



The Sonya Slifka Longitudinal Multiple Sclerosis Study

The Slifka Study

Date July 29, 2019

Dear Slifka Study Participant,

We are writing to you with some very exciting news about the National Multiple Sclerosis Society's Sonya Slifka Longitudinal Multiple Sclerosis Study.

First, the Slifka Study is again conducting interviews and enrolling participants. We will be calling you over the next few weeks to tell you more about the new study and to request your participation.

The new interview will be much the same as your previous ones, but shorter, and will help us learn more about the use of disease modifying therapies, including those that were not available when we last talked with Slifka Study participants. The new interview is part of a larger study titled *Update and Analysis of the Sonya Slifka Longitudinal Multiple Sclerosis Study* that has been approved by the National Multiple Sclerosis Society and is sponsored by Biogen, Inc. We have included an interview guide that describes the new study in detail. With this letter, we request, your participation. At the end of this letter, below our signatures, is some important information about the new interview.

Second, as you may already know, the Slifka team and other MS researchers have analyzed the information participants gave us and published the results in scientific journals and presented at professional meetings. The MS Society has used the information to advocate on behalf of individuals with MS and their families and to inform its program and research agendas. The Society has also awarded new research projects to the Slifka team.

Third, the MS Society has moved Slifka and its related research studies to Gryphon Scientific to bring Gryphon's life scientists and health researchers into the Slifka team and develop a more comprehensive and multi-disciplinary approach to our work. Gryphon Scientific is a unique research organization in which life scientists such as immunologists, geneticists, and virologists also work in the areas of health services, epidemiology, and health policy with the goal of improving human health

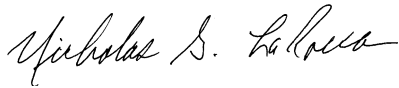
and wellness. Sarah Minden, MD, will continue as the Slifka Principal Investigator and Nicholas LaRocca, PhD, remains as the MS Society's Project Officer.

Many, many thanks to both continuing and new Slifka participants for making the Slifka Study such an important source of information about people with MS.

Sincerely,



Sarah L. Minden, MD
Principal Investigator, Sonya Slifka Longitudinal Multiple Sclerosis Study



Nicholas G. LaRocca, Ph.D.
Vice President, Health Care Delivery and Policy Research
National Multiple Sclerosis Society
Project Officer, Sonya Slifka Longitudinal Multiple Sclerosis Study



Jennifer Corbin, Ph.D.
Project Manager and Co-Principal Investigator, Sonya Slifka Longitudinal Multiple Sclerosis Study

Information about the interview

To participate in the new study or if you have any questions, please call us toll-free at 844-869-8975, leave a message with your name and phone number on our secure voicemail, and we will return your call promptly. Alternatively, you may email us at msresearch@gryphonscientific.com and we will reply quickly. If your phone number has changed since your last interview in 2009 or 2010, please leave a message with your name and new phone number at toll-free 844-869-8975 or email us at msresearch@gryphonscientific.com so we can reach you.

Your telephone interview will last about 35-45 minutes. The questions will be about you (e.g., your living and employment situations, your health insurance), your MS, your experience with disease modifying therapies, and your use of healthcare services over the past year. The accompanying Interview Guide provides more information.

If you decide to participate, please have the Interview Guide with you during your interview because it has definitions of terms, response options for some questions, and descriptions of different types of health insurance. Please also complete the calendar at the end of the Interview Guide before your interview.

Please do not hesitate to call if you have any questions. We very much look forward to this next phase of the Slifka Study and hope you will join us.

INTERVIEW GUIDE

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A. INTRODUCTION

1. Important information about this research study

How to reach us with any questions. You may call us toll-free at 844-869-8975 or send us an email at msresearch@gryphonscientific.com. Please be sure to leave us your name and phone number on our secure voicemail or include them in your email and we will respond promptly.

About the study. The title of this research study is *Update and Analysis of the Sonya Slifka Longitudinal Multiple Sclerosis Study* (Update Study). The Slifka Study was started by the National Multiple Sclerosis Society (MS Society) in 2000 and has interviewed over 4,600 people with MS since then. The last time we interviewed Slifka Study participants was in 2010. We are now interviewing participants again and adding 500 individuals who have been diagnosed with MS in the past year. We will also analyze data that have been collected since the Slifka Study began. We are especially interested in learning about your experiences with disease modifying therapies but will also collect information on your demographic and disease characteristics, your quality of life, and the health services you have used.

The MS Society has approved our contacting all Slifka Study participants to request your participation in this Update Study and to use previously collected Slifka Study data for the analyses. The MS Society also approved our reaching out to individuals who have been recently-diagnosed with MS and asking them to participate too. Anyone who has not previously participated in the Slifka Study will be added to the list of Slifka Study participants. We have no plans at this time to stop conducting interviews and hope you will continue to participate in future surveys.

The Principal Investigator for both the Slifka Study and the Update Study is Sarah L. Minden, MD and both studies are being conducted by Gryphon Scientific. The sponsor of the Slifka Study is the MS Society and the sponsor of the Update Study is Biogen, Inc. Gryphon Scientific is a research organization comprised of life scientists who combine their expertise in immunology, genetics, and other basic sciences relevant to MS with experience in epidemiology and health services research. Biogen is a biotechnology company specializing in the discovery, development, and delivery of therapeutics, including those used to treat MS.

We expect to interview about 1,770 individuals. The interview will last approximately 35-45 minutes.

Your participation is voluntary. It is completely up to you to decide whether to take part in the Update Study and become a participant in the Slifka Study. If you decide to take part in the Update Study, you may drop out at any time, for any reason. You may also drop out of the Slifka Study at any time, for any reason. The Update Study may be stopped if Biogen decides to stop it and the Slifka Study may be stopped if the MS Society decides to stop it.

Costs, risks, and benefits. There is no cost to you for taking part in the Update or the Slifka Study and there is very little risk. You may find some questions to be personal. You may refuse to answer any question, at any time. Some questions may cause an emotional response. If the interviewer becomes concerned about your emotional wellbeing, he or she will talk with you about how to receive help to be well and safe. Although there is no direct benefit to you from taking part in this study, you and other people with MS may benefit from what researchers learn about MS from the study.

Protecting your rights and safety. All of your study information will be stored in a database under secure conditions at Gryphon Scientific. A code number, not your name, will identify information entered into the study database. Your name, telephone number, and other information will be stored separately, under secure conditions. Research staff who have access to your study records are trained to protect your privacy and the confidentiality of all information you provide, including that you even participated in the study. It will not be possible to identify you in any way in any study publication or presentation.

Adverse event reporting. To protect public health, the US Food and Drug Administration (the FDA) requires pharmaceutical and biotechnology companies to report anything they learn from a patient that might be a side effect or other problem associated with their medication. If you have had side effects or other problems associated with any disease modifying therapy, we must report these to Biogen, even if the medication was not made by Biogen. We can report this information without identifying you or anything about you. However, if you give us permission, we can provide your gender and age, which will be helpful to the FDA. If you are willing to talk to a representative from Biogen about the side effects or other problems you had, you can give us permission to pass on your name and contact information.

Future studies. The MS Society may make the Slifka Study database available to qualified researchers who apply to the Society for its use. If the MS Society, the PI of the Slifka Study, and the Gryphon Scientific Institutional Review Board (IRB) all approve the use of your and other participants' information by the qualified researchers, the data will be provided with only your code number and not your name or any other information that could identify you. The MS Society, Slifka PI, and Gryphon IRB may also approve studies like this one that ask you to participate in an interview or a survey. If the study is being

conducted by the Slifka Study team, we will contact you to see if you want to participate in the study. If the study is being conducted by another research team, the Slifka Study team will still contact you to see if you want to participate in another research team's study. If you want to participate in that study, and you give us permission, we will pass on your name and contact information to that study team.

Questions. If you have any questions about this research study, please call our secure voicemail toll-free at 844-869-8975, leave a message with your name and phone number, and we will return your call promptly.

If you'd like to speak to someone not involved in this research about your rights as a research subject, or if you have any concerns or complaints about the research, please call 844-869-8975 and ask to speak to a representative of the IRB. Please be sure to leave your name and phone number.

We are required by the Health Insurance Portability and Accountability Act (HIPAA) to protect the privacy of health information obtained for research. This is an abbreviated notice and does not describe all details of this requirement. During this study, identifiable information about you or your health will be collected and shared with the researchers conducting the research. In general, under federal law, identifiable health information is private. However, there are exceptions to this rule. In some cases, others may see your identifiable health information for purposes of research oversight, quality control, public health and safety, or law enforcement. We share your health information only when we must, and we ask anyone who receives it from us to protect your privacy.

2. Interview Summary

The interviewer will ask questions about:

- Your MS – symptoms, type of MS, and whether you had any relapses or progression of disability in the past year
- Your quality of life
- Your experiences with disease modifying therapies
- Your use of health care services in the past year such as hospitals, emergency rooms, doctors and nurses, and rehabilitation, mental health, and complementary and alternative therapists
- Your MS care and general health care providers
- Your health insurance coverage and the type of insurance you have
- Your employment and education and other characteristics such as your marital status.

B. INFORMATION YOU MAY NEED DURING YOUR INTERVIEW

In this section of the interview guide we provide information you may need during your interview. Some information defines terms commonly used by individuals with MS, their families, friends, and MS care providers, and in literature about MS. So that all participants use these terms in the same way, we are giving you the definitions we'd like you to use. We will also be giving you definitions of different kinds of health insurance.

Some questions during the interview ask you to describe your MS, report how often something happens or how much something troubles you. To make it easier to answer these questions, we are giving you the responses you can choose from.

1. Definitions of Terms for MS

Many different terms are commonly used to describe relapses, progression, and the types of MS people have. For the interview, we will define these terms in the following ways.

a. Relapse

A relapse may also be called an exacerbation or flare-up. During a relapse, you develop one or more new symptoms, or your old symptoms worsen, and this continues for several days or weeks, and then you start to improve. Your improvement may be complete, and you may be able to perform your usual activities just as well as before the relapse. Or, your improvement may be partial, and you may not be able to perform your usual activities as well. To be called a relapse, the worsening of symptoms must last at least 24 hours and be separated from any previous relapse by at least one month. Also, to be called a relapse, the symptoms should not worsen just because you have a fever or infection, or the weather is hot, and then improve when those causes resolve.

b. Progression of disability

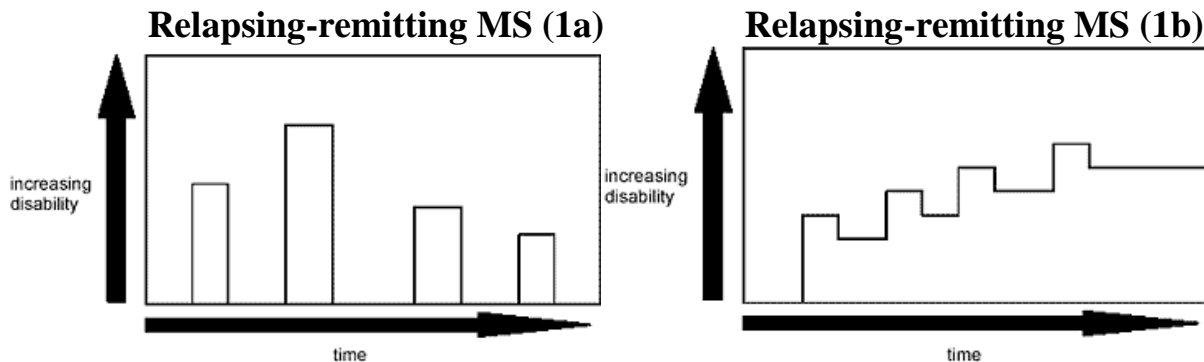
Progression refers to a steady worsening of your symptoms or a steady decline in your ability to perform your usual activities. The worsening may be slow or fast, but it is steady, and you do not have either periods of improvement or clear-cut relapses. Even if you seem to improve for a short time, overall, your symptoms worsen, and you are less able to perform your usual activities as time goes by.

c. Types of MS

There are four general ways to describe the type or course of MS: relapsing-remitting MS, secondary progressive MS, primary progressive MS, progressive relapsing MS. Each of these is described below, along with graphs to help illustrate each one.

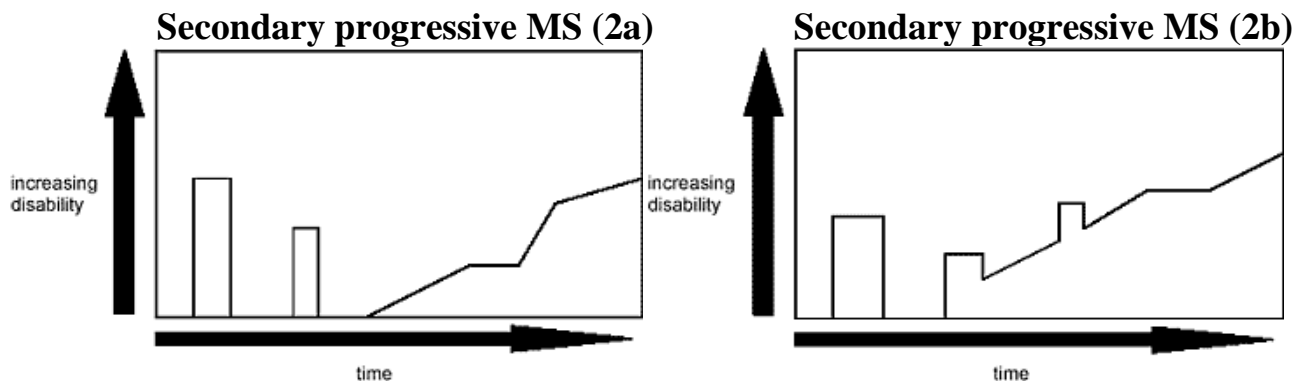
i. Relapsing-remitting MS

From the beginning, you had, and still have, clear-cut relapses or flare-ups of symptoms that are followed by either complete recovery (Figure 1a) or partial recovery (Figure 1b). Between relapses, your MS is stable, and there is no worsening of your symptoms or your ability to perform your usual activities.



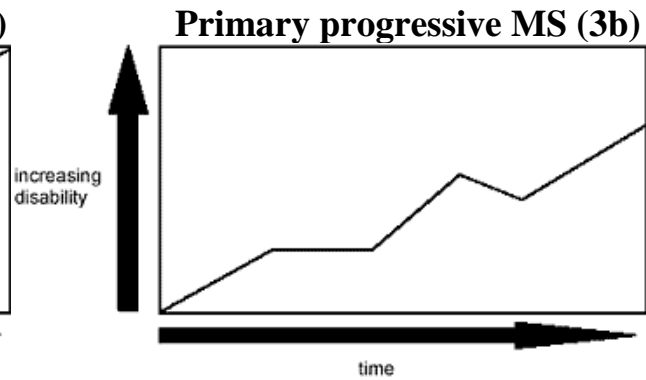
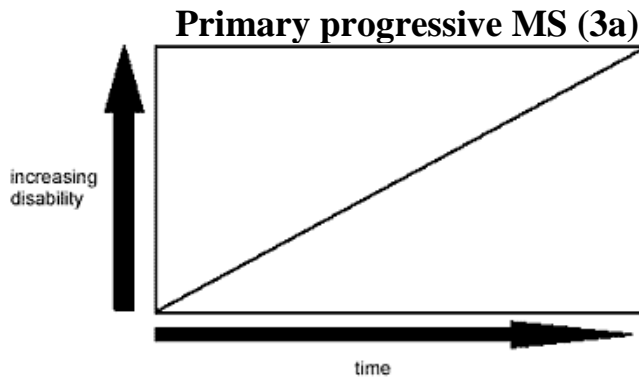
ii. Secondary progressive MS (with or without relapses)

Your MS began with clear-cut relapses, but, after a while, you developed a steady worsening of your symptoms or a steady decline in your ability to perform your usual activities (Figures 2a and 2b). The worsening may be slow or fast, but the rate of worsening is steady. You may or may not still have occasional clear-cut relapses.



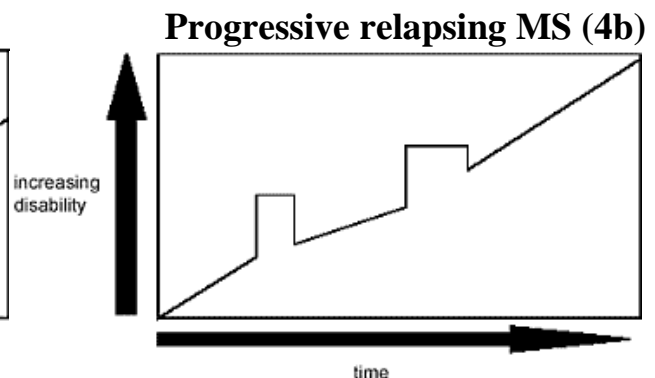
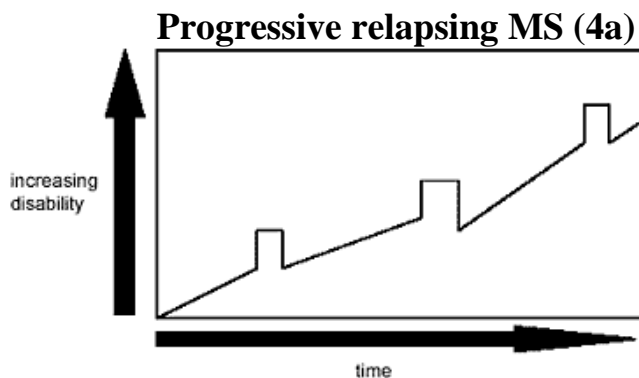
iii. Primary progressive MS

From the beginning, you had a steady worsening of your symptoms or a steady decline in your ability to perform your usual activities (Figures 3a and 3b). The worsening may have been slow or fast, but the rate of worsening was steady, and you never had any clear-cut relapses. Even if you seem to improve for a short time, overall, your symptoms worsen, and you are less able to perform your usual activities as time goes by.



iv. Progressive relapsing MS

From the beginning, you had a steady worsening of your symptoms or a steady decline in your ability to perform your usual activities (Figures 4a and 4b). In addition, you also had (and continue to have) clear-cut relapses or flare-ups of symptoms that may, or may not, be followed by improvement. Between the relapses, however, your symptoms worsen, and you are less able to perform your usual activities as time goes by.



2. Response Choices

For some of the questions, your interviewer will ask you to provide ratings or answer choices of various kinds. For questions that have more than 3 choices of answers, your interviewer will tell you what page to turn to and what letter to look at so that you can refer to the answer choices as you are answering the question. These answer choices are listed below.

a. Disability Status Scale

The Disability Status Scale is used to describe the impact MS has on your activities and lifestyle. The interviewer will ask you to say which statement or number best describes how MS currently affects you.

- 1 – I currently have no MS symptoms.
- 2 – I have mild MS symptoms that do not limit my activity or lifestyle.
- 3 – I have mild MS symptoms such as sensory problems, mild bladder problems, mild incoordination or weakness, and fatigue, but there is no visible problem with my walking.
- 4 – My main problem due to MS is trouble walking, but I do not use any type of aid to help me walk.
- 5 – I can walk 25 feet without a cane or some other form of support, such as a splint, brace, or crutch but I use this occasionally or for longer distances. (25 feet is approximately the length of two parking spaces on a city street.)
- 6 – To be able to walk 25 feet, I must use a cane or some other form of support on one side such as holding on to furniture or touching the wall. ...
- 7 – To be able to walk 25 feet, I must use two canes, a walker, or two crutches.
- 8 – My only form of mobility is a wheelchair or a scooter.
- 9 – I am completely bedridden.

b. Your health status

We will ask whether your health in general now is ...

- 1 – Excellent
- 2 – Very good
- 3 – Good
- 4 – Fair
- 5 – Poor

c. Your activities

We need to ask everyone about how limited or not they are in performing certain activities even if they do not do them. We will ask whether, because of your health, and on a typical day you are ...

- 1 - Limited a lot
- 2 – Limited a little
- 3 – Not limited at all

d. Pain

We will ask how much pain interfered with your normal activities over the past four weeks ...

- 1 - Not at all
- 2 - A little bit
- 3 - Moderately
- 4 - Quite a bit
- 5 - Extremely

e. How you have been feeling

We will ask how often over the past four weeks you have had certain feelings such as feeling calm or nervous, happy or down in the dumps ...

- 1 - All of the time
- 2 - Most of the time
- 3 - A good bit of the time
- 4 - Some of the time
- 5 - A little of the time
- 6 - None of the time

f. Social activities

We will ask how often over the past four weeks physical health or emotional problems interfered with your social activities...

- 1 - All of the time
- 2 - Most of the time
- 3 - Some of the time
- 4 - A little of the time
- 5 - None of the time

g. Thinking and concentrating

We will ask how often over the past week you had difficulties with thinking and concentrating ...

- 1 -Very often (several times a day)
- 2- Often (once a day)
- 3- Sometimes (2-3 times)
- 4- Rarely (once)
- 5- Never

h. Planning and managing your time

We will ask how much difficulty over the past week you have had with planning, managing your time, and learning new instructions

- 1 - Cannot do
- 2- A lot
- 3- Somewhat
- 4- A little
- 5- None

i. Fatigue

We will ask how often over the past four weeks you have had difficulty with fatigue...

- 1 - Never
- 2 - Rarely
- 3 - Sometimes
- 4 - Often
- 5 - Always

3. Health Insurance

We will ask whether you have health insurance and what types you have. If you are not sure of the types of health insurance you have, please review the different types described below and determine which one(s) you have.

a. Types of health insurance

i. Private health insurance can be obtained through work or school, purchased directly from an insurance agent or insurance company, or purchased through a state or local government or a group or association. The cost of a private health insurance premium is covered by you or your family alone or shared with an employer or a union.

If you have a Medicare or Medicaid managed care plan, even though it might not have Medicare or Medicaid in its name, it should be reported as Medicare or Medicaid rather than as private health insurance.

If you have Supplemental Insurance or Medigap coverage that is provided by a private insurance company to fill the gaps in Medicare, please report that you have Medigap insurance, not private insurance.

ii. Medicare is a Federal government health insurance program for people age 65 and over and for people who are disabled or have end-stage renal disease. Sometimes people call their Medicare coverage by different names such as Original Medicare, Medicare Advantage Plan, Part A, Part B, or Part C. The newest form of Medicare is Part D which pays for prescription drugs.

iii. Medicaid is a government health insurance program for individuals and families with low incomes, assets, and resources. Each state has a different name for its Medicaid health insurance program. For example, in Massachusetts it is called MassHealth, in California it is called Medi-Cal, and in Tennessee it is called TennCare.

iv. Medicare Supplemental Insurance or Medigap is a health insurance policy sold by private insurance companies to fill the “gaps” in Medicare coverage and help pay some of the medical care costs that Medicare doesn’t cover. Generally, to buy a Medigap policy you must also have Medicare Part A and Part B.

v. Military health insurance includes TRICARE, VA, and CHAMP-VA. TRICARE (formerly CHAMPUS), covers active duty and retired members of the uniform services, their families, and survivors. The VA (Veterans Administration) covers enrolled veterans. CHAMP-VA (the Civilian Health and Medical Program of the Department of Veterans Affairs) covers families and survivors of veterans with service-connected disabilities.

vi. General Medical Assistance is a state program that pays for the medical care of people with low incomes.

vii. Other government programs provide medical care and/or help to pay medical bills. This would include state, county, or city government programs and the Indian Health Service which is responsible for providing federal health services to American Indians and Alaska natives.

4. Your Health Care

We will ask about the health care providers and services you might have used during the past year. We will also ask you about any disease modifying therapies you used.

Health care information is often difficult to answer off-the-cuff. Please think about the health services and treatments you received. Then, turn to the calendar at the end of the guide and follow the instructions there to record the best you can approximately when you used any disease modifying therapies.

a. Types of health care providers and services

We will ask about who provides your MS care – an MS specialist, a general neurologist, or a primary care physician – and the following types of services:

- Overnight stays at a general hospital
- Visits for just some hours or part of a day to a hospital or free-standing facility such as an infusion center or day surgery center or sleep evaluation center
- Visits to an emergency room
- Visits with primary care doctors and nurses
- Visits with physical, occupational, speech, vocational, or cognitive rehabilitation therapists
- Visits with psychiatrists, psychologists, neuropsychologists, social workers, psychiatric nurses, or drug and alcohol counselors
- Visits with acupuncturists, massage therapists, herbal or vitamin therapists, chiropractors, or other alternative or complementary medicine providers
- Disease modifying therapies

b. Types of disease modifying therapies

We will ask you about your use of disease modifying therapies. The table below has a list of the therapies currently available and how they are administered.

Avonex (interferon beta-1A)	Injection
Betaseron (interferon beta-1B)	Injection
Copaxone (glatiramer acetate)	Injection
Rebif (interferon beta-1A)	Injection
Novantrone (mitoxantrone)	Infusion
Tysabri (natalizumab)	Infusion
Extavia (interferon beta-1B)	Injection
Gilenya (fingolimod)	Oral
Aubagio (teriflunomide)	Oral
Tecfidera (dimethyl fumarate)	Oral
Plegridy (peginterferon beta-1A)	Injection
Lemtrada (alemtuzumab)	Infusion
Glatopa (glatiramer acetate)	Injection
Glatiramer Acetate Injection	Injection
Zinbryta (daclizumab)	Injection
Ocrevus (Ocrelizumab)	Infusion

C. Calendar

We will ask you about whether and when you used these health services and disease modifying therapies. Most of us cannot remember the dates when we started or stopped medication or went to the doctor. For previous interviews, we asked participants to record of their use of health services and medication, but we could not do that this time.

Below is a calendar of the past year. If you have your own calendar for the past year that shows when you used health services and when you started and/or stopped a disease modifying therapy, please mark these events on this calendar. If you do not have such a record for the past year, and need to rely on your memory, it may help you remember if you think about the season in which an event occurred or whether it was near an important personal or public event. The calendar already has national holidays and some religious holidays. Please add your own major events: birthdays, anniversaries, and other holidays or life cycle events that are important to you. Then, enter the approximate dates when you may have used a health service or started or stopped a disease modifying therapy. We know this is difficult and are asking only that you do the best you can.

August 2018

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

September 2018

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						1
2	Labor Day	3	4	5	6	7
8						
9	10 Rosh Hashanah	11	12	13	14	15
16	17	18	19 Yom Kippur	20	21	22
23 30	24	25	26	27	28	29

October 2018

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
7	8 Columbus Day	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31 Halloween			

November 2018

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12 Veterans Day	13	14	15	16	17
18	19	20	21	22 Thanksgiving Day	23	24
25	26	27	28	29	30	

December 2018

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23 30	24 31	25 Christmas Day	26	27	28	29

January 2019

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
		1 New Years Day	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21 MLK Day	22	23	24	25	26
27	28	29	30	31		

February 2019

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14 Valentines Day	15	16
17	18 Presidents Day	19	20	21	22	23
24	25	26	27	28		

March 2019

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17 St. Patrick's Day	18	19	20	21	22	23
24 31	25	26	27	28	29	30

April 2019

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20 Passover
21 Easter	22	23	24	25	26	27
28	29	30				

May 2019

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12 Mother's Day	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27 Memorial Day	28	29	30	31	

June 2019

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16 Father's Day	17	18	19	20	21	22
23 30	24	25	26	27	28	29

July 2019

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4 Independence Day	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			