous/Unsafe: 9%
- Lethal side effects when taken with Avonex: 8%
- Lethal side effects when taken with other medication(s): 3%
- Serious side effects when taken with Avonex: 2%

**Q26.** Why was Tysabri removed from the market in your opinion?

*Base: Total Respondents who are aware that Tysabri was taken off the market (n=284)*
Among Those NOT Aware of Tysabri Being Removed from the Market – Initial Reaction

After being read background information about Tysabri, those who had not heard of the drug prior to this survey gave as many negative reactions as neutral reactions. Another one quarter gave positive reactions.

- Positive reactions were significantly higher among those who take DMAs.
- Neutral reactions were scattered among favoring its reform after further testing and other cautious behaviors, especially among those employed.
- Negative reactions centered on a lack of interest in trying the drug, particularly among females and those who do not believe it should be available again.

**Initial Reaction To Tysabri Background Information**

- **Negative (net)**
  - Not interested in trying/taking: 40%
  - Scared/Fearful: 17%
  - Stunned/Shocked: 8%
  - (Too) risky: 5%
  - Skeptical: 4%
  - Not in favor of its return: 2%
  - Concerned/Worried: 2%
  - Not good: 2%
  - Awful/horrible: 2%

- **Neutral (net)**
  - In favor of its return only after further testing: 39%
  - Doesn’t apply to me: 39%
  - Need to discuss with Dr.: 29%
  - Cautious: 29%
  - Heard this before: 29%
  - Hadn’t heard/good to know: 29%
  - There’s risk in anything: 29%
  - Distustful of all medication: 29%
  - Satisfied with current treatment: 29%
  - Would use as a last resort: 29%

- **Positive (net)**
  - Intersting/Want more info: 25%
  - Not in favor of its return: 9%
  - Doesn’t apply to me: 8%
  - Need to discuss with Dr.: 4%
  - Cautious: 4%
  - Heard this before: 4%
  - Hadn’t heard/good to know: 4%
  - There’s risk in anything: 4%
  - Distustful of all medication: 4%
  - Satisfied with current treatment: 4%
  - Would use as a last resort: 4%

**Use DMA**
- **Employed** 47%
- **Not employed** 33%

**State**
- Male 10%
- Female 4%
- Rural 9%
- Urban/Suburban 3%
- HS or less 10%
- Some college + 4%

**Mentions under 2% not shown**

Base: Total Respondents not aware that Tysabri has been taken off the market (n=526)
Whether Tysabri Should be Available Again

- One-third feel Tysabri should be made available. However, almost one-half are unsure of this.
  - Those feeling it should be available are significantly more likely to be males who had been aware of Tysabri, use a DMA, and are of higher income in urban/suburban areas. They also have a positive opinion of Tysabri and would use it immediately.

<table>
<thead>
<tr>
<th>Should Tysabri Be Made Available Again</th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Male: 40%</td>
</tr>
<tr>
<td>Female: 31%</td>
</tr>
<tr>
<td>Urban/Suburban: 36%</td>
</tr>
<tr>
<td>Rural: 27%</td>
</tr>
<tr>
<td>$50k+ income: 41%</td>
</tr>
<tr>
<td>&lt;$50k income: 30%</td>
</tr>
<tr>
<td>Use DMA: 40%</td>
</tr>
<tr>
<td>Do not use DMA: 23%</td>
</tr>
<tr>
<td>Prior Tysabri awareness: 47%</td>
</tr>
<tr>
<td>No Tysabri awareness: 19%</td>
</tr>
<tr>
<td>Positive Tysabri opinion: 94%</td>
</tr>
<tr>
<td>Neutral/Negative/DK opinion: 31%</td>
</tr>
<tr>
<td>Would use immediately: 64%</td>
</tr>
<tr>
<td>Would wait/never use: 26%</td>
</tr>
<tr>
<td>Don’t know/Not sure: 48%</td>
</tr>
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</table>

Q42b. Do you think that Tysabri should be made available again for the treatment of MS?

Base: Total Respondents (n=810)
Likelihood to Discuss with Doctor

- More than one-third feel they would be likely to discuss the future use of Tysabri with their doctor.
  - These respondents are significantly more likely to have been aware of Tysabri prior to this survey and have a Progressive condition that is worsening; they are unemployed males in urban/suburban areas who receive care at an MS/Neurology clinic, use DMAs but are not particularly satisfied with them. They also have a positive opinion of Tysabri and would use it immediately.

---

Q43. If Tysabri becomes available again for the treatment of MS, how likely would you be to discuss it with your doctor?

![Likelihood to Discuss Tysabri with Doctor](image)

- Use DMA 45%
  - Do not use DMA 24%
- Not very satisfied with DMA 53%
  - Satisfied with DMA 34%
- Positive Tysabri opinion 86%
  - Neutral/Negative/DK opinion 36%
- Would use immediately 67%
  - Would wait/never use Tysabri 31%

Base: Total Respondents (n=810)
Length of Time Would Wait to Take Tysabri (if Available)

- Although one in five state they would never use Tysabri, the majority say they would.
  - Those who would use Tysabri immediately are significantly more likely to have been aware of the drug previously, be males from urban/suburban areas, who have a Progressive condition and use DMAs.
  - Respondents who state they would never use Tysabri are significantly more likely to be those with a HS or less education and do not use DMAs.

Q44. If Tysabri becomes available again and both you and your doctor agree that it is the best treatment for your MS, which of the following best describes how long you would wait before using it? Base: Total Respondents (n=810)
Circumstances Under Which Would Use Tysabri

- When asked under which circumstances respondents would take Tysabri, almost three-quarters of respondents now say they would be willing to take it, with a smaller subset (three in five) only being interested in taking it under limited circumstances.
  - The limited circumstances relate to having an accurate PML test for two in five respondents, along with additional safety data and ineffectual current treatment (25%).

Q45. If Tysabri becomes available again and both you and your doctor agree that it is the best treatment for your MS, under what circumstances would you be willing to use it?

Base: Total Respondents (n=810)

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Circumstances Under Which Would Use Tysabri

- Those willing to take Tysabri are significantly more likely to be previously aware of the drug and have a positive opinion of it, as well as to use a DMA, have mild symptoms or need support, receive care at an MS/Neurology clinic, and have private health insurance.

- Females are more cautious than males, as are those who are employed, and would use the drug under limited circumstances, especially if an accurate PML test and additional safety data were available.

- Those who would never use Tysabri are less educated, have an improving condition and were diagnosed 20+ years ago.

Q45. If Tysabri becomes available again and both you and your doctor agree that it is the best treatment for your MS, under what circumstances would you be willing to use it?

Base: Total Respondents (n=810)
Belief that More PML Cases Might be Detected

- Three in five respondents are unsure of whether or not additional cases of PML will be detected.
  - Those who feel more cases of PML will be detected are significantly more likely to be females who had no previous knowledge of Tysabri and receive care at locations other than an MS/Neurology clinic.

<table>
<thead>
<tr>
<th>Belief That Additional Cases of PML Might Be Detected</th>
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<tbody>
<tr>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td><strong>No</strong></td>
</tr>
<tr>
<td>Don't know/Not sure</td>
</tr>
</tbody>
</table>

Q46. Do you think that additional cases of PML might be detected in the future among patients who received Tysabri prior to the suspension?

Base: Total Respondents (n=810)
Quality vs. Quantity of Life Issues: Risks Willing to Take in Order to Use Tysabri
Risks Willing to Take in Order To Use Tysabri

We thought it an interesting line of questioning to ask the respondents about quantity versus quality of life issues with regard to MS to see what level of risk respondents would tolerate in order to use Tysabri.

One question was the following: “Assume for a moment that if you were to take Tysabri, it would significantly reduce the number of MS relapses and reduce the development of new or newly enlarging MRI-detected brain lesions, but there would be a (insert %) possibility of developing a NON-FATAL/FATAL and disabling PML within a few years. Would you take it?”

The first thing to notice on the chart on the next page is that 13% will not take Tysabri, under any circumstances, even if it reduced the relapses and new or enlarging brain lesions, and the PML which developed later was not fatal, and another 19% said “don’t know”. Similarly, 15% would not take Tysabri if the PML could be Fatal, and 26% said “don’t know”.

On the extreme end of the spectrum, 7% would take it even if they were a 100% chance of developing Non-Fatal PML, and 3% would take if even if there were a 100% chance of developing Fatal PML. One can only assume that these folks are in dire straits and would welcome even a temporary relief of their MS symptoms even if it eventually led to the development of PML.

In addition, 15% percent would take it if there were zero chance of not getting non-fatal PML, and, not surprisingly, 25% would take it if there were zero chance of not getting Fatal PML. Another 9% and 7% respectively, would take the drug if there was only one in a million chance of developing PML, and 9% would take it even if there was a one in ten chance of developing Non-Fatal PML, whereas only 4% would take it if there were a one in ten chance of developing Fatal-PML.

In total, 53% would take Tysabri even if there was some percentage chance of developing Non-Fatal PML, but only 34% would take it if there was any chance of developing Fatal PML. However, the biggest finding here may be that 19% and 26%, respectively, “don’t know” if they would take it unless there is more information, knowledge and it is recommended by their personal physician.

(See chart on next slide)
Risks Willing to Take in Order To Use Tysabri (Cont’d)

- Respondents stating they would not use Tysabri or are unsure of whether they would use it under any of these circumstances tend to be female, those with lower education who receive care at facilities that don’t specialize in MS care, do not use DMAs and have no previous awareness of Tysabri.

Using Tysabri With Hypothetical Chances of Developing Non Fatal but Disabling PML But Significantly Reducing Number of MS Relapses and Development of Brain Lesions

<table>
<thead>
<tr>
<th></th>
<th>Total (n=731)</th>
<th>Total (n=748)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-fatal PML</td>
<td>Fatal PML</td>
</tr>
<tr>
<td>100% chance of developing</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>1 in 10 chance of developing</td>
<td>9%</td>
<td>4%</td>
</tr>
<tr>
<td>1 in 100 chance of developing</td>
<td>8%</td>
<td>4%</td>
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<tr>
<td>1 in 1,000 chance of developing</td>
<td>7%</td>
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<td>1 in 100,000 chance of developing</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td>1 in 1,000,000 chance of developing</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Zero chance of developing</td>
<td>15%</td>
<td>25%</td>
</tr>
<tr>
<td>No, will not take</td>
<td>13%</td>
<td>15%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>19%</td>
<td>26%</td>
</tr>
</tbody>
</table>

Q47a/b. Assume for a moment that if you were to take Tysabri, it would significantly reduce the number of MS relapses that you experience and reduce the development of new or newly enlarging MRI-detected brain lesions, but there would be a (INSERT ITEM) NON FATAL but disabling/FATAL PML within a few years. Would you take it?

Base: Total Respondents Answering
Risks Willing to Take in Order to Use Tysabri (Cont’d)

The second question we asked in regard to quality versus quantity of life issues, was the following: “Now suppose unless you take a drug such as Tysabri, your MS symptoms are likely to increase by around (insert %), and both the quality of your life and the remaining years of your life are likely to be reduced (insert %). Keeping in mind the risks associated with Tysabri, would you take it?”

On this specific question, the “no, will not take” is even greater than on the first question, with 22% saying “no” to taking Tysabri even if their MS symptoms will increase, and 19% saying “no” to taking the drug even if there is a decrease in the quality and remaining years of their life. In addition, the “don’t know” response to taking the drug is rather high at 23% for forestalling MS symptoms increasing, and 21% saying “don’t know” for forestalling a decrease in quality and remaining years of life.

On the extreme ends of the spectrum, 15% would take it to forestall MS symptoms increasing by 2%, and 18% would take it to forestall a 2% decrease in quality and remaining years of life. In addition, 6% would take Tysabri, to forestall a 100% chance of their MS symptoms increasing, and 5% would take the drug to forestall a 100% chance of a decrease in quality and remaining years of life occurring. Interestingly, at the 50% level of symptoms increasing and quality of life and remaining years decreasing, 10% and 13% respectively would take Tysabri. Overall, 55% would take Tysabri to forestall any percentage increase in MS symptoms and 60% would take Tysabri to forestall any decline in quality or remaining years of life.

However, once again, we see the need for more education and information about Tysabri to respondents (i.e. people who have MS), and/or a personal physician’s recommendation as being key to trying the drug.

Overall, it is hard to say how well the respondents understood the questions and the response choices, but one thing is certain without a great deal more information and education about the actual risks of using Tysabri, the greater MS patient population is likely to take a wait-and-see attitude toward the drug, and be considerably reluctant to use it without their personal physician’s endorsement.

(See chart on next slide)
Risks Willing to Take in Order to Use Tysabri (Cont’d)

- Respondents stating they would not use Tysabri or are unsure of whether they would use it under any of these circumstances tend to be female, those with lower education who receive care at facilities that don’t specialize in MS care, do not use DMAs and have no previous awareness of Tysabri.

**Using Tysabri to Forestall Hypothetical Increase in MS Symptoms and Decrease in Quality and Remaining Years of Life**

<table>
<thead>
<tr>
<th>% Yes</th>
<th>Total (n=733)</th>
<th>Total (n=739)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MS Symptoms Increase</td>
<td>Dec. in Quality/ Remaining Years of Life</td>
</tr>
<tr>
<td>2%</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>5%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>10%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>15%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>20%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>25%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>50%</td>
<td>10%</td>
<td>13%</td>
</tr>
<tr>
<td>75%</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td>100%</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td>No, will not take</td>
<td>22%</td>
<td>19%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>23%</td>
<td>21%</td>
</tr>
</tbody>
</table>

Q48a/b. Now supposed that unless you take a drug such as Tysabri, your MS symptoms are likely to increase by around (INSERT ITEM), both the quality of your life and the remaining years of your life are likely to be reduced by (INSERT ITEM). Keeping in mind the risks associated with Tysabri, would you take it?
Opinions of the FDA

- One-third of respondents feel the FDA does a good/excellent job of protecting consumers and patients from dangerous medications, whereas a rather high 65% feel it does only a fair/poor job.
  - Those who feel positive about the FDA are significantly more likely to be positive toward Tysabri, would use it if available, had prior awareness of the drug and currently use DMAs.

- As many who believe the FDA is too lax/liberal, believe it is too cautious/conservative, with a similar number being unsure.
  - Too lax/liberal was significantly more likely to be mentioned among females with lower household incomes who would never use Tysabri and have a negative opinion of it.
  - Too cautious/conservative was used to describe the FDA significantly more so among those age 55+ with a worsening condition.

Performance of FDA In Protecting Consumers/Patients From Dangerous Medicines/Medical Products

Q49. Do you think the FDA does an excellent job, a good job, a fair job, or a poor job in protecting consumers and patients like yourself from dangerous medicines or medical products?

Q50. In terms of protecting consumers and patients like yourself from dangerous medicines or medical products, would you say the FDA is...?
Insurance Coverage Specifics
Have Health Insurance/Type of Insurance

- The vast majority of respondents have some type of health insurance.
  - Those covered are significantly more likely to have annual household incomes greater than $30k, have some college or more education and live in urban/suburban areas.
- As can be expected, respondents on government assisted health insurance programs are less educated and less likely to be employed with lower incomes.
  - In addition, these respondents have a Progressive condition that is worsening, do not use DMAs and are less likely to have been aware or Tysabri.

### Have Health Insurance
- **Yes**: 92%
- **No**: 8%

### Type of Health Insurance (Among Those Covered)
- **Private health insurance**: 60%
  - Medicare/Medicare managed care plan: 27%
  - Medicaid/MediCal: 6%
  - State sponsored plan known as General Medical Asst.: 1%
  - Other gov’t programs: 1%
  - CHAMPUS: 1%
  - VA(Veteran’s Administration): 1%
- **Gov’t. assisted programs**: 35%
  - Worsening: 46%
  - Improving/Stable: 31%
  - Progressive: 47%
  - Relapsing/Remitting: 29%
  - Do not use DMA: 44%
  - Use DMA: 29%
  - No Tysabri awareness: 39%
  - Prior Tysabri awareness: 31%
  - <$30k income: 70%
  - $30k+ income: 19%
  - HS or less: 43%
  - Some college+: 33%
  - Not employed: 51%
  - Employed: 11%
Plan Covers Prescriptions/Co-Payment for Prescriptions

- The vast majority of respondents who have health insurance also have some type of prescription coverage.
  - As can be expected, those more likely to have prescription coverage have private health insurance through an employer and are under age 45, with Relapsing/Remitting MS and use DMAs.
- The average co-payment for prescriptions is about $30.

### Plan Covers Prescription Medications

- **Yes**: 84%
- **No**: 15%
- **Don't know/Not sure**: 1%

### Usual Co-Payment For Prescriptions

- **Less than $10**: $1-$4 6%, $5-$9 8%
- **$10-$24**: $10-$14 9%, $15-$19 7%
- **$25-$39**: $25-$29 8%, $30-$39 8%
- **$40-$49**: $40-$49 5%
- **$50-$99**: $50-$59 4%, $60-$99 1%
- **$100 or more**: 1%

- **I do not need to provide a co-payment**: 9%
- **Don't know/Not sure**: 17%

### Average Co-Pay

- Total including no co-payment: $29
- Total excluding no co-payment: $33

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Q53. Does this plan cover prescription medications?
Q54. What is your usual and customary co-payment for prescription medications?

Q53 Base: Total Respondents who are covered by health insurance (n=745)
Q54 Base: Total Respondents whose medical plan covers prescription medications (n=623)
Monthly Out-of-Pocket Costs/Receive Financial Assistance

- The average monthly out-of-pocket medical costs for respondents is $219.
  - This is significantly higher, as can be expected, among those with a Progressive, worsening condition.
- One in ten respondents receive financial assistance from a pharmaceutical company patient assistance program.
  - As can be expected, those receiving such assistance are significantly more likely to have lower incomes and less education, be on a government assistance health insurance program without prescription coverage and do not use DMAs.

**Average Monthly Medical Out-of-Pocket Costs**
- Total = $219
- Progressive $270
- Relapsing/Remitting $193
- Worsening $275
- Stable/Improving $203

**Receive Financial Assistance From Pharmaceutical Company Patient Assistance Program**
- Yes 9%
- No 89%
- Don't know/Not sure 2%

**Monthly Out-of-Pocket Costs**
- Less than $100 44%
- $101 to $250 27%
- $251 to $500 15%
- $501 to $750 3%
- $751 to $1,000 2%
- More than $1,000 4%
- Don't know/Not sure 5%

Q55. To the best of your knowledge what are your personal monthly out-of-pocket costs for all medical expenses, including medical care, doctor visits, therapies and medications?

Q56. Do you receive financial assistance from a pharmaceutical company patient assistance program?

Base: Total Respondents (n=810)
Demographics
# Demographics

- People with MS who were surveyed tended to be white females who were married, about 50 years of age, are not employed, with an average of two people in the household.

<table>
<thead>
<tr>
<th>Demographic Category</th>
<th>Total (n=810)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>25%</td>
</tr>
<tr>
<td>Female</td>
<td>75%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>Average age</td>
<td>50 yrs</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>12%</td>
</tr>
<tr>
<td>Married/Living with a partner</td>
<td>66%</td>
</tr>
<tr>
<td>Sep/Widowed/Div.</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
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<tr>
<td>Full-time</td>
<td>28%</td>
</tr>
<tr>
<td>Part-time</td>
<td>13%</td>
</tr>
<tr>
<td>Not employed</td>
<td>58%</td>
</tr>
<tr>
<td><strong>Number in Household</strong></td>
<td></td>
</tr>
<tr>
<td>Average # in HH</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>High school or less/technical school</td>
<td>21%</td>
</tr>
<tr>
<td>Some college</td>
<td>33%</td>
</tr>
<tr>
<td>Graduated college</td>
<td>31%</td>
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<tr>
<td>College graduate +</td>
<td>15%</td>
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<tr>
<td><strong>Income</strong></td>
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<tr>
<td>Average HH income</td>
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<tr>
<td><strong>Ethnicity</strong></td>
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<tr>
<td>Caucasian</td>
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<tr>
<td>African American</td>
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<tr>
<td>Hispanic</td>
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