

Uncovering Peer-Review Blind Spots and Their Impact on Patient Outcomes:

Non-Motor Symptoms in Myasthenia Gravis—Re-examining Historical Miscommunication That Undermines Patient Care in MG

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“Let us not decide what is ‘relevant’ until the whole picture is before us”¹ Simpson, J A, 1960

Myasthenia Gravis is a misunderstood illness, especially when it comes to the non-motor symptoms. I published an article in the *RRNMF* in December 2025 titled “Myasthenia Gravis Misunderstood—Identifying the historical misinterpretations, miscommunication, and misconceptions.”² In this historical literature review I identified errors in the literature that have caused reverberating miscommunication about Myasthenia Gravis. This included misinformation that dismissed the existence of sensory symptoms in MG, resulting in misconceptions that continue to cause delayed diagnosis and undermine patient care.

Recently while reviewing the history of subtle eye signs that can help with earlier diagnosis of MG, I came across a 1966 paper by Dr. John Alexander Simpson. Simpson is a widely respected MG neurologist of the era, whose 1966 observations strikingly parallel one of the central arguments of my historical review.

My commentary discusses how Simpson's reflections, written sixty years ago, offer a historical lens that deepens the contemporary relevance of this issue of dismissing sensory and other non-motor symptoms in MG. His reflection provides a historical vantage that not only contextualises the issue but intensifies its relevance today.

In his 1966 article, “Myasthenia Gravis as an Autoimmune Disease: Clinical Aspects,” J A Simpson stated:

“It appears that sensory symptoms were widely recognized until they were summarily dismissed in the classical review by Campbell and Bramwell³ (1900)...since then, the dominance of the concept of a defect in neuromuscular transmission has led to these symptoms being largely ignored, although occasional reports continue to appear in the literature.”⁴

The ‘summary’ mentioned by Simpson, dismisses sensory symptoms, despite “being widely recognised,”⁴ is on page two of the Campbell & Bramwell report from 1900, and is titled “Salient Features of the Disease.”³ I also discussed this in

my Historical review, where I highlighted the contradictory remark where the authors stated that “there are no sensory symptoms” associated with MG,³ despite the plethora of sensory symptoms (including other non-motor symptoms), described their reported 60 case studies, mentioned in detail in the very same report.

The symptoms listed in their review included the patients reporting symptoms like the sensation of heaviness, numbness, feeling of ‘stiffness’ of face, neck pain, back pain, headaches, tenderness, aching limbs and jaw, severe pain in legs, facial pain, vertigo, giddiness, auditory hyperesthesia, a feeling of weakness exists without actual loss of power, high pulse rate (90-120), tongue becomes heavy, the numbness of tongue, feeling of being weighed down and of weakness and heaviness in arms and legs, a feeling of tightness of the face, a feeling of stupor with higher functions affected.³

Both Simpson and I wrote about how we found that this 1900 Review by Campbell and Bramwell³ is the point in history when sensory symptoms became less frequently reported, and subsequently the statement that ‘there were no sensory symptoms in MG’ was repeatedly added to the literature.

The Illusory Truth Effect and Peer Review Blind Spots

This repeated exposure to incorrect information fits into the phenomena of the Illusory Truth Effect,⁵ where over time this statement was believed to be true and non-motor symptoms including sensory symptoms were dismissed, both in the literature and in the clinical assessment of patients.

Simpson had documented sensory symptoms in his MG patients, and in patients of other authors of the day, including symptoms like paraesthesia, deafness or hyperacusis, facial numbness, and loss of taste or smell.⁴ He also noted that occasional reports still appeared in the literature of the day, and one such report by Harvey 1948 states “That sensory disturbances may precede or accompany the first manifestations of weakness is not generally realized. Headache, pain in the eye, numbness and tingling in various regions and other sensory manifestations were described often enough to deserve some consideration.”⁶

Yet because of the Illusory Truth Effect in the literature from the repeated misinformation, there was a persistent belief that MG was purely a motor disease. Patients were dismissed as ‘not having MG’ because the prevailing belief was that MG did not involve pain or other sensory symptoms.

Dr. John A. Simpson – MG as an Autoimmune Disease

Dr. John A. Simpson was a prominent physician known for his many contributions to the field, including his pioneering 1960 article where he hypothesized that MG was an autoimmune response.¹ In this paper he discussed how sensory symptoms in MG research were ignored or discarded as they were difficult to “reconcile with the views which have been current since attention was focussed on the phenomena

of neuromuscular transmission.” Simpson spoke of the importance of “incorporating all the clinical phenomena without exception, and of suggestion completely new lines of inquiry.” He challenged the audience of his article: “Let us not decide what is ‘relevant’ until the whole picture is before us.”¹

In his 1977 paper, when talking about his electrophysiological studies in 1955 he wrote, “So I spent a lot of time talking to myasthenic patients – and this turned out to be a more sensitive probe as I describe!” He stated, “I decided to forget all that the textbooks had to say ... and listen to the patients...noted every fact I could elicit about the previous history...including every illness whether it seemed relevant or not.” He discussed that by doing this he may find that MG is a part of a multisystem disease.⁷

Dismissing non-motor symptoms in MG persists today

Non-motor symptoms in Myasthenia Gravis (MG) continue to be dismissed as “not MG” in much of the literature, despite sensory symptoms, including ocular pain, headache, paraesthesia, and the sensation of heaviness, reported throughout literature for well over one hundred years.^{2, 4}

Even though the non-motor symptoms are still not well recognised in the prominent MG literature, there are recent reports in the literature today of these symptoms in myasthenia gravis causing a range of symptoms, including autonomic symptoms and other systemic symptoms. Symptoms can include but are not limited to, hearing,⁸ olfactory function,⁹ and taste abnormalities,¹⁰ headaches,^{11, 12} pain,^{10, 11, 13, 14} tongue sensation of swelling,^{15, 16} tongue sensation of heaviness,¹⁷ paraesthesia¹⁸, dizziness¹⁸, cognitive impairment,¹⁹ sleep disorders,²⁰ psychological involvement.^{10, 13, 21} Vision blurring,^{22, 23} and pupil abnormalities.¹³ Urinary²⁴, digestive,²⁵ and cardiovascular dysfunction.^{10, 13, 26} These often dismissed symptoms can markedly reduce quality of life of the person living with MG and, when severe, particularly in cases of cardiovascular involvement, may be life threatening.^{13, 26-28} Fatigue is a non-motor symptom of MG that is more widely recognised, however the factors that contribute to fatigue developing in a person living with MG are not well understood.^{21, 29}

Some recent authors are highlighting the importance of clinicians giving nonmotor symptoms the same level of attention as fatigable muscle weakness.^{11, 13, 14, 28} However, despite many reports discussing non-motor symptoms in detail, it is common for patients to have these symptoms dismissed as “not MG.” This dismissal of the patient's lived experience is the reason why the underlying mechanisms of non-motor symptoms in MG are still unknown, as there have been only a limited number of researchers actively looking for answers.^{11, 13, 14} The prevailing MG information in the literature continues to dismiss the non-motor symptoms of MG.

Uncovering Peer Review Blind Spots and Their Impact on Patient Outcomes

In my historical review,² I identified six factors or gaps that have shaped today's misunderstandings of Myasthenia Gravis; issues that continue to cause difficulties in diagnosis and poor understanding of MG patient's lived experiences. They include²:

- 1) Incorrect translation of the intended meaning of the word ‘gravis’ causing a misinterpretation of the intended meaning for ‘gravis’ as being ‘severe’ instead of the intended meaning of ‘a painful weight in the limbs’
- 2) Misinterpretation of meaning of ‘gravis,’ through miscommunication of MG severity. This also led to the incorrect use of the word ‘grave’ to describe MG
- 3) Misinterpreting the prominent MG case series paper by Campbell & Bramwell. This led to the incorrect belief that sensory symptoms are not associated with MG
- 4) Miscommunication of ‘old knowledge’ like The Mary Walker Effect³⁰ and of contributions by the ‘MG Greats’ like J A Simpson^{1, 4, 7}
- 5) Not listening to patient lived experience
- 6) Failing to integrate relevant interdisciplinary knowledge to improve knowledge of MG

My argument about how continuing to highlight and analyse these types of gaps in the literature is essential for increasing our knowledge of MG and is emphasised by the invaluable insights we can draw from Simpson's work. His three papers that I have discussed in this commentary^{1, 4, 7} correspond to the points 3, 4, 5, and 6 in my above-mentioned list,² being, misinterpreting the prominent MG case series paper by Campbell & Bramwell lead to the incorrect belief that sensory symptoms are not associated with MG; Miscommunication of ‘old knowledge’ like Simpson's reviews; not listening to patient lived experience and dismissing non-motor symptoms; failing to integrate interdisciplinary knowledge to improve knowledge of MG in areas like autonomic effect on MG, cardiac muscle, olfactory, taste, auditory and cognitive effects of MG.

Simpson's key message was lost in the Literature

The essential information in Simpson's papers had been lost in the literature, just as his paragraph in his 1966 article⁴ where he stated the error in the Campbell Bramwell (1900) review³ was lost in the literature.

I hope the irony of this won't also be lost in the literature...

An Autoimmune Disease – MG as a multi system disease

Simpson's hypothesis that MG is an autoimmune disease is the only part of his 1966 argument that has endured, while the rest of his insights have disappeared from the literature. His warnings about the danger of dismissing sensory symptoms simply because they did not fit the prevailing model of a disorder of neuromuscular transmission were

set aside, and this broader perspective was effectively lost in subsequent literature.

Simpson's important writings describing the importance of listening to patients and not dismissing their sensory symptoms were not heeded by mainstream researchers and MG became known as a purely motor disease. Mainstream research failed to absorb a crucial lesson: patients' sensory symptoms were real, and clinically meaningful, yet they were repeatedly set aside.

By overlooking these reported symptoms, the field drifted toward an overly narrow framework, and myasthenia gravis was ultimately defined and taught, as a purely motor disease; a characterisation that never fully reflects the patient's experience.

Restoring Lost Insights from Early Myasthenia Gravis Pioneers

Revisiting Simpson's famous papers provides more insight into MG than he has been credited with to date. His writings not only support my historical review from 2025,² by identifying the error in the prominent Campbell and Bramwell paper²⁻⁴, they also provide instructions on the methodology to find the answers to the physiology of the full clinical picture of MG. These instructions are: (1) Listen to patients describe their symptoms and (2) Acknowledge the symptoms that don't appear to fit with the defect at the neuromuscular junction and (2) Be open minded to discovering other mechanisms causing the non-motor symptoms, including looking for answers outside of the neuromuscular junction, in other systems.

Much of the foundational wisdom from the early giants of MG research has faded from modern literature, and I write about this in my 2025 historical review.² The goal of Medicine today should be to recover and reinstate the valuable insights pioneers like Simpson left behind, ensuring that clinically meaningful observations, once well understood, are not lost to time.² The literature needs to be updated to acknowledge that MG is a multi-system autoimmune disease, with both motor and non-motor symptoms, and has these symptoms reported for at least 126 years.

It's time to re-examine peer review methodology

We need to encourage researchers to look to the past for errors like the ones highlighted in my 2025 historical review.² This will help improve our understanding of rare diseases, like Myasthenia Gravis. We still don't understand the physiology behind MG non-motor symptoms, and as Simpson teaches us the most important thing is to stop defining MG as purely a disease of the neuromuscular junction, affecting the skeletal muscles only. The undisputable fact is MG is an autoimmune disease, and there are many factors that can cause the non-motor symptoms that need further investigation.

I can't help but ponder the 'sliding door moment' possible, if 60 years ago Simpson's words were noticed and the literature had corrected this oversight. How people living

with MG could have received earlier diagnosis and better care, and how this could have increased MG knowledge in every way, including in drug development. Simpson spoke about the need to stay openminded to the broader landscape of MG and the many interconnected systems involved,^{1, 4, 7} yet this perspective is largely missing today at the scale and urgency needed to create meaningful change.

I also can only imagine where we would be today in the care of myasthenia gravis patients if the Campbell Branwell report never mentioned the contradictory statement that there were 'no sensory symptoms' in MG in their summary, when they went on to discuss 60 patients describing sensory symptoms and other non-motor symptoms.² This is significant historical error has been constantly restated in literature even today, causing difficulties in diagnosing MG, poor understanding by doctors of the patient's lived experience and undermining patient's ongoing clinical care.²

Imagine how many patients might have been saved over the past 60 years had Simpson's findings been heeded-or even over the past 126 years if the original case series had not been misrepresented in its summary.

Highlights - What Truly Matters

The key to clinical diagnosis and understanding diseases is to "not decide what is 'relevant' until the whole picture is before us,"¹ which is an important quote by Simpson that should be a guide for all researchers and clinical interactions with patients. Physicians need to stop ignoring non-motor symptoms, by dismissing them as "not MG," when they are difficult to "reconcile with the views which have been current since attention was focussed on the phenomena of neuromuscular transmission."¹ Medicine today needs to be reminded of Simpson's original groundbreaking and subsequently correct hypothesis paper where he wrote about "incorporating all the clinical phenomena without exception, and of suggestion completely new lines of inquiry." This is what we need to emphasise today.

Medicine continues to fall short for many people living with myasthenia gravis because nonmotor symptoms are still too often dismissed as "not MG." Even though some research has begun to revisit these long ignored symptoms, the dominant clinical narrative remains narrow, and patients whose experiences extend beyond motor weakness are frequently left without recognition or meaningful support.

Non-motor symptoms need to be acknowledged in MG, as this is the only way for science to uncover the physiology behind 'all' the MG symptoms. This will help with earlier diagnosis and improved patient care. We need more research looking at the 'larger clinical picture' of MG, including all the symptoms, just as Simpson did when he developed his breakthrough hypothesis 60 years ago.

It's essential to reinstate valuable information that has been lost in the literature from the MG Greats. We truly need to do this to effectively 'stand on the shoulders of the giants' like Dr J A Simpson, ensuring that the depth, nuance,

and foundational thinking that shaped the field continue to inform and elevate our MG knowledge today.

Position Statement: The Author is an MG Research Orthoptist, with both Orthoptic Clinical experience and Lived Experience of Myasthenia Gravis

Conflict of Interest: I have no conflicts of interest to disclose.

Disclosure Statement: I did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors

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