

1 **A Targeted Literature Search and Phenomenological Review of Perspectives of People with**  
2 **Multiple Sclerosis and Healthcare Professionals' of the Immunology of Disease-Modifying**  
3 **Therapies**  
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21 **Appendix 1.** Open response questions and patient insights from the questionnaire.

Open response question	Patient insights
<p>How well do you understand [immunological] concepts?                      Please describe why you chose these answers.</p>	<p>DC: "Some of this I have at least heard the doctors mention, but most of it they have not actually explained to me. With the items I chose a three for, I have read an article about or learned about it in science class."</p> <p>JB: "I feel like I have a strong grasp of demyelination vs inflammation in MS. I have done a lot of research on MS and the disease-modifying drugs. The role of B cells vs T cells is something I have not done much research on, however, but am very eager to learn more as B cells become more of a target in emerging therapies. I have some idea of what biologics are and how they work but not a solid understanding worthy of a 4 rating."</p> <p>TS: "Most of these terms I have not heard my healthcare professional discuss."</p>
<p>Is it important for you to understand how your disease-modifying treatment for MS works in the body?</p>	<p>JC: "As a mother to a child with MS I want to know that the treatment is working but I am scared of the long-term effects, so I try not to over-analyze for fear that I won't want her to try the therapy."</p> <p>JB: "I've always been curious about the mechanism of action with any drug I take, whether it's for a migraine or for MS. I feel like knowing how drugs work allows me to make better informed choices when it comes to selecting treatments. Understanding the MoA can also shed more light on why certain side effects may be likely to occur. Knowledge is power and when you have a chronic illness like MS it's important to learn all you can about every aspect of the disease and how it's treated."</p> <p>TS: "It is important for me to understand how the medication is working in my body. What are the possible side effects and/or limitations that may come with starting treatment intervention? Are there any short-/long-term effects of this medication? How will this medication affect my body?"</p>
<p>With which medical professional are you most</p>	<p>JC: "Daisy has a doctor she trusts so we choose to check with him on all her needs."</p>

<p>likely to discuss your disease-modifying treatments?</p>	<p>JB: "It depends on the reason for the discussion. If we are considering a new therapy, I'm most likely to discuss with my doctor since I feel he will be most familiar with my history and have the most knowledge about my treatment options. If I am suspecting I could be having a side effect from my current treatment, however, I may speak to the nurse or the pharmacist before escalating to my doctor if necessary."</p> <p>TS: "I am most likely to discuss my treatments with my [physician associate]. At my MS appointments, I only see my actual neurologist every 6 months or so. My PA is my point of contact, including treatments. When I discuss my MS and symptoms with another profession (e.g.,[primary care provider]) they always refer me back to my neurologist".</p>
<p>Is there anything else you would like to share regarding your experience learning about your current disease-modifying treatment?</p>	<p>DC: "A lot of times the doctor would send a lot of pamphlets about the medication, but the pamphlets wouldn't explain how the medication works. They would mostly explain side effects and patient success stories."</p> <p>JB: "For my first DMT, my doctor just selected it and we had no discussion about why he chose that one, or how it worked. That was something I had to research on my own and only did so after years of the medication not working for me. My answers above reflect the process for choosing my current DMT when I joined the clinical trial and reviewed the Informed Consent with my new neurologist prior to joining. I was able to ask a lot of questions. Because it was being studied, he didn't have all the answers, so that is why I would have preferred to know more. Sometimes I don't even think researchers really understand the MoA for all DMTs – they observe how they work and see the results, but a lot of the "why/how" can be a mystery even to them until more studies are done and real-world evidence can be gathered over time and examined."</p> <p>TS: "I think it is important to use the mode of learning that is effective for the patient. For me, watching and seeing a video is the most effective strategy for me to learn. It is important for the care</p>

	<p>professional to meet the client where they best learn to communicate about the disease-modifying treatments”.</p>
<p>[What factors are important] when considering disease-modifying treatments?          Please tell us more about your answers.</p>	<p>DC: “I feel that the most important things are safety and efficiency. There’s not much of a point in taking medication that won’t work very well for you. I also kind of feel that knowing how the medications work goes hand in hand with safety.”</p> <p>JB: “Safety, efficacy and preventing progression are all important factors. I can work around how it’s administered and where/when I take it. Most important is how well it works for me and how safe it is.”</p> <p>TS: “The main priority is how effective is the medication at preventing further progression of my disease.”</p>
<p>When deciding between disease-modifying treatments, where all other aspects are equal (e.g., side effects, administration, efficacy), how likely would you be to consider how the treatments work (the MoA)?</p>	<p>DC: “If efficiency and side effects are all equal then I suppose I wouldn’t care too much about how it works. I would like to know what it would be doing to my body but, in the end, if it’s all equally safe and effective, how it works would not matter much.”</p> <p>JC: “I have never really given this a lot of thought, but I would consider it a factor.”</p> <p>JB: “If all other factors are equal between disease-modifying therapies, MoA would then be very important. If and when I need to switch to another therapy, MoA will be one of the considerations certainly. It will be fourth after safety, efficacy and side effects (in that order). I feel MoA is important because of how that would impact other areas of my health. For instance, I learned that Gilenya works by sequestering T cells in the lymph nodes and immediately I wondered “what happens if I get sick and need those T cells?”. It was explained to me that they are released back into the body when you become sick and need them. While I don’t understand how this works, I have never felt “immunocompromised” while on my current DMT and have always recovered quickly from any illnesses I’ve had. Safety, efficacy and side effects will always be my top three deciding factors when selecting a new DMT with MoA a close fourth.”</p>

	<p>TS: "A large factor in selecting a medication is how well will it treat my MS and prevent further progression. Next, I want to know the side effects of the medication and how will it affect my body overall. I like to know what are the large concerns taking a medication and short term. Another priority is the method in which you deliver the medication. For example, a pill, infusion or shot. Finally, how often the medication is required to take. For example, daily, weekly, monthly, etc."</p>
<p>How would you prefer to receive information about how the treatment works?</p>	<p>DC: "I would prefer a medical professional in case I have questions. They would be able to give an explanation tailored for my needs when trying to understand."</p> <p>JB: "I deleted "Leaflet" as I don't feel that lends itself well to interactivity or demonstration as easily as websites or video/animation might. Having information about how the treatment works explained to me by a medical professional using patient-friendly language would be the best option. This allows me to ask questions and get immediate clarification. Websites and videos can also provide FAQ-type answers and be a resource that is readily accessible 24/7 when I may not be able to contact my doctor. Everyone has their own learning style and others may feel having a leaflet is important. I am more visual and would like to have an explainer video that walks me through how a treatment works. I am also trying to become more environmentally conscious and would probably not take a leaflet if I can avoid it. I prefer digital over paper when possible."</p> <p>TS: "I think this is important for healthcare professionals to take into account. What is the best mode of learning for the patient and how can we better support them to learn about the medication in the most effective mode?"</p>
<p>Please [give] your preference for treatment administration when considering medications. Please tell us more about your answers.</p>	<p>JB: "I remember before there was a pill form of treatment for MS and the MS community was begging to know when it would be available. The answer was always "in 5 years". I don't know anyone who would choose an injection or infusion over a pill. It seems like there is less risk involved during administration to only swallow a pill. I'd rather be at home and take the pill myself. I would prefer weekly over daily but wouldn't want to take it less often. I'm sensitive to medications and tend to have all the side effects</p>

	<p>possible. I would rather have a reaction to a lower dose (taken more frequently) than to a higher dose. Especially if those side effects would be based on how high a dose I'd been given.”</p> <p>TS: “I think that this is a big priority. How are you delivering the medication and how often? When I selected my first MS medication, this was the biggest priority for me.”</p>
<p>Do you have any other comments or insights to add on your understanding of how disease-modifying treatments for MS work, or on making decisions about medications?</p>	<p>JB: “While I feel like I know a lot about MS and about the various treatment options, I know little about their MoAs and what makes B cells or T cells the best targets for treatments. I would love to learn more, especially when it comes to targeted therapies and knowing what works best for an individual based on their type of MS and unique set of symptoms or circumstances.”</p>

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